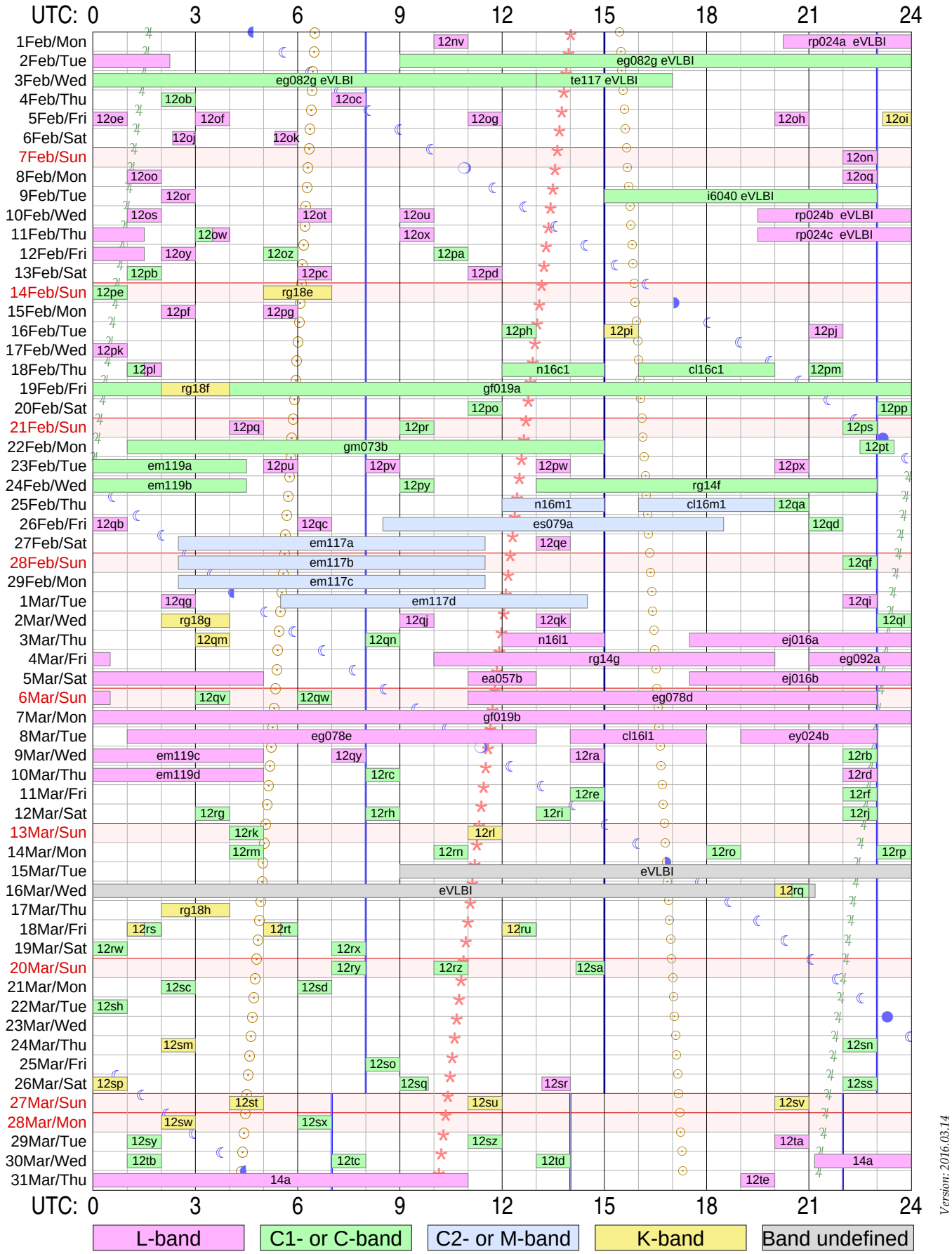
Tr VLBI plan for Feb/Mar 2016



Sky events at Tr: Sunrise & sunset Transit of Moon Transit of Jupiter Transit of Aries (0h ST)

Vertical lines in blue mark operator shift times at Tr

Total observing time: 462.7 hours in 149 experiments scheduled

Initial characters 'rk' are omitted from RA experiment names!

Version: 2016.03.14

Strona zostawiona celowo pusta

RadioAstron & EVN Experiments

Feb 2016

Uytkownik ftp dla logw i schedulw RA: `grt`
`ftp://webinet.asc.rssi.ru`
Przykad dla log files: `cd GRT_log_files/2014_09/2014_09_01_raks08ak`
Przykad dla sched files: `cd schedule/grtsched/RAKS/rk08ak`

Year	Date			UTstart		UTstop		Exper.	xxComment
2016	D	M	DoW	hh	mm	hh	mm	name	
32	1	02	Pon	10	00	11	00	rk12nv	"L "
35	4	02	Czw	2	00	3	00	rk12ob	"C "
35	4	02	Czw	7	00	8	00	rk12oc	"L "
36	5	02	Pia	0	00	1	00	rk12oe	"L "
36	5	02	Pia	3	00	4	00	rk12of	"L "
36	5	02	Pia	11	00	12	00	rk12og	"C "
36	5	02	Pia	20	00	21	00	rk12oh	"C "
36	5	02	Pia	23	10	24	00	rk12oi	"K>C "
37	6	02	Sob	2	20	3	00	rk12oj	"C "
37	6	02	Sob	5	20	6	00	rk12ok	"C "
38	7	02	Nie	22	00	23	00	rk12on	"C "
39	8	02	Pon	1	00	2	00	rk12oo	"L "
39	8	02	Pon	22	00	23	00	rk12oq	"L "
40	9	02	Wto	2	00	3	00	rk12or	"L "
41	10	02	Sro	1	00	2	00	rk12os	"L "
41	10	02	Sro	6	00	7	00	rk12ot	"L "
41	10	02	Sro	9	00	10	00	rk12ou	"L "
42	11	02	Czw	3	00	4	00	rk12ow	"C>L "
42	11	02	Czw	9	00	10	00	rk12ox	"L "
43	12	02	Pia	2	00	3	00	rk12oy	"L "
43	12	02	Pia	5	00	6	00	rk12oz	"C "
43	12	02	Pia	10	00	11	00	rk12pa	"C "
44	13	02	Sob	1	00	2	00	rk12pb	"C "
44	13	02	Sob	6	00	7	00	rk12pc	"L "
44	13	02	Sob	11	00	12	00	rk12pd	"L "
45	14	02	Nie	0	00	1	00	rk12pe	"C "
45	14	02	Nie	5	00	7	00	rg18e	"K "
46	15	02	Pon	2	00	3	00	rk12pf	"L "
46	15	02	Pon	5	00	6	00	rk12pg	"L "
47	16	02	Wto	12	00	13	00	rk12ph	"C "
47	16	02	Wto	15	00	16	00	rk12pi	"K "
47	16	02	Wto	21	00	22	00	rk12pj	"L "
48	17	02	Sro	0	00	1	00	rk12pk	"L "
49	18	02	Czw	1	00	2	00	rk12pl	"C>L "
49	18	02	Czw	21	00	22	00	rk12pm	"C "
50	19	02	Pia	2	00	4	00	rg18f	"K "
51	20	02	Sob	11	00	12	00	rk12po	"C "
51	20	02	Sob	23	00	24	00	rk12pp	"C "
52	21	02	Nie	4	00	5	00	rk12pq	"L "

```
52 21 02 Nie   9 00  10 00  rk12pr "C        "
52 21 02 Nie  22 00  23 00  rk12ps "C        "
53 22 02 Pon  22 30  23 30  rk12pt "C        "
54 23 02 Wto   5 00   6 00  rk12pu "L        "
54 23 02 Wto   8 00   9 00  rk12pv "L        "
54 23 02 Wto  13 00  14 00  rk12pw "L        "
54 23 02 Wto  20 00  21 00  rk12px "L        "
55 24 02 Sro   9 00  10 00  rk12py "C        "
55 24 02 Sro  13 00  23 00  rg14f  "C        "
56 25 02 Czw  20 00  21 00  rk12qa "C        "
57 26 02 Pia   0 00   1 00  rk12qb "L        "
57 26 02 Pia   6 00   7 00  rk12qc "L        "
57 26 02 Pia  21 00  22 00  rk12qd "C        "
58 27 02 Sob  13 00  14 00  rk12qe "L        "
59 28 02 Nie  22 00  23 00  rk12qf "C        "


49 18 02 Czw  12 00  15 00  n16c1    "C"   1- EVN7  0.69
49 18 02 Czw  16 00  20 00  cl16c1   "C"   2- ---0  0.00
50 19 02 Pia   0 00  24 00  gf019a   "C"   3R EVN5  5.53
53 22 02 Pon   1 00  15 00  gm073b   "C"   4- EVN0 12.90
54 23 02 Wto   0 00   4 30  em119a   "C"   5R EVN6  2.07
55 24 02 Sro   0 00   4 30  em119b   "C"   6R EVN6  2.07
55 24 02 Sro  13 00  23 00  eg089c   "C"   7- EVN8  1.15
56 25 02 Czw  12 00  15 00  n16m1    "M"   8- EVN3  0.17
56 25 02 Czw  16 00  20 00  cl16m1   "M"   9- ---0  0.00
57 26 02 Pia   8 30  18 30  es079a   "M"  10- EVN7  1.15
58 27 02 Sob   2 30  11 30  em117a   "M"  11- EVN8  0.52
59 28 02 Nie   2 30  11 30  em117b   "M"  12- EVN8  0.52
60 29 02 Pon   2 30  11 30  em117c   "M"  13- EVN8  0.52
61  1 03 Wto   5 30  14 30  em117d   "M"  14- EVN8  0.52
63  3 03 Czw  12 00  15 00  n16l1    "L"  15- EVN7  0.69
63  3 03 Czw  17 30  24 00  ej016a   "L"
64  4 03 Pia   0 00   0 30   ""        "L"  16- EVN0  3.23
64  4 03 Pia  10 00  20 00  eg089d   "L"  17- EVN2  1.15
64  4 03 Pia  21 00  24 00  eg092a   "L"
65  5 03 Sob   0 00   5 00  ""   "L"  18- EVN6  3.69
65  5 03 Sob  11 00  13 00  ea057b   "L"  19- Bon0  0.92
65  5 03 Sob  17 30  24 00  ej016b   "L"
66  6 03 Nie   0 00   0 30  ""   "L"  20- EVN5  3.23
66  6 03 Nie  11 00  23 00  eg078d   "L"  21- EVN3  5.53
67  7 03 Pon   0 00  24 00  gf019b   "L"  22R EVN9  5.53
68  8 03 Wto   1 00  13 00  eg078e   "L"  23- EVN3  5.53
68  8 03 Wto  14 00  18 00  cl16l1   "L"  24- ---0  0.00
68  8 03 Wto  19 00  23 00  ey024b   "L"  25- EVN6  1.84
69  9 03 Sro   0 00   5 00  em119c   "L"  26R EVN5  2.30
70 10 03 Czw   0 00   5 00  em119d   "L"  27R EVN5  2.30
32  1 02 Pon  20 15  24 00  "rp024a  eVLBI"     "L"
33  2 02 Wto   0 00   2 15  ""   "L"  28  eEV0 0.00
41 10 02 Sro  19 30  24 00  "rp024b  eVLBI"   "L"
42 11 02 Czw   0 00   1 30  ""   "L"  29  eEV0 0.00
42 11 02 Czw  19 30  24 00  "rp024c  eVLBI"   "L"
43 12 02 Pia   0 00   1 30  ""   "L"  30  eEV0 0.00
```

```
0    2.02/Wto   9 00  113 00 "eg082g eVLBI"  "C        "
0    3.02/Sro   13 00  19 00  "eVLBI testy"  "X        "

  Summer time (DST): Mar 27 to Oct 30, 2016
     Total observing time: 336.2 hours in  86 experiments
```

Plik pdf tego dokumentu jest dost/epny w sieci pod adresem:

`http://paulo.astro.uni.torun.pl/~pw/VLBI/schedules/feb16.pdf`

rk12nvtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                   Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Mon   1 Feb 2016   Day  32 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

10 00 00  1502+106     19 58 29  18.3 262.9  4.9      37.3     0        0   10 00 00
10 14 30  ---          20 13 01  16.1 265.9  5.1      37.5   870       28   10 00 01

10 15 00  1502+106     20 13 31  16.1 266.0  5.1      37.5    24       28   10 15 00
10 29 30  ---          20 28 04  13.9 268.9  5.4      37.6   870       56   10 15 01

10 30 00  1502+106     20 28 34  13.8 269.0  5.4      37.6    24       56   10 30 00
10 44 30  ---          20 43 06  11.6 271.9  5.6      37.6   870       84   10 30 01

10 45 00  1502+106     20 43 36  11.6 272.0  5.6      37.6    24       84   10 45 00
11 00 00  ---          20 58 39   9.3 275.0  5.9      37.5   900      112   10 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    5         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
 1st LO=   2400.00   2400.00   2400.00   2400.00
 Net SB=         L         L         U         U
 IF SB =         L         L         L         L
 Pol.  =       RCP       LCP       RCP       LCP
 BBC   =         1         2         1         2
 BBC SB=         U         U         L         L
 IF    =         C         A         C         A

The following frequency sets based on these setups were used.

 Frequency Set:   2  Setup file default.  Used with PCAL = 1MHz
 LO sum=   1668.00  1668.00  1668.00  1668.00
 BBC fr=    732.00   732.00   732.00   732.00
 Bandwd=     16.00    16.00    16.00    16.00
  Matching frequency sets:   2

 Track assignments are:
  track1=   2, 18,  3, 19
  barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 51.468431	0.00
	85 16 41.77889	* 85 00 00.00000	84 54 21.90857	0.00
	fake circumpolar target for a TS to look at			
* 1502+106	15 02 00.157714	* 15 04 24.979783	15 05 11.283684	0.00
J1504+1029	10 41 17.73982	* 10 29 39.19840	10 25 54.01658	0.00
	./rk12nv_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 15421 observations, RA-AO3-04, RA-AO2-1			

EFFECT OF SOLAR CORONA

```
The solar corona can cause unstable phases for sources too close to the Sun.
SCHED provides warnings at individual scans for distances less than 10 degrees.
The distance from the Sun to each source in this schedule is:
  Source         Sun distance (deg)
 1502+106            91.3

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
that the Sun will cause amplitude reductions on the  longest VLBA baselines
at a solar distance of 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:
     1.6 GHz         45. deg
     2.3 GHz         36. deg
     5.0 GHz         23. deg
     8.4 GHz         17. deg
    15.0 GHz         12. deg
    22.0 GHz          9. deg
```

rp024atr

e-EVN: FRB121102

PI: *Hessels/Paragi*

```
Address:  JIVE EMAIL:    zparagi@jive.nl Phone during observation: +31 521 596 530
Observing mode: realtime e-vlbi

Schedule for TORUN     (Code Tr )                                   Page   2
               e-EVN: FRB121102
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------
 --- Mon   1 Feb 2016   Day  32 ---
 Next scan frequencies:  1610.49  1610.49  1610.49  1610.49  1642.49  1642.49  1642.49  1642.49
                         1674.49  1674.49  1674.49  1674.49  1706.49  1706.49  1706.49  1706.49
 Next BBC frequencies:    689.51   689.51   689.51   689.51   657.51   657.51   657.51   657.51
                          625.51   625.51   625.51   625.51   593.51   593.51   593.51   593.51
 Next scan bandwidths:     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
                           16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00

20 15 00  J0126+2559   06 15 10  31.3 272.7  4.8      41.9     0        0   20 15 00
20 29 20  =0123+257    06 29 32  29.1 275.5  5.0      41.7   860      110   20 15 01

20 30 00  J0126+2559   06 30 12  29.0 275.6  5.0      41.7    34      110   20 30 00
20 44 20  =0123+257    06 44 35  26.9 278.4  5.3      41.4   860      221   20 30 01

20 45 00  J0126+2559   06 45 15  26.8 278.5  5.3      41.4    34      221   20 45 00
20 59 20  =0123+257    06 59 37  24.6 281.2  5.5      41.0   860      331   20 45 01

21 00 00  J0126+2559   07 00 17  24.6 281.3  5.5      41.0    34      331   21 00 00
21 14 20  =0123+257    07 14 40  22.4 284.0  5.8      40.4   860      441   21 00 01

21 16 20  0234+285     07 16 40  34.8 273.1  4.6      43.2    59      441   21 16 20
21 29 20  ---          07 29 42  32.8 275.6  4.8      43.0   780      541   21 16 21

21 30 00  0234+285     07 30 22  32.7 275.7  4.9      43.0    34      541   21 30 00
21 44 20  ---          07 44 45  30.6 278.4  5.1      42.7   860      651   21 30 01

21 45 00  0234+285     07 45 25  30.5 278.6  5.1      42.7    34      651   21 45 00
21 59 20  ---          07 59 47  28.4 281.2  5.3      42.3   860      762   21 45 01

22 00 00  0234+285     08 00 27  28.3 281.3  5.4      42.2    34      762   22 00 00
22 14 20  ---          08 14 50  26.2 284.0  5.6      41.7   860      872   22 00 01

22 15 00  0234+285     08 15 30  26.1 284.1  5.6      41.7    34      872   22 15 00
22 29 20  ---          08 29 52  24.0 286.7  5.9      41.1   860      982   22 15 01

22 30 00  0234+285     08 30 32  23.9 286.8  5.9      41.0    34      982   22 30 00
22 44 20  ---          08 44 55  21.8 289.4  6.1      40.3   860     1092   22 30 01

22 45 00  0234+285     08 45 35  21.8 289.5  6.1      40.3    34     1092   22 45 00
22 59 20  ---          08 59 57  19.7 292.1  6.4      39.4   860     1203   22 45 01

23 00 00  0234+285     09 00 37  19.6 292.2  6.4      39.4    34     1203   23 00 00
23 14 20  ---          09 14 59  17.7 294.8  6.6      38.5   860     1313   23 00 01
```

Schedule for TORUN (Code Tr) Page 3

e-EVN: FRB121102

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 1 Feb 2016 Day 32 ---										
23 15 00	0234+285	09 15 40	17.6	294.9	6.6		38.4	34	1313	23 15 00
23 29 20	---	09 30 02	15.6	297.5	6.9		37.5	860	1423	23 15 01
23 30 00	0234+285	09 30 42	15.6	297.7	6.9		37.4	34	1423	23 30 00
23 44 20	---	09 45 04	13.7	300.3	7.1		36.3	860	1533	23 30 01
23 46 20	3C84	09 47 05	28.6	302.1	6.4		42.8	49	1533	23 46 20
23 54 50	---	09 55 36	27.6	303.5	6.6		42.0	510	1599	23 46 21
23 58 50	J0535+1942	09 59 37	30.0	263.0	4.4		39.3	143	1599	23 58 50
23 59 50	=0532+196	10 00 37	29.9	263.3	4.4		39.3	60	1606	23 58 51
--- Tue 2 Feb 2016 Day 33 ---										
00 00 50	J0534+2200	10 01 37	31.4	265.3	4.4		40.2	40	1606	00 00 50
00 07 50	---	10 08 38	30.4	266.7	4.6		40.3	420	1660	00 00 51
00 08 50	J0535+1942	10 09 38	28.5	265.1	4.6		39.5	40	1660	00 08 50
00 09 50	=0532+196	10 10 39	28.4	265.3	4.6		39.5	60	1668	00 08 51
00 11 50	J0529+3209	10 12 39	36.5	276.7	4.7		44.8	75	1668	00 11 50
00 12 50	=0526+321	10 13 39	36.4	276.9	4.7		44.8	60	1676	00 11 51
00 13 20	J0530+3301	10 14 09	37.0	277.6	4.7		45.2	15	1676	00 13 20
00 14 20	=0527+329	10 15 09	36.9	277.8	4.7		45.2	60	1683	00 13 21
00 17 20	J0518+3306	10 18 10	34.7	280.6	5.0		44.8	160	1683	00 17 20
00 20 20	=0514+330	10 21 10	34.2	281.2	5.0		44.7	180	1706	00 17 21
00 21 10	FRB	10 22 00	36.2	278.8	4.8		45.1	29	1706	00 21 10
00 29 00	---	10 29 52	35.0	280.3	4.9		44.9	470	1767	00 21 11
00 29 50	J0518+3306	10 30 42	32.9	282.9	5.2		44.3	28	1767	00 29 50
00 30 50	=0514+330	10 31 42	32.7	283.1	5.2		44.3	60	1774	00 29 51
00 31 40	FRB	10 32 32	34.6	280.8	5.0		44.8	29	1774	00 31 40
00 39 30	---	10 40 23	33.5	282.2	5.1		44.5	470	1835	00 31 41
00 40 20	J0518+3306	10 41 14	31.3	284.8	5.4		43.9	28	1835	00 40 20
00 41 20	=0514+330	10 42 14	31.2	284.9	5.4		43.8	60	1842	00 40 21
00 42 00	FRB	10 42 54	33.1	282.6	5.2		44.4	19	1842	00 42 00
00 50 00	---	10 50 55	31.9	284.0	5.3		44.1	480	1904	00 42 01
00 50 40	J0518+3306	10 51 35	29.8	286.6	5.5		43.4	18	1904	00 50 40
00 51 40	=0514+330	10 52 35	29.7	286.8	5.6		43.4	60	1912	00 50 41

Schedule for TORUN (Code Tr) Page 4

e-EVN: FRB121102

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 2 Feb 2016 Day 33 ---										
00 52 20	FRB	10 53 16	31.6	284.5	5.3		44.0	19	1912	00 52 20
01 00 20	---	11 01 17	30.4	285.9	5.5		43.6	480	1973	00 52 21
01 01 00	J0518+3306	11 01 57	28.3	288.4	5.7		42.9	18	1973	01 01 00
01 02 00	=0514+330	11 02 57	28.2	288.6	5.7		42.8	60	1981	01 01 01
01 02 40	FRB	11 03 37	30.1	286.3	5.5		43.5	19	1981	01 02 40
01 10 40	---	11 11 39	29.0	287.7	5.6		43.1	480	2042	01 02 41
01 11 20	J0518+3306	11 12 19	26.9	290.2	5.9		42.3	19	2042	01 11 20
01 12 20	=0514+330	11 13 19	26.7	290.4	5.9		42.2	60	2050	01 11 21
01 13 00	FRB	11 13 59	28.6	288.1	5.7		43.0	19	2050	01 13 00
01 21 00	---	11 22 00	27.5	289.5	5.8		42.5	480	2112	01 13 01
01 21 40	J0518+3306	11 22 40	25.4	292.0	6.1		41.7	19	2112	01 21 40
01 22 40	=0514+330	11 23 41	25.3	292.2	6.1		41.6	60	2119	01 21 41
01 23 20	FRB	11 24 21	27.1	289.9	5.9		42.4	19	2119	01 23 20
01 31 20	---	11 32 22	26.0	291.3	6.0		41.9	480	2181	01 23 21
01 32 00	J0518+3306	11 33 02	24.0	293.8	6.2		41.0	19	2181	01 32 00
01 33 00	=0514+330	11 34 02	23.8	294.0	6.2		40.9	60	2188	01 32 01
01 33 40	FRB	11 34 42	25.7	291.7	6.0		41.8	19	2188	01 33 40
01 41 40	---	11 42 44	24.6	293.1	6.2		41.3	480	2250	01 33 41
01 42 20	J0518+3306	11 43 24	22.6	295.6	6.4		40.3	19	2250	01 42 20
01 43 20	=0514+330	11 44 24	22.4	295.8	6.4		40.2	60	2258	01 42 21
01 44 10	FRB	11 45 14	24.2	293.5	6.2		41.1	29	2258	01 44 10
01 52 00	---	11 53 05	23.2	294.9	6.3		40.6	470	2318	01 44 11
01 53 00	J0518+3306	11 54 06	21.1	297.4	6.6		39.5	39	2318	01 53 00
01 54 00	=0514+330	11 55 06	21.0	297.6	6.6		39.4	60	2326	01 53 01
01 55 10	J0535+3249	11 56 16	23.0	294.5	6.3		40.5	48	2326	01 55 10
01 56 10	=0532+327	11 57 16	22.9	294.7	6.3		40.5	60	2333	01 55 11
01 56 40	J0535+3153	11 57 46	22.0	294.3	6.4		40.2	14	2333	01 56 40
01 57 40	=0531+318	11 58 46	21.9	294.4	6.4		40.1	60	2341	01 56 41
01 58 10	J0539+3308	11 59 16	23.3	294.7	6.3		40.7	11	2341	01 58 10
01 59 10	=0535+331	12 00 17	23.2	294.9	6.3		40.6	60	2349	01 58 11

```
Schedule for TORUN     (Code Tr )                                  Page   5
               e-EVN: FRB121102
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Tue   2 Feb 2016   Day  33 ---

02 03 20  J0604+2429   12 04 27  19.6 285.0  6.0      39.6   214     2349   02 03 20
02 03 50  =0601+245    12 04 57  19.5 285.1  6.0      39.6    30     2353   02 03 21

02 05 10  J0614+2229   12 06 18  19.1 282.3  5.9      39.4    59     2353   02 05 10
02 06 10  ---          12 07 18  19.0 282.5  5.9      39.4    60     2360   02 05 11

02 07 40  J0604+2429   12 08 48  18.9 285.8  6.0      39.4    69     2360   02 07 40
02 08 10  =0601+245    12 09 18  18.9 285.9  6.1      39.4    30     2364   02 07 41

02 10 50  J0637+2319   12 11 58  22.3 279.5  5.6      40.2   131     2364   02 10 50
02 11 20  =0634+233    12 12 29  22.3 279.6  5.6      40.1    30     2368   02 10 51

02 12 30  J0629+2415   12 13 39  21.6 282.1  5.7      40.1    52     2368   02 12 30
02 13 30  ---          12 14 39  21.4 282.2  5.7      40.1    60     2376   02 12 31

02 14 30  J0637+2319   12 15 39  21.8 280.2  5.6      40.1    42     2376   02 14 30
02 15 00  =0634+233    12 16 09  21.7 280.3  5.6      40.0    30     2379   02 14 31



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: sess116.L1024e

   Setup group:    6         Station: TORUN            Total bit rate:  1024
   Format: MARK5B            Bits per sample: 2        Sample rate: 32.000
   Number of channels: 16    DBE type: DBBC_DDC        Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00
            2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00
  Net SB=         L         L         U         U         L         L         U         U
                  L         L         U         U         L         L         U         U
  IF SB =         L         L         L         L         L         L         L         L
                  L         L         L         L         L         L         L         L
  Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
                RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
  BBC   =         1         5         1         5         2         6         2         6
                  3         7         3         7         4         8         4         8
  BBC SB=         U         U         L         L         U         U         L         L
                  U         U         L         L         U         U         L         L
  IF    =        A1        B1        A1        B1        A1        B1        A1        B1
                 A1        B1        A1        B1        A1        B1        A1        B1

 The following frequency sets based on these setups were used.

  Frequency Set:   5  Setup file default.  Used with PCAL = off
  LO sum=   1610.49  1610.49  1610.49  1610.49  1642.49  1642.49  1642.49  1642.49
            1674.49  1674.49  1674.49  1674.49  1706.49  1706.49  1706.49  1706.49
  BBC fr=    689.51   689.51   689.51   689.51   657.51   657.51   657.51   657.51
             625.51   625.51   625.51   625.51   593.51   593.51   593.51   593.51
  Bandwd=     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
              16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
   Matching frequency sets:   5

  Track assignments are:
   track1=   2, 10, 18, 26,  4, 12, 20, 28,  6, 14, 22, 30,  8, 16, 24, 32
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                       (B1950)            (J2000)            (Date)            (mas)

* FRB               05 28 41.045663   * 05 31 58.000000     05 33 02.490320       0.00
                    33 05 54.64087    * 33 08 04.00000      33 08 36.60399        0.00

* J0534+2200        05 31 31.427725   * 05 34 31.973000     05 35 31.060762       0.00
                    21 58 54.40670    * 22 00 52.06000      22 01 18.09346        0.00

* J0614+2229        06 11 15.764703   * 06 14 17.160000     06 15 16.617013       0.00
                    22 31 31.81944    * 22 30 36.00000      22 30 05.33162        0.00

* J0629+2415        06 26 02.069795   * 06 29 05.728000     06 30 05.949973       0.00
                    24 17 43.52461    * 24 15 43.30000      24 14 51.92147        0.00

* J0126+2559        01 23 57.254021   * 01 26 42.792640     01 27 35.937149       0.11
  0123+257          25 43 27.95555    * 25 59 01.30009      26 04 00.35047        0.11
  J0126+25          ../SCHED/sched11.3u1/catalogs/sources.vlba
                    rfc_2012b Petrov, 2012, unpublished 1729 observations

  J0237+2848        02 34 55.589591   * 02 37 52.405678     02 38 49.629319       0.11
* 0234+285          28 35 11.40773    * 28 48 08.98998      28 52 16.11151        0.10
  J0237+28          ../SCHED/sched11.3u1/catalogs/sources.vlba
                    rfc_2012b Petrov, 2012, unpublished 56811 observations

  J0319+4130        03 16 29.567260   * 03 19 48.160090     03 20 52.857100       1.30
  0316+413          41 19 51.91699    * 41 30 42.10412      41 34 10.56212        2.72
```

```
* 3C84              ../SCHED/sched11.3u1/catalogs/sources.vlba
  J0319+41          GSFC 2011B astro solution      9957 Observations

* J0518+3306        05 14 48.670952   * 05 18 05.142474     05 19 09.443053       0.26
  0514+330          33 03 04.11948    * 33 06 13.36506      33 07 05.77721        0.32
                    ../SCHED/sched11.3u1/catalogs/sources.vlba
                    rfc_2012b Petrov, 2012, unpublished 92 observations

  0526+321          05 26 12.903667   * 05 29 28.211037     05 30 32.151295       0.80
* J0529+3209        32 07 26.83083    * 32 09 46.94745      32 10 22.87455        0.88
                    ../SCHED/sched11.3u1/catalogs/sources.vlba
                    rfc_2012b Petrov, 2012, unpublished 36 observations

  0527+329          05 27 04.333498   * 05 30 21.061039     05 31 25.472979       1.08
* J0530+3301        32 59 03.55663    * 33 01 19.90878      33 01 54.79855        1.28
                    ../SCHED/sched11.3u1/catalogs/sources.vlba
                    rfc_2012b Petrov, 2012, unpublished 33 observations

* J0535+1942        05 32 06.106247   * 05 35 03.597575     05 36 01.685265       1.23
  0532+196          19 40 25.82183    * 19 42 21.08022      19 42 45.75749        1.46
                    ../SCHED/sched11.3u1/catalogs/sources.vlba
                    rfc_2012b Petrov, 2012, unpublished 40 observations

  0531+318          05 31 57.300666   * 05 35 12.304930     05 36 16.157081       2.61
* J0535+3153        31 51 22.86253    * 31 53 18.10154      31 53 45.74183        3.13
                    ../SCHED/sched11.3u1/catalogs/sources.vlba
                    rfc_2012b Petrov, 2012, unpublished 12 observations

  0532+327          05 32 35.553446   * 05 35 52.086112     05 36 56.444873       1.19
* J0535+3249        32 47 24.94830    * 32 49 17.36106      32 49 44.28816        1.47
                    ../SCHED/sched11.3u1/catalogs/sources.vlba
                    rfc_2012b Petrov, 2012, unpublished 36 observations

* J0539+3308        05 35 52.550060   * 05 39 09.671885     05 40 14.231955       0.97
  0535+331          33 06 37.37446    * 33 08 15.49087      33 08 37.76670        1.19
                    ../SCHED/sched11.3u1/catalogs/sources.vlba
                    rfc_2012b Petrov, 2012, unpublished 53 observations

* J0604+2429        06 01 50.936476   * 06 04 55.121381     06 05 55.473143       0.12
  0601+245          24 30 09.83044    * 24 29 55.03637      24 29 38.21186        0.11
                    ../SCHED/sched11.3u1/catalogs/sources.vlba
                    rfc_2012b Petrov, 2012, unpublished 303 observations

* J0637+2319        06 34 24.138792   * 06 37 26.373600     06 38 26.143181       0.00
  0634+233          23 22 34.59869    * 23 19 58.19400      23 18 54.83008        0.00
                    ../SCHED/sched11.3u1/catalogs/sources.vlba
                    JVAS - Wilkinson et al. 1998, mnras, 300, 790; S8.4GHz=   179 mJy
```

eg082gtr

e-EVN: eg082g, ey024a, ec054d

PI: *Gawronski, Yang, Cao*

```
Address:  JIVE EMAIL:    marcote@jive.eu Phone during observation: +31 521 596 530
Observing mode: realtime e-vlbi

Schedule for TORUN     (Code Tr )                                   Page   2
               e-EVN: eg082g, ey024a, ec054d
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------
 --- Tue   2 Feb 2016   Day  33 ---
 Next scan frequencies:  4942.49  4942.49  4942.49  4942.49  4974.49  4974.49  4974.49  4974.49
                         5006.49  5006.49  5006.49  5006.49  5038.49  5038.49  5038.49  5038.49
 Next BBC frequencies:    742.49   742.49   742.49   742.49   774.49   774.49   774.49   774.49
                          806.49   806.49   806.49   806.49   838.49   838.49   838.49   838.49
 Next scan bandwidths:     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
                           16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00

09 00 00  3C454.3      19 02 16  31.9 106.2 -3.9     -36.9     0        0   09 00 00
09 15 00  ---          19 17 18  34.0 109.7 -3.6     -36.1   900      115   09 00 01

09 15 40  3C454.3      19 17 58  34.1 109.9 -3.6     -36.0    34      115   09 15 40
09 30 00  ---          19 32 21  36.1 113.3 -3.4     -35.1   860      226   09 15 41

09 30 40  3C454.3      19 33 01  36.2 113.5 -3.4     -35.0    34      226   09 30 40
09 45 00  ---          19 47 23  38.2 117.0 -3.1     -33.9   860      336   09 30 41

09 45 40  3C454.3      19 48 03  38.3 117.2 -3.1     -33.8    34      336   09 45 40
10 00 00  ---          20 02 26  40.1 120.9 -2.9     -32.4   860      446   09 45 41

10 00 40  3C454.3      20 03 06  40.2 121.1 -2.9     -32.4    34      446   10 00 40
10 15 00  ---          20 17 28  42.0 125.0 -2.6     -30.8   860      556   10 00 41

10 15 40  3C454.3      20 18 08  42.1 125.2 -2.6     -30.7    34      556   10 15 40
10 30 00  ---          20 32 30  43.8 129.3 -2.4     -29.0   860      667   10 15 41

10 30 40  3C454.3      20 33 11  43.9 129.5 -2.4     -28.9    34      667   10 30 40
10 45 00  ---          20 47 33  45.5 133.8 -2.1     -26.8   860      777   10 30 41

10 45 40  3C454.3      20 48 13  45.6 134.0 -2.1     -26.7    34      777   10 45 40
11 00 00  ---          21 02 35  47.1 138.5 -1.9     -24.5   860      887   10 45 41

11 00 40  3C454.3      21 03 16  47.2 138.7 -1.9     -24.4    34      887   11 00 40
11 15 00  ---          21 17 38  48.5 143.4 -1.6     -21.9   860      997   11 00 41

11 18 00  J0005+3820   21 20 38  58.1 100.4 -2.8     -48.9    78      997   11 18 00
11 30 00  =0003+380    21 32 40  59.9 103.5 -2.6     -48.2   720     1090   11 18 01

11 30 40  J0005+3820   21 33 20  60.0 103.6 -2.6     -48.2    34     1090   11 30 40
11 45 00  =0003+380    21 47 43  62.1 107.6 -2.3     -47.0   860     1200   11 30 41

11 45 40  J0005+3820   21 48 23  62.2 107.8 -2.3     -46.9    34     1200   11 45 40
12 00 00  =0003+380    22 02 45  64.2 112.1 -2.1     -45.3   860     1310   11 45 41
```

Schedule for TORUN (Code Tr) Page 3

e-EVN: eg082g, ey024a, ec054d

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 2 Feb 2016 Day 33 ---										
12 00 40	J0005+3820	22 03 25	64.3	112.3	-2.1		-45.2	34	1310	12 00 40
12 15 00	=0003+380	22 17 48	66.2	117.1	-1.8		-43.0	860	1421	12 00 41
12 15 40	J0005+3820	22 18 28	66.3	117.4	-1.8		-42.9	34	1421	12 15 40
12 30 00	=0003+380	22 32 50	68.2	122.8	-1.6		-40.1	860	1531	12 15 41
12 30 40	J0005+3820	22 33 30	68.3	123.1	-1.6		-40.0	33	1531	12 30 40
12 45 00	=0003+380	22 47 53	70.0	129.3	-1.3		-36.4	860	1641	12 30 41
12 48 00	0234+285	22 50 53	42.3	97.1	-3.8		-42.9	61	1641	12 48 00
13 00 00	---	23 02 55	44.1	99.8	-3.6		-42.5	720	1733	12 48 01
13 00 40	0234+285	23 03 35	44.2	99.9	-3.6		-42.5	34	1733	13 00 40
13 15 00	---	23 17 58	46.3	103.2	-3.3		-41.9	860	1844	13 00 41
13 15 40	0234+285	23 18 38	46.4	103.4	-3.3		-41.8	34	1844	13 15 40
13 30 00	---	23 33 00	48.4	106.9	-3.1		-41.0	860	1954	13 15 41
13 36 00	BLLAC	23 39 01	70.8	245.6	1.6		47.8	68	1954	13 36 00
13 43 00	---	23 46 02	69.8	248.2	1.7		49.0	420	2008	13 36 01
13 43 40	BLLAC	23 46 42	69.7	248.4	1.7		49.1	34	2008	13 43 40
13 58 00	---	00 01 05	67.7	253.1	2.0		51.0	860	2118	13 43 41
14 00 00	J2113+4012	00 03 05	58.9	263.0	2.8		51.4	74	2118	14 00 00
14 02 00	=2111+400	00 05 05	58.6	263.4	2.8		51.4	120	2133	14 00 01
14 02 00	J2115+3742	00 05 05	57.2	259.5	2.8		48.3	-23	2133	No stop
14 05 30	---	00 08 36	56.6	260.4	2.9		48.5	187	2160	14 02 01
14 06 10	J2113+4012	00 09 16	58.0	264.4	2.9		51.6	17	2160	14 06 10
14 07 10	=2111+400	00 10 16	57.8	264.6	2.9		51.6	60	2168	14 06 11
14 07 10	V1396CYG	00 10 16	55.7	267.3	3.2		51.7	-22	2168	No stop
14 10 30	---	00 13 37	55.2	268.0	3.2		51.7	178	2194	14 07 11
14 10 30	J2113+4012	00 13 37	57.3	265.3	3.0		51.7	-22	2194	No stop
14 12 00	=2111+400	00 15 07	57.1	265.7	3.0		51.7	68	2205	14 10 31
14 12 00	V1396CYG	00 15 07	55.0	268.3	3.2		51.7	-22	2205	No stop
14 15 30	---	00 18 38	54.5	269.0	3.3		51.7	188	2232	14 12 01
14 16 10	J2113+4012	00 19 18	56.5	266.6	3.1		51.8	18	2232	14 16 10
14 17 10	=2111+400	00 20 18	56.3	266.8	3.1		51.8	60	2240	14 16 11
14 17 10	V1396CYG	00 20 18	54.2	269.3	3.3		51.8	-22	2240	No stop
14 20 30	---	00 23 38	53.7	270.0	3.4		51.8	178	2265	14 17 11

Schedule for TORUN (Code Tr) Page 4

e-EVN: eg082g, ey024a, ec054d

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 2 Feb 2016 Day 33 ---										
14 20 30	J2113+4012	00 23 38	55.8	267.5	3.2		51.8	-22	2265	No stop
14 22 00	=2111+400	00 25 09	55.6	267.8	3.2		51.9	68	2277	14 20 31
14 22 00	V1396CYG	00 25 09	53.5	270.3	3.4		51.8	-22	2277	No stop
14 25 30	---	00 28 39	53.0	271.0	3.5		51.7	188	2304	14 22 01
14 26 10	J2113+4012	00 29 19	55.0	268.7	3.3		51.9	18	2304	14 26 10
14 27 10	=2111+400	00 30 19	54.8	268.9	3.3		51.9	60	2312	14 26 11
14 27 10	V1396CYG	00 30 19	52.7	271.3	3.5		51.7	-22	2312	No stop
14 30 30	---	00 33 40	52.2	272.0	3.5		51.7	178	2337	14 27 11
14 30 30	J2113+4012	00 33 40	54.3	269.5	3.3		51.9	-22	2337	No stop
14 32 00	=2111+400	00 35 10	54.1	269.8	3.4		51.9	68	2349	14 30 31
14 32 00	J2115+3742	00 35 10	52.7	266.3	3.3		49.3	-22	2349	No stop
14 35 30	---	00 38 41	52.1	267.1	3.4		49.4	188	2376	14 32 01
14 36 10	J2113+4012	00 39 21	53.5	270.7	3.4		51.9	18	2376	14 36 10
14 37 10	=2111+400	00 40 21	53.3	270.9	3.4		51.9	60	2383	14 36 11
14 37 10	V1396CYG	00 40 21	51.2	273.3	3.7		51.6	-22	2383	No stop
14 40 30	---	00 43 42	50.7	273.9	3.7		51.6	178	2409	14 37 11
14 40 30	J2113+4012	00 43 42	52.8	271.5	3.5		51.9	-22	2409	No stop
14 42 00	=2111+400	00 45 12	52.6	271.8	3.5		51.9	68	2421	14 40 31
14 42 00	V1396CYG	00 45 12	50.5	274.2	3.7		51.6	-22	2421	No stop
14 45 30	---	00 48 42	49.9	274.8	3.8		51.5	188	2447	14 42 01
14 46 10	J2113+4012	00 49 23	51.9	272.6	3.6		51.8	18	2447	14 46 10
14 47 10	=2111+400	00 50 23	51.8	272.8	3.6		51.8	60	2455	14 46 11
14 47 10	V1396CYG	00 50 23	49.7	275.1	3.8		51.5	-22	2455	No stop
14 50 30	---	00 53 43	49.2	275.7	3.9		51.4	178	2481	14 47 11
14 50 30	J2113+4012	00 53 43	51.3	273.4	3.7		51.8	-22	2481	No stop
14 52 00	=2111+400	00 55 14	51.1	273.7	3.7		51.8	68	2492	14 50 31
14 52 00	V1396CYG	00 55 14	49.0	276.0	3.9		51.4	-22	2492	No stop
14 55 30	---	00 58 44	48.4	276.7	4.0		51.3	188	2519	14 52 01
14 56 10	J2113+4012	00 59 24	50.4	274.5	3.8		51.7	18	2519	14 56 10
14 57 10	=2111+400	01 00 24	50.3	274.7	3.8		51.7	60	2527	14 56 11

Schedule for TORUN (Code Tr) Page 5

e-EVN: eg082g, ey024a, ec054d

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 2 Feb 2016 Day 33 ---										
14 57 10	V1396CYG	01 00 24	48.2	277.0	4.0		51.2	-22	2527	No stop
15 00 30	---	01 03 45	47.7	277.6	4.1		51.1	178	2553	14 57 11
15 00 30	J2113+4012	01 03 45	49.8	275.3	3.8		51.6	-22	2553	No stop
15 02 00	=2111+400	01 05 15	49.6	275.6	3.9		51.6	68	2564	15 00 31
15 02 00	J2115+3742	01 05 15	48.2	272.4	3.8		49.4	-21	2564	No stop
15 05 30	---	01 08 46	47.6	273.1	3.9		49.3	189	2591	15 02 01
15 06 10	J2113+4012	01 09 26	48.9	276.3	3.9		51.5	19	2591	15 06 10
15 07 10	=2111+400	01 10 26	48.8	276.5	3.9		51.4	60	2599	15 06 11
15 07 10	V1396CYG	01 10 26	46.7	278.7	4.2		50.9	-22	2599	No stop
15 10 30	---	01 13 47	46.2	279.3	4.2		50.8	178	2624	15 07 11
15 10 30	J2113+4012	01 13 47	48.3	277.1	4.0		51.4	-22	2624	No stop
15 12 00	=2111+400	01 15 17	48.1	277.4	4.0		51.3	68	2636	15 10 31
15 12 00	V1396CYG	01 15 17	46.0	279.6	4.2		50.8	-22	2636	No stop
15 15 30	---	01 18 47	45.5	280.2	4.3		50.6	188	2663	15 12 01
15 16 10	J2113+4012	01 19 27	47.5	278.1	4.1		51.2	19	2663	15 16 10
15 17 10	=2111+400	01 20 28	47.3	278.3	4.1		51.2	60	2671	15 16 11
15 17 10	V1396CYG	01 20 28	45.2	280.5	4.3		50.6	-22	2671	No stop
15 20 30	---	01 23 48	44.7	281.1	4.4		50.4	178	2696	15 17 11
15 20 30	J2113+4012	01 23 48	46.8	278.9	4.2		51.0	-21	2696	No stop
15 22 00	=2111+400	01 25 18	46.6	279.2	4.2		51.0	69	2708	15 20 31
15 22 00	V1396CYG	01 25 18	44.5	281.3	4.4		50.4	-22	2708	No stop
15 25 30	---	01 28 49	44.0	281.9	4.5		50.2	188	2735	15 22 01
15 26 10	J2113+4012	01 29 29	46.0	279.9	4.3		50.8	19	2735	15 26 10
15 27 10	=2111+400	01 30 29	45.8	280.1	4.3		50.8	60	2742	15 26 11
15 27 10	V1396CYG	01 30 29	43.7	282.2	4.5		50.1	-22	2742	No stop
15 30 30	---	01 33 50	43.3	282.8	4.6		50.0	178	2768	15 27 11
15 30 30	J2113+4012	01 33 50	45.3	280.6	4.3		50.7	-21	2768	No stop
15 32 00	=2111+400	01 35 20	45.1	280.9	4.4		50.6	69	2779	15 30 31
15 32 00	J2115+3742	01 35 20	43.7	278.0	4.3		48.8	-20	2779	No stop
15 35 30	---	01 38 51	43.1	278.6	4.4		48.7	190	2806	15 32 01

Schedule for TORUN (Code Tr) Page 6

e-EVN: eg082g, ey024a, ec054d

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 2 Feb 2016 Day 33 ---										
15 36 10	J2113+4012	01 39 31	44.5	281.6	4.4		50.4	20	2806	15 36 10
15 37 10	=2111+400	01 40 31	44.3	281.8	4.4		50.4	60	2814	15 36 11
15 37 10	V1396CYG	01 40 31	42.3	283.9	4.7		49.7	-22	2814	No stop
15 40 30	---	01 43 51	41.8	284.4	4.7		49.5	178	2840	15 37 11
15 40 30	J2113+4012	01 43 51	43.8	282.3	4.5		50.3	-21	2840	No stop
15 42 00	=2111+400	01 45 22	43.6	282.6	4.5		50.2	69	2851	15 40 31
15 42 00	V1396CYG	01 45 22	41.6	284.7	4.7		49.4	-22	2851	No stop
15 45 30	---	01 48 52	41.1	285.3	4.8		49.3	188	2878	15 42 01
15 46 10	J2113+4012	01 49 32	43.0	283.3	4.6		50.0	19	2878	15 46 10
15 47 10	=2111+400	01 50 33	42.9	283.5	4.6		49.9	60	2886	15 46 11
15 47 10	V1396CYG	01 50 33	40.8	285.5	4.8		49.2	-22	2886	No stop
15 50 30	---	01 53 53	40.3	286.1	4.9		49.0	178	2912	15 47 11
15 50 30	J2113+4012	01 53 53	42.4	284.0	4.7		49.8	-21	2912	No stop
15 52 00	=2111+400	01 55 23	42.2	284.3	4.7		49.7	69	2923	15 50 31
15 52 00	V1396CYG	01 55 23	40.1	286.3	4.9		48.9	-22	2923	No stop
15 55 30	---	01 58 54	39.6	286.9	5.0		48.7	188	2950	15 52 01
15 56 10	J2113+4012	01 59 34	41.6	285.0	4.8		49.5	19	2950	15 56 10
15 57 10	=2111+400	02 00 34	41.4	285.1	4.8		49.4	60	2958	15 56 11
15 57 10	V1396CYG	02 00 34	39.4	287.2	5.0		48.6	-22	2958	No stop
16 00 30	---	02 03 55	38.9	287.7	5.1		48.4	178	2983	15 57 11
16 00 30	J2113+4012	02 03 55	40.9	285.7	4.8		49.3	-21	2983	No stop
16 02 00	=2111+400	02 05 25	40.7	285.9	4.9		49.2	69	2995	16 00 31
16 02 00	J2115+3742	02 05 25	39.2	283.3	4.8		47.7	-19	2995	No stop
16 05 30	---	02 08 56	38.7	283.9	4.9		47.5	191	3022	16 02 01
16 06 10	J2113+4012	02 09 36	40.1	286.6	4.9		49.0	20	3022	16 06 10
16 07 10	=2111+400	02 10 36	40.0	286.8	4.9		48.9	60	3029	16 06 11
16 07 10	V1396CYG	02 10 36	37.9	288.8	5.2		48.0	-22	3029	No stop
16 10 30	---	02 13 56	37.5	289.4	5.2		47.8	178	3055	16 07 11
16 10 30	J2113+4012	02 13 56	39.5	287.3	5.0		48.7	-21	3055	No stop
16 12 00	=2111+400	02 15 27	39.3	287.6	5.0		48.6	69	3067	16 10 31

Schedule for TORUN (Code Tr) Page 7

e-EVN: eg082g, ey024a, ec054d

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 2 Feb 2016 Day 33 ---										
16 12 00	V1396CYG	02 15 27	37.3	289.6	5.2		47.7	-22	3067	No stop
16 15 30	---	02 18 57	36.8	290.2	5.3		47.5	188	3094	16 12 01
16 16 10	J2113+4012	02 19 37	38.7	288.3	5.1		48.4	19	3094	16 16 10
16 17 10	=2111+400	02 20 38	38.5	288.4	5.1		48.3	60	3101	16 16 11
16 17 10	V1396CYG	02 20 38	36.5	290.4	5.3		47.4	-21	3101	No stop
16 20 30	---	02 23 58	36.1	291.0	5.4		47.2	179	3127	16 17 11
16 20 30	J2113+4012	02 23 58	38.1	289.0	5.2		48.1	-21	3127	No stop
16 22 00	=2111+400	02 25 28	37.8	289.2	5.2		48.0	69	3138	16 20 31
16 22 00	V1396CYG	02 25 28	35.9	291.2	5.4		47.1	-21	3138	No stop
16 25 30	---	02 28 59	35.4	291.8	5.5		46.8	189	3165	16 22 01
16 26 10	J2113+4012	02 29 39	37.2	289.9	5.3		47.8	19	3165	16 26 10
16 27 10	=2111+400	02 30 39	37.1	290.0	5.3		47.7	60	3173	16 26 11
16 27 10	V1396CYG	02 30 39	35.1	292.1	5.5		46.7	-21	3173	No stop
16 30 30	---	02 34 00	34.7	292.6	5.6		46.5	179	3199	16 27 11
16 30 30	J2113+4012	02 34 00	36.6	290.6	5.3		47.5	-21	3199	No stop
16 32 00	=2111+400	02 35 30	36.4	290.8	5.4		47.4	69	3210	16 30 31
16 32 00	J2115+3742	02 35 30	34.9	288.4	5.3		46.1	-19	3210	No stop
16 35 30	---	02 39 01	34.4	289.0	5.4		45.9	191	3237	16 32 01
16 35 30	J2113+4012	02 39 01	35.9	291.4	5.4		47.1	-19	3237	No stop
16 37 00	=2111+400	02 40 31	35.7	291.6	5.4		47.0	71	3249	16 35 31
16 37 00	V1396CYG	02 40 31	33.8	293.6	5.7		46.0	-21	3249	No stop
16 40 30	---	02 44 01	33.3	294.2	5.7		45.8	189	3276	16 37 01
16 40 30	J2113+4012	02 44 01	35.2	292.2	5.5		46.8	-21	3276	No stop
16 42 00	=2111+400	02 45 32	35.0	292.4	5.5		46.7	69	3287	16 40 31
16 42 00	V1396CYG	02 45 32	33.1	294.4	5.7		45.6	-21	3287	No stop
16 45 30	---	02 49 02	32.6	295.0	5.8		45.4	189	3314	16 42 01
16 45 30	J2113+4012	02 49 02	34.5	293.0	5.6		46.4	-21	3314	No stop
16 47 00	=2111+400	02 50 32	34.3	293.2	5.6		46.3	69	3326	16 45 31
16 47 00	V1396CYG	02 50 32	32.4	295.2	5.8		45.3	-21	3326	No stop
16 50 30	---	02 54 03	31.9	295.8	5.9		45.0	189	3353	16 47 01

```
Schedule for TORUN     (Code Tr )                                  Page   8
               e-EVN: eg082g, ey024a, ec054d
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                  Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Tue   2 Feb 2016   Day  33 ---

16 51 10  J2113+4012   02 54 43  33.8 293.9  5.7      46.0    19     3353   16 51 10
16 52 10  =2111+400    02 55 43  33.6 294.1  5.7      46.0    60     3360   16 51 11

16 52 10  V1396CYG     02 55 43  31.7 296.1  5.9      44.9   -21     3360   No stop
16 55 30  ---          02 59 04  31.2 296.6  6.0      44.6   179     3386   16 52 11

16 55 30  J2113+4012   02 59 04  33.2 294.6  5.7      45.7   -21     3386   No stop
16 57 00  =2111+400    03 00 34  33.0 294.8  5.8      45.6    69     3397   16 55 31

16 57 00  J2115+3742   03 00 34  31.4 292.5  5.8      44.6   -20     3397   No stop
17 00 30  ---          03 04 05  30.9 293.1  5.8      44.3   190     3424   16 57 01

17 01 10  J2113+4012   03 04 45  32.4 295.5  5.8      45.3    21     3424   17 01 10
17 03 00  =2111+400    03 06 35  32.1 295.8  5.9      45.1   110     3438   17 01 11

 ---------- fringe finder ----------

17 10 20  0234+285     03 13 56  64.9 198.4  0.6      12.5   226     3438   17 10 20
17 16 20  ---          03 19 57  64.6 201.4  0.7      14.5   360     3485   17 10 21

17 19 20  J0519+0848   03 22 58  39.8 141.0 -2.0     -22.5    44     3485   17 19 20
17 21 20  =0516+087    03 24 58  40.0 141.6 -1.9     -22.2   120     3500   17 19 21

17 21 20  J0525+0951   03 24 58  40.4 139.4 -2.0     -23.4   -18     3500   No stop
17 24 50  ---          03 28 29  40.8 140.4 -2.0     -22.8   192     3527   17 21 21

17 25 30  J0519+0848   03 29 09  40.4 142.9 -1.8     -21.5    21     3527   17 25 30
17 26 30  =0516+087    03 30 09  40.5 143.2 -1.8     -21.4    60     3535   17 25 31

17 26 30  V998ORI      03 30 09  40.2 138.8 -2.0     -23.7   -24     3535   No stop
17 29 50  ---          03 33 29  40.5 139.8 -2.0     -23.2   176     3560   17 26 31

17 29 50  J0519+0848   03 33 29  40.8 144.2 -1.8     -20.8   -24     3560   No stop
17 31 20  =0516+087    03 35 00  40.9 144.6 -1.8     -20.6    66     3572   17 29 51

17 31 20  V998ORI      03 35 00  40.6 140.2 -2.0     -23.0   -24     3572   No stop
17 34 50  ---          03 38 30  41.0 141.3 -1.9     -22.4   186     3599   17 31 21

17 35 30  J0519+0848   03 39 10  41.3 145.9 -1.7     -19.9    16     3599   17 35 30
17 36 30  =0516+087    03 40 11  41.3 146.2 -1.7     -19.7    60     3606   17 35 31

17 36 30  V998ORI      03 40 11  41.1 141.8 -1.9     -22.2   -24     3606   No stop
17 39 50  ---          03 43 31  41.4 142.8 -1.8     -21.6   176     3632   17 36 31
```

Schedule for TORUN (Code Tr) Page 9

e-EVN: eg082g, ey024a, ec054d

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Tue 2 Feb 2016 Day 33 ---										
17 39 50	J0519+0848	03 43 31	41.6	147.3	-1.6		-19.2	-24	3632	No stop
17 41 20	=0516+087	03 45 01	41.7	147.7	-1.6		-18.9	66	3644	17 39 51
17 41 20	V998ORI	03 45 01	41.6	143.2	-1.8		-21.4	-24	3644	No stop
17 44 50	---	03 48 32	41.9	144.3	-1.7		-20.8	186	3671	17 41 21
17 45 30	J0519+0848	03 49 12	42.1	149.1	-1.5		-18.2	16	3671	17 45 30
17 46 30	=0516+087	03 50 12	42.1	149.4	-1.5		-18.0	60	3678	17 45 31
17 46 30	V998ORI	03 50 12	42.0	144.8	-1.7		-20.5	-24	3678	No stop
17 49 50	---	03 53 33	42.3	145.9	-1.7		-20.0	176	3704	17 46 31
17 49 50	J0519+0848	03 53 33	42.4	150.4	-1.4		-17.4	-24	3704	No stop
17 51 20	=0516+087	03 55 03	42.5	150.9	-1.4		-17.2	66	3715	17 49 51
17 51 20	J0525+0951	03 55 03	43.1	148.7	-1.5		-18.5	-18	3715	No stop
17 54 50	---	03 58 34	43.4	149.8	-1.5		-17.9	192	3742	17 51 21
17 55 30	J0519+0848	03 59 14	42.8	152.3	-1.3		-16.4	21	3742	17 55 30
17 56 30	=0516+087	04 00 14	42.9	152.6	-1.3		-16.2	60	3750	17 55 31
17 56 30	V998ORI	04 00 14	42.9	148.0	-1.5		-18.8	-24	3750	No stop
17 59 50	---	04 03 34	43.1	149.1	-1.5		-18.3	176	3776	17 56 31
17 59 50	J0519+0848	04 03 34	43.1	153.7	-1.3		-15.6	-24	3776	No stop
18 01 20	=0516+087	04 05 05	43.2	154.2	-1.2		-15.4	66	3787	17 59 51
18 01 20	V998ORI	04 05 05	43.2	149.5	-1.5		-18.0	-24	3787	No stop
18 04 50	---	04 08 35	43.5	150.7	-1.4		-17.4	186	3814	18 01 21
18 05 30	J0519+0848	04 09 15	43.5	155.5	-1.2		-14.6	15	3814	18 05 30
18 06 30	=0516+087	04 10 15	43.5	155.9	-1.2		-14.4	60	3822	18 05 31
18 06 30	V998ORI	04 10 15	43.6	151.2	-1.4		-17.1	-24	3822	No stop
18 09 50	---	04 13 36	43.9	152.3	-1.3		-16.5	176	3847	18 06 31
18 09 50	J0519+0848	04 13 36	43.7	157.0	-1.1		-13.7	-25	3847	No stop
18 11 20	=0516+087	04 15 06	43.8	157.5	-1.1		-13.5	65	3859	18 09 51
18 11 20	V998ORI	04 15 06	44.0	152.8	-1.3		-16.2	-24	3859	No stop
18 14 50	---	04 18 37	44.2	154.0	-1.2		-15.5	186	3886	18 11 21
18 15 30	J0519+0848	04 19 17	44.1	158.9	-1.0		-12.7	15	3886	18 15 30
18 16 30	=0516+087	04 20 17	44.1	159.2	-1.0		-12.5	60	3894	18 15 31

Schedule for TORUN (Code Tr) Page 10

e-EVN: eg082g, ey024a, ec054d

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Tue 2 Feb 2016 Day 33 ---										
18 16 30	V998ORI	04 20 17	44.3	154.5	-1.2		-15.2	-24	3894	No stop
18 19 50	---	04 23 38	44.5	155.6	-1.2		-14.6	176	3919	18 16 31
18 19 50	J0519+0848	04 23 38	44.3	160.3	-0.9		-11.8	-25	3919	No stop
18 21 20	=0516+087	04 25 08	44.4	160.8	-0.9		-11.5	65	3931	18 19 51
18 21 20	J0525+0951	04 25 08	45.1	158.6	-1.0		-12.8	-18	3931	No stop
18 24 50	---	04 28 38	45.3	159.8	-1.0		-12.1	192	3958	18 21 21
18 25 30	J0519+0848	04 29 19	44.6	162.3	-0.8		-10.7	21	3958	18 25 30
18 26 30	=0516+087	04 30 19	44.6	162.6	-0.8		-10.5	60	3965	18 25 31
18 26 30	V998ORI	04 30 19	44.9	157.9	-1.0		-13.3	-24	3965	No stop
18 29 50	---	04 33 39	45.1	159.0	-1.0		-12.6	176	3991	18 26 31
18 29 50	J0519+0848	04 33 39	44.7	163.7	-0.8		-9.8	-25	3991	No stop
18 31 20	=0516+087	04 35 10	44.8	164.3	-0.7		-9.5	65	4003	18 29 51
18 31 20	V998ORI	04 35 10	45.2	159.5	-1.0		-12.3	-24	4003	No stop
18 34 50	---	04 38 40	45.4	160.7	-0.9		-11.6	186	4029	18 31 21
18 35 30	J0519+0848	04 39 20	45.0	165.7	-0.7		-8.6	15	4029	18 35 30
18 36 30	=0516+087	04 40 20	45.0	166.0	-0.7		-8.4	60	4037	18 35 31
18 36 30	V998ORI	04 40 20	45.4	161.3	-0.9		-11.3	-24	4037	No stop
18 39 50	---	04 43 41	45.6	162.4	-0.8		-10.6	176	4063	18 36 31
18 39 50	J0519+0848	04 43 41	45.1	167.2	-0.6		-7.7	-25	4063	No stop
18 41 20	=0516+087	04 45 11	45.2	167.7	-0.6		-7.4	65	4074	18 39 51
18 41 20	V998ORI	04 45 11	45.7	163.0	-0.8		-10.3	-24	4074	No stop
18 44 50	---	04 48 42	45.8	164.2	-0.7		-9.6	186	4101	18 41 21
18 45 30	J0519+0848	04 49 22	45.3	169.2	-0.5		-6.5	15	4101	18 45 30
18 46 30	=0516+087	04 50 22	45.3	169.5	-0.5		-6.3	60	4109	18 45 31
18 46 30	V998ORI	04 50 22	45.9	164.8	-0.7		-9.2	-24	4109	No stop
18 49 50	---	04 53 43	46.0	165.9	-0.7		-8.5	176	4135	18 46 31
18 49 50	J0519+0848	04 53 43	45.4	170.7	-0.4		-5.6	-25	4135	No stop
18 51 20	=0516+087	04 55 13	45.4	171.2	-0.4		-5.3	65	4146	18 49 51
18 51 20	J0525+0951	04 55 13	46.3	169.1	-0.5		-6.6	-18	4146	No stop
18 54 50	---	04 58 43	46.4	170.3	-0.5		-5.9	192	4173	18 51 21

Schedule for TORUN (Code Tr) Page 11

e-EVN: eg082g, ey024a, ec054d

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 2 Feb 2016 Day 33 ---										
18 55 30	J0519+0848	04 59 24	45.5	172.7	-0.3		-4.4	22	4173	18 55 30
18 56 30	=0516+087	05 00 24	45.6	173.0	-0.3		-4.2	60	4181	18 55 31
18 56 30	V998ORI	05 00 24	46.2	168.3	-0.5		-7.1	-24	4181	No stop
18 59 50	---	05 03 44	46.3	169.5	-0.5		-6.4	176	4206	18 56 31
18 59 50	J0519+0848	05 03 44	45.6	174.2	-0.3		-3.5	-25	4206	No stop
19 01 20	=0516+087	05 05 14	45.6	174.8	-0.2		-3.2	65	4218	18 59 51
19 01 20	V998ORI	05 05 14	46.4	170.0	-0.5		-6.1	-24	4218	No stop
19 04 50	---	05 08 45	46.5	171.3	-0.4		-5.3	186	4245	19 01 21
19 05 30	J0519+0848	05 09 25	45.7	176.2	-0.2		-2.3	15	4245	19 05 30
19 06 30	=0516+087	05 10 25	45.7	176.6	-0.2		-2.1	60	4253	19 05 31
19 06 30	V998ORI	05 10 25	46.5	171.9	-0.4		-5.0	-24	4253	No stop
19 09 50	---	05 13 46	46.6	173.0	-0.3		-4.2	176	4278	19 06 31
19 09 50	J0519+0848	05 13 46	45.7	177.8	-0.1		-1.4	-25	4278	No stop
19 11 20	=0516+087	05 15 16	45.7	178.3	-0.1		-1.0	65	4290	19 09 51
19 11 20	V998ORI	05 15 16	46.6	173.6	-0.3		-3.9	-24	4290	No stop
19 14 50	---	05 18 47	46.6	174.8	-0.2		-3.1	186	4317	19 11 21
19 15 30	J0519+0848	05 19 27	45.7	179.8	-0.0		-0.1	15	4317	19 15 30
19 16 30	=0516+087	05 20 27	45.7	180.1	0.0		0.1	60	4324	19 15 31
19 16 30	V998ORI	05 20 27	46.7	175.4	-0.2		-2.8	-24	4324	No stop
19 19 50	---	05 23 48	46.7	176.6	-0.2		-2.0	176	4350	19 16 31
19 19 50	J0519+0848	05 23 48	45.7	181.3	0.1		0.8	-25	4350	No stop
19 21 20	=0516+087	05 25 18	45.7	181.8	0.1		1.1	65	4362	19 19 51
19 21 20	J0525+0951	05 25 18	46.8	179.8	-0.0		-0.1	-17	4362	No stop
19 24 50	---	05 28 48	46.8	181.1	0.1		0.7	193	4388	19 21 21
19 25 30	J0519+0848	05 29 28	45.7	183.3	0.2		2.0	22	4388	19 25 30
19 26 30	=0516+087	05 30 29	45.7	183.7	0.2		2.2	60	4396	19 25 31
19 26 30	V998ORI	05 30 29	46.7	179.0	-0.0		-0.6	-24	4396	No stop
19 29 50	---	05 33 49	46.7	180.2	0.0		0.1	176	4422	19 26 31
19 29 50	J0519+0848	05 33 49	45.6	184.9	0.2		3.0	-24	4422	No stop
19 31 20	=0516+087	05 35 19	45.6	185.4	0.3		3.3	66	4433	19 29 51

Schedule for TORUN (Code Tr) Page 12

e-EVN: eg082g, ey024a, ec054d

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 2 Feb 2016 Day 33 ---										
19 31 20	V998ORI	05 35 19	46.7	180.8	0.0		0.5	-24	4433	No stop
19 34 50	---	05 38 50	46.7	182.0	0.1		1.2	186	4460	19 31 21
19 35 30	J0519+0848	05 39 30	45.6	186.9	0.3		4.2	16	4460	19 35 30
19 36 30	=0516+087	05 40 30	45.5	187.2	0.3		4.4	60	4468	19 35 31
19 36 30	V998ORI	05 40 30	46.7	182.6	0.1		1.6	-24	4468	No stop
19 39 50	---	05 43 51	46.7	183.8	0.2		2.3	176	4494	19 36 31
19 39 50	J0519+0848	05 43 51	45.5	188.4	0.4		5.1	-24	4494	No stop
19 41 20	=0516+087	05 45 21	45.4	188.9	0.4		5.4	66	4505	19 39 51
19 41 20	V998ORI	05 45 21	46.7	184.4	0.2		2.7	-24	4505	No stop
19 44 50	---	05 48 52	46.6	185.6	0.3		3.4	186	4532	19 41 21
19 45 30	J0519+0848	05 49 32	45.3	190.4	0.5		6.3	16	4532	19 45 30
19 46 30	=0516+087	05 50 32	45.3	190.7	0.5		6.5	60	4540	19 45 31
19 46 30	V998ORI	05 50 32	46.6	186.2	0.3		3.8	-24	4540	No stop
19 49 50	---	05 53 52	46.5	187.4	0.3		4.5	176	4565	19 46 31
19 49 50	J0519+0848	05 53 52	45.2	191.9	0.6		7.2	-24	4565	No stop
19 51 20	=0516+087	05 55 23	45.2	192.4	0.6		7.5	66	4577	19 49 51
19 51 20	J0525+0951	05 55 23	46.4	190.6	0.5		6.4	-18	4577	No stop
19 54 50	---	05 58 53	46.3	191.9	0.6		7.2	192	4604	19 51 21
19 55 30	J0519+0848	05 59 33	45.0	193.9	0.7		8.4	22	4604	19 55 30
19 56 30	=0516+087	06 00 34	45.0	194.2	0.7		8.6	60	4612	19 55 31
19 56 30	V998ORI	06 00 34	46.4	189.8	0.5		6.0	-24	4612	No stop
19 59 50	---	06 03 54	46.3	191.0	0.5		6.7	176	4637	19 56 31
19 59 50	J0519+0848	06 03 54	44.9	195.4	0.7		9.3	-24	4637	No stop
20 01 20	=0516+087	06 05 24	44.8	195.9	0.8		9.6	66	4649	19 59 51
20 01 20	V998ORI	06 05 24	46.2	191.5	0.5		7.0	-23	4649	No stop
20 04 50	---	06 08 55	46.1	192.8	0.6		7.7	187	4676	20 01 21
20 04 50	J0519+0848	06 08 55	44.6	197.1	0.8		10.3	-24	4676	No stop
20 06 20	=0516+087	06 10 25	44.6	197.6	0.8		10.6	66	4687	20 04 51
20 06 20	V998ORI	06 10 25	46.1	193.3	0.6		8.1	-23	4687	No stop
20 09 50	---	06 13 56	46.0	194.5	0.7		8.8	187	4714	20 06 21

```
Schedule for TORUN     (Code Tr )                                  Page  13
               e-EVN: eg082g, ey024a, ec054d
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                  Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Tue   2 Feb 2016   Day  33 ---

20 10 30  J0519+0848   06 14 36  44.4 199.0  0.9      11.4    16     4714   20 10 30
20 11 30  =0516+087    06 15 36  44.3 199.4  0.9      11.6    60     4722   20 10 31

20 11 30  V998ORI      06 15 36  45.9 195.1  0.7       9.1   -23     4722   No stop
20 14 50  ---          06 18 57  45.8 196.3  0.8       9.8   177     4747   20 11 31

20 14 50  J0519+0848   06 18 57  44.2 200.5  1.0      12.3   -24     4747   No stop
20 16 20  =0516+087    06 20 27  44.1 201.0  1.0      12.6    66     4759   20 14 51

20 16 20  J0525+0951   06 20 27  45.4 199.4  0.9      11.7   -18     4759   No stop
20 19 50  ---          06 23 57  45.2 200.6  1.0      12.4   192     4786   20 16 21

20 20 30  J0519+0848   06 24 37  43.8 202.4  1.1      13.4    22     4786   20 20 30
20 22 00  =0516+087    06 26 08  43.8 202.9  1.1      13.7    90     4797   20 20 31

 ---------- Eff pointing check ----------

20 30 00  J0147+5840   06 34 09  51.6 307.8  4.8      66.3   256     4797   20 30 00
20 36 50  =0144+584    06 41 00  50.8 308.3  4.9      65.2   410     4850   20 30 01

20 37 30  J0147+5840   06 41 40  50.7 308.4  4.9      65.1    34     4850   20 37 30
20 39 30  =0144+584    06 43 41  50.5 308.6  4.9      64.8   120     4865   20 37 31

20 39 30  J0151+5454   06 43 41  49.2 303.0  4.9      61.4   -26     4865   No stop
20 42 50  ---          06 47 01  48.8 303.4  4.9      61.0   174     4891   20 39 31

20 43 30  J0147+5840   06 47 41  50.0 308.9  5.0      64.3    14     4891   20 43 30
20 44 30  =0144+584    06 48 41  49.9 309.0  5.0      64.1    60     4899   20 43 31

20 44 30  V596CAS      06 48 41  51.2 307.8  4.8      65.6   -18     4899   No stop
20 47 50  ---          06 52 02  50.8 308.1  4.9      65.2   182     4924   20 44 31

20 47 50  J0147+5840   06 52 02  49.5 309.3  5.1      63.6   -18     4924   No stop
20 49 20  =0144+584    06 53 32  49.3 309.4  5.1      63.4    72     4936   20 47 51

20 49 20  V596CAS      06 53 32  50.6 308.2  4.9      64.9   -18     4936   No stop
20 52 50  ---          06 57 03  50.2 308.5  4.9      64.4   192     4963   20 49 21

20 53 20  J0147+5840   06 57 33  48.8 309.8  5.1      62.8    12     4963   20 53 20
20 54 20  =0144+584    06 58 33  48.7 309.9  5.2      62.7    60     4971   20 53 21

20 54 20  V596CAS      06 58 33  50.0 308.6  5.0      64.2   -18     4971   No stop
20 57 50  ---          07 02 04  49.6 308.9  5.0      63.7   192     4997   20 54 21
```

Schedule for TORUN (Code Tr) Page 14

e-EVN: eg082g, ey024a, ec054d

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 2 Feb 2016 Day 33 ---										
20 57 50	J0147+5840	07 02 04	48.3	310.2	5.2		62.2	-18	4997	No stop
20 59 20	=0144+584	07 03 34	48.1	310.3	5.2		61.9	72	5009	20 57 51
20 59 20	V596CAS	07 03 34	49.4	309.1	5.1		63.5	-18	5009	No stop
21 02 50	---	07 07 04	49.0	309.4	5.1		63.0	192	5036	20 59 21
21 03 20	J0147+5840	07 07 35	47.7	310.7	5.3		61.4	12	5036	21 03 20
21 04 20	=0144+584	07 08 35	47.6	310.8	5.3		61.2	60	5044	21 03 21
21 04 20	V596CAS	07 08 35	48.8	309.5	5.1		62.7	-18	5044	No stop
21 07 50	---	07 12 05	48.4	309.8	5.2		62.2	192	5071	21 04 21
21 07 50	J0147+5840	07 12 05	47.2	311.1	5.4		60.7	-18	5071	No stop
21 09 20	=0144+584	07 13 36	47.0	311.3	5.4		60.5	72	5082	21 07 51
21 09 20	J0151+5454	07 13 36	45.5	306.2	5.3		57.6	-25	5082	No stop
21 12 50	---	07 17 06	45.1	306.6	5.4		57.2	185	5109	21 09 21
21 13 30	J0147+5840	07 17 46	46.5	311.7	5.5		59.9	15	5109	21 13 30
21 14 30	=0144+584	07 18 46	46.4	311.8	5.5		59.7	60	5117	21 13 31
21 14 30	V596CAS	07 18 46	47.7	310.5	5.3		61.3	-18	5117	No stop
21 17 50	---	07 22 07	47.3	310.8	5.4		60.8	182	5142	21 14 31
21 17 50	J0147+5840	07 22 07	46.1	312.1	5.6		59.2	-18	5142	No stop
21 19 20	=0144+584	07 23 37	45.9	312.2	5.6		59.0	72	5154	21 17 51
21 19 20	V596CAS	07 23 37	47.1	310.9	5.4		60.6	-18	5154	No stop
21 22 50	---	07 27 08	46.7	311.2	5.4		60.1	192	5181	21 19 21
21 23 20	J0147+5840	07 27 38	45.4	312.6	5.6		58.4	12	5181	21 23 20
21 24 20	=0144+584	07 28 38	45.3	312.7	5.7		58.3	60	5188	21 23 21
21 24 20	V596CAS	07 28 38	46.5	311.4	5.5		59.8	-18	5188	No stop
21 27 50	---	07 32 09	46.2	311.7	5.5		59.3	192	5215	21 24 21
21 27 50	J0147+5840	07 32 09	44.9	313.1	5.7		57.8	-18	5215	No stop
21 29 20	=0144+584	07 33 39	44.8	313.2	5.7		57.6	72	5227	21 27 51
21 29 20	V596CAS	07 33 39	46.0	311.9	5.6		59.1	-18	5227	No stop
21 32 50	---	07 37 09	45.6	312.2	5.6		58.6	192	5254	21 29 21
21 33 20	J0147+5840	07 37 39	44.3	313.6	5.8		57.0	12	5254	21 33 20
21 34 20	=0144+584	07 38 40	44.2	313.7	5.8		56.8	60	5262	21 33 21

Schedule for TORUN (Code Tr) Page 15

e-EVN: eg082g, ey024a, ec054d

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 2 Feb 2016 Day 33 ---										
21 34 20	V596CAS	07 38 40	45.4	312.4	5.6		58.4	-17	5262	No stop
21 37 50	---	07 42 10	45.0	312.7	5.7		57.9	193	5288	21 34 21
21 37 50	J0147+5840	07 42 10	43.9	314.0	5.9		56.3	-18	5288	No stop
21 39 20	=0144+584	07 43 40	43.7	314.2	5.9		56.1	72	5300	21 37 51
21 39 20	J0151+5454	07 43 40	42.0	309.6	5.9		53.8	-24	5300	No stop
21 42 50	---	07 47 11	41.5	310.0	5.9		53.3	186	5327	21 39 21
21 43 30	J0147+5840	07 47 51	43.2	314.6	6.0		55.5	16	5327	21 43 30
21 44 30	=0144+584	07 48 51	43.1	314.7	6.0		55.4	60	5335	21 43 31
21 44 30	V596CAS	07 48 51	44.3	313.4	5.8		56.9	-17	5335	No stop
21 47 50	---	07 52 12	43.9	313.7	5.9		56.4	183	5360	21 44 31
21 47 50	J0147+5840	07 52 12	42.8	315.0	6.1		54.9	-18	5360	No stop
21 49 20	=0144+584	07 53 42	42.6	315.2	6.1		54.7	72	5372	21 47 51
21 49 20	V596CAS	07 53 42	43.8	313.8	5.9		56.2	-17	5372	No stop
21 52 50	---	07 57 13	43.4	314.2	5.9		55.7	193	5399	21 49 21
21 53 20	J0147+5840	07 57 43	42.2	315.6	6.1		54.1	13	5399	21 53 20
21 54 20	=0144+584	07 58 43	42.1	315.7	6.2		53.9	60	5406	21 53 21
21 54 20	V596CAS	07 58 43	43.2	314.3	6.0		55.5	-17	5406	No stop
21 57 50	---	08 02 13	42.9	314.7	6.0		55.0	193	5433	21 54 21
21 57 50	J0147+5840	08 02 13	41.7	316.1	6.2		53.4	-17	5433	No stop
21 59 20	=0144+584	08 03 44	41.6	316.2	6.2		53.2	73	5445	21 57 51
21 59 20	V596CAS	08 03 44	42.7	314.9	6.1		54.8	-17	5445	No stop
22 02 50	---	08 07 14	42.3	315.2	6.1		54.3	193	5472	21 59 21
22 03 20	J0147+5840	08 07 44	41.2	316.7	6.3		52.6	13	5472	22 03 20
22 04 20	=0144+584	08 08 45	41.1	316.8	6.3		52.5	60	5479	22 03 21
22 04 20	V596CAS	08 08 45	42.2	315.4	6.1		54.1	-17	5479	No stop
22 07 50	---	08 12 15	41.8	315.7	6.2		53.6	193	5506	22 04 21
22 07 50	J0147+5840	08 12 15	40.7	317.1	6.4		52.0	-17	5506	No stop
22 09 20	=0144+584	08 13 45	40.5	317.3	6.4		51.8	73	5518	22 07 51
22 09 20	J0151+5454	08 13 45	38.6	313.1	6.4		49.9	-23	5518	No stop
22 12 50	---	08 17 16	38.2	313.5	6.4		49.4	187	5545	22 09 21

Schedule for TORUN (Code Tr) Page 16

e-EVN: eg082g, ey024a, ec054d

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Tue 2 Feb 2016 Day 33 ---										
22 13 20	J0147+5840	08 17 46	40.1	317.7	6.5		51.2	7	5545	22 13 20
22 14 20	=0144+584	08 18 46	40.0	317.8	6.5		51.0	60	5553	22 13 21
22 14 20	V596CAS	08 18 46	41.1	316.4	6.3		52.6	-17	5553	No stop
22 17 50	---	08 22 17	40.8	316.8	6.4		52.1	193	5579	22 14 21
22 17 50	J0147+5840	08 22 17	39.7	318.2	6.6		50.5	-17	5579	No stop
22 19 20	=0144+584	08 23 47	39.5	318.4	6.6		50.3	73	5591	22 17 51
22 19 20	V596CAS	08 23 47	40.6	316.9	6.4		51.9	-17	5591	No stop
22 22 50	---	08 27 18	40.2	317.3	6.4		51.4	193	5618	22 19 21
22 23 20	J0147+5840	08 27 48	39.1	318.8	6.6		49.7	13	5618	22 23 20
22 24 20	=0144+584	08 28 48	39.0	318.9	6.7		49.6	60	5626	22 23 21
22 24 20	V596CAS	08 28 48	40.1	317.5	6.5		51.2	-17	5626	No stop
22 27 50	---	08 32 18	39.7	317.9	6.5		50.7	193	5653	22 24 21
22 27 50	J0147+5840	08 32 18	38.7	319.3	6.7		49.1	-17	5653	No stop
22 29 20	=0144+584	08 33 49	38.5	319.4	6.7		48.8	73	5664	22 27 51
22 29 20	V596CAS	08 33 49	39.6	318.0	6.6		50.4	-17	5664	No stop
22 32 50	---	08 37 19	39.2	318.4	6.6		49.9	193	5691	22 29 21
22 33 20	J0147+5840	08 37 49	38.1	319.9	6.8		48.3	13	5691	22 33 20
22 34 20	=0144+584	08 38 49	38.1	320.0	6.8		48.1	60	5699	22 33 21
22 34 20	V596CAS	08 38 49	39.1	318.6	6.6		49.7	-17	5699	No stop
22 37 50	---	08 42 20	38.7	318.9	6.7		49.2	193	5726	22 34 21
22 37 50	J0147+5840	08 42 20	37.7	320.4	6.9		47.6	-17	5726	No stop
22 39 20	=0144+584	08 43 50	37.6	320.5	6.9		47.4	73	5737	22 37 51
22 39 20	J0151+5454	08 43 50	35.4	316.7	6.9		45.9	-22	5737	No stop
22 42 50	---	08 47 21	35.0	317.1	6.9		45.4	188	5764	22 39 21
22 43 20	J0147+5840	08 47 51	37.2	321.0	7.0		46.8	7	5764	22 43 20
22 44 20	=0144+584	08 48 51	37.1	321.1	7.0		46.7	60	5772	22 43 21
22 44 20	V596CAS	08 48 51	38.1	319.7	6.8		48.3	-16	5772	No stop
22 47 50	---	08 52 22	37.8	320.0	6.9		47.7	194	5799	22 44 21
22 47 50	J0147+5840	08 52 22	36.8	321.5	7.1		46.1	-17	5799	No stop
22 49 20	=0144+584	08 53 52	36.6	321.7	7.1		45.9	73	5810	22 47 51

Schedule for TORUN (Code Tr) Page 17

e-EVN: eg082g, ey024a, ec054d

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 2 Feb 2016 Day 33 ---										
22 49 20	V596CAS	08 53 52	37.6	320.2	6.9		47.5	-16	5810	No stop
22 52 50	---	08 57 23	37.3	320.6	6.9		47.0	194	5837	22 49 21
22 53 20	J0147+5840	08 57 53	36.3	322.1	7.2		45.3	13	5837	22 53 20
22 54 20	=0144+584	08 58 53	36.2	322.2	7.2		45.2	60	5845	22 53 21
22 54 20	V596CAS	08 58 53	37.1	320.8	7.0		46.8	-16	5845	No stop
22 57 50	---	09 02 23	36.8	321.2	7.0		46.3	194	5872	22 54 21
22 57 50	J0147+5840	09 02 23	35.8	322.6	7.2		44.7	-16	5872	No stop
22 59 20	=0144+584	09 03 54	35.7	322.8	7.3		44.4	74	5883	22 57 51
22 59 20	V596CAS	09 03 54	36.7	321.3	7.1		46.1	-16	5883	No stop
23 02 50	---	09 07 24	36.3	321.7	7.1		45.6	194	5910	22 59 21
23 03 20	J0147+5840	09 07 54	35.3	323.2	7.3		43.9	14	5910	23 03 20
23 04 20	=0144+584	09 08 54	35.3	323.4	7.3		43.7	60	5918	23 03 21
23 04 20	V596CAS	09 08 54	36.2	321.9	7.1		45.3	-16	5918	No stop
23 07 50	---	09 12 25	35.9	322.3	7.2		44.8	194	5945	23 04 21
23 07 50	J0147+5840	09 12 25	34.9	323.8	7.4		43.2	-16	5945	No stop
23 09 20	=0144+584	09 13 55	34.8	323.9	7.4		43.0	74	5956	23 07 51
23 09 20	J0151+5454	09 13 55	32.4	320.4	7.4		41.8	-23	5956	No stop
23 12 50	---	09 17 26	32.0	320.9	7.4		41.3	187	5983	23 09 21
23 13 20	J0147+5840	09 17 56	34.5	324.4	7.5		42.4	7	5983	23 13 20
23 14 20	=0144+584	09 18 56	34.4	324.5	7.5		42.2	60	5991	23 13 21
23 14 20	V596CAS	09 18 56	35.3	323.0	7.3		43.9	-16	5991	No stop
23 17 50	---	09 22 27	35.0	323.4	7.4		43.3	194	6018	23 14 21
23 17 50	J0147+5840	09 22 27	34.1	324.9	7.6		41.7	-16	6018	No stop
23 19 20	=0144+584	09 23 57	33.9	325.1	7.6		41.5	74	6029	23 17 51
23 19 20	V596CAS	09 23 57	34.8	323.6	7.4		43.1	-16	6029	No stop
23 22 50	---	09 27 27	34.5	324.0	7.4		42.6	194	6056	23 19 21
23 22 50	J0147+5840	09 27 27	33.6	325.5	7.6		41.0	-16	6056	No stop
23 24 20	=0144+584	09 28 58	33.5	325.7	7.7		40.7	74	6068	23 22 51
23 24 20	V596CAS	09 28 58	34.4	324.2	7.5		42.4	-16	6068	No stop
23 27 50	---	09 32 28	34.1	324.6	7.5		41.9	194	6095	23 24 21

```
Schedule for TORUN     (Code Tr )                                  Page  18
               e-EVN: eg082g, ey024a, ec054d
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Tue   2 Feb 2016   Day  33 ---

23 28 20  J0147+5840   09 32 58  33.2 326.2  7.7      40.1    14     6095   23 28 20
23 29 20  =0144+584    09 33 59  33.1 326.3  7.8      40.0    60     6103   23 28 21

23 29 20  V596CAS      09 33 59  34.0 324.8  7.6      41.6   -16     6103   No stop
23 32 50  ---          09 37 29  33.6 325.2  7.6      41.1   194     6129   23 29 21

23 33 20  J0147+5840   09 37 59  32.8 326.8  7.8      39.4    14     6129   23 33 20
23 34 20  =0144+584    09 38 59  32.7 326.9  7.8      39.2    60     6137   23 33 21

23 34 20  J0151+5454   09 38 59  30.1 323.6  7.8      38.3   -24     6137   No stop
23 37 50  ---          09 42 30  29.7 324.1  7.8      37.9   186     6164   23 34 21

23 38 20  J0147+5840   09 43 00  32.3 327.4  7.9      38.6     6     6164   23 38 20
23 39 50  =0144+584    09 44 30  32.2 327.5  7.9      38.4    90     6176   23 38 21

 ---------- fringe finder ----------

23 45 30  0528+134     09 50 11  26.0 257.6  4.3      37.1   184     6176   23 45 30
23 51 30  ---          09 56 12  25.1 258.9  4.4      37.3   360     6222   23 45 31

23 57 10  J1038+0512   10 01 53  41.4 167.4 -0.6      -7.5   140     6222   23 57 10
23 59 10  =1036+054    10 03 53  41.5 168.1 -0.6      -7.2   120     6237   23 57 11

 --- Start: Tue   2 Feb 2016   Day  33 -- Stop: Wed   3 Feb 2016   Day  34 ---

23 59 10  J1035+0522   10 03 53  41.7 169.3 -0.5      -6.4   -15     6237   No stop
00 02 40  ---          10 07 24  41.8 170.5 -0.5      -5.7   195     6264   23 59 11

00 03 10  J1038+0512   10 07 54  41.6 169.4 -0.5      -6.4    15     6264   00 03 10
00 04 10  =1036+054    10 08 54  41.6 169.7 -0.5      -6.2    60     6272   00 03 11

00 04 10  RYSEX        10 08 54  41.6 170.7 -0.5      -5.6   -14     6272   No stop
00 07 40  ---          10 12 25  41.7 171.8 -0.4      -4.9   196     6299   00 04 11

00 07 40  J1038+0512   10 12 25  41.7 170.9 -0.5      -5.5   -13     6299   No stop
00 09 10  =1036+054    10 13 55  41.7 171.4 -0.4      -5.2    77     6310   00 07 41

00 09 10  RYSEX        10 13 55  41.7 172.3 -0.4      -4.6   -14     6310   No stop
00 12 40  ---          10 17 26  41.8 173.5 -0.3      -3.9   196     6337   00 09 11

00 13 10  J1038+0512   10 17 56  41.8 172.7 -0.4      -4.4    17     6337   00 13 10
00 14 10  =1036+054    10 18 56  41.8 173.1 -0.3      -4.2    60     6345   00 13 11

00 14 10  RYSEX        10 18 56  41.8 174.0 -0.3      -3.6   -14     6345   No stop
00 17 40  ---          10 22 26  41.8 175.2 -0.2      -2.9   196     6372   00 14 11
```

Schedule for TORUN (Code Tr) Page 19

e-EVN: eg082g, ey024a, ec054d

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Wed 3 Feb 2016 Day 34 ---										
00 17 40	J1038+0512	10 22 26	41.9	174.2	-0.3		-3.5	-13	6372	No stop
00 19 10	=1036+054	10 23 57	41.9	174.7	-0.3		-3.2	77	6383	00 17 41
00 19 10	RYSEX	10 23 57	41.9	175.7	-0.2		-2.6	-14	6383	No stop
00 22 40	---	10 27 27	41.9	176.9	-0.2		-1.9	196	6410	00 19 11
00 23 10	J1038+0512	10 27 57	42.0	176.1	-0.2		-2.4	17	6410	00 23 10
00 24 10	=1036+054	10 28 58	42.0	176.4	-0.2		-2.2	60	6418	00 23 11
00 24 10	RYSEX	10 28 58	41.9	177.4	-0.1		-1.6	-14	6418	No stop
00 27 40	---	10 32 28	41.9	178.5	-0.1		-0.9	196	6445	00 24 11
00 27 40	J1038+0512	10 32 28	42.0	177.6	-0.1		-1.4	-13	6445	No stop
00 29 10	=1036+054	10 33 58	42.0	178.1	-0.1		-1.1	77	6456	00 27 41
00 29 10	J1035+0522	10 33 58	42.2	179.4	-0.0		-0.4	-15	6456	No stop
00 32 40	---	10 37 29	42.2	180.6	0.0		0.3	195	6483	00 29 11
00 33 10	J1038+0512	10 37 59	42.0	179.4	-0.0		-0.3	15	6483	00 33 10
00 34 10	=1036+054	10 38 59	42.0	179.8	-0.0		-0.1	60	6491	00 33 11
00 34 10	RYSEX	10 38 59	41.9	180.7	0.0		0.4	-14	6491	No stop
00 37 40	---	10 42 30	41.9	181.9	0.1		1.1	196	6518	00 34 11
00 37 40	J1038+0512	10 42 30	42.0	181.0	0.0		0.6	-13	6518	No stop
00 39 10	=1036+054	10 44 00	42.0	181.5	0.1		0.9	77	6529	00 37 41
00 39 10	RYSEX	10 44 00	41.9	182.4	0.1		1.4	-14	6529	No stop
00 42 40	---	10 47 31	41.9	183.6	0.2		2.1	196	6556	00 39 11
00 43 10	J1038+0512	10 48 01	42.0	182.8	0.1		1.7	17	6556	00 43 10
00 44 10	=1036+054	10 49 01	42.0	183.1	0.2		1.9	60	6564	00 43 11
00 44 10	RYSEX	10 49 01	41.9	184.1	0.2		2.4	-14	6564	No stop
00 47 40	---	10 52 31	41.8	185.2	0.3		3.2	196	6591	00 44 11
00 47 40	J1038+0512	10 52 31	42.0	184.3	0.2		2.6	-13	6591	No stop
00 49 10	=1036+054	10 54 02	41.9	184.8	0.2		2.9	77	6603	00 47 41
00 49 10	RYSEX	10 54 02	41.8	185.7	0.3		3.5	-14	6603	No stop
00 52 40	---	10 57 32	41.8	186.9	0.3		4.2	196	6629	00 49 11
00 53 10	J1038+0512	10 58 02	41.9	186.2	0.3		3.7	17	6629	00 53 10
00 54 10	=1036+054	10 59 02	41.9	186.5	0.3		3.9	60	6637	00 53 11

Schedule for TORUN (Code Tr) Page 20

e-EVN: eg082g, ey024a, ec054d

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Wed 3 Feb 2016 Day 34 ---										
00 54 10	RYSEX	10 59 02	41.7	187.4	0.4		4.5	-14	6637	No stop
00 57 40	---	11 02 33	41.7	188.6	0.4		5.2	196	6664	00 54 11
00 57 40	J1038+0512	11 02 33	41.8	187.7	0.4		4.6	-13	6664	No stop
00 59 10	=1036+054	11 04 03	41.8	188.2	0.4		4.9	77	6676	00 57 41
00 59 10	J1035+0522	11 04 03	41.8	189.5	0.5		5.7	-15	6676	No stop
01 02 40	---	11 07 34	41.8	190.6	0.5		6.4	195	6703	00 59 11
01 03 10	J1038+0512	11 08 04	41.7	189.5	0.5		5.7	15	6703	01 03 10
01 04 10	=1036+054	11 09 04	41.6	189.8	0.5		5.9	60	6710	01 03 11
01 04 10	RYSEX	11 09 04	41.5	190.7	0.5		6.4	-14	6710	No stop
01 07 40	---	11 12 35	41.4	191.9	0.6		7.1	196	6737	01 04 11
01 07 40	J1038+0512	11 12 35	41.6	191.0	0.5		6.6	-13	6737	No stop
01 09 10	=1036+054	11 14 05	41.5	191.5	0.6		6.9	77	6749	01 07 41
01 09 10	RYSEX	11 14 05	41.3	192.4	0.6		7.4	-14	6749	No stop
01 12 40	---	11 17 35	41.2	193.5	0.7		8.1	196	6776	01 09 11
01 13 10	J1038+0512	11 18 06	41.4	192.8	0.6		7.7	17	6776	01 13 10
01 14 10	=1036+054	11 19 06	41.3	193.1	0.7		7.9	60	6783	01 13 11
01 14 10	RYSEX	11 19 06	41.2	194.0	0.7		8.4	-14	6783	No stop
01 17 40	---	11 22 36	41.0	195.2	0.8		9.1	196	6810	01 14 11
01 17 40	J1038+0512	11 22 36	41.2	194.3	0.7		8.6	-13	6810	No stop
01 19 10	=1036+054	11 24 07	41.2	194.8	0.7		8.8	77	6822	01 17 41
01 19 10	RYSEX	11 24 07	41.0	195.7	0.8		9.4	-14	6822	No stop
01 22 40	---	11 27 37	40.8	196.8	0.8		10.0	196	6849	01 19 11
01 23 10	J1038+0512	11 28 07	41.0	196.1	0.8		9.6	17	6849	01 23 10
01 24 10	=1036+054	11 29 07	41.0	196.4	0.8		9.8	60	6856	01 23 11
01 24 10	RYSEX	11 29 07	40.8	197.3	0.9		10.3	-14	6856	No stop
01 27 40	---	11 32 38	40.6	198.4	0.9		11.0	196	6883	01 24 11
01 27 40	J1038+0512	11 32 38	40.8	197.6	0.9		10.5	-13	6883	No stop
01 29 10	=1036+054	11 34 08	40.7	198.0	0.9		10.8	77	6895	01 27 41
01 29 10	J1035+0522	11 34 08	40.7	199.3	1.0		11.5	-15	6895	No stop
01 32 40	---	11 37 39	40.5	200.4	1.0		12.2	195	6922	01 29 11

```
Schedule for TORUN     (Code Tr )                                  Page  21
               e-EVN: eg082g, ey024a, ec054d
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Wed   3 Feb 2016   Day  34 ---

01 33 10  J1038+0512   11 38 09  40.5 199.3  1.0      11.5    15     6922   01 33 10
01 34 10  =1036+054    11 39 09  40.5 199.7  1.0      11.7    60     6929   01 33 11

01 34 10  RYSEX        11 39 09  40.3 200.5  1.0      12.2   -14     6929   No stop
01 37 40  ---          11 42 40  40.1 201.6  1.1      12.8   196     6956   01 34 11

01 37 40  J1038+0512   11 42 40  40.3 200.8  1.1      12.3   -13     6956   No stop
01 39 10  =1036+054    11 44 10  40.2 201.3  1.1      12.6    77     6968   01 37 41

01 39 10  RYSEX        11 44 10  40.0 202.1  1.1      13.1   -13     6968   No stop
01 42 40  ---          11 47 40  39.8 203.2  1.2      13.7   197     6995   01 39 11

01 43 10  J1038+0512   11 48 10  40.0 202.5  1.1      13.4    17     6995   01 43 10
01 44 10  =1036+054    11 49 11  40.0 202.8  1.2      13.5    60     7003   01 43 11

01 44 10  RYSEX        11 49 11  39.7 203.7  1.2      14.0   -13     7003   No stop
01 47 40  ---          11 52 41  39.5 204.8  1.3      14.6   197     7029   01 44 11

01 47 40  J1038+0512   11 52 41  39.7 203.9  1.2      14.2   -13     7029   No stop
01 49 10  =1036+054    11 54 11  39.7 204.4  1.2      14.4    77     7041   01 47 41

01 49 10  RYSEX        11 54 11  39.4 205.3  1.3      14.9   -13     7041   No stop
01 52 40  ---          11 57 42  39.2 206.3  1.3      15.5   197     7068   01 49 11

01 53 10  J1038+0512   11 58 12  39.4 205.7  1.3      15.1    17     7068   01 53 10
01 54 10  =1036+054    11 59 12  39.3 206.0  1.3      15.3    60     7076   01 53 11

01 54 10  RYSEX        11 59 12  39.1 206.8  1.4      15.8   -13     7076   No stop
01 57 40  ---          12 02 43  38.8 207.9  1.4      16.4   197     7103   01 54 11

01 57 40  J1038+0512   12 02 43  39.1 207.1  1.4      15.9   -13     7103   No stop
01 59 10  =1036+054    12 04 13  39.0 207.5  1.4      16.2    77     7114   01 57 41

01 59 10  J1035+0522   12 04 13  38.9 208.8  1.5      16.9   -15     7114   No stop
02 02 40  ---          12 07 44  38.6 209.8  1.5      17.5   195     7141   01 59 11

02 03 10  J1038+0512   12 08 14  38.7 208.8  1.5      16.9    15     7141   02 03 10
02 04 10  =1036+054    12 09 14  38.6 209.1  1.5      17.0    60     7149   02 03 11

02 04 10  RYSEX        12 09 14  38.3 209.9  1.5      17.5   -13     7149   No stop
02 07 40  ---          12 12 45  38.1 210.9  1.6      18.1   197     7176   02 04 11

02 07 40  J1038+0512   12 12 45  38.4 210.1  1.6      17.6   -13     7176   No stop
02 09 10  =1036+054    12 14 15  38.3 210.6  1.6      17.9    77     7187   02 07 41
```

```
Schedule for TORUN     (Code Tr )                                  Page  22
               e-EVN: eg082g, ey024a, ec054d
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Wed   3 Feb 2016   Day  34 ---

02 09 10  RYSEX        12 14 15  38.0 211.4  1.6      18.3   -13     7187   No stop
02 12 40  ---          12 17 45  37.7 212.4  1.7      18.9   197     7214   02 09 11

02 13 10  J1038+0512   12 18 15  37.9 211.8  1.6      18.5    17     7214   02 13 10
02 14 10  =1036+054    12 19 16  37.9 212.1  1.7      18.7    60     7222   02 13 11

02 14 10  RYSEX        12 19 16  37.6 212.9  1.7      19.1   -13     7222   No stop
02 17 40  ---          12 22 46  37.3 213.9  1.8      19.7   197     7249   02 14 11

02 17 40  J1038+0512   12 22 46  37.6 213.1  1.7      19.2   -13     7249   No stop
02 19 10  =1036+054    12 24 16  37.5 213.6  1.7      19.5    77     7260   02 17 41

02 19 10  RYSEX        12 24 16  37.1 214.4  1.8      19.9   -13     7260   No stop
02 22 40  ---          12 27 47  36.8 215.4  1.8      20.4   197     7287   02 19 11

02 23 10  J1038+0512   12 28 17  37.1 214.8  1.8      20.1    17     7287   02 23 10
02 24 10  =1036+054    12 29 17  37.0 215.1  1.8      20.3    60     7295   02 23 11

02 24 10  RYSEX        12 29 17  36.7 215.8  1.9      20.7   -13     7295   No stop
02 27 40  ---          12 32 48  36.4 216.8  1.9      21.2   197     7322   02 24 11

02 27 40  J1038+0512   12 32 48  36.7 216.1  1.9      20.8   -13     7322   No stop
02 29 10  =1036+054    12 34 18  36.6 216.5  1.9      21.0    77     7333   02 27 41

02 29 10  J1035+0522   12 34 18  36.4 217.7  2.0      21.6   -15     7333   No stop
02 32 40  ---          12 37 49  36.1 218.7  2.0      22.2   195     7360   02 29 11

02 33 10  J1038+0512   12 38 19  36.2 217.7  2.0      21.6    16     7360   02 33 10
02 34 10  =1036+054    12 39 19  36.1 218.0  2.0      21.8    60     7368   02 33 11

02 34 10  RYSEX        12 39 19  35.8 218.7  2.0      22.1   -13     7368   No stop
02 37 40  ---          12 42 49  35.5 219.7  2.1      22.7   197     7395   02 34 11

02 37 40  J1038+0512   12 42 49  35.8 219.0  2.1      22.3   -13     7395   No stop
02 39 10  =1036+054    12 44 20  35.7 219.4  2.1      22.5    77     7406   02 37 41

02 39 10  RYSEX        12 44 20  35.3 220.1  2.1      22.9   -13     7406   No stop
02 42 40  ---          12 47 50  35.0 221.1  2.2      23.4   197     7433   02 39 11

02 42 40  J1038+0512   12 47 50  35.3 220.4  2.1      23.0   -12     7433   No stop
02 44 10  =1036+054    12 49 21  35.2 220.8  2.2      23.2    78     7445   02 42 41

02 44 10  RYSEX        12 49 21  34.8 221.5  2.2      23.6   -13     7445   No stop
02 47 40  ---          12 52 51  34.5 222.5  2.3      24.0   197     7472   02 44 11
```

Schedule for TORUN (Code Tr) Page 23

e-EVN: eg082g, ey024a, ec054d

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 3 Feb 2016 Day 34 ---										
02 48 10	J1038+0512	12 53 21	34.8	221.9	2.2		23.8	18	7472	02 48 10
02 49 10	=1036+054	12 54 21	34.7	222.2	2.2		23.9	60	7479	02 48 11
02 49 10	RYSEX	12 54 21	34.3	222.9	2.3		24.2	-13	7479	No stop
02 52 40	---	12 57 52	34.0	223.9	2.4		24.7	197	7506	02 49 11
02 52 40	J1038+0512	12 57 52	34.3	223.2	2.3		24.4	-12	7506	No stop
02 54 10	=1036+054	12 59 22	34.2	223.6	2.3		24.6	78	7518	02 52 41
02 54 10	J1035+0522	12 59 22	33.9	224.7	2.4		25.1	-15	7518	No stop
02 57 40	---	13 02 53	33.6	225.7	2.5		25.5	195	7545	02 54 11
02 58 10	J1038+0512	13 03 23	33.8	224.7	2.4		25.1	16	7545	02 58 10
02 59 40	=1036+054	13 04 53	33.6	225.1	2.4		25.3	90	7556	02 58 11
03 02 00	1156+295	13 07 13	63.1	213.7	1.1		22.4	15	7556	03 02 00
03 09 00	---	13 14 15	62.5	216.8	1.2		24.3	420	7610	03 02 01
03 09 40	1156+295	13 14 55	62.4	217.1	1.2		24.5	33	7610	03 09 40
03 24 00	---	13 29 17	61.0	223.0	1.5		28.0	860	7720	03 09 41
03 24 40	1156+295	13 29 57	61.0	223.3	1.5		28.1	33	7720	03 24 40
03 39 00	---	13 44 20	59.4	228.8	1.7		31.1	860	7831	03 24 41
03 39 40	1156+295	13 45 00	59.3	229.0	1.7		31.3	34	7831	03 39 40
03 54 00	---	13 59 22	57.7	234.1	2.0		33.8	860	7941	03 39 41
03 54 40	1156+295	14 00 02	57.6	234.3	2.0		34.0	34	7941	03 54 40
04 09 00	---	14 14 24	55.8	239.0	2.2		36.1	860	8051	03 54 41
04 09 40	1156+295	14 15 05	55.7	239.2	2.2		36.2	34	8051	04 09 40
04 24 00	---	14 29 27	53.8	243.5	2.5		38.0	860	8162	04 09 41
04 24 40	1156+295	14 30 07	53.7	243.7	2.5		38.1	34	8162	04 24 40
04 39 00	---	14 44 29	51.7	247.8	2.7		39.5	860	8272	04 24 41
04 39 40	1156+295	14 45 09	51.6	248.0	2.7		39.6	34	8272	04 39 40
04 54 00	---	14 59 32	49.6	251.7	3.0		40.8	860	8382	04 39 41
04 54 40	1156+295	15 00 12	49.5	251.9	3.0		40.8	34	8382	04 54 40
05 09 00	---	15 14 34	47.4	255.5	3.2		41.7	860	8492	04 54 41
05 09 40	1156+295	15 15 14	47.4	255.6	3.2		41.8	34	8492	05 09 40
05 24 00	---	15 29 37	45.2	259.0	3.5		42.4	860	8603	05 09 41

Schedule for TORUN (Code Tr) Page 24

e-EVN: eg082g, ey024a, ec054d

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 3 Feb 2016 Day 34 ---										
05 24 40	1156+295	15 30 17	45.1	259.1	3.5		42.5	34	8603	05 24 40
05 39 00	---	15 44 39	43.0	262.4	3.7		43.0	860	8713	05 24 41
05 39 40	1156+295	15 45 19	42.9	262.5	3.7		43.0	34	8713	05 39 40
05 54 00	---	15 59 42	40.8	265.6	4.0		43.3	860	8823	05 39 41
06 00 00	NRAO530	16 05 43	21.2	156.9	-1.5		-14.0	127	8823	06 00 00
06 14 00	---	16 19 45	21.9	160.5	-1.2		-11.9	840	8931	06 00 01
06 14 40	NRAO530	16 20 25	22.0	160.7	-1.2		-11.8	34	8931	06 14 40
06 29 00	---	16 34 47	22.6	164.4	-1.0		-9.6	860	9041	06 14 41
06 30 00	J1724-1443	16 35 48	21.3	167.0	-0.8		-8.0	41	9041	06 30 00
06 36 00	=1721-146	16 41 49	21.5	168.6	-0.7		-7.1	360	9087	06 30 01
06 36 00	PDS456	16 41 49	21.9	167.6	-0.8		-7.6	-14	9087	No stop
06 38 30	---	16 44 19	21.9	168.3	-0.7		-7.2	136	9106	06 36 01
06 38 30	J1724-1443	16 44 19	21.6	169.2	-0.7		-6.7	-14	9106	No stop
06 40 00	=1721-146	16 45 49	21.6	169.6	-0.7		-6.4	76	9118	06 38 31
06 40 00	PDS456	16 45 49	22.0	168.7	-0.7		-7.0	-14	9118	No stop
06 42 30	---	16 48 20	22.1	169.3	-0.7		-6.6	136	9137	06 40 01
06 43 00	J1724-1443	16 48 50	21.7	170.4	-0.6		-5.9	16	9137	06 43 00
06 44 00	=1721-146	16 49 50	21.7	170.7	-0.6		-5.8	60	9145	06 43 01
06 44 00	PDS456	16 49 50	22.1	169.7	-0.7		-6.4	-14	9145	No stop
06 46 30	---	16 52 20	22.2	170.3	-0.6		-6.0	136	9164	06 44 01
06 46 30	J1724-1443	16 52 20	21.8	171.3	-0.6		-5.4	-14	9164	No stop
06 48 00	=1721-146	16 53 51	21.8	171.7	-0.5		-5.1	76	9176	06 46 31
06 48 00	PDS456	16 53 51	22.2	170.7	-0.6		-5.7	-14	9176	No stop
06 50 30	---	16 56 21	22.3	171.4	-0.5		-5.3	136	9195	06 48 01
06 51 00	J1724-1443	16 56 51	21.9	172.5	-0.5		-4.7	16	9195	06 51 00
06 52 00	=1721-146	16 57 51	21.9	172.7	-0.5		-4.5	60	9203	06 51 01
06 52 00	PDS456	16 57 51	22.3	171.8	-0.5		-5.1	-14	9203	No stop
06 54 30	---	17 00 22	22.3	172.4	-0.5		-4.7	136	9222	06 52 01
06 54 30	J1724-1443	17 00 22	21.9	173.4	-0.4		-4.1	-14	9222	No stop
06 56 00	=1721-146	17 01 52	22.0	173.8	-0.4		-3.9	76	9233	06 54 31

Schedule for TORUN (Code Tr) Page 25

e-EVN: eg082g, ey024a, ec054d

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 3 Feb 2016 Day 34 ---										
06 56 00	PDS456	17 01 52	22.4	172.8	-0.5		-4.4	-14	9233	No stop
06 58 30	---	17 04 22	22.4	173.5	-0.4		-4.0	136	9253	06 56 01
06 59 00	J1724-1443	17 04 52	22.0	174.6	-0.3		-3.4	16	9253	06 59 00
07 00 00	=1721-146	17 05 53	22.0	174.8	-0.3		-3.2	60	9260	06 59 01
07 00 00	PDS456	17 05 53	22.4	173.9	-0.4		-3.8	-14	9260	No stop
07 02 30	---	17 08 23	22.5	174.5	-0.3		-3.4	136	9279	07 00 01
07 02 30	J1724-1443	17 08 23	22.1	175.5	-0.3		-2.8	-14	9279	No stop
07 04 00	=1721-146	17 09 53	22.1	175.9	-0.3		-2.6	76	9291	07 02 31
07 04 00	PDS456	17 09 53	22.5	174.9	-0.3		-3.1	-14	9291	No stop
07 06 30	---	17 12 24	22.5	175.6	-0.3		-2.7	136	9310	07 04 01
07 07 00	J1724-1443	17 12 54	22.1	176.7	-0.2		-2.1	16	9310	07 07 00
07 08 00	=1721-146	17 13 54	22.1	176.9	-0.2		-1.9	60	9318	07 07 01
07 08 00	PDS456	17 13 54	22.5	176.0	-0.3		-2.5	-14	9318	No stop
07 10 30	---	17 16 24	22.6	176.6	-0.2		-2.1	136	9337	07 08 01
07 10 30	J1724-1443	17 16 24	22.1	177.6	-0.2		-1.5	-14	9337	No stop
07 12 00	=1721-146	17 17 55	22.1	178.0	-0.1		-1.3	76	9349	07 10 31
07 12 00	PDS456	17 17 55	22.6	177.0	-0.2		-1.8	-13	9349	No stop
07 14 30	---	17 20 25	22.6	177.7	-0.1		-1.4	137	9368	07 12 01
07 15 00	J1724-1443	17 20 55	22.2	178.8	-0.1		-0.8	16	9368	07 15 00
07 16 00	=1721-146	17 21 55	22.2	179.0	-0.1		-0.6	60	9376	07 15 01
07 16 00	PDS456	17 21 55	22.6	178.1	-0.1		-1.2	-13	9376	No stop
07 18 30	---	17 24 26	22.6	178.7	-0.1		-0.8	137	9395	07 16 01
07 18 30	J1724-1443	17 24 26	22.2	179.7	-0.0		-0.2	-14	9395	No stop
07 20 00	=1721-146	17 25 56	22.2	180.1	0.0		0.0	76	9406	07 18 31
07 20 00	PDS456	17 25 56	22.6	179.1	-0.1		-0.5	-13	9406	No stop
07 22 30	---	17 28 26	22.6	179.8	-0.0		-0.1	137	9426	07 20 01
07 23 00	J1724-1443	17 28 56	22.2	180.8	0.1		0.5	16	9426	07 23 00
07 24 00	=1721-146	17 29 56	22.2	181.1	0.1		0.7	60	9433	07 23 01
07 24 00	PDS456	17 29 56	22.6	180.2	0.0		0.1	-13	9433	No stop
07 26 30	---	17 32 27	22.6	180.8	0.1		0.5	137	9453	07 24 01

Schedule for TORUN (Code Tr) Page 26

e-EVN: eg082g, ey024a, ec054d

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 3 Feb 2016 Day 34 ---										
07 26 30	J1724-1443	17 32 27	22.1	181.8	0.1		1.1	-14	9453	No stop
07 28 00	=1721-146	17 33 57	22.1	182.2	0.1		1.3	76	9464	07 26 31
07 28 00	PDS456	17 33 57	22.6	181.2	0.1		0.8	-13	9464	No stop
07 30 30	---	17 36 28	22.6	181.9	0.1		1.2	137	9483	07 28 01
07 31 00	J1724-1443	17 36 58	22.1	182.9	0.2		1.8	16	9483	07 31 00
07 32 00	=1721-146	17 37 58	22.1	183.2	0.2		2.0	60	9491	07 31 01
07 32 00	PDS456	17 37 58	22.6	182.3	0.1		1.4	-13	9491	No stop
07 34 30	---	17 40 28	22.6	182.9	0.2		1.8	137	9510	07 32 01
07 34 30	J1724-1443	17 40 28	22.1	183.9	0.2		2.4	-14	9510	No stop
07 36 00	=1721-146	17 41 58	22.1	184.2	0.3		2.6	76	9522	07 34 31
07 36 00	PDS456	17 41 58	22.6	183.3	0.2		2.1	-13	9522	No stop
07 38 30	---	17 44 29	22.5	184.0	0.3		2.5	137	9541	07 36 01
07 39 00	J1724-1443	17 44 59	22.0	185.0	0.3		3.1	16	9541	07 39 00
07 40 00	=1721-146	17 45 59	22.0	185.3	0.3		3.3	60	9549	07 39 01
07 40 00	PDS456	17 45 59	22.5	184.4	0.3		2.7	-13	9549	No stop
07 42 30	---	17 48 30	22.5	185.1	0.3		3.1	137	9568	07 40 01
07 42 30	J1724-1443	17 48 30	22.0	185.9	0.4		3.7	-14	9568	No stop
07 44 00	=1721-146	17 50 00	22.0	186.3	0.4		3.9	76	9579	07 42 31
07 44 00	PDS456	17 50 00	22.5	185.4	0.3		3.4	-13	9579	No stop
07 46 30	---	17 52 30	22.4	186.1	0.4		3.8	137	9599	07 44 01
07 47 00	J1724-1443	17 53 00	21.9	187.1	0.5		4.4	16	9599	07 47 00
07 48 00	=1721-146	17 54 00	21.9	187.4	0.5		4.6	60	9606	07 47 01
07 48 00	PDS456	17 54 00	22.4	186.5	0.4		4.0	-13	9606	No stop
07 50 30	---	17 56 31	22.4	187.2	0.5		4.4	137	9626	07 48 01
07 50 30	J1724-1443	17 56 31	21.8	188.0	0.5		5.0	-14	9626	No stop
07 52 00	=1721-146	17 58 01	21.8	188.4	0.5		5.2	76	9637	07 50 31
07 52 00	PDS456	17 58 01	22.3	187.5	0.5		4.7	-13	9637	No stop
07 54 30	---	18 00 31	22.3	188.2	0.5		5.1	137	9656	07 52 01
07 55 00	J1724-1443	18 01 02	21.7	189.2	0.6		5.7	16	9656	07 55 00
07 56 00	=1721-146	18 02 02	21.7	189.5	0.6		5.9	60	9664	07 55 01

Schedule for TORUN (Code Tr) Page 27

e-EVN: eg082g, ey024a, ec054d

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 3 Feb 2016 Day 34 ---										
07 56 00	PDS456	18 02 02	22.3	188.6	0.5		5.3	-14	9664	No stop
07 58 30	---	18 04 32	22.2	189.2	0.6		5.7	136	9683	07 56 01
07 58 30	J1724-1443	18 04 32	21.6	190.1	0.6		6.3	-14	9683	No stop
08 00 00	=1721-146	18 06 02	21.6	190.5	0.7		6.5	76	9695	07 58 31
08 00 00	PDS456	18 06 02	22.2	189.6	0.6		6.0	-14	9695	No stop
08 02 30	---	18 08 33	22.1	190.3	0.7		6.4	136	9714	08 00 01
08 03 00	J1724-1443	18 09 03	21.5	191.3	0.7		7.0	16	9714	08 03 00
08 04 00	=1721-146	18 10 03	21.5	191.5	0.7		7.1	60	9722	08 03 01
08 04 00	PDS456	18 10 03	22.1	190.7	0.7		6.6	-14	9722	No stop
08 06 30	---	18 12 33	22.0	191.3	0.7		7.0	136	9741	08 04 01
08 06 30	J1724-1443	18 12 33	21.4	192.2	0.8		7.5	-14	9741	No stop
08 08 00	=1721-146	18 14 04	21.4	192.6	0.8		7.8	76	9753	08 06 31
08 08 00	PDS456	18 14 04	21.9	191.7	0.7		7.2	-14	9753	No stop
08 10 30	---	18 16 34	21.9	192.4	0.8		7.6	136	9772	08 08 01
08 11 00	J1724-1443	18 17 04	21.3	193.3	0.9		8.2	16	9772	08 11 00
08 12 00	=1721-146	18 18 04	21.2	193.6	0.9		8.4	60	9779	08 11 01
08 12 00	PDS456	18 18 04	21.8	192.8	0.8		7.9	-14	9779	No stop
08 14 30	---	18 20 35	21.7	193.4	0.9		8.3	136	9799	08 12 01
08 14 30	J1724-1443	18 20 35	21.1	194.2	0.9		8.8	-14	9799	No stop
08 16 00	=1721-146	18 22 05	21.1	194.6	0.9		9.0	76	9810	08 14 31
08 16 00	PDS456	18 22 05	21.7	193.8	0.9		8.5	-14	9810	No stop
08 18 30	---	18 24 35	21.6	194.4	0.9		8.9	136	9829	08 16 01
08 19 00	J1724-1443	18 25 06	21.0	195.4	1.0		9.5	16	9829	08 19 00
08 20 00	=1721-146	18 26 06	20.9	195.6	1.0		9.6	60	9837	08 19 01
08 20 00	PDS456	18 26 06	21.5	194.8	0.9		9.1	-14	9837	No stop
08 22 30	---	18 28 36	21.4	195.5	1.0		9.5	136	9856	08 20 01
08 22 30	J1724-1443	18 28 36	20.8	196.3	1.0		10.0	-14	9856	No stop
08 24 00	=1721-146	18 30 06	20.8	196.7	1.1		10.3	76	9868	08 22 31
08 24 00	PDS456	18 30 06	21.4	195.9	1.0		9.7	-14	9868	No stop
08 26 30	---	18 32 37	21.3	196.5	1.1		10.1	136	9887	08 24 01

Schedule for TORUN (Code Tr) Page 28

e-EVN: eg082g, ey024a, ec054d

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 3 Feb 2016 Day 34 ---										
08 27 00	J1724-1443	18 33 07	20.6	197.4	1.1		10.7	16	9887	08 27 00
08 28 00	=1721-146	18 34 07	20.6	197.7	1.1		10.9	60	9895	08 27 01
08 28 00	PDS456	18 34 07	21.2	196.9	1.1		10.4	-14	9895	No stop
08 30 30	---	18 36 37	21.1	197.5	1.1		10.8	136	9914	08 28 01
08 30 30	J1724-1443	18 36 37	20.5	198.3	1.2		11.3	-14	9914	No stop
08 32 00	=1721-146	18 38 08	20.4	198.7	1.2		11.5	76	9926	08 30 31
08 32 00	PDS456	18 38 08	21.0	197.9	1.1		11.0	-14	9926	No stop
08 34 30	---	18 40 38	20.9	198.5	1.2		11.4	136	9945	08 32 01
08 35 00	J1724-1443	18 41 08	20.2	199.5	1.3		11.9	16	9945	08 35 00
08 36 00	=1721-146	18 42 08	20.2	199.7	1.3		12.1	60	9953	08 35 01
08 36 00	PDS456	18 42 08	20.8	198.9	1.2		11.6	-14	9953	No stop
08 38 30	---	18 44 39	20.7	199.6	1.3		12.0	136	9972	08 36 01
08 38 30	J1724-1443	18 44 39	20.1	200.3	1.3		12.5	-14	9972	No stop
08 40 00	=1721-146	18 46 09	20.0	200.7	1.3		12.7	76	9983	08 38 31
08 40 00	PDS456	18 46 09	20.6	199.9	1.3		12.2	-14	9983	No stop
08 42 30	---	18 48 39	20.5	200.6	1.3		12.6	136	10003	08 40 01
08 43 00	J1724-1443	18 49 09	19.8	201.5	1.4		13.1	16	10003	08 43 00
08 44 00	=1721-146	18 50 10	19.8	201.7	1.4		13.3	60	10010	08 43 01
08 44 00	PDS456	18 50 10	20.4	201.0	1.3		12.8	-14	10010	No stop
08 46 30	---	18 52 40	20.3	201.6	1.4		13.2	136	10029	08 44 01
08 46 30	J1724-1443	18 52 40	19.6	202.4	1.4		13.7	-14	10029	No stop
08 48 00	=1721-146	18 54 10	19.5	202.7	1.5		13.9	76	10041	08 46 31
08 48 00	PDS456	18 54 10	20.2	202.0	1.4		13.4	-14	10041	No stop
08 50 30	---	18 56 41	20.1	202.6	1.5		13.8	136	10060	08 48 01
08 51 30	NRAO530	18 57 41	21.4	202.0	1.4		13.3	41	10060	08 51 30
08 55 30	---	19 01 42	21.2	203.0	1.5		13.9	240	10091	08 51 31
09 00 00	J2226+0052	19 06 12	23.4	123.0	-3.4		-30.2	94	10091	09 00 00
09 03 00	=2224+006	19 09 13	23.7	123.7	-3.3		-30.0	180	10114	09 00 01
09 03 00	J2220+0025	19 09 13	24.1	125.5	-3.2		-29.3	-17	10114	No stop
09 06 30	---	19 12 43	24.5	126.3	-3.1		-28.9	193	10141	09 03 01

```
Schedule for TORUN     (Code Tr )                                  Page  29
               e-EVN: eg082g, ey024a, ec054d
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Wed   3 Feb 2016   Day  34 ---

09 06 30  J2226+0052   19 12 43  24.2 124.6 -3.2     -29.6   -17    10141   No stop
09 08 00  =2224+006    19 14 14  24.4 124.9 -3.2     -29.5    73    10153   09 06 31

09 08 00  J2220+0025   19 14 14  24.7 126.7 -3.1     -28.8   -17    10153   No stop
09 11 30  ---          19 17 44  25.1 127.5 -3.1     -28.4   193    10179   09 08 01

09 12 10  J2226+0052   19 18 24  24.9 125.9 -3.2     -29.1    23    10179   09 12 10
09 13 00  =2224+006    19 19 14  25.0 126.1 -3.1     -29.0    50    10186   09 12 11

09 13 00  J2220+0025   19 19 14  25.3 127.9 -3.0     -28.3   -17    10186   No stop
09 16 30  ---          19 22 45  25.7 128.7 -3.0     -27.9   193    10213   09 13 01

09 16 30  J2226+0052   19 22 45  25.4 127.0 -3.1     -28.7   -17    10213   No stop
09 18 00  =2224+006    19 24 15  25.6 127.3 -3.1     -28.5    73    10224   09 16 31

09 18 00  J2220+0025   19 24 15  25.9 129.1 -3.0     -27.8   -17    10224   No stop
09 21 30  ---          19 27 46  26.3 130.0 -2.9     -27.4   193    10251   09 18 01

09 22 10  J2226+0052   19 28 26  26.1 128.4 -3.0     -28.1    23    10251   09 22 10
09 23 00  =2224+006    19 29 16  26.2 128.6 -3.0     -28.0    50    10258   09 22 11

09 23 00  J2220+0025   19 29 16  26.5 130.3 -2.9     -27.2   -17    10258   No stop
09 26 30  ---          19 32 47  26.9 131.2 -2.8     -26.9   193    10285   09 23 01

09 26 30  J2226+0052   19 32 47  26.6 129.4 -2.9     -27.6   -17    10285   No stop
09 28 00  =2224+006    19 34 17  26.7 129.8 -2.9     -27.5    73    10296   09 26 31

09 28 00  J2220+0025   19 34 17  27.1 131.6 -2.8     -26.7   -17    10296   No stop
09 31 30  ---          19 37 47  27.5 132.5 -2.7     -26.3   193    10323   09 28 01

09 32 10  J2226+0052   19 38 28  27.2 130.8 -2.8     -27.0    23    10323   09 32 10
09 33 00  =2224+006    19 39 18  27.3 131.1 -2.8     -26.9    50    10329   09 32 11

09 33 00  J2220+0025   19 39 18  27.6 132.9 -2.7     -26.1   -17    10329   No stop
09 36 30  ---          19 42 48  28.0 133.7 -2.6     -25.7   193    10356   09 33 01

09 36 30  J2226+0052   19 42 48  27.7 131.9 -2.7     -26.5   -17    10356   No stop
09 38 00  =2224+006    19 44 18  27.9 132.3 -2.7     -26.4    73    10368   09 36 31

09 38 00  J2220+0025   19 44 18  28.2 134.1 -2.6     -25.5   -17    10368   No stop
09 41 30  ---          19 47 49  28.5 135.0 -2.6     -25.1   193    10395   09 38 01

09 42 10  J2226+0052   19 48 29  28.3 133.4 -2.7     -25.9    23    10395   09 42 10
09 43 00  =2224+006    19 49 19  28.4 133.6 -2.6     -25.8    50    10401   09 42 11
```

Schedule for TORUN (Code Tr) Page 30

e-EVN: eg082g, ey024a, ec054d

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 3 Feb 2016 Day 34 ---										
09 43 00	J2220+0025	19 49 19	28.7	135.4	-2.5		-24.9	-17	10401	No stop
09 46 30	---	19 52 50	29.1	136.3	-2.5		-24.5	193	10428	09 43 01
09 46 30	J2226+0052	19 52 50	28.8	134.5	-2.6		-25.4	-17	10428	No stop
09 48 00	=2224+006	19 54 20	29.0	134.9	-2.6		-25.2	73	10440	09 46 31
09 48 00	J2220+0025	19 54 20	29.2	136.7	-2.5		-24.3	-17	10440	No stop
09 51 30	---	19 57 51	29.6	137.6	-2.4		-23.9	193	10467	09 48 01
09 52 10	J2226+0052	19 58 31	29.4	136.0	-2.5		-24.7	23	10467	09 52 10
09 53 00	=2224+006	19 59 21	29.5	136.2	-2.5		-24.6	50	10473	09 52 11
09 53 00	J2220+0025	19 59 21	29.7	138.0	-2.4		-23.7	-17	10473	No stop
09 56 30	---	20 02 52	30.1	139.0	-2.3		-23.2	193	10500	09 53 01
09 56 30	J2226+0052	20 02 52	29.9	137.1	-2.4		-24.1	-17	10500	No stop
09 58 00	=2224+006	20 04 22	30.0	137.5	-2.4		-23.9	73	10511	09 56 31
09 58 00	J2220+0025	20 04 22	30.2	139.4	-2.3		-23.0	-17	10511	No stop
10 01 30	---	20 07 52	30.6	140.3	-2.2		-22.6	193	10538	09 58 01
10 02 10	J2226+0052	20 08 32	30.4	138.6	-2.3		-23.4	23	10538	10 02 10
10 03 00	=2224+006	20 09 23	30.5	138.8	-2.3		-23.3	50	10545	10 02 11
10 03 00	J2220+0025	20 09 23	30.7	140.7	-2.2		-22.4	-17	10545	No stop
10 06 30	---	20 12 53	31.0	141.7	-2.1		-21.9	193	10572	10 03 01
10 06 30	J2226+0052	20 12 53	30.9	139.8	-2.2		-22.8	-17	10572	No stop
10 08 00	=2224+006	20 14 23	31.0	140.2	-2.2		-22.6	73	10583	10 06 31
10 08 00	J2220+0025	20 14 23	31.2	142.1	-2.1		-21.7	-17	10583	No stop
10 11 30	---	20 17 54	31.5	143.0	-2.1		-21.2	193	10610	10 08 01
10 12 10	J2226+0052	20 18 34	31.4	141.3	-2.2		-22.1	23	10610	10 12 10
10 13 00	=2224+006	20 19 24	31.5	141.5	-2.1		-21.9	50	10617	10 12 11
10 13 00	J2220+0025	20 19 24	31.6	143.4	-2.0		-21.0	-17	10617	No stop
10 16 30	---	20 22 55	31.9	144.4	-2.0		-20.5	193	10644	10 13 01
10 16 30	J2226+0052	20 22 55	31.8	142.5	-2.1		-21.4	-17	10644	No stop
10 18 00	=2224+006	20 24 25	31.9	142.9	-2.1		-21.2	73	10655	10 16 31
10 18 00	J2220+0025	20 24 25	32.1	144.8	-1.9		-20.2	-18	10655	No stop
10 21 30	---	20 27 56	32.4	145.8	-1.9		-19.7	192	10682	10 18 01

Schedule for TORUN (Code Tr) Page 31

e-EVN: eg082g, ey024a, ec054d

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Wed 3 Feb 2016 Day 34 ---										
10 22 10	J2226+0052	20 28 36	32.3	144.1	-2.0		-20.6	23	10682	10 22 10
10 23 00	=2224+006	20 29 26	32.4	144.3	-2.0		-20.5	50	10688	10 22 11
10 23 00	J2220+0025	20 29 26	32.5	146.2	-1.9		-19.5	-18	10688	No stop
10 26 30	---	20 32 56	32.8	147.2	-1.8		-19.0	192	10715	10 23 01
10 26 30	J2226+0052	20 32 56	32.7	145.3	-1.9		-20.0	-17	10715	No stop
10 28 00	=2224+006	20 34 27	32.8	145.7	-1.9		-19.8	73	10727	10 26 31
10 28 00	J2220+0025	20 34 27	32.9	147.6	-1.8		-18.8	-18	10727	No stop
10 31 30	---	20 37 57	33.2	148.6	-1.7		-18.2	192	10754	10 28 01
10 32 10	J2226+0052	20 38 37	33.2	146.9	-1.8		-19.2	23	10754	10 32 10
10 33 00	=2224+006	20 39 28	33.2	147.1	-1.8		-19.0	50	10760	10 32 11
10 34 30	CTA102	20 40 58	43.0	140.9	-1.9		-22.8	40	10760	10 34 30
10 37 30	---	20 43 58	43.3	141.8	-1.8		-22.3	180	10783	10 34 31
10 39 00	3C454.3	20 45 29	45.3	133.1	-2.2		-27.2	57	10783	10 39 00
10 42 00	---	20 48 29	45.6	134.1	-2.1		-26.7	180	10806	10 39 01
10 43 00	J2226+0052	20 49 29	34.0	150.0	-1.6		-17.5	3	10806	10 43 00
10 46 00	=2224+006	20 52 30	34.2	150.8	-1.6		-17.0	180	10829	10 43 01
10 46 00	J2220+0025	20 52 30	34.3	152.8	-1.5		-15.9	-18	10829	No stop
10 49 30	---	20 56 00	34.5	153.8	-1.4		-15.4	192	10856	10 46 01
10 49 30	J2226+0052	20 56 00	34.5	151.8	-1.5		-16.5	-17	10856	No stop
10 51 00	=2224+006	20 57 30	34.6	152.3	-1.5		-16.2	73	10868	10 49 31
10 51 00	J2220+0025	20 57 30	34.6	154.2	-1.4		-15.1	-18	10868	No stop
10 54 30	---	21 01 01	34.8	155.3	-1.3		-14.5	192	10895	10 51 01
10 55 10	J2226+0052	21 01 41	34.9	153.5	-1.4		-15.5	23	10895	10 55 10
10 56 00	=2224+006	21 02 31	34.9	153.7	-1.4		-15.4	50	10901	10 55 11
10 56 00	J2220+0025	21 02 31	34.9	155.7	-1.3		-14.3	-18	10901	No stop
10 59 30	---	21 06 02	35.1	156.8	-1.3		-13.7	192	10928	10 56 01
10 59 30	J2226+0052	21 06 02	35.2	154.8	-1.4		-14.8	-17	10928	No stop
11 01 00	=2224+006	21 07 32	35.3	155.2	-1.3		-14.6	73	10940	10 59 31
11 01 00	J2220+0025	21 07 32	35.2	157.2	-1.2		-13.5	-18	10940	No stop
11 04 30	---	21 11 03	35.4	158.3	-1.2		-12.9	192	10967	11 01 01

Schedule for TORUN (Code Tr) Page 32

e-EVN: eg082g, ey024a, ec054d

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 3 Feb 2016 Day 34 ---										
11 05 10	J2226+0052	21 11 43	35.5	156.5	-1.3		-13.9	23	10967	11 05 10
11 06 00	=2224+006	21 12 33	35.6	156.7	-1.3		-13.7	50	10973	11 05 11
11 06 00	J2220+0025	21 12 33	35.5	158.7	-1.1		-12.6	-18	10973	No stop
11 09 30	---	21 16 04	35.7	159.8	-1.1		-12.0	192	11000	11 06 01
11 09 30	J2226+0052	21 16 04	35.8	157.8	-1.2		-13.1	-17	11000	No stop
11 11 00	=2224+006	21 17 34	35.9	158.2	-1.2		-12.9	73	11011	11 09 31
11 11 00	J2220+0025	21 17 34	35.8	160.2	-1.1		-11.7	-18	11011	No stop
11 14 30	---	21 21 04	35.9	161.3	-1.0		-11.1	192	11038	11 11 01
11 15 10	J2226+0052	21 21 44	36.1	159.5	-1.1		-12.2	23	11038	11 15 10
11 16 00	=2224+006	21 22 35	36.1	159.7	-1.1		-12.0	50	11045	11 15 11
11 16 00	J2220+0025	21 22 35	36.0	161.7	-1.0		-10.9	-18	11045	No stop
11 19 30	---	21 26 05	36.2	162.8	-0.9		-10.2	192	11072	11 16 01
11 19 30	J2226+0052	21 26 05	36.3	160.8	-1.0		-11.4	-17	11072	No stop
11 21 00	=2224+006	21 27 35	36.4	161.3	-1.0		-11.1	73	11083	11 19 31
11 21 00	J2220+0025	21 27 35	36.2	163.3	-0.9		-10.0	-18	11083	No stop
11 24 30	---	21 31 06	36.4	164.3	-0.8		-9.3	192	11110	11 21 01
11 25 10	J2226+0052	21 31 46	36.6	162.5	-0.9		-10.4	23	11110	11 25 10
11 26 00	=2224+006	21 32 36	36.6	162.8	-0.9		-10.2	50	11117	11 25 11
11 26 00	J2220+0025	21 32 36	36.4	164.8	-0.8		-9.1	-18	11117	No stop
11 29 30	---	21 36 07	36.6	165.9	-0.8		-8.4	192	11144	11 26 01
11 29 30	J2226+0052	21 36 07	36.8	163.9	-0.9		-9.6	-17	11144	No stop
11 31 00	=2224+006	21 37 37	36.8	164.3	-0.8		-9.3	73	11155	11 29 31
11 31 00	J2220+0025	21 37 37	36.6	166.3	-0.7		-8.2	-18	11155	No stop
11 34 30	---	21 41 08	36.7	167.4	-0.7		-7.5	192	11182	11 31 01
11 35 10	J2226+0052	21 41 48	37.0	165.6	-0.8		-8.6	23	11182	11 35 10
11 36 00	=2224+006	21 42 38	37.0	165.9	-0.7		-8.4	50	11188	11 35 11
11 36 00	J2220+0025	21 42 38	36.8	167.9	-0.6		-7.2	-18	11188	No stop
11 39 30	---	21 46 08	36.9	169.0	-0.6		-6.6	192	11215	11 36 01
11 39 30	J2226+0052	21 46 08	37.1	167.0	-0.7		-7.8	-17	11215	No stop
11 41 00	=2224+006	21 47 39	37.2	167.4	-0.7		-7.5	73	11227	11 39 31

Schedule for TORUN (Code Tr) Page 33

e-EVN: eg082g, ey024a, ec054d

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 3 Feb 2016 Day 34 ---										
11 41 00	J2220+0025	21 47 39	36.9	169.4	-0.6		-6.3	-18	11227	No stop
11 44 30	---	21 51 09	37.0	170.5	-0.5		-5.7	192	11254	11 41 01
11 45 10	J2226+0052	21 51 49	37.3	168.7	-0.6		-6.7	23	11254	11 45 10
11 46 00	=2224+006	21 52 40	37.4	169.0	-0.6		-6.6	50	11260	11 45 11
11 46 00	J2220+0025	21 52 40	37.1	171.0	-0.5		-5.4	-18	11260	No stop
11 49 30	---	21 56 10	37.2	172.1	-0.4		-4.7	192	11287	11 46 01
11 49 30	J2226+0052	21 56 10	37.4	170.1	-0.5		-5.9	-17	11287	No stop
11 51 00	=2224+006	21 57 40	37.5	170.6	-0.5		-5.7	73	11299	11 49 31
11 51 00	J2220+0025	21 57 40	37.2	172.6	-0.4		-4.5	-18	11299	No stop
11 54 30	---	22 01 11	37.2	173.7	-0.3		-3.8	192	11326	11 51 01
11 55 10	J2226+0052	22 01 51	37.6	171.9	-0.4		-4.9	23	11326	11 55 10
11 56 00	=2224+006	22 02 41	37.6	172.1	-0.4		-4.7	50	11332	11 55 11
11 56 00	J2220+0025	22 02 41	37.3	174.1	-0.3		-3.5	-18	11332	No stop
11 59 30	---	22 06 12	37.3	175.2	-0.3		-2.9	192	11359	11 56 01
11 59 30	J2226+0052	22 06 12	37.7	173.2	-0.4		-4.1	-17	11359	No stop
12 01 00	=2224+006	22 07 42	37.7	173.7	-0.3		-3.8	73	11370	11 59 31
12 01 00	J2220+0025	22 07 42	37.3	175.7	-0.2		-2.6	-18	11370	No stop
12 04 30	---	22 11 13	37.4	176.8	-0.2		-1.9	192	11397	12 01 01
12 05 10	J2226+0052	22 11 53	37.8	175.0	-0.3		-3.0	23	11397	12 05 10
12 06 00	=2224+006	22 12 43	37.8	175.3	-0.2		-2.8	50	11404	12 05 11
12 06 00	J2220+0025	22 12 43	37.4	177.3	-0.1		-1.6	-18	11404	No stop
12 09 30	---	22 16 13	37.4	178.4	-0.1		-1.0	192	11431	12 06 01
12 09 30	J2226+0052	22 16 13	37.8	176.4	-0.2		-2.2	-17	11431	No stop
12 11 00	=2224+006	22 17 44	37.8	176.9	-0.2		-1.9	73	11442	12 09 31
12 11 00	J2220+0025	22 17 44	37.4	178.9	-0.1		-0.7	-18	11442	No stop
12 14 30	---	22 21 14	37.4	180.0	-0.0		-0.0	192	11469	12 11 01
12 15 10	J2226+0052	22 21 54	37.8	178.2	-0.1		-1.1	23	11469	12 15 10
12 16 00	=2224+006	22 22 44	37.8	178.5	-0.1		-0.9	50	11476	12 15 11
12 16 00	J2220+0025	22 22 44	37.4	180.4	0.0		0.3	-18	11476	No stop
12 19 30	---	22 26 15	37.4	181.5	0.1		0.9	192	11503	12 16 01

Schedule for TORUN (Code Tr) Page 34

e-EVN: eg082g, ey024a, ec054d

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 3 Feb 2016 Day 34 ---										
12 19 30	J2226+0052	22 26 15	37.9	179.6	-0.0		-0.3	-17	11503	No stop
12 21 00	=2224+006	22 27 45	37.9	180.1	0.0		0.0	73	11514	12 19 31
12 21 00	J2220+0025	22 27 45	37.4	182.0	0.1		1.2	-18	11514	No stop
12 24 30	---	22 31 16	37.4	183.1	0.2		1.9	192	11541	12 21 01
12 25 10	J2226+0052	22 31 56	37.8	181.4	0.1		0.8	23	11541	12 25 10
12 26 00	=2224+006	22 32 46	37.8	181.6	0.1		1.0	50	11547	12 25 11
12 26 00	J2220+0025	22 32 46	37.4	183.6	0.2		2.2	-18	11547	No stop
12 29 30	---	22 36 17	37.3	184.7	0.2		2.8	192	11574	12 26 01
12 29 30	J2226+0052	22 36 17	37.8	182.8	0.1		1.7	-17	11574	No stop
12 31 00	=2224+006	22 37 47	37.8	183.2	0.2		1.9	73	11586	12 29 31
12 31 00	J2220+0025	22 37 47	37.3	185.2	0.3		3.1	-18	11586	No stop
12 34 30	---	22 41 17	37.2	186.3	0.3		3.8	192	11613	12 31 01
12 35 10	J2226+0052	22 41 58	37.8	184.5	0.2		2.7	23	11613	12 35 10
12 36 00	=2224+006	22 42 48	37.8	184.8	0.3		2.9	50	11619	12 35 11
12 36 00	J2220+0025	22 42 48	37.2	186.7	0.4		4.0	-18	11619	No stop
12 39 30	---	22 46 18	37.2	187.8	0.4		4.7	192	11646	12 36 01
12 39 30	J2226+0052	22 46 18	37.7	185.9	0.3		3.6	-17	11646	No stop
12 41 00	=2224+006	22 47 49	37.7	186.4	0.3		3.8	73	11658	12 39 31
12 41 00	J2220+0025	22 47 49	37.1	188.3	0.4		5.0	-18	11658	No stop
12 44 30	---	22 51 19	37.0	189.4	0.5		5.6	192	11685	12 41 01
12 45 10	J2226+0052	22 51 59	37.6	187.7	0.4		4.6	23	11685	12 45 10
12 46 00	=2224+006	22 52 49	37.6	188.0	0.4		4.8	50	11691	12 45 11
12 46 00	J2220+0025	22 52 49	37.0	189.9	0.5		5.9	-18	11691	No stop
12 49 30	---	22 56 20	36.9	191.0	0.6		6.6	192	11718	12 46 01
12 49 30	J2226+0052	22 56 20	37.5	189.1	0.5		5.4	-17	11718	No stop
12 51 00	=2224+006	22 57 50	37.5	189.5	0.5		5.7	73	11729	12 49 31
12 51 00	J2220+0025	22 57 50	36.9	191.4	0.6		6.8	-17	11729	No stop
12 54 30	---	23 01 21	36.8	192.5	0.7		7.5	193	11756	12 51 01
12 55 10	J2226+0052	23 02 01	37.4	190.9	0.6		6.5	23	11756	12 55 10
12 56 00	=2224+006	23 02 51	37.3	191.1	0.6		6.6	50	11763	12 55 11

```
Schedule for TORUN     (Code Tr )                                Page  35
               e-EVN: eg082g, ey024a, ec054d
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Wed   3 Feb 2016   Day  34 ---

12 56 00  J2220+0025   23 02 51  36.7 193.0  0.7       7.8   -17    11763   No stop
12 58 20  ---          23 05 11  36.6 193.7  0.7       8.2   123    11781   12 56 01

12 59 00  J2226+0052   23 05 52  37.3 192.1  0.6       7.2    23    11781   12 59 00
13 00 00  =2224+006    23 06 52  37.2 192.4  0.7       7.4    60    11788   12 59 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: sess116.C1024e

   Setup group:    8         Station: TORUN            Total bit rate:  1024
   Format: MARK5B            Bits per sample: 2        Sample rate: 32.000
   Number of channels: 16    DBE type: DBBC_DDC        Speedup factor:   1.00

   Disk used to record data.
```

```
 1st LO=   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00
           4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00
 Net SB=         L         L         U         U         L         L         U         U
                 L         L         U         U         L         L         U         U
 IF SB =         U         U         U         U         U         U         U         U
                 U         U         U         U         U         U         U         U
 Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
               RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
 BBC   =         1         5         1         5         2         6         2         6
                 3         7         3         7         4         8         4         8
 BBC SB=         L         L         U         U         L         L         U         U
                 L         L         U         U         L         L         U         U
 IF    =        A1        B1        A1        B1        A1        B1        A1        B1
                A1        B1        A1        B1        A1        B1        A1        B1

The following frequency sets based on these setups were used.

 Frequency Set:   6  Setup file default.  Used with PCAL = off
 LO sum=   4942.49  4942.49  4942.49  4942.49  4974.49  4974.49  4974.49  4974.49
           5006.49  5006.49  5006.49  5006.49  5038.49  5038.49  5038.49  5038.49
 BBC fr=    742.49   742.49   742.49   742.49   774.49   774.49   774.49   774.49
            806.49   806.49   806.49   806.49   838.49   838.49   838.49   838.49
 Bandwd=     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
             16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
  Matching frequency sets:   6

 Track assignments are:
  track1=  18, 26,  2, 10, 20, 28,  4, 12, 22, 30,  6, 14, 24, 32,  8, 16
  barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* V998ORI	05 29 29.270336	* 05 32 14.463130	05 33 08.521710	0.00
	09 47 04.31611	* 09 49 11.38350	09 49 37.42518	0.00
* J0525+0951	05 22 04.199602	* 05 24 49.390800	05 25 43.423233	0.00
	09 49 24.65085	* 09 52 03.81800	09 52 40.31866	0.00
* V1396CYG	20 58 12.167060	* 21 00 06.211740	21 00 41.503368	0.00
	39 52 23.08541	* 40 04 08.97890	40 08 00.63605	0.00
* J2115+3742	21 12 44.469033	* 21 14 44.117900	21 15 21.278577	0.00
	37 29 56.03237	* 37 42 25.72400	37 46 31.57772	0.00
* V596CAS	01 55 57.083353	* 01 59 24.175430	02 00 31.598255	0.00
	58 16 40.28001	* 58 31 12.92590	58 36 01.18292	0.00
* J0151+5454	01 48 18.839204	* 01 51 36.288800	01 52 40.405710	0.00
	54 39 48.95530	* 54 54 37.68900	54 59 30.47828	0.00
* RYSEX	10 33 24.509887	* 10 36 00.495220	10 36 51.718777	0.00
	05 22 48.34435	* 05 07 14.86920	05 02 04.19846	0.00
* J1035+0522	10 32 21.484250	* 10 34 57.605900	10 35 48.873327	0.00
	05 38 04.61084	* 05 22 32.81500	05 17 22.59913	0.00

```
* PDS456            17 25 29.219414   * 17 28 19.792000     17 29 13.721576       0.00
                   -14 13 31.71638    *-14 15 55.91200     -14 16 32.17062        0.00

* J2220+0025        22 17 58.978317   * 22 20 32.608000     22 21 20.757943       0.00
                    00 10 29.12917    * 00 25 36.03000      00 30 26.93701        0.00

  0003+380          00 03 22.335502   * 00 05 57.175391     00 06 46.508612       0.03
* J0005+3820        38 03 33.40990    * 38 20 15.14897      38 25 42.27697        0.03
  J0005+38          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
                    GSFC 2015a astro solution, unpublished   1775 observations.

  0144+584          01 44 23.999659   * 01 47 46.540837     01 48 52.397621       0.16
* J0147+5840        58 25 48.56475    * 58 40 44.97092      58 45 41.32915        0.10
                    /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
                    GSFC 2015a astro solution, unpublished    370 observations.

* 0234+285          02 34 55.589590   * 02 37 52.405677     02 38 49.620622       0.00
  J0237+2848        28 35 11.40776    * 28 48 08.99001      28 52 16.07323        0.00
  J0237+28          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
                    GSFC 2015a astro solution, unpublished  54650 observations.

  0516+087          05 16 26.910746   * 05 19 10.811129     05 20 04.402888       0.09
* J0519+0848        08 45 53.30182    * 08 48 56.73464      08 49 40.86355        0.19
                    /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
                    GSFC 2015a astro solution, unpublished    144 observations.

* 0528+134          05 28 06.759216   * 05 30 56.416747     05 31 51.925699       0.21
  J0530+1331        13 29 42.28885    * 13 31 55.14952      13 32 24.01146        0.24
  J0530+13          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
                    GSFC 2015a astro solution, unpublished 135789 observations.

  1036+054          10 36 10.827221   * 10 38 46.779874     10 39 37.984220       0.05
* J1038+0512        05 28 06.89975    * 05 12 29.08668      05 07 17.12153        0.11
                    /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
                    GSFC 2015a astro solution, unpublished    310 observations.

* 1156+295          11 56 57.786211   * 11 59 31.833912     12 00 21.895508       0.00
  J1159+2914        29 31 25.73882    * 29 14 43.82692      29 09 09.35498        0.00
  J1159+29          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
                    GSFC 2015a astro solution, unpublished  69878 observations.

  1721-146          17 21 55.862162   * 17 24 46.966559     17 25 41.086358       0.10
* J1724-1443       -14 41 20.21319    *-14 43 59.76100     -14 44 40.79065        0.23
                    /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
                    GSFC 2015a astro solution, unpublished     90 observations.

* NRAO530           17 30 13.535189   * 17 33 02.705787     17 33 56.160987       0.01
  J1733-1304       -13 02 45.83964    *-13 04 49.54811     -13 05 19.60211        0.02
  1730-130          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
  J1733-13          GSFC 2015a astro solution, unpublished  17155 observations.

  2111+400          21 11 33.259951   * 21 13 29.486268     21 14 05.516793       0.38
* J2113+4012        40 00 25.23950    * 40 12 51.38801      40 16 56.30314        0.32
                    /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
                    GSFC 2015a astro solution, unpublished    120 observations.

  VR422201          22 00 39.362505   * 22 02 43.291372     22 03 21.971940       0.00
  J2202+4216        42 02 08.59077    * 42 16 39.97990      42 21 26.29454        0.00
* BLLAC             /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
  2200+420          GSFC 2015a astro solution, unpublished  51226 observations.
  J2202+42

  2224+006          22 24 13.105521   * 22 26 46.537022     22 27 34.646112       0.12
* J2226+0052        00 36 53.17056    * 00 52 11.33142      00 57 05.64096        0.31
```

```
                    /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
                    GSFC 2015a astro solution, unpublished    171 observations.

 * CTA102           22 30 07.803947   * 22 32 36.408905     22 33 23.095504       0.01
   J2232+1143       11 28 22.81075    * 11 43 50.90403      11 48 50.03402        0.02
   2230+114         /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
   J2232+11         GSFC 2015a astro solution, unpublished   4017 observations.

 * 3C454.3          22 51 29.519738   * 22 53 57.747938     22 54 44.427442       0.67
   J2253+1608       15 52 54.34810    * 16 08 53.56093      16 14 02.93895        0.70
   2251+158         /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
   J2253+16         GSFC 2015a astro solution, unpublished  40748 observations.


EFFECT OF SOLAR CORONA

  The solar corona can cause unstable phases for sources too close to the Sun.
  SCHED provides warnings at individual scans for distances less than 10 degrees.
  The distance from the Sun to each source in this schedule is:
    Source         Sun distance (deg)
   V998ORI            128.4
   J0525+0951         126.6
   V1396CYG            56.9
   J2115+3742          54.6
   V596CAS             96.3
   J0151+5454          93.9
   RYSEX              154.4
   J1035+0522         154.8
   PDS456              51.6
   J2220+0025          25.7
   J0005+3820          69.8
   J0147+5840          95.0
   0234+285            92.7
   J0519+0848         125.0
   0528+134           128.9
   J1038+0512         153.8
   1156+295           137.8
   J1724-1443          52.4
   NRAO530             50.7
   J2113+4012          57.1
   BLLAC               60.7
   J2226+0052          27.2
   CTA102              36.1
   3C454.3             42.8

  Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
  that the Sun will cause amplitude reductions on the  longest VLBA baselines
  at a solar distance of 60deg F^(-0.6) where F is in GHz.
  For common VLBI bands, this is:
       1.6 GHz         45. deg
       2.3 GHz         36. deg
       5.0 GHz         23. deg
       8.4 GHz         17. deg
      15.0 GHz         12. deg
      22.0 GHz          9. deg
```

te117tr

e-EVN: 2 Gbps test TE117

PI: *Arpad Szomoru*

```
Address:  JIVE EMAIL:    zparagi@jive.eu Phone during observation: +31 521 596 530
Observing mode: realtime e-vlbi

Schedule for TORUN     (Code Tr )                                   Page   2
               e-EVN: 2 Gbps test TE117
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------
 --- Wed   3 Feb 2016   Day  34 ---
 Next scan frequencies:  4958.49  4958.49  4958.49  4958.49  5022.49  5022.49  5022.49  5022.49
 Next BBC frequencies:    758.49   758.49   758.49   758.49   822.49   822.49   822.49   822.49
 Next scan bandwidths:     32.00    32.00    32.00    32.00    32.00    32.00    32.00    32.00

13 00 00  0234+285     23 06 52  44.6 100.7 -3.5     -42.4     0        0   13 00 00
13 15 00  ---          23 21 54  46.8 104.2 -3.3     -41.7   900      116   13 00 01

13 15 40  0234+285     23 22 34  46.9 104.3 -3.3     -41.6    34      116   13 15 40
13 30 00  ---          23 36 57  49.0 107.9 -3.0     -40.7   860      227   13 15 41

13 30 40  0234+285     23 37 37  49.1 108.0 -3.0     -40.7    34      227   13 30 40
13 45 00  ---          23 51 59  51.1 111.8 -2.8     -39.6   860      338   13 30 41

13 45 40  0234+285     23 52 39  51.2 112.0 -2.8     -39.5    34      338   13 45 40
14 00 00  ---          00 07 02  53.2 116.0 -2.5     -38.1   860      448   13 45 41

14 00 40  0234+285     00 07 42  53.3 116.2 -2.5     -38.0    34      448   14 00 40
14 15 00  ---          00 22 04  55.2 120.5 -2.3     -36.2   860      559   14 00 41

14 15 40  0234+285     00 22 44  55.3 120.7 -2.3     -36.1    34      559   14 15 40
14 30 00  ---          00 37 06  57.1 125.3 -2.0     -34.0   860      670   14 15 41

14 30 40  0234+285     00 37 47  57.2 125.5 -2.0     -33.9    34      670   14 30 40
14 45 00  ---          00 52 09  58.9 130.5 -1.8     -31.4   860      781   14 30 41

14 45 40  0234+285     00 52 49  58.9 130.8 -1.8     -31.3    34      781   14 45 40
15 00 00  ---          01 07 11  60.5 136.2 -1.5     -28.4   860      891   14 45 41

15 00 40  0234+285     01 07 52  60.6 136.4 -1.5     -28.2    33      891   15 00 40
15 15 00  ---          01 22 14  62.0 142.3 -1.3     -24.8   860     1002   15 00 41

15 15 40  0234+285     01 22 54  62.0 142.6 -1.3     -24.6    33     1002   15 15 40
15 30 00  ---          01 37 16  63.3 148.9 -1.0     -20.7   860     1113   15 15 41

15 30 40  0234+285     01 37 56  63.3 149.2 -1.0     -20.6    33     1113   15 30 40
15 45 00  ---          01 52 19  64.3 156.0 -0.8     -16.2   860     1224   15 30 41

15 45 40  0234+285     01 52 59  64.4 156.3 -0.8     -16.0    33     1224   15 45 40
16 00 00  ---          02 07 21  65.1 163.5 -0.5     -11.3   860     1335   15 45 41

16 00 40  0234+285     02 08 01  65.1 163.8 -0.5     -11.0    33     1335   16 00 40
16 15 00  ---          02 22 24  65.6 171.3 -0.3      -6.0   860     1445   16 00 41
```

```
Schedule for TORUN     (Code Tr )                                Page   3
               e-EVN: 2 Gbps test TE117
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------
 --- Wed   3 Feb 2016   Day  34 ---
16 15 40  0234+285     02 23 04  65.6 171.6 -0.3      -5.7    33     1445   16 15 40
16 30 00  ---          02 37 26  65.8 179.3 -0.0      -0.5   860     1556   16 15 41

16 30 40  0234+285     02 38 06  65.8 179.6 -0.0      -0.3    33     1556   16 30 40
16 45 00  ---          02 52 29  65.6 187.3  0.2       5.0   860     1667   16 30 41

16 45 40  0234+285     02 53 09  65.6 187.6  0.2       5.2    33     1667   16 45 40
17 00 00  ---          03 07 31  65.2 195.1  0.5      10.3   860     1778   16 45 41



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: sess116.C2048e

   Setup group:    7         Station: TORUN            Total bit rate:  1024
   Format: VDIF              Bits per sample: 2        Sample rate: 64.000
   Number of channels:  8    DBE type: DBBC_DDC        Speedup factor:   1.00

   Disk used to record data.
```

```
 1st LO=   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00
 Net SB=         L         L         U         U         L         L         U         U
 IF SB =         U         U         U         U         U         U         U         U
 Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
 BBC   =         1         5         1         5         3         7         3         7
 BBC SB=         L         L         U         U         L         L         U         U
 IF    =        A1        B1        A1        B1        A1        B1        A1        B1

 The following frequency sets based on these setups were used.

  Frequency Set:   7  Setup file default.  Used with PCAL = off
  LO sum=   4958.49  4958.49  4958.49  4958.49  5022.49  5022.49  5022.49  5022.49
  BBC fr=    758.49   758.49   758.49   758.49   822.49   822.49   822.49   822.49
  Bandwd=     32.00    32.00    32.00    32.00    32.00    32.00    32.00    32.00
   Matching frequency sets:   7

  Track assignments are:
   track1=   1,  2,  3,  4,  5,  6,  7,  8
   barrel=roll_off


POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* 0234+285          02 34 55.589590   * 02 37 52.405677     02 38 49.603523       0.00
  J0237+2848        28 35 11.40776    * 28 48 08.99001      28 52 16.00026        0.00
  J0237+28          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
                    GSFC 2015a astro solution, unpublished  54650 observations.


EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  0234+285            92.1

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12obtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/K-band, dual-pol

Schedule for TORUN     (Code Tr )                                  Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Thu   4 Feb 2016   Day  35 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

02 00 00  1253-055     12 09 00  30.2 166.2 -0.8      -8.3     0        0   02 00 00
02 14 30  ---          12 23 32  30.6 170.3 -0.6      -5.8   870       28   02 00 01

02 15 00  1253-055     12 24 02  30.6 170.5 -0.5      -5.7    24       28   02 15 00
02 29 30  ---          12 38 35  30.9 174.7 -0.3      -3.2   870       56   02 15 01

02 30 00  1253-055     12 39 05  30.9 174.8 -0.3      -3.1    24       56   02 30 00
02 44 30  ---          12 53 37  31.0 179.0 -0.1      -0.6   870       84   02 30 01

02 45 00  1253-055     12 54 07  31.0 179.2 -0.0      -0.5    24       84   02 45 00
03 00 00  ---          13 09 10  31.0 183.5  0.2       2.1   900      112   02 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    4         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4100.00   4100.00   4100.00   4100.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   1  Setup file default.  Used with PCAL = 1MHz
  LO sum=   4836.00  4836.00  4836.00  4836.00
  BBC fr=    736.00   736.00   736.00   736.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   1

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off



 POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 51.973537       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 22.37377        0.00
                    fake circumpolar target for a TS to look at

* 1253-055          12 53 35.831289   * 12 56 11.166557     12 57 01.823948       0.00
  J1256-0547       -05 31 07.99603    *-05 47 21.52489     -05 52 35.61127        0.00
  3C279             ./rk12ob_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 7924 observations, RA-AO3-04, RA-AO3-05



EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1253-055           119.3

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12octr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                   Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Thu   4 Feb 2016   Day  35 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

07 00 00  1219+044     17 09 49  14.2 257.6  4.8      36.0     0        0   07 00 00
07 14 30  ---          17 24 21  12.1 260.6  5.0      36.4   870       28   07 00 01

07 15 00  1219+044     17 24 52  12.0 260.7  5.0      36.5    24       28   07 15 00
07 29 30  ---          17 39 24   9.9 263.7  5.3      36.8   870       56   07 15 01

07 30 00  1219+044     17 39 54   9.8 263.8  5.3      36.8    24       56   07 30 00
07 44 30  ---          17 54 26   7.6 266.7  5.5      36.9   870       84   07 30 01

07 45 00  1219+044     17 54 56   7.5 266.8  5.5      37.0    24       84   07 45 00
08 00 00  ---          18 09 59   5.3 269.8  5.8      37.0   900      112   07 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    2         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
 1st LO=   4100.00   4100.00   4100.00   4100.00
 Net SB=         L         L         U         U
 IF SB =         U         U         U         U
 Pol.  =       RCP       LCP       RCP       LCP
 BBC   =         1         2         1         2
 BBC SB=         L         L         U         U
 IF    =         C         A         C         A

The following frequency sets based on these setups were used.

 Frequency Set:   2  Setup file default.  Used with PCAL = 1MHz
 LO sum=   4836.00  4836.00  4836.00  4836.00
 BBC fr=    736.00   736.00   736.00   736.00
 Bandwd=     16.00    16.00    16.00    16.00
  Matching frequency sets:   2

 Track assignments are:
  track1=   2, 18,  3, 19
  barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 52.014553       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 22.40846        0.00
                    fake circumpolar target for a TS to look at

* 1219+044          12 19 49.255032   * 12 22 22.549622     12 23 12.580201       0.00
  J1222+0413        04 29 53.60821    * 04 13 15.77600      04 07 49.11966        0.00
                    ./rk12oc_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 34610 observations, RA-AO3-04, RA-AO2-1


EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1219+044           130.9

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12oetr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: L-band, dual-pol

Schedule for TORUN     (Code Tr )                                   Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Fri   5 Feb 2016   Day  36 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

00 00 00  0316+413     10 12 37  25.5 -53.9  6.9      40.4     0        0   00 00 00
00 14 30  ---          10 27 09  23.7 -51.6  7.1      39.0   870       28   00 00 01

00 15 00  0316+413     10 27 39  23.7 -51.5  7.1      38.9    24       28   00 15 00
00 29 30  ---          10 42 12  22.0 -49.2  7.4      37.4   870       56   00 15 01

00 30 00  0316+413     10 42 42  21.9 -49.1  7.4      37.3    24       56   00 30 00
00 44 30  ---          10 57 14  20.3 -46.7  7.6      35.8   870       84   00 30 01

00 45 00  0316+413     10 57 44  20.3 -46.7  7.6      35.7    24       84   00 45 00
01 00 00  ---          11 12 47  18.7 -44.2  7.9      34.0   900      112   00 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    1         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   2400.00   2400.00   2400.00   2400.00
  Net SB=         L         L         U         U
  IF SB =         L         L         L         L
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         U         U         L         L
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   1  Setup file default.  Used with PCAL = 1MHz
  LO sum=   1668.00  1668.00  1668.00  1668.00
  BBC fr=    732.00   732.00   732.00   732.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   1

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

```
  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 52.156784       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 22.52600        0.00
                    fake circumpolar target for a TS to look at

* 0316+413          03 16 29.567283   * 03 19 48.160114     03 20 52.802829       0.00
  J0319+4130        41 19 51.91847    * 41 30 42.10559      41 34 10.51042        0.00
  3C84              ./rk12oe_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 15448 observations, RA-AO3-04, RA-AO2-1
```

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  0316+413           102.2

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12oftr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: L-band, dual-pol

Schedule for TORUN     (Code Tr )                                   Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Fri   5 Feb 2016   Day  36 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

03 00 00  1402+044     13 13 06  39.9 162.8 -0.9     -10.3     0        0   03 00 00
03 14 30  ---          13 27 39  40.5 167.4 -0.6      -7.5   870       28   03 00 01

03 15 00  1402+044     13 28 09  40.5 167.6 -0.6      -7.4    24       28   03 15 00
03 29 30  ---          13 42 41  40.9 172.4 -0.4      -4.6   870       56   03 15 01

03 30 00  1402+044     13 43 11  40.9 172.5 -0.4      -4.5    24       56   03 30 00
03 44 30  ---          13 57 44  41.1 177.3 -0.1      -1.6   870       84   03 30 01

03 45 00  1402+044     13 58 14  41.1 177.5 -0.1      -1.5    24       84   03 45 00
04 00 00  ---          14 13 16  41.1 182.5  0.1       1.5   900      112   03 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    3         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
 1st LO=   2400.00   2400.00   2400.00   2400.00
 Net SB=         L         L         U         U
 IF SB =         L         L         L         L
 Pol.  =       RCP       LCP       RCP       LCP
 BBC   =         1         2         1         2
 BBC SB=         U         U         L         L
 IF    =         C         A         C         A

The following frequency sets based on these setups were used.

 Frequency Set:   2  Setup file default.  Used with PCAL = 1MHz
 LO sum=   1668.00  1668.00  1668.00  1668.00
 BBC fr=    732.00   732.00   732.00   732.00
 Bandwd=     16.00    16.00    16.00    16.00
  Matching frequency sets:   2

 Track assignments are:
  track1=   2, 18,  3, 19
  barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 52.182355       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 22.54679        0.00
                    fake circumpolar target for a TS to look at

* 1402+044          14 02 29.977464   * 14 05 01.119814     14 05 49.971242       0.00
  J1405+0415        04 29 55.30133    * 04 15 35.81874      04 10 58.14558        0.00
                    ./rk12of_sources.radioastron
                    AGN, HIGHz, BAL QSO, rfc_2013d Petrov, 2013, unpublished 1370 observations, RA-A


EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1402+044           107.2

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12ogtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*

```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865

Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                   Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Fri   5 Feb 2016   Day  36 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

11 00 00  1514+197     21 14 25  15.9 -78.6  5.9      38.6     0        0   11 00 00
11 14 30  ---          21 28 57  13.8 -75.9  6.2      38.1   870       28   11 00 01

11 15 00  1514+197     21 29 28  13.7 -75.8  6.2      38.1    24       28   11 15 00
11 29 30  ---          21 44 00  11.6 -73.0  6.4      37.5   870       56   11 15 01

11 30 00  1514+197     21 44 30  11.6 -72.9  6.4      37.5    24       56   11 30 00
11 44 30  ---          21 59 02   9.5 -70.1  6.7      36.8   870       84   11 30 01

11 45 00  1514+197     21 59 32   9.4 -70.0  6.7      36.8    24       84   11 45 00
12 00 00  ---          22 14 35   7.3 -67.1  6.9      35.9   900      112   11 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    4         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   2400.00   2400.00   2400.00   2400.00
  Net SB=         L         L         U         U
  IF SB =         L         L         L         L
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         U         U         L         L
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   1  Setup file default.  Used with PCAL = 1MHz
  LO sum=   1668.00  1668.00  1668.00  1668.00
  BBC fr=    732.00   732.00   732.00   732.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   1

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off



 POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 52.251257       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 22.60246        0.00
                    fake circumpolar target for a TS to look at

* 1514+197          15 14 40.985841   * 15 16 56.796164     15 17 40.182327       0.00
  J1516+1932        19 43 10.94234    * 19 32 12.99191      19 28 37.79696        0.00
                    ./rk12og_sources.radioastron
                    AGN, MASIV, rfc_2013d Petrov, 2013, unpublished 2439 observations, RA-AO3-04, RA



EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1514+197            94.5

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12ohtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Fri   5 Feb 2016   Day  36 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

20 00 00  0403-132     06 15 54  18.2 213.3  2.2      19.8     0        0   20 00 00
20 14 30  ---          06 30 26  17.0 216.8  2.4      21.7   870       28   20 00 01

20 15 00  0403-132     06 30 56  16.9 216.9  2.4      21.7    24       28   20 15 00
20 29 30  ---          06 45 29  15.6 220.3  2.7      23.5   870       56   20 15 01

20 30 00  0403-132     06 45 59  15.5 220.4  2.7      23.6    24       56   20 30 00
20 44 30  ---          07 00 31  14.0 223.8  2.9      25.2   870       84   20 30 01

20 45 00  0403-132     07 01 01  14.0 223.9  2.9      25.3    24       84   20 45 00
21 00 00  ---          07 16 04  12.4 227.3  3.2      26.9   900      112   20 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    6         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
 1st LO=   2400.00   2400.00   2400.00   2400.00
 Net SB=         L         L         U         U
 IF SB =         L         L         L         L
 Pol.  =       RCP       LCP       RCP       LCP
 BBC   =         1         2         1         2
 BBC SB=         U         U         L         L
 IF    =         C         A         C         A

The following frequency sets based on these setups were used.

 Frequency Set:   3  Setup file default.  Used with PCAL = 1MHz
 LO sum=   1668.00  1668.00  1668.00  1668.00
 BBC fr=    732.00   732.00   732.00   732.00
 Bandwd=     16.00    16.00    16.00    16.00
  Matching frequency sets:   3

 Track assignments are:
  track1=   2, 18,  3, 19
  barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 52.329997       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 22.66580        0.00
                    fake circumpolar target for a TS to look at

* 0403-132          04 03 13.979060   * 04 05 34.003395     04 06 19.422865       0.00
  J0405-1308       -13 16 18.08449    *-13 08 13.69083     -13 05 58.02801        0.00
                    ./rk12oh_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 1366 observations, RA-AO3-04, RA-AO2-12


EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  0403-132            98.2

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12oitr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/K-band, dual-pol

Schedule for TORUN     (Code Tr )                                  Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Fri   5 Feb 2016   Day  36 ---

 ---------- K-band VLBI scans ----------

 Next scan frequencies:  22236.00  22236.00  22236.00  22236.00
 Next BBC frequencies:     736.00    736.00    736.00    736.00
 Next scan bandwidths:      16.00     16.00     16.00     16.00

23 10 00  0333+321     09 26 25  26.9 -71.1  5.8      42.3     0        0   23 10 00
23 22 00  ---          09 38 27  25.2 -69.0  6.0      41.6   720       23   23 10 01

23 22 30  0333+321     09 38 57  25.1 -68.9  6.0      41.6    24       23   23 22 30
23 34 30  ---          09 50 59  23.5 -66.8  6.2      40.8   720       46   23 22 31

23 35 00  0333+321     09 51 29  23.4 -66.7  6.2      40.8    24       46   23 35 00
23 47 00  ---          10 03 31  21.8 -64.6  6.4      40.0   720       69   23 35 01

23 47 30  0333+321     10 04 01  21.7 -64.5  6.4      39.9    24       69   23 47 30
23 59 59  ---          10 16 33  20.0 -62.4  6.7      39.0   749       93   23 47 31



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra1cm2.set
   Matching groups in ./rk12oi_freq.dat:
     tr1cm

   Setup group:    5         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=  21500.00  21500.00  21500.00  21500.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   2  Setup file default.  Used with PCAL = 1MHz
  LO sum=   22236.00  22236.00  22236.00  22236.00
  BBC fr=     736.00    736.00    736.00    736.00
  Bandwd=      16.00     16.00     16.00     16.00
   Matching frequency sets:   2

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

```
  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 52.357631       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 22.68804        0.00
                    fake circumpolar target for a TS to look at

* 0333+321          03 33 22.404692   * 03 36 30.107611     03 37 31.138164       0.00
  J0336+3218        32 08 36.66043    * 32 18 29.34220      32 21 35.59520        0.00
  NRAO140           ./rk12oi_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 3693 observations, RA-AO3-04, RA-AO2-12
```

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  0333+321           102.8

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12ojtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Sat   6 Feb 2016   Day  37 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

02 20 00  0300+470     12 36 56  15.2 -25.0  9.5      22.0     0        0   02 20 00
02 39 30  ---          12 56 29  14.1 -21.8  9.9      19.2  1170       37   02 20 01

02 40 00  0300+470     12 56 59  14.0 -21.7  9.9      19.1    24       37   02 40 00
03 00 00  ---          13 17 03  13.0 -18.4 10.2      16.2  1200       76   02 40 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    4         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
 1st LO=   2400.00   2400.00   2400.00   2400.00
 Net SB=         L         L         U         U
 IF SB =         L         L         L         L
 Pol.  =       RCP       LCP       RCP       LCP
 BBC   =         1         2         1         2
 BBC SB=         U         U         L         L
 IF    =         C         A         C         A

The following frequency sets based on these setups were used.

 Frequency Set:   3  Setup file default.  Used with PCAL = 1MHz
 LO sum=   1668.00  1668.00  1668.00  1668.00
 BBC fr=    732.00   732.00   732.00   732.00
 Bandwd=     16.00    16.00    16.00    16.00
  Matching frequency sets:   3

 Track assignments are:
  track1=   2, 18,  3, 19
  barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 52.386897       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 22.71162        0.00
                    fake circumpolar target for a TS to look at

* 0300+470          03 00 10.111206   * 03 03 35.242224     03 04 42.024849       0.00
  J0303+4716        47 04 33.67712    * 47 16 16.27546      47 20 03.99070        0.00
                    ./rk12oj_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 26473 observations, RA-AO3-04, RA-AO2-1


EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  0300+470            99.6

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12oktr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                  Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Sat   6 Feb 2016   Day  37 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

05 20 00  1319-093     15 37 26  21.0 215.6  2.2      20.8     0        0   05 20 00
05 39 30  ---          15 56 59  19.2 220.4  2.6      23.3  1170       37   05 20 01

05 40 00  1319-093     15 57 29  19.2 220.5  2.6      23.3    24       37   05 40 00
06 00 00  ---          16 17 32  17.1 225.2  2.9      25.6  1200       76   05 40 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    8         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   2400.00   2400.00   2400.00   2400.00
  Net SB=         L         L         U         U
  IF SB =         L         L         L         L
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         U         U         L         L
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   5  Setup file default.  Used with PCAL = 1MHz
  LO sum=   1668.00  1668.00  1668.00  1668.00
  BBC fr=    732.00   732.00   732.00   732.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   5

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

```
  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 52.413704       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 22.73329        0.00
                    fake circumpolar target for a TS to look at

* 1319-093          13 19 59.261855   * 13 22 36.912643     13 23 28.303729       0.00
  J1322-0937       -09 21 58.03930    *-09 37 37.79977     -09 42 38.78296        0.00
                    ./rk12ok_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 64 observations, RA-AO3-04, RA-AO2-12
```

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1319-093           113.9

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12ontr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/K-band, dual-pol

Schedule for TORUN     (Code Tr )                                  Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Sun   7 Feb 2016   Day  38 ---

 ---------- K-band VLBI scans ----------

 Next scan frequencies:  22236.00  22236.00  22236.00  22236.00
 Next BBC frequencies:     736.00    736.00    736.00    736.00
 Next scan bandwidths:      16.00     16.00     16.00     16.00

22 00 00  0333+321     08 24 07  36.0 277.7  4.8      44.8     0        0   22 00 00
22 14 30  ---          08 38 39  33.8 280.4  5.0      44.4   870       28   22 00 01

22 15 00  0333+321     08 39 09  33.8 280.5  5.0      44.3    24       28   22 15 00
22 29 30  ---          08 53 41  31.6 283.1  5.3      43.8   870       56   22 15 01

22 30 00  0333+321     08 54 12  31.6 283.2  5.3      43.8    24       56   22 30 00
22 44 30  ---          09 08 44  29.4 285.8  5.5      43.2   870       84   22 30 01

22 45 00  0333+321     09 09 14  29.4 285.9  5.5      43.1    24       84   22 45 00
23 00 00  ---          09 24 16  27.2 288.5  5.8      42.4   900      112   22 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra1cm2.set
   Matching groups in ./rk12on_freq.dat:
     tr1cm

   Setup group:    8         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=  21500.00  21500.00  21500.00  21500.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   5  Setup file default.  Used with PCAL = 1MHz
  LO sum=   22236.00  22236.00  22236.00  22236.00
  BBC fr=     736.00    736.00    736.00    736.00
  Bandwd=      16.00     16.00     16.00     16.00
   Matching frequency sets:   5

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off
```

```
 POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 52.784918       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 23.04940        0.00
                    fake circumpolar target for a TS to look at

* 0333+321          03 33 22.404692   * 03 36 30.107611     03 37 31.108491       0.00
  J0336+3218        32 08 36.66043    * 32 18 29.34220      32 21 35.62423        0.00
  NRAO140           ./rk12on_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 3693 observations, RA-AO3-04, RA-AO2-12
```

```
EFFECT OF SOLAR CORONA

  The solar corona can cause unstable phases for sources too close to the Sun.
  SCHED provides warnings at individual scans for distances less than 10 degrees.
  The distance from the Sun to each source in this schedule is:
    Source         Sun distance (deg)
   0333+321           100.9

  Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
  that the Sun will cause amplitude reductions on the  longest VLBA baselines
  at a solar distance of 60deg F^(-0.6) where F is in GHz.
  For common VLBI bands, this is:
       1.6 GHz         45. deg
       2.3 GHz         36. deg
       5.0 GHz         23. deg
       8.4 GHz         17. deg
      15.0 GHz         12. deg
      22.0 GHz          9. deg
```

rk12ootr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                   Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Mon   8 Feb 2016   Day  39 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

01 00 00  1402+044     11 24 36  31.0 131.2 -2.7     -26.9     0        0   01 00 00
01 14 30  ---          11 39 09  32.6 135.0 -2.4     -25.2   870       28   01 00 01

01 15 00  1402+044     11 39 39  32.6 135.1 -2.4     -25.1    24       28   01 15 00
01 29 30  ---          11 54 11  34.1 139.1 -2.2     -23.2   870       56   01 15 01

01 30 00  1402+044     11 54 41  34.2 139.2 -2.2     -23.1    24       56   01 30 00
01 44 30  ---          12 09 13  35.5 143.3 -1.9     -21.1   870       84   01 30 01

01 45 00  1402+044     12 09 44  35.6 143.5 -1.9     -21.0    24       84   01 45 00
02 00 00  ---          12 24 46  36.9 147.9 -1.7     -18.7   900      112   01 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:   10         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   2400.00   2400.00   2400.00   2400.00
  Net SB=         L         L         U         U
  IF SB =         L         L         L         L
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         U         U         L         L
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   6  Setup file default.  Used with PCAL = 1MHz
  LO sum=   1668.00  1668.00  1668.00  1668.00
  BBC fr=    732.00   732.00   732.00   732.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   6

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off



 POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                       (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 52.812572       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 23.07497        0.00
                    fake circumpolar target for a TS to look at

* 1402+044          14 02 29.977464   * 14 05 01.119814     14 05 50.069742       0.00
  J1405+0415        04 29 55.30133    * 04 15 35.81874      04 10 57.62858        0.00
                    ./rk12oo_sources.radioastron
                    AGN, HIGHz, BAL QSO, rfc_2013d Petrov, 2013, unpublished 1370 observations, RA-A



EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1402+044           110.1

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12oqtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Mon   8 Feb 2016   Day  39 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

22 00 00  0300+470     08 28 03  40.8 -62.0  5.4      51.5     0        0   22 00 00
22 14 30  ---          08 42 36  38.8 -60.0  5.6      50.1   870       28   22 00 01

22 15 00  0300+470     08 43 06  38.8 -59.9  5.6      50.1    24       28   22 15 00
22 29 30  ---          08 57 38  36.9 -57.9  5.9      48.6   870       56   22 15 01

22 30 00  0300+470     08 58 08  36.8 -57.8  5.9      48.6    24       56   22 30 00
22 44 30  ---          09 12 40  35.0 -55.8  6.1      47.1   870       84   22 30 01

22 45 00  0300+470     09 13 11  35.0 -55.7  6.1      47.1    24       84   22 45 00
23 00 00  ---          09 28 13  33.1 -53.6  6.4      45.5   900      112   22 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    7         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
 1st LO=   2400.00   2400.00   2400.00   2400.00
 Net SB=         L         L         U         U
 IF SB =         L         L         L         L
 Pol.  =       RCP       LCP       RCP       LCP
 BBC   =         1         2         1         2
 BBC SB=         U         U         L         L
 IF    =         C         A         C         A

The following frequency sets based on these setups were used.

 Frequency Set:   6  Setup file default.  Used with PCAL = 1MHz
 LO sum=   1668.00  1668.00  1668.00  1668.00
 BBC fr=    732.00   732.00   732.00   732.00
 Bandwd=     16.00    16.00    16.00    16.00
  Matching frequency sets:   6

 Track assignments are:
  track1=   2, 18,  3, 19
  barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 53.004072       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 23.26422        0.00
                    fake circumpolar target for a TS to look at

* 0300+470          03 00 10.111206   * 03 03 35.242224     03 04 41.957248       0.00
  J0303+4716        47 04 33.67712    * 47 16 16.27546      47 20 03.98756        0.00
                    ./rk12oq_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 26473 observations, RA-AO3-04, RA-AO2-1


EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  0300+470            97.1

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12ortr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                   Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Tue   9 Feb 2016   Day  40 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

02 00 00  1319-093     12 28 43  26.1 164.9 -0.9      -9.1     0        0   02 00 00
02 14 30  ---          12 43 15  26.6 168.9 -0.7      -6.7   870       28   02 00 01

02 15 00  1319-093     12 43 45  26.6 169.0 -0.7      -6.7    24       28   02 15 00
02 29 30  ---          12 58 17  27.0 173.0 -0.4      -4.2   870       56   02 15 01

02 30 00  1319-093     12 58 48  27.0 173.2 -0.4      -4.2    24       56   02 30 00
02 44 30  ---          13 13 20  27.2 177.2 -0.2      -1.7   870       84   02 30 01

02 45 00  1319-093     13 13 50  27.2 177.3 -0.2      -1.6    24       84   02 45 00
03 00 00  ---          13 28 52  27.2 181.5  0.1       0.9   900      112   02 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    9         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   2400.00   2400.00   2400.00   2400.00
  Net SB=         L         L         U         U
  IF SB =         L         L         L         L
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         U         U         L         L
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   6  Setup file default.  Used with PCAL = 1MHz
  LO sum=   1668.00  1668.00  1668.00  1668.00
  BBC fr=    732.00   732.00   732.00   732.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   6

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off



 POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 53.039855       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 23.30234        0.00
                    fake circumpolar target for a TS to look at

* 1319-093          13 19 59.261855   * 13 22 36.912643     13 23 28.388849       0.00
  J1322-0937       -09 21 58.03930    *-09 37 37.79977     -09 42 39.36093        0.00
                    ./rk12or_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 64 observations, RA-AO3-04, RA-AO2-12



EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1319-093           116.9

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

i6040tr

MC-NT-TR-YS C-band transient test DOY 16040

PI: *Marcello Giroletti*

```
Address:  INAF, EMAIL:    giroletti@ira.inaf.it
Observing mode: 1024-16-2

Schedule for TORUN     (Code Tr )                                  Page   2
               MC-NT-TR-YS C-band transient test DOY 16040
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source                Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------
 --- Tue   9 Feb 2016   Day  40 ---
 Next scan frequencies:  4942.49  4942.49  4942.49  4942.49  4974.49  4974.49  4974.49  4974.49
                         5006.49  5006.49  5006.49  5006.49  5038.49  5038.49  5038.49  5038.49
 Next BBC frequencies:    742.49   742.49   742.49   742.49   774.49   774.49   774.49   774.49
                          806.49   806.49   806.49   806.49   838.49   838.49   838.49   838.49
 Next scan bandwidths:     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
                           16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00

15 00 00  J2007+4029   01 30 51  36.4 -68.8  5.4      47.4     0        0   15 00 00
15 02 00  =2005+403    01 32 51  36.2 -68.4  5.4      47.3   120       15   15 00 01

15 03 00  CYGX3        01 33 51  39.8 -71.8  5.0      49.1    32       15   15 03 00
15 08 00  ---          01 38 52  39.1 -71.0  5.1      48.8   300       54   15 03 01

15 09 00  J2007+4029   01 39 52  35.2 -67.3  5.5      46.8    32       54   15 09 00
15 11 00  =2005+403    01 41 53  34.9 -67.0  5.6      46.7   120       69   15 09 01

15 12 00  CYGX3        01 42 53  38.5 -70.3  5.2      48.5    32       69   15 12 00
15 17 00  ---          01 47 54  37.8 -69.5  5.2      48.2   300      108   15 12 01

15 18 00  J2007+4029   01 48 54  33.9 -65.9  5.7      46.2    32      108   15 18 00
15 20 00  =2005+403    01 50 54  33.7 -65.6  5.7      46.0   120      123   15 18 01

15 21 00  CYGX3        01 51 54  37.3 -68.9  5.3      47.9    32      123   15 21 00
15 26 00  ---          01 56 55  36.6 -68.1  5.4      47.6   300      162   15 21 01

15 27 00  J2007+4029   01 57 55  32.7 -64.5  5.8      45.5    32      162   15 27 00
15 29 00  =2005+403    01 59 55  32.4 -64.1  5.9      45.3   120      177   15 27 01

15 30 00  CYGX3        02 00 56  36.0 -67.5  5.5      47.3    32      177   15 30 00
15 35 00  ---          02 05 56  35.3 -66.7  5.5      47.0   300      215   15 30 01

15 36 00  J2007+4029   02 06 57  31.5 -63.0  6.0      44.8    32      215   15 36 00
15 38 00  =2005+403    02 08 57  31.2 -62.7  6.0      44.6   120      231   15 36 01

15 39 00  CYGX3        02 09 57  34.8 -66.0  5.6      46.7    33      231   15 39 00
15 44 00  ---          02 14 58  34.1 -65.3  5.7      46.3   300      269   15 39 01

15 45 00  J2007+4029   02 15 58  30.3 -61.6  6.1      44.0    32      269   15 45 00
15 47 00  =2005+403    02 17 58  30.0 -61.3  6.2      43.9   120      285   15 45 01

15 48 00  CYGX3        02 18 59  33.5 -64.6  5.8      46.0    33      285   15 48 00
15 53 00  ---          02 23 59  32.9 -63.8  5.9      45.6   300      323   15 48 01
```

Schedule for TORUN (Code Tr) Page 3

MC-NT-TR-YS C-band transient test DOY 16040

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 9 Feb 2016 Day 40 ---										
15 54 00	J2007+4029	02 25 00	29.1	-60.2	6.3		43.3	32	323	15 54 00
15 56 00	=2005+403	02 27 00	28.9	-59.9	6.3		43.1	120	338	15 54 01
15 57 00	CYGX3	02 28 00	32.3	-63.2	5.9		45.3	33	338	15 57 00
16 02 00	---	02 33 01	31.6	-62.4	6.0		44.9	300	377	15 57 01
16 03 00	J2007+4029	02 34 01	27.9	-58.7	6.4		42.5	33	377	16 03 00
16 05 00	=2005+403	02 36 01	27.7	-58.4	6.5		42.3	120	392	16 03 01
16 10 30	J0555+3948	02 41 32	54.7	92.0	-3.3		-51.4	14	392	16 10 30
16 15 30	=0552+398	02 46 33	55.4	93.1	-3.2		-51.3	300	431	16 10 31
16 18 00	J0504-0744	02 49 04	22.7	143.0	-2.3		-21.4	13	431	16 18 00
16 20 00	=0502-078	02 51 04	22.8	143.5	-2.2		-21.1	120	446	16 18 01
16 20 30	J0514-0733	02 51 34	22.2	141.1	-2.4		-22.4	11	446	16 20 30
16 22 30	=0512-076	02 53 34	22.3	141.6	-2.4		-22.1	120	462	16 20 31
16 23 00	GRB160131A	02 54 04	23.0	142.0	-2.3		-21.9	16	462	16 23 00
16 28 00	---	02 59 05	23.5	143.2	-2.2		-21.2	300	500	16 23 01
16 28 30	J0514-0733	02 59 35	22.9	143.1	-2.3		-21.3	16	500	16 28 30
16 30 30	=0512-076	03 01 36	23.1	143.6	-2.2		-21.1	120	515	16 28 31
16 31 00	GRB160131A	03 02 06	23.8	144.0	-2.2		-20.8	16	515	16 31 00
16 36 00	---	03 07 06	24.2	145.3	-2.1		-20.2	300	554	16 31 01
16 36 30	J0514-0733	03 07 37	23.6	145.1	-2.1		-20.3	16	554	16 36 30
16 38 30	=0512-076	03 09 37	23.8	145.6	-2.1		-20.0	120	569	16 36 31
16 39 00	GRB160131A	03 10 07	24.4	146.0	-2.1		-19.8	16	569	16 39 00
16 44 00	---	03 15 08	24.9	147.3	-2.0		-19.1	300	608	16 39 01
16 44 30	J0514-0733	03 15 38	24.3	147.2	-2.0		-19.2	16	608	16 44 30
16 46 30	=0512-076	03 17 38	24.4	147.7	-2.0		-18.9	120	623	16 44 31
16 47 00	GRB160131A	03 18 08	25.1	148.1	-1.9		-18.6	16	623	16 47 00
16 52 00	---	03 23 09	25.5	149.4	-1.8		-17.9	300	662	16 47 01
16 52 30	J0514-0733	03 23 39	24.9	149.2	-1.9		-18.1	16	662	16 52 30
16 54 30	=0512-076	03 25 40	25.1	149.8	-1.8		-17.8	120	677	16 52 31
16 55 00	GRB160131A	03 26 10	25.7	150.2	-1.8		-17.5	16	677	16 55 00
17 00 00	---	03 31 10	26.1	151.5	-1.7		-16.8	300	715	16 55 01
17 00 30	J0514-0733	03 31 41	25.5	151.3	-1.7		-16.9	16	715	17 00 30
17 02 30	=0512-076	03 33 41	25.6	151.9	-1.7		-16.6	120	731	17 00 31

Schedule for TORUN (Code Tr) Page 4

MC-NT-TR-YS C-band transient test DOY 16040

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 9 Feb 2016 Day 40 ---										
17 03 00	GRB160131A	03 34 11	26.3	152.3	-1.7		-16.3	16	731	17 03 00
17 08 00	---	03 39 12	26.6	153.6	-1.6		-15.6	300	769	17 03 01
17 08 30	J0514-0733	03 39 42	26.1	153.4	-1.6		-15.7	16	769	17 08 30
17 10 30	=0512-076	03 41 42	26.2	154.0	-1.6		-15.4	120	785	17 08 31
17 11 00	GRB160131A	03 42 12	26.8	154.5	-1.5		-15.1	16	785	17 11 00
17 16 00	---	03 47 13	27.1	155.8	-1.4		-14.4	300	823	17 11 01
17 16 30	J0514-0733	03 47 43	26.6	155.6	-1.5		-14.5	16	823	17 16 30
17 18 30	=0512-076	03 49 43	26.7	156.1	-1.4		-14.2	120	838	17 16 31
17 19 00	J0504-0744	03 50 14	27.1	159.0	-1.3		-12.5	10	838	17 19 00
17 21 00	=0502-078	03 52 14	27.2	159.5	-1.2		-12.2	120	854	17 19 01
17 21 30	J0514-0733	03 52 44	26.9	156.9	-1.4		-13.7	10	854	17 21 30
17 23 30	=0512-076	03 54 44	27.0	157.5	-1.3		-13.4	120	869	17 21 31
17 24 00	GRB160131A	03 55 14	27.6	158.0	-1.3		-13.1	16	869	17 24 00
17 29 00	---	04 00 15	27.9	159.4	-1.2		-12.3	300	908	17 24 01
17 29 30	J0514-0733	04 00 45	27.3	159.1	-1.2		-12.5	16	908	17 29 30
17 31 30	=0512-076	04 02 46	27.4	159.7	-1.2		-12.2	120	923	17 29 31
17 32 00	GRB160131A	04 03 16	28.1	160.2	-1.2		-11.8	16	923	17 32 00
17 37 00	---	04 08 17	28.3	161.6	-1.1		-11.0	300	962	17 32 01
17 37 30	J0514-0733	04 08 47	27.7	161.3	-1.1		-11.2	16	962	17 37 30
17 39 30	=0512-076	04 10 47	27.8	161.9	-1.1		-10.9	120	977	17 37 31
17 40 00	GRB160131A	04 11 17	28.4	162.4	-1.0		-10.5	16	977	17 40 00
17 45 00	---	04 16 18	28.7	163.8	-1.0		-9.7	300	1015	17 40 01
17 45 30	J0514-0733	04 16 48	28.1	163.5	-1.0		-9.9	16	1015	17 45 30
17 47 30	=0512-076	04 18 48	28.2	164.1	-0.9		-9.6	120	1031	17 45 31
17 48 00	GRB160131A	04 19 18	28.8	164.6	-0.9		-9.2	16	1031	17 48 00
17 53 00	---	04 24 19	29.0	166.0	-0.8		-8.4	300	1069	17 48 01
17 53 30	J0514-0733	04 24 49	28.4	165.7	-0.8		-8.6	16	1069	17 53 30
17 55 30	=0512-076	04 26 50	28.5	166.3	-0.8		-8.2	120	1085	17 53 31
17 56 00	GRB160131A	04 27 20	29.1	166.9	-0.8		-7.9	16	1085	17 56 00
18 01 00	---	04 32 20	29.2	168.3	-0.7		-7.1	300	1123	17 56 01

Schedule for TORUN (Code Tr) Page 5

MC-NT-TR-YS C-band transient test DOY 16040

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 9 Feb 2016 Day 40 ---										
18 01 30	J0514-0733	04 32 51	28.7	168.0	-0.7		-7.2	16	1123	18 01 30
18 03 30	=0512-076	04 34 51	28.8	168.6	-0.7		-6.9	120	1138	18 01 31
18 04 00	GRB160131A	04 35 21	29.3	169.1	-0.6		-6.5	16	1138	18 04 00
18 09 00	---	04 40 22	29.5	170.6	-0.6		-5.7	300	1177	18 04 01
18 09 30	J0514-0733	04 40 52	28.9	170.2	-0.6		-5.9	16	1177	18 09 30
18 11 30	=0512-076	04 42 52	29.0	170.8	-0.5		-5.6	120	1192	18 09 31
18 12 00	GRB160131A	04 43 22	29.5	171.4	-0.5		-5.2	16	1192	18 12 00
18 17 00	---	04 48 23	29.6	172.8	-0.4		-4.3	300	1231	18 12 01
18 17 30	J0514-0733	04 48 53	29.1	172.5	-0.4		-4.5	17	1231	18 17 30
18 19 30	=0512-076	04 50 53	29.1	173.1	-0.4		-4.2	120	1246	18 17 31
18 20 00	J0504-0744	04 51 24	29.1	176.0	-0.2		-2.4	10	1246	18 20 00
18 22 00	=0502-078	04 53 24	29.1	176.6	-0.2		-2.1	120	1262	18 20 01
18 22 30	J0514-0733	04 53 54	29.2	173.9	-0.4		-3.7	10	1262	18 22 30
18 24 30	=0512-076	04 55 54	29.2	174.5	-0.3		-3.3	120	1277	18 22 31
18 25 00	GRB160131A	04 56 24	29.8	175.1	-0.3		-2.9	17	1277	18 25 00
18 30 00	---	05 01 25	29.8	176.6	-0.2		-2.1	300	1315	18 25 01
18 30 30	J0514-0733	05 01 55	29.3	176.2	-0.2		-2.3	17	1315	18 30 30
18 32 30	=0512-076	05 03 56	29.3	176.8	-0.2		-2.0	120	1331	18 30 31
18 33 00	GRB160131A	05 04 26	29.8	177.4	-0.2		-1.6	17	1331	18 33 00
18 38 00	---	05 09 27	29.9	178.8	-0.1		-0.7	300	1369	18 33 01
18 38 30	J0514-0733	05 09 57	29.4	178.5	-0.1		-0.9	17	1369	18 38 30
18 40 30	=0512-076	05 11 57	29.4	179.1	-0.1		-0.6	120	1385	18 38 31
18 41 00	GRB160131A	05 12 27	29.9	179.7	0.0		-0.2	17	1385	18 41 00
18 46 00	---	05 17 28	29.9	181.1	0.1		0.7	300	1423	18 41 01
18 46 30	J0514-0733	05 17 58	29.4	180.8	0.0		0.5	17	1423	18 46 30
18 48 30	=0512-076	05 19 58	29.4	181.3	0.1		0.8	120	1438	18 46 31
18 49 00	GRB160131A	05 20 28	29.8	182.0	0.1		1.2	17	1438	18 49 00
18 54 00	---	05 25 29	29.8	183.4	0.2		2.1	300	1477	18 49 01
18 54 30	J0514-0733	05 25 59	29.3	183.0	0.2		1.8	17	1477	18 54 30
18 56 30	=0512-076	05 28 00	29.3	183.6	0.2		2.2	120	1492	18 54 31

Schedule for TORUN (Code Tr) Page 6

MC-NT-TR-YS C-band transient test DOY 16040

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 9 Feb 2016 Day 40 ---										
18 57 00	GRB160131A	05 28 30	29.8	184.3	0.3		2.6	17	1492	18 57 00
19 02 00	---	05 33 30	29.7	185.7	0.3		3.5	300	1531	18 57 01
19 02 30	J0514-0733	05 34 01	29.2	185.3	0.3		3.2	17	1531	19 02 30
19 04 30	=0512-076	05 36 01	29.2	185.9	0.3		3.6	120	1546	19 02 31
19 05 00	GRB160131A	05 36 31	29.7	186.6	0.4		4.0	17	1546	19 05 00
19 10 00	---	05 41 32	29.6	188.0	0.5		4.8	300	1585	19 05 01
19 10 30	J0514-0733	05 42 02	29.1	187.6	0.4		4.6	17	1585	19 10 30
19 12 30	=0512-076	05 44 02	29.1	188.2	0.5		4.9	120	1600	19 10 31
19 13 00	GRB160131A	05 44 32	29.5	188.9	0.5		5.4	17	1600	19 13 00
19 18 00	---	05 49 33	29.4	190.3	0.6		6.2	300	1638	19 13 01
19 18 30	J0514-0733	05 50 03	28.9	189.9	0.6		6.0	17	1638	19 18 30
19 20 30	=0512-076	05 52 04	28.9	190.4	0.6		6.3	120	1654	19 18 31
19 21 00	J0504-0744	05 52 34	28.4	193.3	0.8		8.0	10	1654	19 21 00
19 23 00	=0502-078	05 54 34	28.3	193.9	0.8		8.4	120	1669	19 21 01
19 23 30	J0514-0733	05 55 04	28.8	191.3	0.7		6.8	10	1669	19 23 30
19 25 30	=0512-076	05 57 04	28.7	191.8	0.7		7.1	120	1685	19 23 31
19 26 00	GRB160131A	05 57 34	29.1	192.6	0.7		7.6	17	1685	19 26 00
19 31 00	---	06 02 35	29.0	194.0	0.8		8.4	300	1723	19 26 01
19 31 30	J0514-0733	06 03 05	28.5	193.5	0.8		8.1	17	1723	19 31 30
19 33 30	=0512-076	06 05 06	28.4	194.1	0.8		8.5	120	1738	19 31 31
19 34 00	GRB160131A	06 05 36	28.9	194.8	0.9		8.9	17	1738	19 34 00
19 39 00	---	06 10 37	28.7	196.2	1.0		9.7	300	1777	19 34 01
19 39 30	J0514-0733	06 11 07	28.2	195.7	0.9		9.5	17	1777	19 39 30
19 41 30	=0512-076	06 13 07	28.1	196.3	1.0		9.8	120	1792	19 39 31
19 42 00	GRB160131A	06 13 37	28.5	197.0	1.0		10.2	18	1792	19 42 00
19 47 00	---	06 18 38	28.3	198.4	1.1		11.0	300	1831	19 42 01
19 47 30	J0514-0733	06 19 08	27.9	198.0	1.1		10.8	18	1831	19 47 30
19 49 30	=0512-076	06 21 08	27.8	198.5	1.1		11.1	120	1846	19 47 31
19 50 00	GRB160131A	06 21 38	28.2	199.3	1.1		11.5	18	1846	19 50 00
19 55 00	---	06 26 39	27.9	200.6	1.2		12.3	300	1885	19 50 01

Schedule for TORUN (Code Tr) Page 7

MC-NT-TR-YS C-band transient test DOY 16040

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 9 Feb 2016 Day 40 ---										
19 55 30	J0514-0733	06 27 09	27.5	200.2	1.2		12.1	18	1885	19 55 30
19 57 30	=0512-076	06 29 10	27.4	200.7	1.2		12.4	120	1900	19 55 31
19 58 00	GRB160131A	06 29 40	27.7	201.5	1.3		12.8	18	1900	19 58 00
20 03 00	---	06 34 40	27.5	202.8	1.4		13.6	300	1938	19 58 01
20 03 30	J0514-0733	06 35 11	27.0	202.3	1.3		13.3	18	1938	20 03 30
20 05 30	=0512-076	06 37 11	26.9	202.9	1.4		13.6	120	1954	20 03 31
20 06 00	GRB160131A	06 37 41	27.3	203.6	1.4		14.0	18	1954	20 06 00
20 11 00	---	06 42 42	27.0	205.0	1.5		14.8	300	1992	20 06 01
20 11 30	J0514-0733	06 43 12	26.6	204.5	1.5		14.6	18	1992	20 11 30
20 13 30	=0512-076	06 45 12	26.4	205.0	1.5		14.9	120	2008	20 11 31
20 14 00	GRB160131A	06 45 42	26.8	205.8	1.5		15.3	18	2008	20 14 00
20 19 00	---	06 50 43	26.4	207.2	1.6		16.0	300	2046	20 14 01
20 19 30	J0514-0733	06 51 13	26.0	206.6	1.6		15.8	18	2046	20 19 30
20 21 30	=0512-076	06 53 14	25.9	207.2	1.6		16.1	120	2062	20 19 31
20 22 00	J0504-0744	06 53 44	25.0	209.9	1.8		17.6	11	2062	20 22 00
20 24 00	=0502-078	06 55 44	24.8	210.4	1.8		17.8	120	2077	20 22 01
20 24 30	J0514-0733	06 56 14	25.7	208.0	1.7		16.5	11	2077	20 24 30
20 26 30	=0512-076	06 58 14	25.5	208.5	1.7		16.8	120	2092	20 24 31
20 27 00	GRB160131A	06 58 44	25.9	209.3	1.8		17.2	18	2092	20 27 00
20 32 00	---	07 03 45	25.5	210.6	1.8		17.9	300	2131	20 27 01
20 32 30	J0514-0733	07 04 15	25.1	210.1	1.8		17.7	18	2131	20 32 30
20 34 30	=0512-076	07 06 16	25.0	210.6	1.8		18.0	120	2146	20 32 31
20 35 00	GRB160131A	07 06 46	25.3	211.4	1.9		18.4	18	2146	20 35 00
20 40 00	---	07 11 47	24.9	212.7	2.0		19.1	300	2185	20 35 01
20 40 30	J0514-0733	07 12 17	24.5	212.2	2.0		18.8	18	2185	20 40 30
20 42 30	=0512-076	07 14 17	24.3	212.7	2.0		19.1	120	2200	20 40 31
20 43 00	GRB160131A	07 14 47	24.6	213.5	2.0		19.5	18	2200	20 43 00
20 48 00	---	07 19 48	24.2	214.7	2.1		20.2	300	2238	20 43 01
20 48 30	J0514-0733	07 20 18	23.8	214.2	2.1		19.9	18	2238	20 48 30
20 50 30	=0512-076	07 22 18	23.7	214.7	2.1		20.2	120	2254	20 48 31

Schedule for TORUN (Code Tr) Page 8

MC-NT-TR-YS C-band transient test DOY 16040

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 9 Feb 2016 Day 40 ---										
20 51 00	GRB160131A	07 22 48	23.9	215.5	2.2		20.6	18	2254	20 51 00
20 56 00	---	07 27 49	23.5	216.8	2.2		21.2	300	2292	20 51 01
20 56 30	J0514-0733	07 28 19	23.1	216.2	2.2		21.0	18	2292	20 56 30
20 58 30	=0512-076	07 30 20	23.0	216.7	2.3		21.2	120	2308	20 56 31
20 59 00	GRB160131A	07 30 50	23.2	217.5	2.3		21.6	18	2308	20 59 00
21 04 00	---	07 35 51	22.7	218.8	2.4		22.3	300	2346	20 59 01
21 04 30	J0514-0733	07 36 21	22.4	218.3	2.4		22.0	18	2346	21 04 30
21 06 30	=0512-076	07 38 21	22.2	218.7	2.4		22.3	120	2362	21 04 31
21 07 00	GRB160131A	07 38 51	22.5	219.5	2.4		22.6	18	2362	21 07 00
21 12 00	---	07 43 52	22.0	220.8	2.5		23.3	300	2400	21 07 01
21 12 30	J0514-0733	07 44 22	21.6	220.2	2.5		23.0	18	2400	21 12 30
21 14 30	=0512-076	07 46 22	21.4	220.7	2.5		23.3	120	2415	21 12 31
21 15 00	GRB160131A	07 46 52	21.7	221.5	2.6		23.6	18	2415	21 15 00
21 20 00	---	07 51 53	21.2	222.7	2.6		24.2	300	2454	21 15 01
21 20 30	J0514-0733	07 52 23	20.8	222.2	2.6		24.0	18	2454	21 20 30
21 22 30	=0512-076	07 54 24	20.6	222.7	2.7		24.2	120	2469	21 20 31
21 23 00	J0504-0744	07 54 54	19.4	225.1	2.8		25.4	11	2469	21 23 00
21 25 00	=0502-078	07 56 54	19.2	225.6	2.9		25.6	120	2485	21 23 01
21 25 30	J0514-0733	07 57 24	20.3	223.4	2.7		24.6	12	2485	21 25 30
21 27 30	=0512-076	07 59 24	20.1	223.9	2.7		24.8	120	2500	21 25 31
21 28 00	GRB160131A	07 59 54	20.3	224.7	2.8		25.2	18	2500	21 28 00
21 33 00	---	08 04 55	19.8	225.9	2.9		25.7	300	2538	21 28 01
21 33 30	J0514-0733	08 05 25	19.5	225.3	2.8		25.5	18	2538	21 33 30
21 35 30	=0512-076	08 07 26	19.3	225.8	2.9		25.7	120	2554	21 33 31
21 36 00	GRB160131A	08 07 56	19.5	226.6	2.9		26.1	18	2554	21 36 00
21 41 00	---	08 12 57	18.9	227.7	3.0		26.6	300	2592	21 36 01
21 41 30	J0514-0733	08 13 27	18.6	227.2	3.0		26.4	18	2592	21 41 30
21 43 30	=0512-076	08 15 27	18.4	227.7	3.0		26.6	120	2608	21 41 31
21 44 00	GRB160131A	08 15 57	18.6	228.5	3.0		26.9	18	2608	21 44 00
21 49 00	---	08 20 58	18.0	229.6	3.1		27.4	300	2646	21 44 01

Schedule for TORUN (Code Tr) Page 9

MC-NT-TR-YS C-band transient test DOY 16040

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 9 Feb 2016 Day 40 ---										
21 49 30	J0514-0733	08 21 28	17.7	229.1	3.1		27.2	18	2646	21 49 30
21 51 30	=0512-076	08 23 28	17.5	229.5	3.1		27.4	120	2662	21 49 31
21 52 00	GRB160131A	08 23 58	17.7	230.3	3.2		27.7	18	2662	21 52 00
21 57 00	---	08 28 59	17.1	231.5	3.3		28.2	300	2700	21 52 01
21 57 30	J0514-0733	08 29 29	16.8	230.9	3.2		28.0	18	2700	21 57 30
21 59 30	=0512-076	08 31 30	16.6	231.4	3.3		28.2	120	2715	21 57 31
22 00 00	GRB160131A	08 32 00	16.7	232.2	3.3		28.5	18	2715	22 00 00
22 05 00	---	08 37 01	16.1	233.3	3.4		29.0	300	2754	22 00 01
22 05 30	J0514-0733	08 37 31	15.9	232.7	3.4		28.8	18	2754	22 05 30
22 07 30	=0512-076	08 39 31	15.6	233.2	3.4		29.0	120	2769	22 05 31
22 08 00	GRB160131A	08 40 01	15.8	234.0	3.4		29.3	18	2769	22 08 00
22 13 00	---	08 45 02	15.2	235.1	3.5		29.7	300	2808	22 08 01
22 13 30	J0514-0733	08 45 32	14.9	234.5	3.5		29.6	18	2808	22 13 30
22 15 30	=0512-076	08 47 32	14.6	235.0	3.5		29.7	120	2823	22 13 31
22 16 00	GRB160131A	08 48 02	14.8	235.8	3.6		30.0	18	2823	22 16 00
22 21 00	---	08 53 03	14.2	236.9	3.7		30.4	300	2862	22 16 01
22 21 30	J0514-0733	08 53 33	13.9	236.3	3.6		30.3	18	2862	22 21 30
22 23 30	=0512-076	08 55 34	13.6	236.8	3.7		30.4	120	2877	22 21 31
22 24 00	J0504-0744	08 56 04	12.2	238.9	3.8		31.3	11	2877	22 24 00
22 26 00	=0502-078	08 58 04	11.9	239.4	3.9		31.4	120	2892	22 24 01
22 26 30	J0514-0733	08 58 34	13.3	237.4	3.7		30.7	11	2892	22 26 30
22 28 00	=0512-076	09 00 04	13.1	237.7	3.7		30.8	90	2904	22 26 31
22 28 30	GRB160131A	09 00 34	13.2	238.5	3.8		31.1	18	2904	22 28 30
22 33 30	---	09 05 35	12.6	239.6	3.9		31.5	300	2942	22 28 31
22 34 00	J0514-0733	09 06 05	12.3	239.1	3.8		31.3	18	2942	22 34 00
22 36 00	=0512-076	09 08 06	12.0	239.5	3.9		31.5	120	2958	22 34 01
22 36 30	GRB160131A	09 08 36	12.2	240.3	3.9		31.7	18	2958	22 36 30
22 41 30	---	09 13 37	11.5	241.3	4.0		32.1	300	2996	22 36 31
22 42 00	J0514-0733	09 14 07	11.3	240.8	4.0		31.9	18	2996	22 42 00
22 44 00	=0512-076	09 16 07	11.0	241.2	4.0		32.1	120	3012	22 42 01

```
Schedule for TORUN     (Code Tr )                                Page  10
              MC-NT-TR-YS C-band transient test DOY 16040
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Tue   9 Feb 2016   Day  40 ---

22 44 30  GRB160131A   09 16 37  11.1 242.0  4.1      32.3    18     3012   22 44 30
22 49 30  ---          09 21 38  10.5 243.1  4.1      32.6   300     3050   22 44 31

22 50 00  J0514-0733   09 22 08  10.2 242.5  4.1      32.5    18     3050   22 50 00
22 52 00  =0512-076    09 24 08   9.9 242.9  4.1      32.6   120     3065   22 50 01

22 52 30  GRB160131A   09 24 38  10.1 243.7  4.2      32.8    18     3065   22 52 30
22 57 30  ---          09 29 39   9.4 244.8  4.3      33.2   300     3104   22 52 31

22 58 00  J0514-0733   09 30 09   9.1 244.2  4.2      33.0    18     3104   22 58 00
23 00 00  =0512-076    09 32 10   8.9 244.6  4.3      33.2   120     3119   22 58 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: c1024

   Setup group:    2         Station: TORUN            Total bit rate:  1024
   Format: MARK5B            Bits per sample: 2        Sample rate: 32.000
   Number of channels: 16    DBE type: DBBC_DDC        Speedup factor:   1.00

   Disk used to record data.

   1st LO=   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00
             4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00
   Net SB=         L         L         U         U         L         L         U         U
                   L         L         U         U         L         L         U         U
   IF SB =         U         U         U         U         U         U         U         U
                   U         U         U         U         U         U         U         U
   Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
                 RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
   BBC   =         1         5         1         5         2         6         2         6
                   3         7         3         7         4         8         4         8
   BBC SB=         L         L         U         U         L         L         U         U
                   L         L         U         U         L         L         U         U
   IF    =        A1        B1        A1        B1        A1        B1        A1        B1
                  A1        B1        A1        B1        A1        B1        A1        B1

  The following frequency sets based on these setups were used.

   Frequency Set:   3  Setup file default.  Used with PCAL = off
   LO sum=   4942.49  4942.49  4942.49  4942.49  4974.49  4974.49  4974.49  4974.49
             5006.49  5006.49  5006.49  5006.49  5038.49  5038.49  5038.49  5038.49
   BBC fr=    742.49   742.49   742.49   742.49   774.49   774.49   774.49   774.49
              806.49   806.49   806.49   806.49   838.49   838.49   838.49   838.49
```

```
  Bandwd=     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
              16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
   Matching frequency sets:   3

  Track assignments are:
   track1=  18, 26,  2, 10, 20, 28,  4, 12, 22, 30,  6, 14, 24, 32,  8, 16
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

```
  Source                        Source position (RA/Dec)                        Error
                       (B1950)            (J2000)            (Date)            (mas)

* CYGX3             20 30 37.619894   * 20 32 25.780000     20 32 59.188144       0.00
                    40 47 12.62910    * 40 57 27.90000      41 00 47.66523        0.00

* GRB160131A        05 10 14.717855   * 05 12 40.351000     05 13 27.920516       0.00
                   -07 06 29.51592    *-07 02 58.80000     -07 02 10.41340        0.00

  0502-078          05 02 09.596661   * 05 04 34.493333     05 05 21.782892       0.29
* J0504-0744       -07 48 42.05498    *-07 44 36.88399     -07 43 37.54715        0.57
                    /Users/mgirolet/sched/catalogs/sources.rfc
                    rfc_2015a Petrov, 2015, unpublished.  45 observations

  0512-076          05 12 04.001974   * 05 14 29.037752     05 15 16.423677       0.30
* J0514-0733       -07 36 35.88952    *-07 33 12.94436     -07 32 27.19874        0.62
                    /Users/mgirolet/sched/catalogs/sources.rfc
                    rfc_2015a Petrov, 2015, unpublished.  45 observations

  0552+398          05 52 01.407174   * 05 55 30.805616     05 56 39.384712       0.13
* J0555+3948        39 48 21.94584    * 39 48 49.16499      39 48 50.20252        0.10
                    /Users/mgirolet/sched/catalogs/sources.rfc
                    rfc_2015a Petrov, 2015, unpublished.  404081 observations

  2005+403          20 05 59.558896   * 20 07 44.944847     20 08 17.454484       0.30
* J2007+4029        40 21 01.80231    * 40 29 48.60416      40 32 39.14167        0.23
                    /Users/mgirolet/sched/catalogs/sources.rfc
                    rfc_2015a Petrov, 2015, unpublished.  169 observations
```

rk12ostr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                  Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Wed  10 Feb 2016   Day  41 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

01 00 00  1253-055     11 32 29  28.4 155.9 -1.4     -14.2     0        0   01 00 00
01 14 30  ---          11 47 02  29.2 160.0 -1.2     -11.9   870       28   01 00 01

01 15 00  1253-055     11 47 32  29.2 160.1 -1.2     -11.9    24       28   01 15 00
01 29 30  ---          12 02 04  29.9 164.2 -0.9      -9.5   870       56   01 15 01

01 30 00  1253-055     12 02 34  29.9 164.3 -0.9      -9.4    24       56   01 30 00
01 44 30  ---          12 17 07  30.4 168.5 -0.7      -6.9   870       84   01 30 01

01 45 00  1253-055     12 17 37  30.4 168.6 -0.7      -6.8    24       84   01 45 00
02 00 00  ---          12 32 39  30.8 172.9 -0.4      -4.3   900      112   01 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    6         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   2400.00   2400.00   2400.00   2400.00
  Net SB=         L         L         U         U
  IF SB =         L         L         L         L
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         U         U         L         L
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   4  Setup file default.  Used with PCAL = 1MHz
  LO sum=   1668.00  1668.00  1668.00  1668.00
  BBC fr=    732.00   732.00   732.00   732.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   4

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off



 POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                       (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 53.238453       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 23.53374        0.00
                    fake circumpolar target for a TS to look at

* 1253-055          12 53 35.831289   * 12 56 11.166557     12 57 01.994511       0.00
  J1256-0547       -05 31 07.99603    *-05 47 21.52489     -05 52 36.74514        0.00
  3C279             ./rk12os_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 7924 observations, RA-AO3-04, RA-AO3-05



EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1253-055           125.3

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12ottr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                  Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Wed  10 Feb 2016   Day  41 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

06 00 00  1156+295     16 33 19  35.7 272.4  4.5      43.4     0        0   06 00 00
06 14 30  ---          16 47 51  33.6 275.2  4.8      43.2   870       28   06 00 01

06 15 00  1156+295     16 48 21  33.5 275.3  4.8      43.2    24       28   06 15 00
06 29 30  ---          17 02 53  31.3 278.0  5.0      42.9   870       56   06 15 01

06 30 00  1156+295     17 03 23  31.2 278.1  5.1      42.9    24       56   06 30 00
06 44 30  ---          17 17 56  29.1 280.8  5.3      42.5   870       84   06 30 01

06 45 00  1156+295     17 18 26  29.0 280.9  5.3      42.5    24       84   06 45 00
07 00 00  ---          17 33 28  26.8 283.7  5.6      41.9   900      112   06 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    6         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   2400.00   2400.00   2400.00   2400.00
  Net SB=         L         L         U         U
  IF SB =         L         L         L         L
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         U         U         L         L
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   4  Setup file default.  Used with PCAL = 1MHz
  LO sum=   1668.00  1668.00  1668.00  1668.00
  BBC fr=    732.00   732.00   732.00   732.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   4

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off



 POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA           11 57 21.769299   * 12 00 00.000000     12 00 53.279649       0.00
                   85 16 41.77889    * 85 00 00.00000      84 54 23.58652        0.00
                   fake circumpolar target for a TS to look at

* 1156+295         11 56 57.786212   * 11 59 31.833913     12 00 22.119536       0.00
  J1159+2914       29 31 25.73868    * 29 14 43.82678      29 09 09.19204        0.00
                   ./rk12ot_sources.radioastron
                   AGN, MASIV, rfc_2013d Petrov, 2013, unpublished 70591 observations, RA-AO3-04, R



EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1156+295           143.1

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12outr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                   Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Wed  10 Feb 2016   Day  41 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

09 00 00  1442+101     19 33 48  18.7 261.4  4.8      37.1     0        0   09 00 00
09 14 30  ---          19 48 21  16.6 264.4  5.0      37.4   870       28   09 00 01

09 15 00  1442+101     19 48 51  16.5 264.5  5.0      37.4    24       28   09 15 00
09 29 30  ---          20 03 23  14.3 267.5  5.3      37.5   870       56   09 15 01

09 30 00  1442+101     20 03 53  14.2 267.6  5.3      37.5    24       56   09 30 00
09 44 30  ---          20 18 25  12.0 270.5  5.5      37.6   870       84   09 30 01

09 45 00  1442+101     20 18 56  12.0 270.6  5.5      37.6    24       84   09 45 00
10 00 00  ---          20 33 58   9.7 273.6  5.8      37.5   900      112   09 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    7         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   2400.00   2400.00   2400.00   2400.00
  Net SB=         L         L         U         U
  IF SB =         L         L         L         L
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         U         U         L         L
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   6  Setup file default.  Used with PCAL = 1MHz
  LO sum=   1668.00  1668.00  1668.00  1668.00
  BBC fr=    732.00   732.00   732.00   732.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   6

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off



 POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 53.302029       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 23.61596        0.00
                    fake circumpolar target for a TS to look at

* 1442+101          14 42 50.483804   * 14 45 16.465253     14 46 03.544740       0.00
  J1445+0958        10 11 12.14439    * 09 58 36.07265      09 54 30.46601        0.00
  OQ172             ./rk12ou_sources.radioastron
                    AGN, HIGHz, rfc_2013d Petrov, 2013, unpublished 1336 observations, RA-AO3-04, RA



EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1442+101           103.9

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rp024btr

e-EVN: FRB121102

PI: *Hessels/Paragi*

```
Address:  JIVE EMAIL:    zparagi@jive.nl Phone during observation: +31 521 596 530
Observing mode: realtime e-vlbi

Schedule for TORUN     (Code Tr )                                  Page   2
               e-EVN: FRB121102
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------
 --- Wed  10 Feb 2016   Day  41 ---
 Next scan frequencies:  1610.49  1610.49  1610.49  1610.49  1642.49  1642.49  1642.49  1642.49
                         1674.49  1674.49  1674.49  1674.49  1706.49  1706.49  1706.49  1706.49
 Next BBC frequencies:    689.51   689.51   689.51   689.51   657.51   657.51   657.51   657.51
                          625.51   625.51   625.51   625.51   593.51   593.51   593.51   593.51
 Next scan bandwidths:     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
                           16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00

19 30 00  0234+285     06 05 32  45.4 258.1  3.4      42.1     0        0   19 30 00
19 45 00  ---          06 20 34  43.2 261.5  3.7      42.7   900      115   19 30 01

19 45 40  0234+285     06 21 14  43.1 261.7  3.7      42.7    34      115   19 45 40
20 00 00  ---          06 35 37  40.9 264.8  3.9      43.1   860      226   19 45 41

20 00 40  0234+285     06 36 17  40.8 264.9  4.0      43.1    34      226   20 00 40
20 15 00  ---          06 50 39  38.7 267.9  4.2      43.3   860      336   20 00 41

20 15 40  0234+285     06 51 19  38.6 268.0  4.2      43.3    34      336   20 15 40
20 30 00  ---          07 05 41  36.4 270.9  4.4      43.3   860      446   20 15 41

20 30 40  0234+285     07 06 22  36.3 271.1  4.5      43.3    34      446   20 30 40
20 45 00  ---          07 20 44  34.2 273.9  4.7      43.2   860      556   20 30 41

20 45 40  0234+285     07 21 24  34.1 274.0  4.7      43.2    34      556   20 45 40
21 00 00  ---          07 35 46  31.9 276.7  4.9      42.9   860      667   20 45 41

21 00 40  0234+285     07 36 27  31.8 276.9  5.0      42.9    34      667   21 00 40
21 15 00  ---          07 50 49  29.7 279.6  5.2      42.5   860      777   21 00 41

21 15 40  0234+285     07 51 29  29.6 279.7  5.2      42.5    34      777   21 15 40
21 30 00  ---          08 05 51  27.5 282.3  5.5      42.1   860      887   21 15 41

21 30 40  0234+285     08 06 31  27.4 282.5  5.5      42.0    34      887   21 30 40
21 45 00  ---          08 20 54  25.3 285.1  5.7      41.5   860      997   21 30 41

21 45 40  0234+285     08 21 34  25.2 285.2  5.7      41.4    34      997   21 45 40
22 00 00  ---          08 35 56  23.1 287.8  6.0      40.8   860     1108   21 45 41

22 00 40  0234+285     08 36 36  23.0 287.9  6.0      40.7    34     1108   22 00 40
22 15 00  ---          08 50 59  21.0 290.5  6.2      40.0   860     1218   22 00 41

22 15 40  0234+285     08 51 39  20.9 290.6  6.2      39.9    34     1218   22 15 40
22 30 00  ---          09 06 01  18.9 293.2  6.5      39.1   860     1328   22 15 41
```

Schedule for TORUN (Code Tr) Page 3

e-EVN: FRB121102

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 10 Feb 2016 Day 41 ---										
22 30 40	0234+285	09 06 41	18.8	293.3	6.5		39.0	34	1328	22 30 40
22 45 00	---	09 21 04	16.8	295.9	6.7		38.1	860	1438	22 30 41
22 48 30	J0403+2600	09 24 34	26.3	279.0	5.3		41.3	159	1438	22 48 30
22 56 00	=0400+258	09 32 05	25.2	280.4	5.5		41.1	450	1496	22 48 31
22 58 00	J0518+3306	09 34 06	41.3	272.4	4.2		45.8	45	1496	22 58 00
23 01 00	=0514+330	09 37 06	40.8	273.0	4.3		45.7	180	1519	22 58 01
23 02 00	J0529+3209	09 38 06	41.7	270.1	4.1		45.2	39	1519	23 02 00
23 03 00	=0526+321	09 39 07	41.6	270.3	4.1		45.2	60	1527	23 02 01
23 04 00	J0530+3301	09 40 07	42.1	271.1	4.1		45.7	45	1527	23 04 00
23 12 00	=0527+329	09 48 08	40.9	272.7	4.3		45.7	480	1588	23 04 01
23 13 00	J0529+3209	09 49 08	40.0	272.2	4.3		45.1	45	1588	23 13 00
23 14 00	=0526+321	09 50 08	39.9	272.4	4.3		45.1	60	1596	23 13 01
23 15 30	J0521+2112	09 51 39	30.4	265.3	4.5		39.9	41	1596	23 15 30
23 16 30	=0518+211	09 52 39	30.3	265.5	4.5		40.0	60	1604	23 15 31
23 17 30	J0528+2200	09 53 39	31.8	264.8	4.4		40.2	40	1604	23 17 30
23 25 30	---	10 01 40	30.6	266.5	4.5		40.3	480	1665	23 17 31
23 26 30	J0521+2112	10 02 40	28.8	267.5	4.7		40.1	40	1665	23 26 30
23 27 30	=0518+211	10 03 41	28.6	267.7	4.7		40.1	60	1673	23 26 31
23 28 30	J0528+2200	10 04 41	30.1	267.1	4.6		40.3	40	1673	23 28 30
23 36 30	---	10 12 42	28.9	268.7	4.7		40.4	480	1735	23 28 31
23 37 30	J0521+2112	10 13 42	27.1	269.8	4.8		40.1	40	1735	23 37 30
23 38 30	=0518+211	10 14 42	27.0	270.0	4.9		40.1	60	1742	23 37 31
23 41 30	J0529+3209	10 17 43	35.8	277.7	4.8		44.7	132	1742	23 41 30
23 42 30	=0526+321	10 18 43	35.6	277.9	4.8		44.6	60	1750	23 41 31
23 43 00	FRB	10 19 13	36.6	278.3	4.8		45.2	13	1750	23 43 00
23 51 00	---	10 27 15	35.4	279.8	4.9		45.0	480	1812	23 43 01
23 51 30	J0529+3209	10 27 45	34.3	279.5	5.0		44.4	13	1812	23 51 30
23 52 30	=0526+321	10 28 45	34.1	279.7	5.0		44.4	60	1819	23 51 31
--- Start: Wed 10 Feb 2016 Day 41 -- Stop: Thu 11 Feb 2016 Day 42 ---										
23 53 00	FRB	10 29 15	35.1	280.2	4.9		44.9	13	1819	23 53 00
00 01 00	---	10 37 16	33.9	281.6	5.1		44.6	480	1881	23 53 01

Schedule for TORUN (Code Tr) Page 4

e-EVN: FRB121102

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Thu 11 Feb 2016 Day 42 ---										
00 01 30	J0529+3209	10 37 46	32.8	281.3	5.1		44.1	13	1881	00 01 30
00 02 30	=0526+321	10 38 46	32.7	281.5	5.1		44.0	60	1888	00 01 31
00 03 00	FRB	10 39 16	33.6	282.0	5.1		44.6	13	1888	00 03 00
00 10 40	---	10 46 58	32.5	283.3	5.2		44.3	460	1947	00 03 01
00 11 30	J0529+3209	10 47 48	31.3	283.1	5.3		43.7	33	1947	00 11 30
00 12 30	=0526+321	10 48 48	31.2	283.3	5.3		43.7	60	1955	00 11 31
00 13 00	FRB	10 49 18	32.2	283.8	5.3		44.2	13	1955	00 13 00
00 21 00	---	10 57 19	31.0	285.2	5.4		43.8	480	2017	00 13 01
00 21 30	J0529+3209	10 57 50	29.9	284.9	5.5		43.3	13	2017	00 21 30
00 22 30	=0526+321	10 58 50	29.7	285.1	5.5		43.2	60	2024	00 21 31
00 23 00	FRB	10 59 20	30.7	285.5	5.4		43.7	13	2024	00 23 00
00 31 00	---	11 07 21	29.6	286.9	5.6		43.3	480	2086	00 23 01
00 31 30	J0529+3209	11 07 51	28.4	286.7	5.6		42.8	13	2086	00 31 30
00 32 30	=0526+321	11 08 51	28.3	286.9	5.6		42.8	60	2094	00 31 31
00 33 00	FRB	11 09 21	29.3	287.3	5.6		43.2	13	2094	00 33 00
00 40 50	---	11 17 13	28.2	288.7	5.7		42.8	470	2154	00 33 01
00 41 30	J0529+3209	11 17 53	27.0	288.5	5.8		42.3	23	2154	00 41 30
00 42 30	=0526+321	11 18 53	26.8	288.7	5.8		42.2	60	2162	00 41 31
00 43 00	FRB	11 19 23	27.8	289.0	5.8		42.7	13	2162	00 43 00
00 51 00	---	11 27 24	26.7	290.4	5.9		42.2	480	2223	00 43 01
00 51 30	J0529+3209	11 27 54	25.6	290.2	6.0		41.7	13	2223	00 51 30
00 52 30	=0526+321	11 28 55	25.4	290.4	6.0		41.7	60	2231	00 51 31
00 53 00	FRB	11 29 25	26.4	290.8	5.9		42.1	13	2231	00 53 00
01 01 00	---	11 37 26	25.3	292.2	6.1		41.6	480	2292	00 53 01
01 01 30	J0529+3209	11 37 56	24.2	292.0	6.1		41.1	13	2292	01 01 30
01 02 30	=0526+321	11 38 56	24.0	292.2	6.1		41.1	60	2300	01 01 31
01 03 00	FRB	11 39 26	25.0	292.5	6.1		41.5	13	2300	01 03 00
01 11 00	---	11 47 28	23.9	293.9	6.2		41.0	480	2362	01 03 01
01 11 30	J0529+3209	11 47 58	22.8	293.7	6.3		40.5	13	2362	01 11 30
01 12 30	=0526+321	11 48 58	22.6	293.9	6.3		40.4	60	2369	01 11 31

```
Schedule for TORUN     (Code Tr )                                  Page   5
              e-EVN: FRB121102
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Thu  11 Feb 2016   Day  42 ---

01 13 00  FRB          11 49 28  23.7 294.3  6.3      40.8    13     2369   01 13 00
01 21 00  ---          11 57 29  22.6 295.6  6.4      40.3   480     2431   01 13 01

01 21 30  J0529+3209   11 57 59  21.4 295.5  6.5      39.8    13     2431   01 21 30
01 22 30  =0526+321    11 59 00  21.3 295.7  6.5      39.7    60     2438   01 21 31

01 23 00  FRB          11 59 30  22.3 296.0  6.4      40.1    13     2438   01 23 00
01 29 00  ---          12 05 31  21.5 297.0  6.5      39.7   360     2485   01 23 01

01 29 30  J0529+3209   12 06 01  20.3 296.9  6.6      39.3    13     2485   01 29 30
01 30 30  =0526+321    12 07 01  20.2 297.1  6.6      39.2    60     2492   01 29 31



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: sess116.L1024e

   Setup group:    6         Station: TORUN            Total bit rate:  1024
   Format: MARK5B            Bits per sample: 2        Sample rate: 32.000
   Number of channels: 16    DBE type: DBBC_DDC        Speedup factor:   1.00

   Disk used to record data.

   1st LO=   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00
             2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00
   Net SB=         L         L         U         U         L         L         U         U
                   L         L         U         U         L         L         U         U
   IF SB =         L         L         L         L         L         L         L         L
                   L         L         L         L         L         L         L         L
   Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
                 RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
   BBC   =         1         5         1         5         2         6         2         6
                   3         7         3         7         4         8         4         8
   BBC SB=         U         U         L         L         U         U         L         L
                   U         U         L         L         U         U         L         L
   IF    =        A1        B1        A1        B1        A1        B1        A1        B1
                  A1        B1        A1        B1        A1        B1        A1        B1

  The following frequency sets based on these setups were used.

   Frequency Set:   5  Setup file default.  Used with PCAL = off
   LO sum=   1610.49  1610.49  1610.49  1610.49  1642.49  1642.49  1642.49  1642.49
             1674.49  1674.49  1674.49  1674.49  1706.49  1706.49  1706.49  1706.49
   BBC fr=    689.51   689.51   689.51   689.51   657.51   657.51   657.51   657.51
              625.51   625.51   625.51   625.51   593.51   593.51   593.51   593.51
```

```
  Bandwd=     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
              16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
   Matching frequency sets:   5

  Track assignments are:
   track1=   2, 10, 18, 26,  4, 12, 20, 28,  6, 14, 22, 30,  8, 16, 24, 32
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                       (B1950)            (J2000)            (Date)            (mas)

* FRB               05 28 41.045663   * 05 31 58.000000     05 33 02.387034       0.00
                    33 05 54.64087    * 33 08 04.00000      33 08 37.16737        0.00

* J0528+2200        05 25 51.827467   * 05 28 52.264000     05 29 51.207466       0.00
                    21 57 41.80619    * 22 00 04.00000      22 00 38.26038        0.00

  J0237+2848        02 34 55.589591   * 02 37 52.405678     02 38 49.480487       0.11
* 0234+285          28 35 11.40773    * 28 48 08.98998      28 52 15.67810        0.10
  J0237+28          /aps3/opt/share/sched_11.3U1/catalogs/sources.vlba
                    rfc_2012b Petrov, 2012, unpublished 56811 observations

* J0403+2600        04 00 03.594850   * 04 03 05.586080     04 04 04.723817       0.11
  0400+258          25 51 46.48884    * 26 00 01.50271      26 02 33.24499        0.10
  J0403+26          /aps3/opt/share/sched_11.3U1/catalogs/sources.vlba
                    rfc_2012b Petrov, 2012, unpublished 2073 observations

* J0518+3306        05 14 48.670952   * 05 18 05.142474     05 19 09.330783       0.26
  0514+330          33 03 04.11948    * 33 06 13.36506      33 07 06.28143        0.32
                    /aps3/opt/share/sched_11.3U1/catalogs/sources.vlba
                    rfc_2012b Petrov, 2012, unpublished 92 observations

* J0521+2112        05 18 46.711010   * 05 21 45.965845     05 22 44.497599       0.40
  0518+211          21 09 58.62250    * 21 12 51.45169      21 13 35.52853        0.60
                    /aps3/opt/share/sched_11.3U1/catalogs/sources.vlba
                    GSFC 2011B astro solution       104 Observations

  0526+321          05 26 12.903667   * 05 29 28.211037     05 30 32.047795       0.80
* J0529+3209        32 07 26.83083    * 32 09 46.94745      32 10 23.39504        0.88
                    /aps3/opt/share/sched_11.3U1/catalogs/sources.vlba
                    rfc_2012b Petrov, 2012, unpublished 36 observations

  0527+329          05 27 04.333498   * 05 30 21.061039     05 31 25.368779       1.08
* J0530+3301        32 59 03.55663    * 33 01 19.90878      33 01 55.35161        1.28
                    /aps3/opt/share/sched_11.3U1/catalogs/sources.vlba
                    rfc_2012b Petrov, 2012, unpublished 33 observations
```

rk12owtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                  Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Thu  11 Feb 2016   Day  42 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

03 00 00  1226+023     13 36 46  37.0 201.1  1.1      12.5     0        0   03 00 00
03 14 30  ---          13 51 18  36.2 205.5  1.4      15.0   870       28   03 00 01

03 15 00  1226+023     13 51 48  36.1 205.6  1.4      15.1    24       28   03 15 00
03 25 00  ---          14 01 50  35.4 208.6  1.5      16.7   600       47   03 15 01

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00

03 30 00  1226+023     14 06 50  35.1 210.1  1.6      17.5   293       47   03 30 00
03 44 30  ---          14 21 23  33.9 214.2  1.9      19.8   870       75   03 30 01

03 45 00  1226+023     14 21 53  33.9 214.4  1.9      19.8    24       75   03 45 00
04 00 00  ---          14 36 55  32.5 218.6  2.1      22.0   900      104   03 45 01


SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    1         Station: TORUN             Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2         Sample rate: 32.000
   Number of channels:  4    DBE type:                  Speedup factor:   1.00

   Disk used to record data.

   1st LO=   4100.00   4100.00   4100.00   4100.00
   Net SB=         L         L         U         U
   IF SB =         U         U         U         U
   Pol.  =       RCP       LCP       RCP       LCP
```

```
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   5  Setup file default.  Used with PCAL = 1MHz
  LO sum=   4836.00  4836.00  4836.00  4836.00
  BBC fr=    736.00   736.00   736.00   736.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   5

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off

======== Setup file: ra18cm2.set

  Setup group:    7         Station: TORUN            Total bit rate:   256
  Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
  Number of channels:  4    DBE type:                 Speedup factor:   1.00

  Disk used to record data.

  1st LO=   2400.00   2400.00   2400.00   2400.00
  Net SB=         L         L         U         U
  IF SB =         L         L         L         L
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         U         U         L         L
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   6  Setup file default.  Used with PCAL = 1MHz
  LO sum=   1668.00  1668.00  1668.00  1668.00
  BBC fr=    732.00   732.00   732.00   732.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   6

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)            (J2000)            (Date)            (mas)

* 1226+023          12 26 33.245835   * 12 29 06.699731     12 29 56.954318       0.00
  J1229+0203        02 19 43.30547    * 02 03 08.59797      01 57 42.86419        0.00
  3C273B            ./rk12ow_sources.radioastron
  3C273             AGN, rfc_2013d Petrov, 2013, unpublished 32011 observations, RA-AO3-04, RA-AO3-0
```

rk12oxtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                   Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Thu  11 Feb 2016   Day  42 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

09 00 00  1442+101     19 37 45  18.1 262.3  4.9      37.2     0        0   09 00 00
09 14 30  ---          19 52 17  16.0 265.2  5.1      37.4   870       28   09 00 01

09 15 00  1442+101     19 52 47  15.9 265.3  5.1      37.4    24       28   09 15 00
09 29 30  ---          20 07 20  13.7 268.3  5.4      37.5   870       56   09 15 01

09 30 00  1442+101     20 07 50  13.6 268.4  5.4      37.5    24       56   09 30 00
09 44 30  ---          20 22 22  11.5 271.3  5.6      37.5   870       84   09 30 01

09 45 00  1442+101     20 22 52  11.4 271.4  5.6      37.5    24       84   09 45 00
10 00 00  ---          20 37 55   9.1 274.4  5.9      37.4   900      112   09 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    6         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   2400.00   2400.00   2400.00   2400.00
  Net SB=         L         L         U         U
  IF SB =         L         L         L         L
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         U         U         L         L
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   3  Setup file default.  Used with PCAL = 1MHz
  LO sum=   1668.00  1668.00  1668.00  1668.00
  BBC fr=    732.00   732.00   732.00   732.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   3

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off



 POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                       (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 53.487348       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 23.88221        0.00
                    fake circumpolar target for a TS to look at

* 1442+101          14 42 50.483804   * 14 45 16.465253     14 46 03.570330       0.00
  J1445+0958        10 11 12.14439    * 09 58 36.07265      09 54 30.35817        0.00
  OQ172             ./rk12ox_sources.radioastron
                    AGN, HIGHz, rfc_2013d Petrov, 2013, unpublished 1336 observations, RA-AO3-04, RA



EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1442+101           104.8

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rp024ctr

e-EVN: FRB121102

PI: *Hessels/Paragi*

```
Address:  JIVE  EMAIL:    zparagi@jive.nl Phone during observation: +31 521 596 530
Observing mode: realtime e-vlbi

Schedule for TORUN     (Code Tr )                                   Page   2
               e-EVN: FRB121102
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------
 --- Thu  11 Feb 2016   Day  42 ---
 Next scan frequencies:  1610.49  1610.49  1610.49  1610.49  1642.49  1642.49  1642.49  1642.49
                         1674.49  1674.49  1674.49  1674.49  1706.49  1706.49  1706.49  1706.49
 Next BBC frequencies:    689.51   689.51   689.51   689.51   657.51   657.51   657.51   657.51
                          625.51   625.51   625.51   625.51   593.51   593.51   593.51   593.51
 Next scan bandwidths:     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
                           16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00

19 30 00  0234+285     06 09 28  44.8 259.0  3.5      42.3     0        0   19 30 00
19 45 00  ---          06 24 31  42.6 262.4  3.8      42.8   900      115   19 30 01

19 45 40  0234+285     06 25 11  42.5 262.5  3.8      42.8    34      115   19 45 40
20 00 00  ---          06 39 33  40.4 265.6  4.0      43.1   860      226   19 45 41

20 00 40  0234+285     06 40 13  40.3 265.8  4.0      43.1    34      226   20 00 40
20 15 00  ---          06 54 36  38.1 268.7  4.3      43.3   860      336   20 00 41

20 15 40  0234+285     06 55 16  38.0 268.8  4.3      43.3    34      336   20 15 40
20 30 00  ---          07 09 38  35.8 271.7  4.5      43.3   860      446   20 15 41

20 30 40  0234+285     07 10 18  35.7 271.8  4.5      43.3    34      446   20 30 40
20 45 00  ---          07 24 41  33.6 274.6  4.8      43.1   860      556   20 30 41

20 45 40  0234+285     07 25 21  33.5 274.8  4.8      43.1    34      556   20 45 40
21 00 00  ---          07 39 43  31.3 277.5  5.0      42.8   860      667   20 45 41

21 00 40  0234+285     07 40 23  31.2 277.6  5.0      42.8    34      667   21 00 40
21 15 00  ---          07 54 45  29.1 280.3  5.3      42.4   860      777   21 00 41

21 15 40  0234+285     07 55 26  29.0 280.4  5.3      42.4    34      777   21 15 40
21 30 00  ---          08 09 48  26.9 283.1  5.5      41.9   860      887   21 15 41

21 30 40  0234+285     08 10 28  26.8 283.2  5.5      41.9    34      887   21 30 40
21 45 00  ---          08 24 50  24.7 285.8  5.8      41.3   860      997   21 30 41

21 45 40  0234+285     08 25 30  24.6 285.9  5.8      41.3    34      997   21 45 40
22 00 00  ---          08 39 53  22.6 288.5  6.0      40.6   860     1108   21 45 41

22 00 40  0234+285     08 40 33  22.5 288.6  6.0      40.5    34     1108   22 00 40
22 15 00  ---          08 54 55  20.4 291.2  6.3      39.7   860     1218   22 00 41

22 15 40  0234+285     08 55 35  20.3 291.3  6.3      39.7    34     1218   22 15 40
22 30 00  ---          09 09 58  18.4 293.9  6.5      38.8   860     1328   22 15 41
```

```
Schedule for TORUN     (Code Tr )                                  Page   3
               e-EVN: FRB121102
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------
 --- Thu  11 Feb 2016   Day  42 ---
22 30 40  0234+285     09 10 38  18.3 294.0  6.5      38.8    34     1328   22 30 40
22 45 00  ---          09 25 00  16.3 296.6  6.8      37.8   860     1438   22 30 41

22 48 30  J0403+2600   09 28 31  25.8 279.8  5.4      41.2   159     1438   22 48 30
22 56 00  =0400+258    09 36 02  24.6 281.2  5.5      41.0   450     1496   22 48 31

22 58 00  J0518+3306   09 38 02  40.7 273.2  4.3      45.7    46     1496   22 58 00
23 01 00  =0514+330    09 41 03  40.2 273.8  4.4      45.7   180     1519   22 58 01

23 02 00  J0529+3209   09 42 03  41.1 270.9  4.2      45.2    39     1519   23 02 00
23 03 00  =0526+321    09 43 03  41.0 271.0  4.2      45.2    60     1527   23 02 01

23 04 00  J0530+3301   09 44 03  41.5 271.9  4.2      45.7    45     1527   23 04 00
23 12 00  =0527+329    09 52 05  40.3 273.4  4.3      45.6   480     1588   23 04 01

23 13 00  J0529+3209   09 53 05  39.5 273.0  4.4      45.1    45     1588   23 13 00
23 14 00  =0526+321    09 54 05  39.3 273.2  4.4      45.1    60     1596   23 13 01

23 15 30  J0521+2112   09 55 35  29.8 266.1  4.5      40.0    41     1596   23 15 30
23 16 30  =0518+211    09 56 35  29.7 266.3  4.6      40.0    60     1604   23 15 31

23 17 30  J0528+2200   09 57 36  31.2 265.6  4.5      40.2    40     1604   23 17 30
23 25 30  ---          10 05 37  30.0 267.3  4.6      40.3   480     1665   23 17 31

23 26 30  J0521+2112   10 06 37  28.2 268.3  4.7      40.1    40     1665   23 26 30
23 27 30  =0518+211    10 07 37  28.0 268.5  4.7      40.1    60     1673   23 26 31

23 28 30  J0528+2200   10 08 37  29.5 267.9  4.6      40.3    40     1673   23 28 30
23 36 30  ---          10 16 39  28.3 269.5  4.8      40.4   480     1735   23 28 31

23 37 30  J0521+2112   10 17 39  26.5 270.5  4.9      40.1    40     1735   23 37 30
23 38 30  =0518+211    10 18 39  26.4 270.7  4.9      40.1    60     1742   23 37 31

23 41 30  J0529+3209   10 21 40  35.2 278.4  4.9      44.6   132     1742   23 41 30
23 42 30  =0526+321    10 22 40  35.0 278.6  4.9      44.5    60     1750   23 41 31

23 43 00  FRB          10 23 10  36.0 279.1  4.8      45.1    13     1750   23 43 00
23 51 00  ---          10 31 11  34.8 280.5  5.0      44.8   480     1812   23 43 01

23 51 30  J0529+3209   10 31 41  33.7 280.2  5.0      44.3    13     1812   23 51 30
23 52 30  =0526+321    10 32 41  33.6 280.4  5.0      44.2    60     1819   23 51 31

 --- Start: Thu  11 Feb 2016   Day  42 -- Stop: Fri  12 Feb 2016   Day  43 ---

23 53 00  FRB          10 33 11  34.5 280.9  5.0      44.8    13     1819   23 53 00
00 01 00  ---          10 41 13  33.4 282.3  5.1      44.5   480     1881   23 53 01
```

Schedule for TORUN (Code Tr) Page 4

e-EVN: FRB121102

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 12 Feb 2016 Day 43 ---										
00 01 30	J0529+3209	10 41 43	32.2	282.1	5.2		43.9	13	1881	00 01 30
00 02 30	=0526+321	10 42 43	32.1	282.2	5.2		43.9	60	1888	00 01 31
00 03 00	FRB	10 43 13	33.1	282.7	5.2		44.4	13	1888	00 03 00
00 10 40	---	10 50 54	31.9	284.0	5.3		44.1	460	1947	00 03 01
00 11 30	J0529+3209	10 51 44	30.8	283.9	5.4		43.5	33	1947	00 11 30
00 12 30	=0526+321	10 52 45	30.6	284.0	5.4		43.5	60	1955	00 11 31
00 13 00	FRB	10 53 15	31.6	284.5	5.3		44.0	13	1955	00 13 00
00 21 00	---	11 01 16	30.4	285.9	5.5		43.6	480	2017	00 13 01
00 21 30	J0529+3209	11 01 46	29.3	285.6	5.5		43.1	13	2017	00 21 30
00 22 30	=0526+321	11 02 46	29.2	285.8	5.5		43.0	60	2024	00 21 31
00 23 00	FRB	11 03 16	30.2	286.2	5.5		43.5	13	2024	00 23 00
00 31 00	---	11 11 18	29.0	287.6	5.6		43.1	480	2086	00 23 01
00 31 30	J0529+3209	11 11 48	27.9	287.4	5.7		42.6	13	2086	00 31 30
00 32 30	=0526+321	11 12 48	27.7	287.6	5.7		42.6	60	2094	00 31 31
00 33 00	FRB	11 13 18	28.7	288.0	5.7		43.0	13	2094	00 33 00
00 40 50	---	11 21 09	27.6	289.3	5.8		42.6	470	2154	00 33 01
00 41 30	J0529+3209	11 21 49	26.4	289.2	5.9		42.1	23	2154	00 41 30
00 42 30	=0526+321	11 22 50	26.3	289.3	5.9		42.0	60	2162	00 41 31
00 43 00	FRB	11 23 20	27.3	289.7	5.8		42.5	13	2162	00 43 00
00 51 00	---	11 31 21	26.2	291.1	6.0		42.0	480	2223	00 43 01
00 51 30	J0529+3209	11 31 51	25.0	290.9	6.0		41.5	13	2223	00 51 30
00 52 30	=0526+321	11 32 51	24.9	291.1	6.0		41.4	60	2231	00 51 31
00 53 00	FRB	11 33 21	25.9	291.5	6.0		41.9	13	2231	00 53 00
01 01 00	---	11 41 23	24.8	292.9	6.1		41.4	480	2292	00 53 01
01 01 30	J0529+3209	11 41 53	23.6	292.7	6.2		40.9	13	2292	01 01 30
01 02 30	=0526+321	11 42 53	23.5	292.9	6.2		40.8	60	2300	01 01 31
01 03 00	FRB	11 43 23	24.5	293.2	6.2		41.2	13	2300	01 03 00
01 11 00	---	11 51 24	23.4	294.6	6.3		40.7	480	2362	01 03 01
01 11 30	J0529+3209	11 51 54	22.2	294.4	6.4		40.2	13	2362	01 11 30
01 12 30	=0526+321	11 52 54	22.1	294.6	6.4		40.2	60	2369	01 11 31

```
Schedule for TORUN     (Code Tr )                                  Page   5
               e-EVN: FRB121102
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Fri  12 Feb 2016   Day  43 ---

01 13 00  FRB          11 53 25  23.1 294.9  6.3      40.6    13     2369   01 13 00
01 21 00  ---          12 01 26  22.0 296.3  6.5      40.0   480     2431   01 13 01

01 21 30  J0529+3209   12 01 56  20.9 296.2  6.5      39.5    13     2431   01 21 30
01 22 30  =0526+321    12 02 56  20.7 296.4  6.5      39.5    60     2438   01 21 31

01 23 00  FRB          12 03 26  21.8 296.7  6.5      39.9    13     2438   01 23 00
01 29 00  ---          12 09 27  21.0 297.7  6.6      39.4   360     2485   01 23 01

01 29 30  J0529+3209   12 09 57  19.8 297.6  6.7      39.0    13     2485   01 29 30
01 30 30  =0526+321    12 10 57  19.7 297.8  6.7      38.9    60     2492   01 29 31


SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

 ======== Setup file: sess116.L1024e

   Setup group:    6         Station: TORUN            Total bit rate:  1024
   Format: MARK5B            Bits per sample: 2        Sample rate: 32.000
   Number of channels: 16    DBE type: DBBC_DDC        Speedup factor:   1.00

   Disk used to record data.

   1st LO=   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00
             2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00
   Net SB=         L         L         U         U         L         L         U         U
                   L         L         U         U         L         L         U         U
   IF SB =         L         L         L         L         L         L         L         L
                   L         L         L         L         L         L         L         L
   Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
                 RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
   BBC   =         1         5         1         5         2         6         2         6
                   3         7         3         7         4         8         4         8
   BBC SB=         U         U         L         L         U         U         L         L
                   U         U         L         L         U         U         L         L
   IF    =        A1        B1        A1        B1        A1        B1        A1        B1
                  A1        B1        A1        B1        A1        B1        A1        B1

  The following frequency sets based on these setups were used.

   Frequency Set:   5  Setup file default.  Used with PCAL = off
   LO sum=   1610.49  1610.49  1610.49  1610.49  1642.49  1642.49  1642.49  1642.49
             1674.49  1674.49  1674.49  1674.49  1706.49  1706.49  1706.49  1706.49
   BBC fr=    689.51   689.51   689.51   689.51   657.51   657.51   657.51   657.51
              625.51   625.51   625.51   625.51   593.51   593.51   593.51   593.51
   Bandwd=     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
               16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
    Matching frequency sets:   5
```

```
  Track assignments are:
   track1=   2, 10, 18, 26,  4, 12, 20, 28,  6, 14, 22, 30,  8, 16, 24, 32
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

```
  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FRB              05 28 41.045663   * 05 31 58.000000     05 33 02.364226       0.00
                   33 05 54.64087    * 33 08 04.00000      33 08 37.21153        0.00

* J0528+2200       05 25 51.827467   * 05 28 52.264000     05 29 51.186751       0.00
                   21 57 41.80619    * 22 00 04.00000      22 00 38.26594        0.00

  J0237+2848       02 34 55.589591   * 02 37 52.405678     02 38 49.455594       0.11
* 0234+285         28 35 11.40773    * 28 48 08.98998      28 52 15.58036        0.10
  J0237+28         /aps3/opt/share/sched_11.3U1/catalogs/sources.vlba
                   rfc_2012b Petrov, 2012, unpublished 56811 observations

* J0403+2600       04 00 03.594850   * 04 03 05.586080     04 04 04.699230       0.11
  0400+258         25 51 46.48884    * 26 00 01.50271      26 02 33.20930        0.10
  J0403+26         /aps3/opt/share/sched_11.3U1/catalogs/sources.vlba
                   rfc_2012b Petrov, 2012, unpublished 2073 observations

* J0518+3306       05 14 48.670952   * 05 18 05.142474     05 19 09.307143       0.26
  0514+330         33 03 04.11948    * 33 06 13.36506      33 07 06.31548        0.32
                   /aps3/opt/share/sched_11.3U1/catalogs/sources.vlba
                   rfc_2012b Petrov, 2012, unpublished 92 observations

* J0521+2112       05 18 46.711010   * 05 21 45.965845     05 22 44.476623       0.40
  0518+211         21 09 58.62250    * 21 12 51.45169      21 13 35.52822        0.60
                   /aps3/opt/share/sched_11.3U1/catalogs/sources.vlba
                   GSFC 2011B astro solution       104 Observations

  0526+321         05 26 12.903667   * 05 29 28.211037     05 30 32.025086       0.80
* J0529+3209       32 07 26.83083    * 32 09 46.94745      32 10 23.43424        0.88
                   /aps3/opt/share/sched_11.3U1/catalogs/sources.vlba
                   rfc_2012b Petrov, 2012, unpublished 36 observations

  0527+329         05 27 04.333498   * 05 30 21.061039     05 31 25.345899       1.08
* J0530+3301       32 59 03.55663    * 33 01 19.90878      33 01 55.39425        1.28
                   /aps3/opt/share/sched_11.3U1/catalogs/sources.vlba
                   rfc_2012b Petrov, 2012, unpublished 33 observations
```

rk12oytr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Fri  12 Feb 2016   Day  43 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

02 00 00  1253-055     12 40 32  30.9 175.2 -0.3      -2.9     0        0   02 00 00
02 14 30  ---          12 55 05  31.0 179.4 -0.0      -0.3   870       28   02 00 01

02 15 00  1253-055     12 55 35  31.0 179.6 -0.0      -0.3    24       28   02 15 00
02 29 30  ---          13 10 07  31.0 183.8  0.2       2.3   870       56   02 15 01

02 30 00  1253-055     13 10 37  31.0 183.9  0.2       2.4    24       56   02 30 00
02 44 30  ---          13 25 10  30.7 188.1  0.5       4.9   870       84   02 30 01

02 45 00  1253-055     13 25 40  30.7 188.3  0.5       5.0    24       84   02 45 00
03 00 00  ---          13 40 42  30.3 192.6  0.7       7.6   900      112   02 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    4         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   2400.00   2400.00   2400.00   2400.00
  Net SB=         L         L         U         U
  IF SB =         L         L         L         L
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         U         U         L         L
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   4  Setup file default.  Used with PCAL = 1MHz
  LO sum=   1668.00  1668.00  1668.00  1668.00
  BBC fr=    732.00   732.00   732.00   732.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   4

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off



 POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 53.604924       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 24.07306        0.00
                    fake circumpolar target for a TS to look at

* 1253-055          12 53 35.831289   * 12 56 11.166557     12 57 02.034900       0.00
  J1256-0547       -05 31 07.99603    *-05 47 21.52489     -05 52 37.01300        0.00
  3C279             ./rk12oy_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 7924 observations, RA-AO3-04, RA-AO3-05



EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1253-055           127.4

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12oztr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                  Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Fri  12 Feb 2016   Day  43 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

05 00 00  1319-093     15 41 02  20.7 216.5  2.3      21.3     0        0   05 00 00
05 14 30  ---          15 55 34  19.4 220.1  2.5      23.1   870       28   05 00 01

05 15 00  1319-093     15 56 04  19.3 220.2  2.5      23.1    24       28   05 15 00
05 29 30  ---          16 10 37  17.8 223.6  2.8      24.9   870       56   05 15 01

05 30 00  1319-093     16 11 07  17.8 223.7  2.8      24.9    24       56   05 30 00
05 44 30  ---          16 25 39  16.2 227.1  3.0      26.5   870       84   05 30 01

05 45 00  1319-093     16 26 09  16.2 227.2  3.0      26.6    24       84   05 45 00
06 00 00  ---          16 41 12  14.5 230.7  3.3      28.1   900      112   05 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    3         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4100.00   4100.00   4100.00   4100.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   3  Setup file default.  Used with PCAL = 1MHz
  LO sum=   4836.00  4836.00  4836.00  4836.00
  BBC fr=    736.00   736.00   736.00   736.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   3

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

```
  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 53.623093       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 24.10404        0.00
                    fake circumpolar target for a TS to look at

* 1319-093          13 19 59.261855   * 13 22 36.912643     13 23 28.458325       0.00
  J1322-0937       -09 21 58.03930    *-09 37 37.79977     -09 42 39.82969        0.00
                    ./rk12oz_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 64 observations, RA-AO3-04, RA-AO2-12
```

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1319-093           120.0

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12patr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Fri  12 Feb 2016   Day  43 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

10 00 00  1538+149     20 41 51  20.7 267.2  5.0      38.3     0        0   10 00 00
10 14 30  ---          20 56 23  18.5 270.1  5.2      38.4   870       28   10 00 01

10 15 00  1538+149     20 56 54  18.4 270.2  5.3      38.4    24       28   10 15 00
10 29 30  ---          21 11 26  16.2 273.1  5.5      38.3   870       56   10 15 01

10 30 00  1538+149     21 11 56  16.2 273.2  5.5      38.3    24       56   10 30 00
10 44 30  ---          21 26 28  14.0 276.0  5.7      38.1   870       84   10 30 01

10 45 00  1538+149     21 26 58  13.9 276.1  5.8      38.1    24       84   10 45 00
11 00 00  ---          21 42 01  11.7 279.1  6.0      37.8   900      112   10 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    2         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4100.00   4100.00   4100.00   4100.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   1  Setup file default.  Used with PCAL = 1MHz
  LO sum=   4836.00  4836.00  4836.00  4836.00
  BBC fr=    736.00   736.00   736.00   736.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   1

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

```
  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 53.656972       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 24.16279        0.00
                    fake circumpolar target for a TS to look at

* 1538+149          15 38 30.232265   * 15 40 49.491516     15 41 34.118757       0.00
  J1540+1447        14 57 21.79415    * 14 47 45.88462      14 44 38.28064        0.00
                    ./rk12pa_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 1559 observations, RA-AO3-04
```

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1538+149            93.6

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12pbtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Sat  13 Feb 2016   Day  44 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

01 00 00  1406-076     11 44 19  21.6 140.8 -2.4     -22.5     0        0   01 00 00
01 14 30  ---          11 58 51  22.9 144.4 -2.2     -20.6   870       28   01 00 01

01 15 00  1406-076     11 59 21  23.0 144.6 -2.2     -20.6    24       28   01 15 00
01 29 30  ---          12 13 54  24.2 148.3 -1.9     -18.6   870       56   01 15 01

01 30 00  1406-076     12 14 24  24.2 148.4 -1.9     -18.5    24       56   01 30 00
01 44 30  ---          12 28 56  25.3 152.2 -1.7     -16.4   870       84   01 30 01

01 45 00  1406-076     12 29 26  25.3 152.3 -1.7     -16.4    24       84   01 45 00
02 00 00  ---          12 44 29  26.3 156.3 -1.4     -14.1   900      112   01 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    3         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4100.00   4100.00   4100.00   4100.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   3  Setup file default.  Used with PCAL = 1MHz
  LO sum=   4836.00  4836.00  4836.00  4836.00
  BBC fr=    736.00   736.00   736.00   736.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   3

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

```
  Source                        Source position (RA/Dec)                        Error
                       (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 53.749731       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 24.32927        0.00
                    fake circumpolar target for a TS to look at

* 1406-076          14 06 17.898821   * 14 08 56.481199     14 09 48.073255       0.00
  J1408-0752       -07 38 15.91695    *-07 52 26.66668     -07 56 58.40509        0.00
                    ./rk12pb_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 2135 observations, RA-AO3-04, RA-AO2-12
```

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1406-076           110.7

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12pctr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Sat  13 Feb 2016   Day  44 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

06 00 00  1351-018     16 45 08  24.3 227.9  2.8      26.5     0        0   06 00 00
06 14 30  ---          16 59 41  22.6 231.4  3.1      28.0   870       28   06 00 01

06 15 00  1351-018     17 00 11  22.6 231.5  3.1      28.1    24       28   06 15 00
06 29 30  ---          17 14 43  20.8 234.9  3.3      29.5   870       56   06 15 01

06 30 00  1351-018     17 15 13  20.8 235.0  3.3      29.5    24       56   06 30 00
06 44 30  ---          17 29 46  19.0 238.4  3.6      30.8   870       84   06 30 01

06 45 00  1351-018     17 30 16  18.9 238.5  3.6      30.8    24       84   06 45 00
07 00 00  ---          17 45 18  16.9 241.9  3.8      32.0   900      112   06 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    9         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
 1st LO=   2400.00   2400.00   2400.00   2400.00
 Net SB=         L         L         U         U
 IF SB =         L         L         L         L
 Pol.  =       RCP       LCP       RCP       LCP
 BBC   =         1         2         1         2
 BBC SB=         U         U         L         L
 IF    =         C         A         C         A

The following frequency sets based on these setups were used.

 Frequency Set:   6  Setup file default.  Used with PCAL = 1MHz
 LO sum=   1668.00  1668.00  1668.00  1668.00
 BBC fr=    732.00   732.00   732.00   732.00
 Bandwd=     16.00    16.00    16.00    16.00
  Matching frequency sets:   6

 Track assignments are:
  track1=   2, 18,  3, 19
  barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 53.779471       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 24.38398        0.00
                    fake circumpolar target for a TS to look at

* 1351-018          13 51 32.032818   * 13 54 06.895322     13 54 57.303832       0.00
  J1354-0206       -01 51 20.07716    *-02 06 03.19066     -02 10 47.99679        0.00
                    ./rk12pc_sources.radioastron
                    AGN, HIGHz, rfc_2013d Petrov, 2013, unpublished 22569 observations, RA-AO3-04, R


EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1351-018           116.1

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12pdtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Sat  13 Feb 2016   Day  44 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

11 00 00  1636+473     21 45 58  42.8 -64.3  5.1      52.9     0        0   11 00 00
11 14 30  ---          22 00 30  40.8 -62.3  5.4      51.5   870       28   11 00 01

11 15 00  1636+473     22 01 00  40.8 -62.2  5.4      51.5    24       28   11 15 00
11 29 30  ---          22 15 32  38.9 -60.2  5.6      50.1   870       56   11 15 01

11 30 00  1636+473     22 16 02  38.8 -60.1  5.6      50.1    24       56   11 30 00
11 44 30  ---          22 30 35  36.9 -58.1  5.9      48.7   870       84   11 30 01

11 45 00  1636+473     22 31 05  36.9 -58.0  5.9      48.6    24       84   11 45 00
12 00 00  ---          22 46 07  35.0 -55.9  6.1      47.1   900      112   11 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    8         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
 1st LO=   2400.00   2400.00   2400.00   2400.00
 Net SB=         L         L         U         U
 IF SB =         L         L         L         L
 Pol.  =       RCP       LCP       RCP       LCP
 BBC   =         1         2         1         2
 BBC SB=         U         U         L         L
 IF    =         C         A         C         A

The following frequency sets based on these setups were used.

 Frequency Set:   7  Setup file default.  Used with PCAL = 1MHz
 LO sum=   1668.00  1668.00  1668.00  1668.00
 BBC fr=    732.00   732.00   732.00   732.00
 Bandwd=     16.00    16.00    16.00    16.00
  Matching frequency sets:   7

 Track assignments are:
  track1=   2, 18,  3, 19
  barrel=roll_off
```

```
POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 53.808731       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 24.43821        0.00
                    fake circumpolar target for a TS to look at

* 1636+473          16 36 19.144415   * 16 37 45.130558     16 38 11.985056       0.00
  J1637+4717        47 23 28.57983    * 47 17 33.83103      47 15 31.03218        0.00
                    ./rk12pd_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 4851 observations, RA-AO3-04, RA-AO2-12
```

```
EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1636+473            91.3

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12petr

RadioAstron AGN Survey

PI: *Yuri Kovalev*

```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865

Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                   Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Sun  14 Feb 2016   Day  45 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

00 00 00  0300+470     10 48 06  24.2 -42.0  7.7      36.3     0        0   00 00 00
00 14 30  ---          11 02 38  22.8 -39.8  8.0      34.5   870       28   00 00 01

00 15 00  0300+470     11 03 08  22.8 -39.7  8.0      34.5    24       28   00 15 00
00 29 30  ---          11 17 40  21.4 -37.5  8.2      32.6   870       56   00 15 01

00 30 00  0300+470     11 18 11  21.4 -37.4  8.2      32.6    24       56   00 30 00
00 44 30  ---          11 32 43  20.1 -35.2  8.5      30.7   870       84   00 30 01

00 45 00  0300+470     11 33 13  20.0 -35.1  8.5      30.6    24       84   00 45 00
01 00 00  ---          11 48 16  18.8 -32.8  8.7      28.6   900      112   00 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    1         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4100.00   4100.00   4100.00   4100.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   2  Setup file default.  Used with PCAL = 1MHz
  LO sum=   4836.00  4836.00  4836.00  4836.00
  BBC fr=    736.00   736.00   736.00   736.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   2

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

```
  Source                        Source position (RA/Dec)                        Error
                       (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 53.883065       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 24.57662        0.00
                    fake circumpolar target for a TS to look at

* 0300+470          03 00 10.111206   * 03 03 35.242224     03 04 41.797947       0.00
  J0303+4716        47 04 33.67712    * 47 16 16.27546      47 20 03.63669        0.00
                    ./rk12pe_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 26473 observations, RA-AO3-04, RA-AO2-1
```

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  0300+470            92.6

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rg18etr

RadioAstron Megamaser observations

PI: *Alexei Alakoz, Willem Baan*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: K-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron Megamaser observations
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Sun  14 Feb 2016   Day  45 ---

 ---------- 15 min. K-band VLBI scan of space-ground FF/clock offset calibrator ----------

 Next scan frequencies:  22204.00  22204.00  22204.00  22204.00
 Next BBC frequencies:     704.00    704.00    704.00    704.00
 Next scan bandwidths:      16.00     16.00     16.00     16.00

05 00 00  0716+714     15 48 55  40.1 -19.7  8.4      39.2     0        0   05 00 00
05 15 00  ---          16 03 57  39.3 -18.5  8.7      36.5   900       29   05 00 01

 ---------- 10 min. K-band ground-VLBI scan of calibrator for NGC4258 (4.8 deg. separation) ----------

05 17 00  1150+497     16 05 58  51.7 -69.3  4.2      59.7     3       29   05 17 00
05 27 00  ---          16 15 59  50.3 -67.9  4.4      58.8   600       48   05 17 01

 ---------- K-band VLBI scan of NGC4258 ----------

05 28 00  NGC4258      16 17 00  52.7 -74.4  4.0      58.4    32       48   05 28 00
05 37 00  ---          16 26 01  51.4 -73.1  4.1      57.7   540       65   05 28 01

 ---------- K-band VLBI scan of NGC4258 ----------

05 38 00  NGC4258      16 27 01  51.2 -72.9  4.1      57.7    54       65   05 38 00
05 57 45  ---          16 46 49  48.4 -70.1  4.5      56.2  1185      103   05 38 01

05 58 45  NGC4258      16 47 50  48.3 -69.9  4.5      56.1    54      103   05 58 45
06 18 30  ---          17 07 38  45.5 -67.1  4.8      54.5  1185      141   05 58 46

06 19 30  NGC4258      17 08 38  45.3 -67.0  4.8      54.4    54      141   06 19 30
06 39 15  ---          17 28 26  42.6 -64.2  5.1      52.7  1185      179   06 19 31

06 40 15  NGC4258      17 29 26  42.5 -64.1  5.2      52.7    54      179   06 40 15
07 00 00  ---          17 49 15  39.9 -61.3  5.5      50.8  1185      217   06 40 16



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.
```

```
======== Setup file: ra1cm2.set
  Matching groups in ./rg18e_freq.dat:
    tr1cm

  Setup group:    1         Station: TORUN            Total bit rate:   256
  Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
  Number of channels:  4    DBE type:                 Speedup factor:   1.00

  Disk used to record data.

  1st LO=  21500.00  21500.00  21500.00  21500.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =       RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =         C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   2  Setup file default.  Used with PCAL = off
  LO sum=   22204.00  22204.00  22204.00  22204.00
  BBC fr=     704.00    704.00    704.00    704.00
  Bandwd=      16.00     16.00     16.00     16.00
   Matching frequency sets:   2

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* NGC4258           12 16 29.364915   * 12 18 57.504600     12 19 45.814942       0.00
  NGC4258_H2O       47 34 53.16919    * 47 18 14.30300      47 12 39.15317        0.00
                    ./rg18e_sources.radioastron
                    H2O maser; positions from Herrnstein et al. 2005, RA-AO3-10, RA-AO2-13

* 0716+714          07 16 13.029739   * 07 21 53.448474     07 23 45.375702       0.00
  J0721+7120        71 26 15.17406    * 71 20 36.36340      71 18 41.31343        0.00
                    ./rg18e_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 42370 observations, RA-AO3-04, RA-AO2-1

* 1150+497          11 50 47.999856   * 11 53 24.466639     11 54 15.569656       0.00
  J1153+4931        49 47 50.09409    * 49 31 08.83012      49 25 32.76881        0.00
                    ./rg18e_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 1816 observations, RA-AO3-04, RA-AO2-12
```

rk12pftr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Mon  15 Feb 2016   Day  46 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

02 00 00  1402+044     12 52 22  38.8 156.2 -1.2     -14.1     0        0   02 00 00
02 14 30  ---          13 06 54  39.6 160.8 -1.0     -11.4   870       28   02 00 01

02 15 00  1402+044     13 07 24  39.6 160.9 -1.0     -11.3    24       28   02 15 00
02 29 30  ---          13 21 57  40.3 165.6 -0.7      -8.6   870       56   02 15 01

02 30 00  1402+044     13 22 27  40.3 165.8 -0.7      -8.5    24       56   02 30 00
02 44 30  ---          13 36 59  40.7 170.5 -0.5      -5.7   870       84   02 30 01

02 45 00  1402+044     13 37 29  40.7 170.7 -0.5      -5.6    24       84   02 45 00
03 00 00  ---          13 52 32  41.0 175.6 -0.2      -2.6   900      112   02 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    4         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
 1st LO=   4100.00   4100.00   4100.00   4100.00
 Net SB=         L         L         U         U
 IF SB =         U         U         U         U
 Pol.  =       RCP       LCP       RCP       LCP
 BBC   =         1         2         1         2
 BBC SB=         L         L         U         U
 IF    =         C         A         C         A

The following frequency sets based on these setups were used.

 Frequency Set:   3  Setup file default.  Used with PCAL = 1MHz
 LO sum=   4836.00  4836.00  4836.00  4836.00
 BBC fr=    736.00   736.00   736.00   736.00
 Bandwd=     16.00    16.00    16.00    16.00
  Matching frequency sets:   3

 Track assignments are:
  track1=   2, 18,  3, 19
  barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 54.028380       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 24.84123        0.00
                    fake circumpolar target for a TS to look at

* 1402+044          14 02 29.977464   * 14 05 01.119814     14 05 50.251445       0.00
  J1405+0415        04 29 55.30133    * 04 15 35.81874      04 10 56.84352        0.00
                    ./rk12pf_sources.radioastron
                    AGN, HIGHz, BAL QSO, rfc_2013d Petrov, 2013, unpublished 1370 observations, RA-A


EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1402+044           116.9

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12pgtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Mon  15 Feb 2016   Day  46 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

05 00 00  1351-018     15 52 51  29.5 214.4  2.0      19.8     0        0   05 00 00
05 14 30  ---          16 07 24  28.2 218.3  2.2      21.8   870       28   05 00 01

05 15 00  1351-018     16 07 54  28.1 218.4  2.2      21.9    24       28   05 15 00
05 29 30  ---          16 22 26  26.7 222.2  2.5      23.8   870       56   05 15 01

05 30 00  1351-018     16 22 56  26.7 222.3  2.5      23.9    24       56   05 30 00
05 44 30  ---          16 37 29  25.1 226.0  2.7      25.6   870       84   05 30 01

05 45 00  1351-018     16 37 59  25.1 226.1  2.7      25.7    24       84   05 45 00
06 00 00  ---          16 53 01  23.4 229.8  3.0      27.3   900      112   05 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    4         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
 1st LO=   4100.00   4100.00   4100.00   4100.00
 Net SB=         L         L         U         U
 IF SB =         U         U         U         U
 Pol.  =       RCP       LCP       RCP       LCP
 BBC   =         1         2         1         2
 BBC SB=         L         L         U         U
 IF    =         C         A         C         A

The following frequency sets based on these setups were used.

 Frequency Set:   3  Setup file default.  Used with PCAL = 1MHz
 LO sum=   4836.00  4836.00  4836.00  4836.00
 BBC fr=    736.00   736.00   736.00   736.00
 Bandwd=     16.00    16.00    16.00    16.00
  Matching frequency sets:   3

 Track assignments are:
  track1=   2, 18,  3, 19
  barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 54.045180       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 24.87073        0.00
                    fake circumpolar target for a TS to look at

* 1351-018          13 51 32.032818   * 13 54 06.895322     13 54 57.356346       0.00
  J1354-0206       -01 51 20.07716    *-02 06 03.19066     -02 10 48.22198        0.00
                    ./rk12pg_sources.radioastron
                    AGN, HIGHz, rfc_2013d Petrov, 2013, unpublished 22569 observations, RA-AO3-04, R



EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1351-018           118.1

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12phtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Tue  16 Feb 2016   Day  47 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

12 00 00  0333+321     22 57 57  37.0  83.6 -4.7     -44.9     0        0   12 00 00
12 14 30  ---          23 12 29  39.2  86.3 -4.4     -45.2   870       28   12 00 01

12 15 00  0333+321     23 13 00  39.3  86.4 -4.4     -45.2    24       28   12 15 00
12 29 30  ---          23 27 32  41.5  89.3 -4.2     -45.3   870       56   12 15 01

12 30 00  0333+321     23 28 02  41.5  89.4 -4.2     -45.3    24       56   12 30 00
12 44 30  ---          23 42 34  43.7  92.3 -3.9     -45.3   870       84   12 30 01

12 45 00  0333+321     23 43 04  43.8  92.4 -3.9     -45.3    24       84   12 45 00
13 00 00  ---          23 58 07  46.1  95.6 -3.7     -45.0   900      112   12 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    1         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4100.00   4100.00   4100.00   4100.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   1  Setup file default.  Used with PCAL = 1MHz
  LO sum=   4836.00  4836.00  4836.00  4836.00
  BBC fr=    736.00   736.00   736.00   736.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   1

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off



 POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                       (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 54.223587       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 25.16598        0.00
                    fake circumpolar target for a TS to look at

* 0333+321          03 33 22.404692   * 03 36 30.107611     03 37 30.921093       0.00
  J0336+3218        32 08 36.66043    * 32 18 29.34220      32 21 35.24446        0.00
  NRAO140           ./rk12ph_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 3693 observations, RA-AO3-04, RA-AO2-12



EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  0333+321            92.4

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12pitr

RadioAstron AGN Survey

PI: *Yuri Kovalev*

```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865

Observing mode: C/K-band, dual-pol

Schedule for TORUN     (Code Tr )                                   Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Tue  16 Feb 2016   Day  47 ---

 ---------- K-band VLBI scans ----------

 Next scan frequencies:  22236.00  22236.00  22236.00  22236.00
 Next BBC frequencies:     736.00    736.00    736.00    736.00
 Next scan bandwidths:      16.00     16.00     16.00     16.00

15 00 00  0316+413     01 58 27  72.0 121.5 -1.4     -43.2     0        0   15 00 00
15 14 30  ---          02 12 59  73.8 128.5 -1.1     -38.9   870       28   15 00 01

15 15 00  0316+413     02 13 29  73.9 128.8 -1.1     -38.7    23       28   15 15 00
15 29 30  ---          02 28 01  75.5 137.1 -0.9     -33.1   870       56   15 15 01

15 30 00  0316+413     02 28 32  75.5 137.4 -0.9     -32.9    23       56   15 30 00
15 44 30  ---          02 43 04  76.8 147.3 -0.6     -25.7   870       84   15 30 01

15 45 00  0316+413     02 43 34  76.9 147.7 -0.6     -25.4    23       84   15 45 00
16 00 00  ---          02 58 36  77.9 159.8 -0.4     -16.1   900      112   15 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra1cm2.set
   Matching groups in ./rk12pi_freq.dat:
     tr1cm

   Setup group:    4         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=  21500.00  21500.00  21500.00  21500.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   2  Setup file default.  Used with PCAL = 1MHz
  LO sum=   22236.00  22236.00  22236.00  22236.00
  BBC fr=     736.00    736.00    736.00    736.00
  Bandwd=      16.00     16.00     16.00     16.00
   Matching frequency sets:   2

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off



 POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA           11 57 21.769299   * 12 00 00.000000     12 00 54.241497       0.00
                   85 16 41.77889    * 85 00 00.00000      84 54 25.19388        0.00
                   fake circumpolar target for a TS to look at

* 0316+413         03 16 29.567283   * 03 19 48.160114     03 20 52.533341       0.00
  J0319+4130       41 19 51.91847    * 41 30 42.10559      41 34 10.08522        0.00
  3C84             ./rk12pi_sources.radioastron
                   AGN, rfc_2013d Petrov, 2013, unpublished 15448 observations, RA-AO3-04, RA-AO2-1



EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  0316+413            91.3

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12pjtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Tue  16 Feb 2016   Day  47 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

21 00 00  0356+322     07 59 26  43.2 268.5  4.0      45.3     0        0   21 00 00
21 14 30  ---          08 13 58  41.0 271.4  4.2      45.3   870       28   21 00 01

21 15 00  0356+322     08 14 28  40.9 271.5  4.2      45.3    24       28   21 15 00
21 29 30  ---          08 29 01  38.8 274.3  4.5      45.2   870       56   21 15 01

21 30 00  0356+322     08 29 31  38.7 274.4  4.5      45.2    24       56   21 30 00
21 44 30  ---          08 44 03  36.5 277.1  4.7      44.9   870       84   21 30 01

21 45 00  0356+322     08 44 33  36.4 277.2  4.7      44.9    24       84   21 45 00
22 00 00  ---          08 59 36  34.2 280.0  5.0      44.5   900      112   21 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    3         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   2400.00   2400.00   2400.00   2400.00
  Net SB=         L         L         U         U
  IF SB =         L         L         L         L
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         U         U         L         L
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   2  Setup file default.  Used with PCAL = 1MHz
  LO sum=   1668.00  1668.00  1668.00  1668.00
  BBC fr=    732.00   732.00   732.00   732.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   2

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

```
  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 54.277724       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 25.24952        0.00
                    fake circumpolar target for a TS to look at

* 0356+322          03 56 34.795463   * 03 59 44.912919     04 00 46.610249       0.00
  J0359+3220        32 12 19.24958    * 32 20 47.15555      32 23 24.99884        0.00
                    ./rk12pj_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 88 observations, RA-AO3-04, RA-AO2-12
```

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  0356+322            96.8

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12pktr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Wed  17 Feb 2016   Day  48 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

00 00 00  0316+413     10 59 55  20.0 -46.3  7.7      35.5     0        0   00 00 00
00 14 30  ---          11 14 28  18.5 -43.9  7.9      33.8   870       28   00 00 01

00 15 00  0316+413     11 14 58  18.4 -43.9  7.9      33.8    24       28   00 15 00
00 29 30  ---          11 29 30  16.9 -41.5  8.1      32.1   870       56   00 15 01

00 30 00  0316+413     11 30 00  16.9 -41.4  8.2      32.0    24       56   00 30 00
00 44 30  ---          11 44 33  15.5 -39.0  8.4      30.3   870       84   00 30 01

00 45 00  0316+413     11 45 03  15.4 -38.9  8.4      30.2    24       84   00 45 00
01 00 00  ---          12 00 05  14.1 -36.3  8.7      28.4   900      112   00 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    3         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   2400.00   2400.00   2400.00   2400.00
  Net SB=         L         L         U         U
  IF SB =         L         L         L         L
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         U         U         L         L
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   2  Setup file default.  Used with PCAL = 1MHz
  LO sum=   1668.00  1668.00  1668.00  1668.00
  BBC fr=    732.00   732.00   732.00   732.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   2

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

```
  Source                        Source position (RA/Dec)                        Error
                       (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 54.296046       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 25.27728        0.00
                    fake circumpolar target for a TS to look at

* 0316+413          03 16 29.567283   * 03 19 48.160114     03 20 52.527256       0.00
  J0319+4130        41 19 51.91847    * 41 30 42.10559      41 34 10.06712        0.00
  3C84              ./rk12pk_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 15448 observations, RA-AO3-04, RA-AO2-1
```

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  0316+413            91.0

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12pltr

RadioAstron AGN Survey

PI: *Yuri Kovalev*

```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865

Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                   Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Thu  18 Feb 2016   Day  49 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

01 00 00  1617+229     12 04 02  33.5  96.3 -4.3     -40.3     0        0   01 00 00
01 14 30  ---          12 18 34  35.7  99.4 -4.0     -40.0   870       28   01 00 01

01 15 00  1617+229     12 19 04  35.8  99.5 -4.0     -40.0    24       28   01 15 00
01 25 00  ---          12 29 06  37.2 101.7 -3.8     -39.6   600       47   01 15 01

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00

01 30 00  1617+229     12 34 07  38.0 102.8 -3.8     -39.4   293       47   01 30 00
01 44 30  ---          12 48 39  40.1 106.2 -3.5     -38.7   870       75   01 30 01

01 45 00  1617+229     12 49 09  40.2 106.3 -3.5     -38.7    24       75   01 45 00
02 00 00  ---          13 04 12  42.3 109.9 -3.3     -37.7   900      104   01 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    1         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4100.00   4100.00   4100.00   4100.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =       RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =         C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   5  Setup file default.  Used with PCAL = 1MHz
  LO sum=   4836.00  4836.00  4836.00  4836.00
  BBC fr=    736.00   736.00   736.00   736.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   5

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off


======== Setup file: ra18cm2.set

  Setup group:    8         Station: TORUN            Total bit rate:   256
  Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
  Number of channels:  4    DBE type:                 Speedup factor:   1.00

  Disk used to record data.
```

```
 1st LO=   2400.00   2400.00   2400.00   2400.00
 Net SB=         L         L         U         U
 IF SB =         L         L         L         L
 Pol.  =       RCP       LCP       RCP       LCP
 BBC   =         1         2         1         2
 BBC SB=         U         U         L         L
 IF    =         C         A         C         A

The following frequency sets based on these setups were used.

 Frequency Set:   6  Setup file default.  Used with PCAL = 1MHz
 LO sum=   1668.00  1668.00  1668.00  1668.00
 BBC fr=    732.00   732.00   732.00   732.00
 Bandwd=     16.00    16.00    16.00    16.00
  Matching frequency sets:   6

 Track assignments are:
  track1=   2, 18,  3, 19
  barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 54.454156       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 25.50926        0.00
                    fake circumpolar target for a TS to look at

* 1617+229          16 17 06.466940   * 16 19 14.824597     16 19 55.857672       0.00
  J1619+2247        22 54 58.47369    * 22 47 47.85093      22 45 25.12827        0.00
                    ./rk12pl_sources.radioastron
                    AGN, MASIV, rfc_2013d Petrov, 2013, unpublished 8180 observations, RA-AO3-04, RA


EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1617+229            90.9

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

n16c1tr

Network Monitoring Experiment

PI: *Benito Marcote*

```
Address:  JIVE
Observing mode:

Schedule for TORUN     (Code Tr )                                   Page   2
               Network Monitoring Experiment
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source                Start / Stop                  Early    Disk   TPStart
Stop UT                   LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------
 --- Thu  18 Feb 2016   Day  49 ---
 Next scan frequencies:  4966.49  4966.49  4966.49  4966.49  4982.49  4982.49  4982.49  4982.49
                         4998.49  4998.49  4998.49  4998.49  5014.49  5014.49  5014.49  5014.49
 Next BBC frequencies:    766.49   766.49   766.49   766.49   782.49   782.49   782.49   782.49
                          798.49   798.49   798.49   798.49   814.49   814.49   814.49   814.49
 Next scan bandwidths:      8.00     8.00     8.00     8.00     8.00     8.00     8.00     8.00
                            8.00     8.00     8.00     8.00     8.00     8.00     8.00     8.00

12 00 00  3C84         23 05 50  46.8  78.7 -4.3     -51.9     0        0   12 00 00
12 05 00  ---          23 10 51  47.6  79.6 -4.2     -52.1   300       19   12 00 01

12 07 00  3C84         23 12 51  47.9  79.9 -4.1     -52.2   114       19   12 07 00
12 12 00  ---          23 17 52  48.6  80.8 -4.1     -52.4   300       38   12 07 01

12 15 00  3C84         23 20 53  49.0  81.3 -4.0     -52.5   173       38   12 15 00
12 25 00  ---          23 30 54  50.5  83.0 -3.8     -52.8   600       77   12 15 01

12 26 00  3C84         23 31 54  50.7  83.2 -3.8     -52.8    54       77   12 26 00
12 35 00  ---          23 40 56  52.0  84.9 -3.7     -53.1   540      112   12 26 01

12 36 00  3C84         23 41 56  52.2  85.0 -3.6     -53.1    54      112   12 36 00
12 45 00  ---          23 50 58  53.5  86.7 -3.5     -53.3   540      146   12 36 01

12 46 00  3C84         23 51 58  53.7  86.9 -3.5     -53.3    54      146   12 46 00
12 55 00  ---          00 00 59  55.0  88.6 -3.3     -53.4   540      181   12 46 01

12 55 00  3C84         00 00 59  55.0  88.6 -3.3     -53.4    -5      181   No stop
13 00 00  ---          00 06 00  55.8  89.6 -3.2     -53.4   295      200   12 55 01

13 02 00  3C84         00 08 00  56.1  90.0 -3.2     -53.4   114      200   13 02 00
13 07 00  ---          00 13 01  56.8  91.0 -3.1     -53.4   300      219   13 02 01

13 10 00  3C84         00 16 02  57.3  91.6 -3.1     -53.3   173      219   13 10 00
13 20 00  ---          00 26 03  58.8  93.8 -2.9     -53.2   600      258   13 10 01

13 21 00  J0418+3801   00 27 03  48.0  86.8 -3.9     -49.6     5      258   13 21 00
13 30 00  =0415+379    00 36 05  49.3  88.5 -3.7     -49.7   540      292   13 21 01

13 31 00  J0418+3801   00 37 05  49.5  88.7 -3.7     -49.7    54      292   13 31 00
13 40 00  =0415+379    00 46 07  50.8  90.5 -3.6     -49.7   540      327   13 31 01

13 41 00  J0418+3801   00 47 07  51.0  90.7 -3.5     -49.7    54      327   13 41 00
13 50 00  =0415+379    00 56 08  52.3  92.6 -3.4     -49.6   540      362   13 41 01
```

Schedule for TORUN (Code Tr) Page 3

Network Monitoring Experiment

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Thu	18 Feb 2016	Day 49 ---								
13 50 00	J0418+3801	00 56 08	52.3	92.6	-3.4		-49.6	-5	362	No stop
13 55 00	=0415+379	01 01 09	53.1	93.6	-3.3		-49.6	295	381	13 50 01
13 57 00	J0418+3801	01 03 09	53.4	94.1	-3.3		-49.5	114	381	13 57 00
14 02 00	=0415+379	01 08 10	54.1	95.1	-3.2		-49.4	300	400	13 57 01
14 05 00	J0418+3801	01 11 11	54.6	95.8	-3.1		-49.4	173	400	14 05 00
14 15 00	=0415+379	01 21 12	56.1	98.1	-3.0		-49.0	600	438	14 05 01
14 16 00	J0418+3801	01 22 12	56.2	98.3	-3.0		-49.0	54	438	14 16 00
14 25 00	=0415+379	01 31 14	57.6	100.4	-2.8		-48.6	540	473	14 16 01
14 26 00	J0418+3801	01 32 14	57.7	100.7	-2.8		-48.5	54	473	14 26 00
14 35 00	=0415+379	01 41 16	59.0	102.9	-2.6		-48.0	540	508	14 26 01
14 35 00	J0418+3801	01 41 16	59.0	102.9	-2.6		-48.0	-5	508	No stop
14 40 00	=0415+379	01 46 16	59.8	104.2	-2.6		-47.7	295	527	14 35 01
14 41 00	J0418+3801	01 47 17	59.9	104.5	-2.5		-47.6	54	527	14 41 00
14 46 00	=0415+379	01 52 17	60.6	105.9	-2.5		-47.2	300	546	14 41 01
14 49 00	J0418+3801	01 55 18	61.1	106.7	-2.4		-46.9	173	546	14 49 00
14 54 00	=0415+379	02 00 19	61.8	108.1	-2.3		-46.5	300	565	14 49 01
14 55 00	J0418+3801	02 01 19	61.9	108.4	-2.3		-46.4	54	565	14 55 00
15 00 00	=0415+379	02 06 20	62.7	109.9	-2.2		-45.8	300	585	14 55 01

SETUP FILE INFORMATION:
NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

======== Setup file: sess116.C512nme

Setup group: 11 Station: TORUN Total bit rate: 512
Format: MARK5B Bits per sample: 2 Sample rate: 16.000
Number of channels: 16 DBE type: DBBC_DDC Speedup factor: 1.00

Disk used to record data.

```
  1st LO=   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00
            4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00
  Net SB=         L         L         U         U         L         L         U         U
                  L         L         U         U         L         L         U         U
  IF SB =         U         U         U         U         U         U         U         U
                  U         U         U         U         U         U         U         U
  Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
                RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
  BBC   =         1         5         1         5         2         6         2         6
                  3         7         3         7         4         8         4         8
  BBC SB=         L         L         U         U         L         L         U         U
                  L         L         U         U         L         L         U         U
  IF    =        A1        B1        A1        B1        A1        B1        A1        B1
                 A1        B1        A1        B1        A1        B1        A1        B1

 The following frequency sets based on these setups were used.

  Frequency Set:  10  Setup file default.  Used with PCAL = off
  LO sum=   4966.49  4966.49  4966.49  4966.49  4982.49  4982.49  4982.49  4982.49
            4998.49  4998.49  4998.49  4998.49  5014.49  5014.49  5014.49  5014.49
  BBC fr=    766.49   766.49   766.49   766.49   782.49   782.49   782.49   782.49
             798.49   798.49   798.49   798.49   814.49   814.49   814.49   814.49
  Bandwd=      8.00     8.00     8.00     8.00     8.00     8.00     8.00     8.00
               8.00     8.00     8.00     8.00     8.00     8.00     8.00     8.00
   Matching frequency sets:  10  16

  Track assignments are:
   track1=  18, 26,  2, 10, 20, 28,  4, 12, 22, 30,  6, 14, 24, 32,  8, 16
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

```
  Source                        Source position (RA/Dec)                        Error
                       (B1950)            (J2000)            (Date)            (mas)

* 3C84              03 16 29.567263   * 03 19 48.160094     03 20 52.502635      1.30
  J0319+4130        41 19 51.91701    * 41 30 42.10413      41 34 10.00953       2.69
  0316+413          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
  J0319+41          GSFC 2015a astro solution, unpublished  10208 observations.

  0415+379          04 15 00.610255   * 04 18 21.277228     04 19 26.513391      0.07
* J0418+3801        37 54 19.28067    * 38 01 35.80014      38 03 51.88633       0.07
  3C111             /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
  J0418+38          GSFC 2015a astro solution, unpublished    151 observations.
```

rk12pmtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Thu  18 Feb 2016   Day  49 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

21 00 00  0356+322     08 07 19  42.0 270.1  4.1      45.3     0        0   21 00 00
21 14 30  ---          08 21 51  39.8 272.9  4.4      45.3   870       28   21 00 01

21 15 00  0356+322     08 22 21  39.8 273.0  4.4      45.2    24       28   21 15 00
21 29 30  ---          08 36 54  37.6 275.8  4.6      45.0   870       56   21 15 01

21 30 00  0356+322     08 37 24  37.5 275.9  4.6      45.0    24       56   21 30 00
21 44 30  ---          08 51 56  35.3 278.6  4.9      44.7   870       84   21 30 01

21 45 00  0356+322     08 52 26  35.3 278.7  4.9      44.7    24       84   21 45 00
22 00 00  ---          09 07 29  33.0 281.4  5.1      44.2   900      112   21 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    2         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4100.00   4100.00   4100.00   4100.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   3  Setup file default.  Used with PCAL = 1MHz
  LO sum=   4836.00  4836.00  4836.00  4836.00
  BBC fr=    736.00   736.00   736.00   736.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   3

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

```
  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 54.586827       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 25.69956        0.00
                    fake circumpolar target for a TS to look at

* 0356+322          03 56 34.795463   * 03 59 44.912919     04 00 46.582244       0.00
  J0359+3220        32 12 19.24958    * 32 20 47.15555      32 23 24.97560        0.00
                    ./rk12pm_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 88 observations, RA-AO3-04, RA-AO2-12
```

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  0356+322            94.9

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

gf019atr

High-resolution, multi-frequency mapping of the compact sources in

PI: *D. Fenech*

```
Address:  Department of Physics and Astronomy
Observing mode: Phase-referencing of M82 at 6cm (512 Mb/s)

Schedule for TORUN     (Code Tr )                                  Page   2
               High-resolution, multi-frequency mapping of the compact sources in M82
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------
 --- Fri  19 Feb 2016   Day  50 ---
 Next scan frequencies:  4932.25  4932.25  4932.25  4932.25  4948.25  4948.25  4948.25  4948.25
                         4964.25  4964.25  4964.25  4964.25  4980.25  4980.25  4980.25  4980.25
 Next BBC frequencies:    732.25   732.25   732.25   732.25   748.25   748.25   748.25   748.25
                          764.25   764.25   764.25   764.25   780.25   780.25   780.25   780.25
 Next scan bandwidths:      8.00     8.00     8.00     8.00     8.00     8.00     8.00     8.00
                            8.00     8.00     8.00     8.00     8.00     8.00     8.00     8.00

00 00 00  J0958+65     11 07 48  75.0 -27.8  1.1     137.5     0        0   00 00 00
00 02 30  ---          11 10 19  74.8 -28.6  1.2     136.2   150       10   00 00 01

00 02 30  M82PTCEN     11 10 19  71.5 -20.1  1.2     143.6   -32       10   No stop
00 07 20  ---          11 15 10  71.2 -21.2  1.3     141.5   258       28   00 02 31

00 07 50  J0958+65     11 15 40  74.4 -30.0  1.3     133.6    -3       28   00 07 50
00 10 30  ---          11 18 20  74.2 -30.7  1.3     132.3   157       38   00 07 51

00 10 30  M82PTCEN     11 18 20  71.1 -21.8  1.4     140.1   -33       38   No stop
00 15 20  ---          11 23 11  70.8 -22.8  1.4     138.1   257       57   00 10 31

00 15 50  J0958+65     11 23 41  73.8 -32.1  1.4     129.8    -3       57   00 15 50
00 18 30  ---          11 26 21  73.6 -32.7  1.4     128.6   157       67   00 15 51

00 24 24  3C84         11 32 17  16.7 -41.0  8.2      31.8   128       67   00 24 24
00 30 24  ---          11 38 18  16.1 -40.0  8.3      31.1   360       90   00 24 25

00 35 24  J0958+65     11 43 19  72.1 -36.1  1.7     121.5    75       90   00 35 24
00 37 54  ---          11 45 49  71.9 -36.5  1.8     120.5   150      100   00 35 25

00 50 05  J0927+39     11 58 01  60.8 256.3  2.5      48.6   131      100   00 50 05
00 56 05  ---          12 04 02  60.0 257.8  2.6      49.0   360      123   00 50 06

01 00 05  J0958+65     12 08 03  69.9 320.3  2.1     112.5   100      123   01 00 05
01 02 35  ---          12 10 33  69.6 320.0  2.2     111.6   150      133   01 00 06

01 02 35  M82PTCEN     12 10 33  67.6 329.9  2.2     120.1   -35      133   No stop
01 07 10  ---          12 15 09  67.2 329.4  2.3     118.6   240      150   01 02 36

01 08 05  J0958+65     12 16 04  69.1 319.5  2.3     109.8    20      150   01 08 05
01 10 35  ---          12 18 35  68.8 319.2  2.3     109.0   150      160   01 08 06

01 10 35  M82PTCEN     12 18 35  67.0 329.0  2.4     117.4   -34      160   No stop
01 15 10  ---          12 23 11  66.6 328.5  2.4     115.9   241      178   01 10 36
```

Schedule for TORUN (Code Tr) Page 3

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 19 Feb 2016 Day 50 ---										
01 16 05	J0958+65	12 24 06	68.3	318.7	2.4		107.3	20	178	01 16 05
01 18 35	---	12 26 36	68.0	318.5	2.4		106.6	150	187	01 16 06
01 18 35	M82PTCEN	12 26 36	66.3	328.2	2.5		114.9	-34	187	No stop
01 23 10	---	12 31 12	66.0	327.8	2.6		113.4	241	205	01 18 36
01 24 05	J0958+65	12 32 07	67.5	318.1	2.5		104.9	21	205	01 24 05
01 26 35	---	12 34 37	67.2	317.9	2.6		104.2	150	214	01 24 06
01 26 35	M82PTCEN	12 34 37	65.7	327.5	2.6		112.3	-34	214	No stop
01 31 10	---	12 39 13	65.3	327.2	2.7		110.9	241	232	01 26 36
01 32 05	J0958+65	12 40 08	66.7	317.6	2.7		102.6	21	232	01 32 05
01 34 35	---	12 42 39	66.4	317.5	2.7		101.9	150	242	01 32 06
01 34 35	M82PTCEN	12 42 39	65.0	326.9	2.8		109.9	-34	242	No stop
01 39 10	---	12 47 14	64.7	326.6	2.8		108.6	241	259	01 34 36
01 40 05	J0958+65	12 48 10	65.9	317.2	2.8		100.4	21	259	01 40 05
01 42 35	---	12 50 40	65.6	317.1	2.8		99.8	150	269	01 40 06
01 42 35	M82PTCEN	12 50 40	64.4	326.4	2.9		107.6	-34	269	No stop
01 47 10	---	12 55 16	64.0	326.1	3.0		106.2	241	287	01 42 36
01 48 05	J0958+65	12 56 11	65.1	316.9	2.9		98.3	21	287	01 48 05
01 50 35	---	12 58 41	64.8	316.8	3.0		97.7	150	296	01 48 06
01 50 35	M82PTCEN	12 58 41	63.7	325.9	3.0		105.3	-33	296	No stop
01 55 10	---	13 03 17	63.3	325.7	3.1		104.0	242	314	01 50 36
01 56 05	J0958+65	13 04 12	64.2	316.6	3.1		96.3	22	314	01 56 05
01 58 35	---	13 06 43	64.0	316.6	3.1		95.6	150	323	01 56 06
01 58 35	M82PTCEN	13 06 43	63.0	325.6	3.2		103.1	-33	323	No stop
02 03 10	---	13 11 18	62.6	325.4	3.2		101.8	242	341	01 58 36
02 04 05	J0958+65	13 12 14	63.4	316.4	3.2		94.3	22	341	02 04 05
02 06 35	---	13 14 44	63.1	316.4	3.2		93.7	150	351	02 04 06
02 06 35	M82PTCEN	13 14 44	62.3	325.2	3.3		100.9	-33	351	No stop
02 11 10	---	13 19 20	62.0	325.1	3.4		99.7	242	368	02 06 36
02 12 05	J0958+65	13 20 15	62.6	316.3	3.3		92.4	22	368	02 12 05
02 14 35	---	13 22 45	62.3	316.3	3.4		91.8	150	378	02 12 06
02 14 35	M82PTCEN	13 22 45	61.7	325.0	3.4		98.8	-32	378	No stop
02 19 10	---	13 27 21	61.3	324.9	3.5		97.6	243	396	02 14 36

```
Schedule for TORUN     (Code Tr )                                   Page   4
              High-resolution, multi-frequency mapping of the compact sources in M82
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Fri  19 Feb 2016   Day  50 ---

02 20 05  J0958+65     13 28 16  61.7 316.3  3.5      90.5    23      396   02 20 05
02 22 35  ---          13 30 47  61.5 316.3  3.5      89.9   150      405   02 20 06

02 22 35  M82PTCEN     13 30 47  61.0 324.8  3.6      96.7   -32      405   No stop
02 27 10  ---          13 35 22  60.6 324.7  3.6      95.6   243      423   02 22 36

02 28 05  J0958+65     13 36 18  60.9 316.3  3.6      88.7    23      423   02 28 05
02 30 35  ---          13 38 48  60.6 316.3  3.6      88.1   150      432   02 28 06

02 30 35  M82PTCEN     13 38 48  60.3 324.7  3.7      94.7   -32      432   No stop
02 35 10  ---          13 43 24  59.9 324.6  3.8      93.6   243      450   02 30 36

02 36 05  J0958+65     13 44 19  60.1 316.4  3.7      86.9    24      450   02 36 05
02 38 35  ---          13 46 49  59.8 316.4  3.8      86.4   150      460   02 36 06

02 38 35  M82PTCEN     13 46 49  59.6 324.6  3.8      92.8   -31      460   No stop
02 43 10  ---          13 51 25  59.2 324.5  3.9      91.7   244      477   02 38 36

02 44 05  J0958+65     13 52 20  59.2 316.5  3.9      85.2    24      477   02 44 05
02 46 35  ---          13 54 51  59.0 316.5  3.9      84.7   150      487   02 44 06

02 46 35  M82PTCEN     13 54 51  58.9 324.5  4.0      90.9   -31      487   No stop
02 51 10  ---          13 59 26  58.5 324.5  4.0      89.8   244      504   02 46 36

02 52 05  J0958+65     14 00 21  58.4 316.6  4.0      83.5    24      504   02 52 05
02 54 35  ---          14 02 52  58.2 316.7  4.0      83.0   150      514   02 52 06

02 54 35  M82PTCEN     14 02 52  58.2 324.5  4.1      89.0   -31      514   No stop
02 59 10  ---          14 07 28  57.8 324.5  4.2      87.9   244      532   02 54 36

03 00 05  J0958+65     14 08 23  57.6 316.8  4.1      81.8    25      532   03 00 05
03 02 35  ---          14 10 53  57.3 316.9  4.2      81.3   150      541   03 00 06

03 02 35  M82PTCEN     14 10 53  57.5 324.6  4.2      87.1   -30      541   No stop
03 07 10  ---          14 15 29  57.1 324.6  4.3      86.1   245      559   03 02 36

03 08 05  J0958+65     14 16 24  56.8 317.1  4.3      80.2    25      559   03 08 05
03 10 35  ---          14 18 54  56.5 317.2  4.3      79.7   150      569   03 08 06

03 10 35  M82PTCEN     14 18 54  56.8 324.7  4.4      85.3   -30      569   No stop
03 15 10  ---          14 23 30  56.4 324.7  4.4      84.3   245      586   03 10 36

03 16 05  J0958+65     14 24 25  55.9 317.4  4.4      78.6    25      586   03 16 05
03 18 35  ---          14 26 56  55.7 317.5  4.4      78.1   150      596   03 16 06
```

Schedule for TORUN (Code Tr) Page 5

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 19 Feb 2016 Day 50 ---										
03 18 35	M82PTCEN	14 26 56	56.1	324.8	4.5		83.6	-30	596	No stop
03 23 10	---	14 31 32	55.7	324.9	4.6		82.5	245	613	03 18 36
03 24 05	J0958+65	14 32 27	55.1	317.7	4.5		77.1	26	613	03 24 05
03 26 35	---	14 34 57	54.9	317.8	4.6		76.6	150	623	03 24 06
03 26 35	M82PTCEN	14 34 57	55.4	324.9	4.6		81.8	-29	623	No stop
03 31 10	---	14 39 33	55.0	325.0	4.7		80.8	246	641	03 26 36
03 32 05	J0958+65	14 40 28	54.3	318.0	4.7		75.5	26	641	03 32 05
03 34 35	---	14 42 58	54.1	318.1	4.7		75.0	150	650	03 32 06
03 34 35	M82PTCEN	14 42 58	54.7	325.1	4.8		80.1	-29	650	No stop
03 39 10	---	14 47 34	54.3	325.2	4.8		79.1	246	668	03 34 36
03 40 05	J0958+65	14 48 29	53.5	318.4	4.8		74.0	26	668	03 40 05
03 42 35	---	14 51 00	53.3	318.5	4.8		73.5	150	678	03 40 06
03 42 35	M82PTCEN	14 51 00	54.0	325.3	4.9		78.4	-29	678	No stop
03 47 10	---	14 55 36	53.6	325.5	5.0		77.4	246	695	03 42 36
03 48 05	J0958+65	14 56 31	52.7	318.8	4.9		72.5	27	695	03 48 05
03 50 35	---	14 59 01	52.5	318.9	5.0		72.0	150	705	03 48 06
03 50 35	M82PTCEN	14 59 01	53.3	325.6	5.0		76.7	-28	705	No stop
03 55 10	---	15 03 37	52.9	325.8	5.1		75.8	247	722	03 50 36
03 56 05	J0958+65	15 04 32	51.9	319.2	5.1		71.0	27	722	03 56 05
03 58 35	---	15 07 02	51.7	319.3	5.1		70.5	150	732	03 56 06
03 58 35	M82PTCEN	15 07 02	52.7	325.9	5.2		75.1	-28	732	No stop
04 03 10	---	15 11 38	52.3	326.1	5.2		74.1	247	750	03 58 36
04 04 05	J0958+65	15 12 33	51.2	319.7	5.2		69.5	27	750	04 04 05
04 06 35	---	15 15 04	50.9	319.8	5.3		69.1	150	759	04 04 06
04 06 35	M82PTCEN	15 15 04	52.0	326.2	5.3		73.4	-28	759	No stop
04 11 10	---	15 19 39	51.6	326.4	5.4		72.5	247	777	04 06 36
04 12 05	J0958+65	15 20 35	50.4	320.1	5.3		68.1	27	777	04 12 05
04 14 35	---	15 23 05	50.1	320.3	5.4		67.6	150	787	04 12 06
04 14 35	M82PTCEN	15 23 05	51.3	326.5	5.4		71.8	-28	787	No stop
04 19 10	---	15 27 41	50.9	326.7	5.5		70.9	247	804	04 14 36

Schedule for TORUN (Code Tr) Page 6

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 19 Feb 2016 Day 50 ---										
04 20 05	J0958+65	15 28 36	49.6	320.6	5.5		66.6	28	804	04 20 05
04 22 35	---	15 31 06	49.4	320.8	5.5		66.2	150	814	04 20 06
04 22 35	M82PTCEN	15 31 06	50.7	326.9	5.6		70.2	-27	814	No stop
04 27 10	---	15 35 42	50.3	327.1	5.6		69.3	248	831	04 22 36
04 28 05	J0958+65	15 36 37	48.8	321.2	5.6		65.2	28	831	04 28 05
04 30 35	---	15 39 08	48.6	321.3	5.7		64.8	150	841	04 28 06
04 30 35	M82PTCEN	15 39 08	50.0	327.3	5.7		68.6	-27	841	No stop
04 35 15	---	15 43 48	49.6	327.5	5.8		67.7	253	859	04 30 36
04 36 05	J0958+65	15 44 39	48.1	321.7	5.7		63.8	23	859	04 36 05
04 38 35	---	15 47 09	47.9	321.9	5.8		63.3	150	869	04 36 06
04 38 35	M82PTCEN	15 47 09	49.3	327.7	5.8		67.1	-27	869	No stop
04 43 15	---	15 51 50	49.0	327.9	5.9		66.1	253	887	04 38 36
04 44 05	J0958+65	15 52 40	47.4	322.3	5.9		62.4	24	887	04 44 05
04 46 35	---	15 55 10	47.1	322.4	5.9		61.9	150	896	04 44 06
04 46 35	M82PTCEN	15 55 10	48.7	328.1	6.0		65.5	-26	896	No stop
04 51 15	---	15 59 51	48.3	328.4	6.0		64.6	254	914	04 46 36
04 52 05	J0958+65	16 00 41	46.6	322.8	6.0		61.0	24	914	04 52 05
04 54 35	---	16 03 12	46.4	323.0	6.1		60.5	150	924	04 52 06
04 54 35	M82PTCEN	16 03 12	48.1	328.6	6.1		64.0	-26	924	No stop
04 59 15	---	16 07 52	47.7	328.8	6.2		63.1	254	942	04 54 36
05 00 05	J0958+65	16 08 42	45.9	323.4	6.1		59.6	24	942	05 00 05
05 02 35	---	16 11 13	45.7	323.6	6.2		59.1	150	951	05 00 06
05 02 35	M82PTCEN	16 11 13	47.5	329.0	6.2		62.4	-26	951	No stop
05 07 15	---	16 15 54	47.1	329.3	6.3		61.5	254	969	05 02 36
05 08 05	J0958+65	16 16 44	45.2	324.0	6.3		58.2	24	969	05 08 05
05 10 35	---	16 19 14	45.0	324.2	6.3		57.8	150	979	05 08 06
05 10 35	M82PTCEN	16 19 14	46.8	329.5	6.4		60.9	-26	979	No stop
05 15 15	---	16 23 55	46.5	329.8	6.4		60.0	254	997	05 10 36
05 16 05	J0958+65	16 24 45	44.5	324.7	6.4		56.8	25	997	05 16 05
05 18 35	---	16 27 16	44.3	324.9	6.5		56.4	150	1006	05 16 06

Schedule for TORUN (Code Tr) Page 7

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 19 Feb 2016 Day 50 ---										
05 18 35	M82PTCEN	16 27 16	46.2	330.0	6.5		59.4	-25	1006	No stop
05 23 15	---	16 31 56	45.9	330.3	6.6		58.5	255	1024	05 18 36
05 24 05	J0958+65	16 32 46	43.8	325.3	6.5		55.4	25	1024	05 24 05
05 26 35	---	16 35 17	43.6	325.5	6.6		55.0	150	1034	05 24 06
05 26 35	M82PTCEN	16 35 17	45.6	330.6	6.6		57.9	-25	1034	No stop
05 31 15	---	16 39 58	45.3	330.9	6.7		57.0	255	1052	05 26 36
05 32 05	J0958+65	16 40 48	43.1	326.0	6.7		54.1	25	1052	05 32 05
05 34 35	---	16 43 18	42.9	326.2	6.7		53.6	150	1062	05 32 06
05 34 35	M82PTCEN	16 43 18	45.0	331.1	6.8		56.4	-25	1062	No stop
05 39 15	---	16 47 59	44.7	331.4	6.8		55.5	255	1079	05 34 36
05 40 05	J0958+65	16 48 49	42.4	326.7	6.8		52.7	25	1079	05 40 05
05 42 35	---	16 51 19	42.2	326.9	6.9		52.3	150	1089	05 40 06
05 42 35	M82PTCEN	16 51 19	44.5	331.6	6.9		54.9	-25	1089	No stop
05 47 15	---	16 56 00	44.1	332.0	7.0		54.0	255	1107	05 42 36
05 48 05	J0958+65	16 56 50	41.8	327.3	6.9		51.3	26	1107	05 48 05
05 50 35	---	16 59 21	41.6	327.6	7.0		50.9	150	1117	05 48 06
05 50 35	M82PTCEN	16 59 21	43.9	332.2	7.0		53.4	-24	1117	No stop
05 55 15	---	17 04 02	43.6	332.6	7.1		52.6	256	1135	05 50 36
05 56 05	J0958+65	17 04 52	41.1	328.1	7.1		50.0	26	1135	05 56 05
05 58 35	---	17 07 22	41.0	328.3	7.1		49.6	150	1144	05 56 06
06 06 35	J0927+39	17 15 23	17.0	313.5	7.8		34.1	379	1144	06 06 35
06 12 35	---	17 21 24	16.3	314.5	7.9		33.4	360	1167	06 06 36
06 16 35	J0958+65	17 25 25	39.6	329.9	7.4		46.5	138	1167	06 16 35
06 19 05	---	17 27 55	39.4	330.1	7.5		46.1	150	1177	06 16 36
06 19 05	M82PTCEN	17 27 55	42.0	334.4	7.5		48.2	-24	1177	No stop
06 23 45	---	17 32 36	41.7	334.7	7.6		47.3	256	1195	06 19 06
06 24 35	J0958+65	17 33 26	39.0	330.7	7.6		45.2	26	1195	06 24 35
06 27 05	---	17 35 57	38.8	330.9	7.6		44.7	150	1204	06 24 36
06 27 05	M82PTCEN	17 35 57	41.5	335.0	7.6		46.7	-24	1204	No stop
06 31 45	---	17 40 38	41.2	335.4	7.7		45.9	256	1222	06 27 06

Schedule for TORUN (Code Tr) Page 8

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 19 Feb 2016 Day 50 ---										
06 32 35	J0958+65	17 41 28	38.4	331.4	7.7		43.8	26	1222	06 32 35
06 35 05	---	17 43 58	38.2	331.7	7.7		43.4	150	1232	06 32 36
06 35 05	M82PTCEN	17 43 58	41.0	335.6	7.8		45.3	-24	1232	No stop
06 39 45	---	17 48 39	40.7	336.0	7.9		44.4	256	1250	06 35 06
06 40 35	J0958+65	17 49 29	37.8	332.2	7.8		42.5	26	1250	06 40 35
06 43 05	---	17 51 59	37.6	332.4	7.9		42.0	150	1260	06 40 36
06 43 05	M82PTCEN	17 51 59	40.5	336.3	7.9		43.8	-24	1260	No stop
06 47 45	---	17 56 40	40.2	336.7	8.0		43.0	256	1278	06 43 06
06 48 35	J0958+65	17 57 30	37.3	333.0	8.0		41.1	25	1278	06 48 35
06 51 05	---	18 00 01	37.1	333.2	8.0		40.7	150	1287	06 48 36
06 51 05	M82PTCEN	18 00 01	40.0	337.0	8.0		42.4	-25	1287	No stop
06 55 45	---	18 04 41	39.7	337.4	8.1		41.5	255	1305	06 51 06
06 56 35	J0958+65	18 05 32	36.7	333.8	8.1		39.8	25	1305	06 56 35
06 59 05	---	18 08 02	36.6	334.0	8.1		39.3	150	1315	06 56 36
06 59 05	M82PTCEN	18 08 02	39.5	337.7	8.2		40.9	-25	1315	No stop
07 03 45	---	18 12 43	39.3	338.1	8.3		40.1	255	1333	06 59 06
07 04 35	J0958+65	18 13 33	36.2	334.6	8.2		38.4	25	1333	07 04 35
07 07 05	---	18 16 03	36.0	334.8	8.3		38.0	150	1342	07 04 36
07 07 05	M82PTCEN	18 16 03	39.1	338.3	8.3		39.5	-25	1342	No stop
07 11 45	---	18 20 44	38.8	338.7	8.4		38.6	255	1360	07 07 06
07 12 35	J0958+65	18 21 34	35.7	335.4	8.4		37.1	24	1360	07 12 35
07 15 05	---	18 24 05	35.5	335.6	8.4		36.6	150	1370	07 12 36
07 15 05	M82PTCEN	18 24 05	38.6	339.0	8.4		38.0	-25	1370	No stop
07 19 45	---	18 28 45	38.4	339.5	8.5		37.2	255	1388	07 15 06
07 20 35	J0958+65	18 29 36	35.2	336.2	8.5		35.7	24	1388	07 20 35
07 23 05	---	18 32 06	35.0	336.5	8.5		35.3	150	1397	07 20 36
07 23 05	M82PTCEN	18 32 06	38.2	339.7	8.6		36.6	-26	1397	No stop
07 27 45	---	18 36 47	38.0	340.2	8.7		35.8	254	1415	07 23 06
07 28 35	J0958+65	18 37 37	34.7	337.0	8.6		34.4	24	1415	07 28 35
07 31 05	---	18 40 07	34.6	337.3	8.7		33.9	150	1425	07 28 36

Schedule for TORUN (Code Tr) Page 9

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	 AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 19 Feb 2016 Day 50 ---										
07 31 05	M82PTCEN	18 40 07	37.8	340.5	8.7		35.2	-26	1425	No stop
07 35 45	---	18 44 48	37.6	340.9	8.8		34.3	254	1443	07 31 06
07 36 35	J0958+65	18 45 38	34.2	337.9	8.8		33.0	24	1443	07 36 35
07 39 05	---	18 48 09	34.1	338.1	8.8		32.6	150	1453	07 36 36
07 39 05	M82PTCEN	18 48 09	37.4	341.2	8.8		33.7	-26	1453	No stop
07 43 45	---	18 52 49	37.2	341.6	8.9		32.9	254	1471	07 39 06
07 44 35	J0958+65	18 53 40	33.8	338.7	8.9		31.7	24	1471	07 44 35
07 47 05	---	18 56 10	33.7	339.0	8.9		31.2	150	1480	07 44 36
07 47 05	M82PTCEN	18 56 10	37.0	341.9	9.0		32.3	-26	1480	No stop
07 51 45	---	19 00 51	36.8	342.4	9.1		31.5	254	1498	07 47 06
07 52 35	J0958+65	19 01 41	33.4	339.6	9.0		30.3	23	1498	07 52 35
07 55 05	---	19 04 11	33.2	339.9	9.1		29.9	150	1508	07 52 36
07 55 05	M82PTCEN	19 04 11	36.7	342.7	9.1		30.9	-27	1508	No stop
07 59 45	---	19 08 52	36.5	343.1	9.2		30.0	253	1526	07 55 06
08 00 35	J0958+65	19 09 42	33.0	340.4	9.2		29.0	23	1526	08 00 35
08 03 05	---	19 12 13	32.8	340.7	9.2		28.5	150	1535	08 00 36
08 03 05	M82PTCEN	19 12 13	36.3	343.4	9.2		29.4	-27	1535	No stop
08 07 45	---	19 16 53	36.1	343.9	9.3		28.6	253	1553	08 03 06
08 08 35	J0958+65	19 17 43	32.6	341.3	9.3		27.6	23	1553	08 08 35
08 11 05	---	19 20 14	32.4	341.6	9.3		27.2	150	1563	08 08 36
08 11 05	M82PTCEN	19 20 14	36.0	344.2	9.4		28.0	-27	1563	No stop
08 15 45	---	19 24 55	35.8	344.6	9.5		27.2	253	1581	08 11 06
08 16 35	J0958+65	19 25 45	32.2	342.2	9.4		26.3	23	1581	08 16 35
08 19 05	---	19 28 15	32.1	342.5	9.5		25.8	150	1590	08 16 36
08 19 05	M82PTCEN	19 28 15	35.7	345.0	9.5		26.6	-27	1590	No stop
08 23 45	---	19 32 56	35.5	345.4	9.6		25.7	253	1608	08 19 06
08 24 35	J0958+65	19 33 46	31.8	343.1	9.6		24.9	23	1608	08 24 35
08 27 05	---	19 36 16	31.7	343.4	9.6		24.5	150	1618	08 24 36
08 27 05	M82PTCEN	19 36 16	35.3	345.7	9.7		25.1	-27	1618	No stop
08 31 45	---	19 40 57	35.2	346.2	9.7		24.3	253	1636	08 27 06

Schedule for TORUN (Code Tr) Page 10

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 19 Feb 2016 Day 50 ---										
08 32 25	J0958+65	19 41 37	31.5	344.0	9.7		23.6	12	1636	08 32 25
08 34 55	---	19 44 08	31.4	344.2	9.7		23.2	150	1646	08 32 26
08 34 55	M82PTCEN	19 44 08	35.1	346.5	9.8		23.7	-28	1646	No stop
08 39 35	---	19 48 49	34.9	346.9	9.9		22.9	252	1663	08 34 56
08 40 15	J0958+65	19 49 29	31.2	344.8	9.8		22.2	12	1663	08 40 15
08 42 45	---	19 51 59	31.1	345.1	9.9		21.8	150	1673	08 40 16
08 42 45	M82PTCEN	19 51 59	34.8	347.3	9.9		22.3	-28	1673	No stop
08 47 35	---	19 56 50	34.6	347.7	10.0		21.5	262	1692	08 42 46
08 48 15	J0958+65	19 57 30	30.9	345.7	10.0		20.9	12	1692	08 48 15
08 50 55	---	20 00 10	30.8	346.0	10.0		20.4	160	1702	08 48 16
08 50 55	M82PTCEN	20 00 10	34.5	348.1	10.0		20.9	-28	1702	No stop
08 55 45	---	20 05 01	34.4	348.5	10.1		20.0	262	1721	08 50 56
08 56 25	J0958+65	20 05 41	30.6	346.7	10.1		19.5	12	1721	08 56 25
08 59 05	---	20 08 22	30.5	347.0	10.1		19.0	160	1731	08 56 26
08 59 05	M82PTCEN	20 08 22	34.3	348.9	10.2		19.4	-28	1731	No stop
09 03 55	---	20 13 13	34.2	349.4	10.3		18.5	262	1749	08 59 06
09 04 35	J0958+65	20 13 53	30.3	347.6	10.2		18.1	12	1749	09 04 35
09 07 15	---	20 16 33	30.2	347.9	10.3		17.7	160	1760	09 04 36
09 07 15	M82PTCEN	20 16 33	34.1	349.7	10.3		18.0	-28	1760	No stop
09 12 05	---	20 21 24	33.9	350.2	10.4		17.1	262	1778	09 07 16
09 12 45	J0958+65	20 22 04	30.1	348.5	10.4		16.7	12	1778	09 12 45
09 15 25	---	20 24 44	30.0	348.8	10.4		16.3	160	1788	09 12 46
09 15 25	M82PTCEN	20 24 44	33.8	350.5	10.5		16.5	-28	1788	No stop
09 20 15	---	20 29 35	33.7	351.0	10.5		15.6	262	1807	09 15 26
09 20 55	J0958+65	20 30 15	29.8	349.5	10.5		15.3	11	1807	09 20 55
09 23 35	---	20 32 56	29.7	349.8	10.5		14.9	160	1817	09 20 56
09 23 35	M82PTCEN	20 32 56	33.7	351.3	10.6		15.0	-29	1817	No stop
09 28 25	---	20 37 47	33.5	351.8	10.7		14.2	261	1836	09 23 36
09 29 05	J0958+65	20 38 27	29.6	350.4	10.6		13.9	11	1836	09 29 05
09 31 45	---	20 41 07	29.5	350.7	10.7		13.5	160	1846	09 29 06

Schedule for TORUN (Code Tr) Page 11

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 19 Feb 2016 Day 50 ---										
09 31 45	M82PTCEN	20 41 07	33.5	352.2	10.7		13.6	-29	1846	No stop
09 36 35	---	20 45 58	33.4	352.7	10.8		12.7	261	1865	09 31 46
09 37 15	J0958+65	20 46 38	29.4	351.4	10.8		12.5	11	1865	09 37 15
09 39 55	---	20 49 18	29.4	351.7	10.8		12.1	160	1875	09 37 16
09 39 55	M82PTCEN	20 49 18	33.3	353.0	10.9		12.1	-29	1875	No stop
09 44 45	---	20 54 09	33.2	353.5	10.9		11.2	261	1894	09 39 56
09 45 25	J0958+65	20 54 49	29.2	352.3	10.9		11.1	11	1894	09 45 25
09 48 05	---	20 57 30	29.2	352.6	11.0		10.7	160	1904	09 45 26
09 48 05	M82PTCEN	20 57 30	33.2	353.8	11.0		10.7	-29	1904	No stop
09 52 55	---	21 02 21	33.1	354.3	11.1		9.8	261	1922	09 48 06
09 53 35	J0958+65	21 03 01	29.1	353.3	11.0		9.7	11	1922	09 53 35
09 56 15	---	21 05 41	29.0	353.6	11.1		9.3	160	1933	09 53 36
09 56 15	M82PTCEN	21 05 41	33.1	354.7	11.1		9.2	-29	1933	No stop
10 01 05	---	21 10 32	33.0	355.2	11.2		8.3	261	1951	09 56 16
10 01 45	J0958+65	21 11 12	28.9	354.2	11.2		8.3	11	1951	10 01 45
10 04 25	---	21 13 52	28.9	354.6	11.2		7.9	160	1962	10 01 46
10 04 25	M82PTCEN	21 13 52	33.0	355.5	11.3		7.7	-29	1962	No stop
10 09 15	---	21 18 43	32.9	356.0	11.4		6.9	261	1980	10 04 26
10 09 55	J0958+65	21 19 23	28.8	355.2	11.3		6.9	11	1980	10 09 55
10 12 35	---	21 22 04	28.8	355.5	11.4		6.5	160	1990	10 09 56
10 12 35	M82PTCEN	21 22 04	32.9	356.4	11.4		6.3	-29	1990	No stop
10 17 25	---	21 26 55	32.8	356.9	11.5		5.4	261	2009	10 12 36
10 18 05	J0958+65	21 27 35	28.7	356.2	11.5		5.5	11	2009	10 18 05
10 20 45	---	21 30 15	28.7	356.5	11.5		5.1	160	2019	10 18 06
10 20 45	M82PTCEN	21 30 15	32.8	357.2	11.6		4.8	-29	2019	No stop
10 25 35	---	21 35 06	32.8	357.7	11.6		3.9	261	2038	10 20 46
10 26 15	J0958+65	21 35 46	28.7	357.1	11.6		4.1	11	2038	10 26 15
10 28 55	---	21 38 27	28.7	357.4	11.6		3.7	160	2048	10 26 16
10 28 55	M82PTCEN	21 38 27	32.7	358.1	11.7		3.4	-29	2048	No stop
10 33 45	---	21 43 17	32.7	358.6	11.8		2.5	261	2067	10 28 56

Schedule for TORUN (Code Tr) Page 12

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 19 Feb 2016 Day 50 ---										
10 34 25	J0958+65	21 43 57	28.6	358.1	11.7		2.7	11	2067	10 34 25
10 37 05	---	21 46 38	28.6	358.4	11.8		2.3	160	2077	10 34 26
10 37 05	M82PTCEN	21 46 38	32.7	358.9	11.8		1.9	-29	2077	No stop
10 41 55	---	21 51 29	32.7	359.4	11.9		1.0	261	2096	10 37 06
10 42 35	J0958+65	21 52 09	28.6	359.1	11.9		1.3	11	2096	10 42 35
10 45 15	---	21 54 49	28.6	359.4	11.9		0.9	160	2106	10 42 36
10 45 15	M82PTCEN	21 54 49	32.7	359.8	12.0		0.4	-29	2106	No stop
10 50 05	---	21 59 40	32.7	360.3	-12.0		-0.4	261	2124	10 45 16
10 50 45	J0958+65	22 00 20	28.6	360.0	-12.0		-0.0	11	2124	10 50 45
10 53 25	---	22 03 01	28.6	360.4	-12.0		-0.5	160	2135	10 50 46
10 53 25	M82PTCEN	22 03 01	32.7	360.6	-11.9		-1.0	-29	2135	No stop
10 58 15	---	22 07 51	32.7	361.1	-11.8		-1.9	261	2153	10 53 26
10 58 55	J0958+65	22 08 31	28.6	361.0	-11.9		-1.4	11	2153	10 58 55
11 01 35	---	22 11 12	28.6	361.3	-11.8		-1.9	160	2163	10 58 56
11 01 35	M82PTCEN	22 11 12	32.7	361.4	-11.8		-2.5	-29	2163	No stop
11 06 25	---	22 16 03	32.7	361.9	-11.7		-3.4	261	2182	11 01 36
11 07 05	J0958+65	22 16 43	28.6	362.0	-11.7		-2.8	11	2182	11 07 05
11 09 45	---	22 19 23	28.6	362.3	-11.7		-3.3	160	2192	11 07 06
11 09 45	M82PTCEN	22 19 23	32.8	362.3	-11.6		-4.0	-29	2192	No stop
11 14 35	---	22 24 14	32.8	362.8	-11.5		-4.8	261	2211	11 09 46
11 15 15	J0958+65	22 24 54	28.7	362.9	-11.6		-4.2	11	2211	11 15 15
11 17 55	---	22 27 35	28.7	363.2	-11.5		-4.7	160	2221	11 15 16
11 17 55	M82PTCEN	22 27 35	32.8	363.1	-11.5		-5.4	-29	2221	No stop
11 22 45	---	22 32 25	32.9	363.6	-11.4		-6.3	261	2240	11 17 56
11 23 25	J0958+65	22 33 05	28.7	363.9	-11.4		-5.6	11	2240	11 23 25
11 26 05	---	22 35 46	28.8	364.2	-11.4		-6.1	160	2250	11 23 26
11 26 05	M82PTCEN	22 35 46	32.9	364.0	-11.4		-6.9	-29	2250	No stop
11 30 55	---	22 40 37	33.0	364.5	-11.3		-7.7	261	2269	11 26 06
11 31 35	J0958+65	22 41 17	28.8	364.9	-11.3		-7.0	11	2269	11 31 35
11 34 15	---	22 43 57	28.9	365.2	-11.3		-7.5	160	2279	11 31 36

```
Schedule for TORUN     (Code Tr )                                   Page  13
               High-resolution, multi-frequency mapping of the compact sources in M82
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Fri  19 Feb 2016   Day  50 ---

11 34 15  M82PTCEN     22 43 57  33.0 364.8-11.2      -8.3   -29     2279   No stop
11 39 05  ---          22 48 48  33.1 365.3-11.1      -9.2   261     2297   11 34 16

11 39 45  J0958+65     22 49 28  29.0 365.8-11.2      -8.4    11     2297   11 39 45
11 42 25  ---          22 52 09  29.0 366.1-11.1      -8.9   160     2308   11 39 46

11 42 25  M82PTCEN     22 52 09  33.1 365.7-11.1      -9.8   -29     2308   No stop
11 47 15  ---          22 56 59  33.2 366.2-11.0     -10.7   261     2326   11 42 26

11 47 55  J0958+65     22 57 39  29.1 366.8-11.0      -9.8    11     2326   11 47 55
11 50 35  ---          23 00 20  29.1 367.1-11.0     -10.3   160     2337   11 47 56

11 50 35  M82PTCEN     23 00 20  33.2 366.5-10.9     -11.3   -29     2337   No stop
11 55 25  ---          23 05 11  33.3 367.0-10.9     -12.1   261     2355   11 50 36

11 56 05  J0958+65     23 05 51  29.2 367.7-10.9     -11.2    11     2355   11 56 05
11 58 45  ---          23 08 31  29.3 368.1-10.9     -11.7   160     2365   11 56 06

11 58 45  M82PTCEN     23 08 31  33.4 367.3-10.8     -12.7   -29     2365   No stop
12 03 35  ---          23 13 22  33.5 367.8-10.7     -13.6   261     2384   11 58 46

12 04 15  J0958+65     23 14 02  29.4 368.7-10.8     -12.6    11     2384   12 04 15
12 06 55  ---          23 16 43  29.5 369.0-10.7     -13.1   160     2394   12 04 16

12 06 55  M82PTCEN     23 16 43  33.5 368.2-10.7     -14.2   -29     2394   No stop
12 11 45  ---          23 21 33  33.7 368.7-10.6     -15.0   261     2413   12 06 56

12 12 25  J0958+65     23 22 14  29.6 369.6-10.6     -14.0    11     2413   12 12 25
12 15 05  ---          23 24 54  29.7 370.0-10.6     -14.5   160     2423   12 12 26

12 15 05  M82PTCEN     23 24 54  33.7 369.0-10.5     -15.6   -29     2423   No stop
12 19 55  ---          23 29 45  33.8 369.5-10.5     -16.5   261     2442   12 15 06

12 20 35  J0958+65     23 30 25  29.8 370.6-10.5     -15.4    11     2442   12 20 35
12 23 15  ---          23 33 05  29.9 370.9-10.4     -15.9   160     2452   12 20 36

12 23 15  M82PTCEN     23 33 05  33.9 369.8-10.4     -17.1   -29     2452   No stop
12 28 05  ---          23 37 56  34.1 370.3-10.3     -18.0   261     2471   12 23 16

12 28 45  J0958+65     23 38 36  30.1 371.5-10.4     -16.8    11     2471   12 28 45
12 31 25  ---          23 41 17  30.2 371.8-10.3     -17.3   160     2481   12 28 46

12 31 25  M82PTCEN     23 41 17  34.2 370.6-10.3     -18.6   -29     2481   No stop
12 36 15  ---          23 46 07  34.3 371.1-10.2     -19.4   261     2499   12 31 26
```

Schedule for TORUN (Code Tr) Page 14

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 19 Feb 2016 Day 50 ---										
12 36 55	J0958+65	23 46 48	30.3	372.5	-10.2		-18.2	11	2499	12 36 55
12 39 35	---	23 49 28	30.4	372.8	-10.2		-18.7	160	2510	12 36 56
12 39 35	M82PTCEN	23 49 28	34.4	371.5	-10.1		-20.0	-29	2510	No stop
12 44 25	---	23 54 19	34.5	371.9	-10.0		-20.9	261	2528	12 39 36
12 45 05	J0958+65	23 54 59	30.6	373.4	-10.1		-19.6	11	2528	12 45 05
12 47 45	---	23 57 39	30.7	373.7	-10.0		-20.1	160	2538	12 45 06
12 47 45	M82PTCEN	23 57 39	34.6	372.3	-10.0		-21.5	-29	2538	No stop
12 52 35	---	00 02 30	34.8	372.7	-9.9		-22.3	261	2557	12 47 46
12 53 15	J0958+65	00 03 10	30.9	374.3	-9.9		-21.0	11	2557	12 53 15
12 55 45	---	00 05 41	31.0	374.6	-9.9		-21.4	150	2567	12 53 16
12 55 45	M82PTCEN	00 05 41	34.9	373.1	-9.9		-22.9	-29	2567	No stop
13 00 35	---	00 10 31	35.1	373.5	-9.8		-23.8	261	2585	12 55 46
13 01 15	J0958+65	00 11 12	31.2	375.2	-9.8		-22.3	12	2585	13 01 15
13 03 45	---	00 13 42	31.3	375.5	-9.8		-22.8	150	2595	13 01 16
13 13 24	3C84	00 23 23	58.4	93.2	-3.0		-53.3	0	2595	13 13 24
13 19 24	---	00 29 24	59.3	94.5	-2.9		-53.1	360	2618	13 13 25
13 25 24	J0958+65	00 35 25	32.2	17.9	-9.4		-26.4	191	2618	13 25 24
13 27 24	---	00 37 25	32.3	18.1	-9.4		-26.8	120	2626	13 25 25
13 27 24	M82PTCEN	00 37 25	36.1	16.1	-9.3		-28.6	-28	2626	No stop
13 32 14	---	00 42 16	36.3	16.6	-9.2		-29.4	262	2644	13 27 25
13 32 54	J0958+65	00 42 56	32.6	18.7	-9.3		-27.7	12	2644	13 32 54
13 35 24	---	00 45 27	32.7	19.0	-9.2		-28.1	150	2654	13 32 55
13 35 24	M82PTCEN	00 45 27	36.4	16.9	-9.2		-30.0	-28	2654	No stop
13 40 14	---	00 50 18	36.7	17.3	-9.1		-30.9	262	2672	13 35 25
13 40 54	J0958+65	00 50 58	33.0	19.6	-9.2		-29.1	12	2672	13 40 54
13 43 24	---	00 53 28	33.1	19.9	-9.1		-29.5	150	2682	13 40 55
13 43 24	M82PTCEN	00 53 28	36.8	17.6	-9.1		-31.4	-28	2682	No stop
13 48 14	---	00 58 19	37.0	18.1	-9.0		-32.3	262	2701	13 43 25
13 48 54	J0958+65	00 58 59	33.4	20.5	-9.0		-30.4	12	2701	13 48 54
13 51 24	---	01 01 29	33.5	20.7	-9.0		-30.8	150	2710	13 48 55

Schedule for TORUN (Code Tr) Page 15

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 19 Feb 2016 Day 50 ---										
13 51 24	M82PTCEN	01 01 29	37.2	18.4	-8.9		-32.9	-28	2710	No stop
13 56 14	---	01 06 20	37.4	18.8	-8.8		-33.7	262	2729	13 51 25
13 56 54	J0958+65	01 07 00	33.8	21.3	-8.9		-31.8	13	2729	13 56 54
13 59 24	---	01 09 31	34.0	21.6	-8.8		-32.2	150	2738	13 56 55
13 59 24	M82PTCEN	01 09 31	37.6	19.1	-8.8		-34.3	-27	2738	No stop
14 04 14	---	01 14 22	37.8	19.5	-8.7		-35.2	263	2757	13 59 25
14 04 54	J0958+65	01 15 02	34.3	22.2	-8.8		-33.1	13	2757	14 04 54
14 07 24	---	01 17 32	34.4	22.4	-8.7		-33.5	150	2767	14 04 55
14 07 24	M82PTCEN	01 17 32	38.0	19.8	-8.7		-35.7	-27	2767	No stop
14 12 14	---	01 22 23	38.2	20.3	-8.6		-36.6	263	2785	14 07 25
14 12 54	J0958+65	01 23 03	34.7	23.0	-8.6		-34.5	13	2785	14 12 54
14 15 24	---	01 25 33	34.9	23.3	-8.6		-34.9	150	2795	14 12 55
14 15 24	M82PTCEN	01 25 33	38.4	20.5	-8.5		-37.2	-27	2795	No stop
14 20 14	---	01 30 24	38.6	21.0	-8.4		-38.0	263	2813	14 15 25
14 20 54	J0958+65	01 31 04	35.2	23.9	-8.5		-35.8	13	2813	14 20 54
14 23 24	---	01 33 35	35.4	24.1	-8.4		-36.2	150	2823	14 20 55
14 23 24	M82PTCEN	01 33 35	38.8	21.2	-8.4		-38.6	-27	2823	No stop
14 28 14	---	01 38 25	39.1	21.7	-8.3		-39.5	263	2842	14 23 25
14 28 54	J0958+65	01 39 06	35.7	24.7	-8.3		-37.2	13	2842	14 28 54
14 31 24	---	01 41 36	35.9	24.9	-8.3		-37.6	150	2851	14 28 55
14 31 24	M82PTCEN	01 41 36	39.3	21.9	-8.3		-40.1	-27	2851	No stop
14 36 14	---	01 46 27	39.5	22.4	-8.2		-40.9	263	2870	14 31 25
14 36 54	J0958+65	01 47 07	36.2	25.5	-8.2		-38.5	14	2870	14 36 54
14 39 24	---	01 49 37	36.4	25.7	-8.2		-38.9	150	2879	14 36 55
14 39 24	M82PTCEN	01 49 37	39.7	22.6	-8.1		-41.5	-26	2879	No stop
14 44 14	---	01 54 28	40.0	23.0	-8.0		-42.4	264	2898	14 39 25
14 44 54	J0958+65	01 55 08	36.8	26.3	-8.1		-39.9	14	2898	14 44 54
14 47 24	---	01 57 39	36.9	26.5	-8.0		-40.3	150	2908	14 44 55
14 47 24	M82PTCEN	01 57 39	40.2	23.3	-8.0		-42.9	-26	2908	No stop
14 52 14	---	02 02 29	40.5	23.7	-7.9		-43.8	264	2926	14 47 25

Schedule for TORUN (Code Tr) Page 16

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 19 Feb 2016 Day 50 ---										
14 52 54	J0958+65	02 03 10	37.3	27.1	-7.9		-41.2	14	2926	14 52 54
14 55 24	---	02 05 40	37.5	27.3	-7.9		-41.6	150	2936	14 52 55
14 55 24	M82PTCEN	02 05 40	40.7	24.0	-7.9		-44.4	-26	2936	No stop
15 00 14	---	02 10 31	41.0	24.4	-7.8		-45.3	264	2954	14 55 25
15 00 54	J0958+65	02 11 11	37.9	27.9	-7.8		-42.6	14	2954	15 00 54
15 03 24	---	02 13 41	38.0	28.1	-7.8		-43.0	150	2964	15 00 55
15 03 24	M82PTCEN	02 13 41	41.2	24.6	-7.7		-45.9	-26	2964	No stop
15 08 14	---	02 18 32	41.5	25.0	-7.6		-46.7	264	2983	15 03 25
15 08 54	J0958+65	02 19 12	38.4	28.6	-7.7		-43.9	15	2983	15 08 54
15 11 24	---	02 21 43	38.6	28.9	-7.6		-44.3	150	2992	15 08 55
15 11 24	M82PTCEN	02 21 43	41.7	25.3	-7.6		-47.3	-25	2992	No stop
15 16 14	---	02 26 33	42.0	25.6	-7.5		-48.2	265	3011	15 11 25
15 16 54	J0958+65	02 27 13	39.0	29.4	-7.5		-45.3	15	3011	15 16 54
15 19 24	---	02 29 44	39.2	29.6	-7.5		-45.7	150	3021	15 16 55
15 19 24	M82PTCEN	02 29 44	42.2	25.9	-7.5		-48.8	-25	3021	No stop
15 24 14	---	02 34 35	42.5	26.3	-7.4		-49.7	265	3039	15 19 25
15 24 54	J0958+65	02 35 15	39.6	30.1	-7.4		-46.6	15	3039	15 24 54
15 27 24	---	02 37 45	39.8	30.4	-7.4		-47.0	150	3049	15 24 55
15 27 24	M82PTCEN	02 37 45	42.7	26.5	-7.3		-50.2	-25	3049	No stop
15 32 14	---	02 42 36	43.0	26.9	-7.2		-51.1	265	3067	15 27 25
15 32 54	J0958+65	02 43 16	40.2	30.9	-7.3		-48.0	15	3067	15 32 54
15 35 24	---	02 45 47	40.4	31.1	-7.2		-48.4	150	3077	15 32 55
15 35 24	M82PTCEN	02 45 47	43.3	27.1	-7.2		-51.7	-25	3077	No stop
15 40 14	---	02 50 37	43.6	27.5	-7.1		-52.6	265	3096	15 35 25
15 40 54	J0958+65	02 51 17	40.8	31.6	-7.1		-49.3	16	3096	15 40 54
15 43 24	---	02 53 48	41.0	31.8	-7.1		-49.7	150	3105	15 40 55
15 43 24	M82PTCEN	02 53 48	43.8	27.7	-7.1		-53.2	-24	3105	No stop
15 48 14	---	02 58 39	44.2	28.0	-7.0		-54.1	266	3124	15 43 25
15 48 54	J0958+65	02 59 19	41.5	32.3	-7.0		-50.7	16	3124	15 48 54
15 51 24	---	03 01 49	41.7	32.5	-7.0		-51.1	150	3133	15 48 55

Schedule for TORUN (Code Tr) Page 17

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 19 Feb 2016 Day 50 ---										
15 51 24	M82PTCEN	03 01 49	44.4	28.3	-6.9		-54.7	-24	3133	No stop
15 56 14	---	03 06 40	44.7	28.6	-6.8		-55.6	266	3152	15 51 25
15 56 54	J0958+65	03 07 20	42.1	33.0	-6.9		-52.0	16	3152	15 56 54
15 59 24	---	03 09 50	42.3	33.2	-6.8		-52.5	150	3162	15 56 55
15 59 24	M82PTCEN	03 09 50	45.0	28.8	-6.8		-56.1	-24	3162	No stop
16 04 14	---	03 14 41	45.3	29.1	-6.7		-57.0	266	3180	15 59 25
16 04 54	J0958+65	03 15 21	42.8	33.7	-6.7		-53.4	16	3180	16 04 54
16 07 24	---	03 17 52	43.0	33.9	-6.7		-53.8	150	3190	16 04 55
16 07 24	M82PTCEN	03 17 52	45.5	29.4	-6.7		-57.6	-24	3190	No stop
16 12 14	---	03 22 43	45.9	29.7	-6.6		-58.5	266	3208	16 07 25
16 12 54	J0958+65	03 23 23	43.5	34.4	-6.6		-54.8	16	3208	16 12 54
16 15 24	---	03 25 53	43.7	34.6	-6.6		-55.2	150	3218	16 12 55
16 15 24	M82PTCEN	03 25 53	46.1	29.9	-6.5		-59.1	-24	3218	No stop
16 20 14	---	03 30 44	46.5	30.2	-6.4		-60.1	266	3237	16 15 25
16 20 54	J0958+65	03 31 24	44.1	35.0	-6.5		-56.1	15	3237	16 20 54
16 23 24	---	03 33 54	44.4	35.2	-6.4		-56.6	150	3246	16 20 55
16 23 24	M82PTCEN	03 33 54	46.7	30.4	-6.4		-60.7	-25	3246	No stop
16 28 14	---	03 38 45	47.1	30.7	-6.3		-61.6	265	3265	16 23 25
16 28 54	J0958+65	03 39 25	44.8	35.6	-6.3		-57.5	15	3265	16 28 54
16 31 24	---	03 41 56	45.1	35.8	-6.3		-57.9	150	3274	16 28 55
16 31 24	M82PTCEN	03 41 56	47.4	30.9	-6.3		-62.2	-25	3274	No stop
16 36 14	---	03 46 47	47.7	31.2	-6.2		-63.1	265	3293	16 31 25
16 36 54	J0958+65	03 47 27	45.6	36.3	-6.2		-58.9	15	3293	16 36 54
16 39 24	---	03 49 57	45.8	36.5	-6.2		-59.3	150	3303	16 36 55
16 39 24	M82PTCEN	03 49 57	48.0	31.4	-6.1		-63.7	-25	3303	No stop
16 44 14	---	03 54 48	48.4	31.6	-6.0		-64.6	265	3321	16 39 25
16 44 54	J0958+65	03 55 28	46.3	36.9	-6.1		-60.3	15	3321	16 44 54
16 47 24	---	03 57 58	46.5	37.1	-6.0		-60.7	150	3331	16 44 55
16 47 24	M82PTCEN	03 57 58	48.6	31.8	-6.0		-65.2	-25	3331	No stop
16 52 14	---	04 02 49	49.0	32.1	-5.9		-66.2	265	3349	16 47 25

Schedule for TORUN (Code Tr) Page 18

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 19 Feb 2016 Day 50 ---										
16 52 54	J0958+65	04 03 29	47.0	37.5	-5.9		-61.7	14	3349	16 52 54
16 55 24	---	04 06 00	47.2	37.6	-5.9		-62.1	150	3359	16 52 55
16 55 24	M82PTCEN	04 06 00	49.2	32.2	-5.9		-66.8	-26	3359	No stop
17 00 14	---	04 10 50	49.6	32.5	-5.8		-67.7	264	3378	16 55 25
17 00 54	J0958+65	04 11 31	47.7	38.0	-5.8		-63.1	14	3378	17 00 54
17 03 24	---	04 14 01	48.0	38.2	-5.8		-63.5	150	3387	17 00 55
17 03 24	M82PTCEN	04 14 01	49.9	32.7	-5.7		-68.4	-26	3387	No stop
17 08 14	---	04 18 52	50.3	32.9	-5.6		-69.3	264	3406	17 03 25
17 08 54	J0958+65	04 19 32	48.5	38.6	-5.7		-64.5	14	3406	17 08 54
17 11 24	---	04 22 02	48.7	38.8	-5.6		-64.9	150	3415	17 08 55
17 11 24	M82PTCEN	04 22 02	50.5	33.0	-5.6		-69.9	-26	3415	No stop
17 16 14	---	04 26 53	50.9	33.3	-5.5		-70.9	264	3434	17 11 25
17 16 54	J0958+65	04 27 33	49.2	39.1	-5.5		-65.9	13	3434	17 16 54
17 19 24	---	04 30 04	49.5	39.3	-5.5		-66.4	150	3444	17 16 55
17 19 24	M82PTCEN	04 30 04	51.2	33.4	-5.5		-71.5	-27	3444	No stop
17 24 14	---	04 34 54	51.6	33.6	-5.4		-72.5	263	3462	17 19 25
17 24 54	J0958+65	04 35 34	50.0	39.6	-5.4		-67.4	13	3462	17 24 54
17 27 24	---	04 38 05	50.2	39.8	-5.4		-67.8	150	3472	17 24 55
17 27 24	M82PTCEN	04 38 05	51.9	33.8	-5.3		-73.2	-27	3472	No stop
17 32 14	---	04 42 56	52.3	33.9	-5.2		-74.1	263	3490	17 27 25
17 32 54	J0958+65	04 43 36	50.8	40.1	-5.3		-68.8	13	3490	17 32 54
17 35 24	---	04 46 06	51.0	40.3	-5.2		-69.3	150	3500	17 32 55
17 35 24	M82PTCEN	04 46 06	52.5	34.1	-5.2		-74.8	-27	3500	No stop
17 40 14	---	04 50 57	52.9	34.2	-5.1		-75.8	263	3519	17 35 25
17 40 54	J0958+65	04 51 37	51.6	40.6	-5.1		-70.3	12	3519	17 40 54
17 43 24	---	04 54 08	51.8	40.7	-5.1		-70.7	150	3528	17 40 55
17 43 24	M82PTCEN	04 54 08	53.2	34.4	-5.1		-76.4	-28	3528	No stop
17 48 14	---	04 58 58	53.6	34.5	-5.0		-77.4	262	3547	17 43 25
17 48 54	J0958+65	04 59 38	52.3	41.0	-5.0		-71.8	12	3547	17 48 54
17 51 24	---	05 02 09	52.6	41.1	-5.0		-72.2	150	3556	17 48 55

Schedule for TORUN (Code Tr) Page 19

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 19 Feb 2016 Day 50 ---										
17 56 24	J0927+39	05 07 10	44.3	80.6	-4.3		-49.6	207	3556	17 56 24
18 02 24	---	05 13 11	45.2	81.6	-4.2		-49.8	360	3579	17 56 25
18 06 24	J0958+65	05 17 11	54.1	41.9	-4.7		-75.1	145	3579	18 06 24
18 08 24	---	05 19 12	54.3	42.0	-4.7		-75.4	120	3587	18 06 25
18 17 47	3C84	05 28 36	65.8	254.6	2.1		50.7	124	3587	18 17 47
18 23 47	---	05 34 37	64.9	256.3	2.2		51.2	360	3610	18 17 48
18 31 47	J0958+65	05 42 38	56.7	402.9	-4.3		-80.0	172	3610	18 31 47
18 33 47	---	05 44 38	56.9	402.9	-4.3		-80.4	120	3618	18 31 48
18 33 47	M82PTCEN	05 44 38	57.6	395.4	-4.2		-87.4	-30	3618	No stop
18 38 27	---	05 49 19	58.0	395.5	-4.1		-88.5	250	3636	18 33 48
18 39 17	J0958+65	05 50 09	57.4	403.1	-4.2		-81.5	20	3636	18 39 17
18 41 47	---	05 52 40	57.7	403.2	-4.1		-82.0	150	3646	18 39 18
18 41 47	M82PTCEN	05 52 40	58.3	395.5	-4.1		-89.2	-30	3646	No stop
18 46 27	---	05 57 20	58.7	395.5	-4.0		-90.3	250	3663	18 41 48
18 47 17	J0958+65	05 58 11	58.3	403.3	-4.0		-83.2	19	3663	18 47 17
18 49 47	---	06 00 41	58.5	403.4	-4.0		-83.7	150	3673	18 47 18
18 49 47	M82PTCEN	06 00 41	59.0	395.5	-3.9		-91.1	-31	3673	No stop
18 54 27	---	06 05 22	59.4	395.5	-3.9		-92.2	249	3691	18 49 48
18 55 17	J0958+65	06 06 12	59.1	403.5	-3.9		-84.9	19	3691	18 55 17
18 57 47	---	06 08 42	59.3	403.5	-3.9		-85.4	150	3701	18 55 18
18 57 47	M82PTCEN	06 08 42	59.7	395.4	-3.8		-93.0	-31	3701	No stop
19 02 27	---	06 13 23	60.1	395.4	-3.7		-94.2	249	3719	18 57 48
19 03 17	J0958+65	06 14 13	59.9	403.6	-3.8		-86.6	19	3719	19 03 17
19 05 47	---	06 16 44	60.2	403.6	-3.7		-87.1	150	3728	19 03 18
19 05 47	M82PTCEN	06 16 44	60.4	395.3	-3.7		-95.0	-32	3728	No stop
19 10 27	---	06 21 24	60.8	395.2	-3.6		-96.2	248	3746	19 05 48
19 11 17	J0958+65	06 22 14	60.7	403.7	-3.6		-88.3	18	3746	19 11 17
19 13 47	---	06 24 45	61.0	403.7	-3.6		-88.9	150	3756	19 11 18
19 13 47	M82PTCEN	06 24 45	61.1	395.2	-3.5		-97.0	-32	3756	No stop
19 18 27	---	06 29 26	61.5	395.1	-3.5		-98.2	248	3774	19 13 48

Schedule for TORUN (Code Tr) Page 20

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 19 Feb 2016 Day 50 ---										
19 19 17	J0958+65	06 30 16	61.6	403.7	-3.5		-90.1	18	3774	19 19 17
19 21 47	---	06 32 46	61.8	403.7	-3.5		-90.7	150	3783	19 19 18
19 21 47	M82PTCEN	06 32 46	61.7	395.0	-3.4		-99.1	-32	3783	No stop
19 26 27	---	06 37 27	62.2	394.8	-3.3		-100.3	248	3801	19 21 48
19 27 17	J0958+65	06 38 17	62.4	403.7	-3.4		-92.0	17	3801	19 27 17
19 29 47	---	06 40 47	62.7	403.7	-3.3		-92.6	150	3811	19 27 18
19 29 47	M82PTCEN	06 40 47	62.4	394.7	-3.3		-101.2	-33	3811	No stop
19 34 27	---	06 45 28	62.8	394.5	-3.2		-102.4	247	3829	19 29 48
19 35 17	J0958+65	06 46 18	63.2	403.6	-3.2		-93.9	17	3829	19 35 17
19 37 47	---	06 48 49	63.5	403.5	-3.2		-94.5	150	3838	19 35 18
19 37 47	M82PTCEN	06 48 49	63.1	394.4	-3.1		-103.3	-33	3838	No stop
19 42 27	---	06 53 30	63.5	394.2	-3.1		-104.6	247	3856	19 37 48
19 43 17	J0958+65	06 54 20	64.1	403.4	-3.1		-95.9	16	3856	19 43 17
19 45 47	---	06 56 50	64.3	403.4	-3.1		-96.5	150	3866	19 43 18
19 45 47	M82PTCEN	06 56 50	63.8	394.0	-3.0		-105.6	-34	3866	No stop
19 50 27	---	07 01 31	64.2	393.7	-2.9		-106.9	246	3884	19 45 48
19 51 17	J0958+65	07 02 21	64.9	403.2	-3.0		-97.9	16	3884	19 51 17
19 53 47	---	07 04 51	65.1	403.1	-2.9		-98.6	150	3894	19 51 18
19 53 47	M82PTCEN	07 04 51	64.5	393.5	-2.9		-107.9	-34	3894	No stop
19 58 27	---	07 09 32	64.9	393.2	-2.8		-109.2	246	3912	19 53 48
19 59 17	J0958+65	07 10 22	65.7	402.9	-2.8		-100.0	16	3912	19 59 17
20 01 47	---	07 12 53	66.0	402.8	-2.8		-100.7	150	3921	19 59 18
20 01 47	M82PTCEN	07 12 53	65.1	393.0	-2.7		-110.2	-35	3921	No stop
20 06 27	---	07 17 34	65.5	392.7	-2.7		-111.7	245	3939	20 01 48
20 07 17	J0958+65	07 18 24	66.5	402.5	-2.7		-102.2	15	3939	20 07 17
20 09 47	---	07 20 54	66.8	402.3	-2.7		-102.9	150	3949	20 07 18
20 09 47	M82PTCEN	07 20 54	65.8	392.4	-2.6		-112.7	-35	3949	No stop
20 14 27	---	07 25 35	66.2	392.0	-2.5		-114.1	245	3967	20 09 48
20 15 17	J0958+65	07 26 25	67.3	402.0	-2.6		-104.5	15	3967	20 15 17
20 17 47	---	07 28 55	67.6	401.8	-2.5		-105.2	150	3976	20 15 18

Schedule for TORUN (Code Tr) Page 21

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 19 Feb 2016 Day 50 ---										
20 17 47	M82PTCEN	07 28 55	66.4	391.7	-2.5		-115.2	-35	3976	No stop
20 22 27	---	07 33 36	66.8	391.2	-2.4		-116.7	245	3994	20 17 48
20 23 17	J0958+65	07 34 26	68.1	401.4	-2.4		-106.9	15	3994	20 23 17
20 25 47	---	07 36 57	68.4	401.2	-2.4		-107.6	150	4004	20 23 18
20 25 47	M82PTCEN	07 36 57	67.0	390.9	-2.3		-117.8	-36	4004	No stop
20 30 27	---	07 41 37	67.4	390.4	-2.3		-119.4	244	4022	20 25 48
20 31 17	J0958+65	07 42 28	68.9	400.7	-2.3		-109.3	14	4022	20 31 17
20 33 47	---	07 44 58	69.2	400.4	-2.3		-110.1	150	4031	20 31 18
20 33 47	M82PTCEN	07 44 58	67.7	390.0	-2.2		-120.5	-36	4031	No stop
20 38 27	---	07 49 39	68.0	389.4	-2.1		-122.1	244	4049	20 33 48
20 39 17	J0958+65	07 50 29	69.7	399.9	-2.2		-111.9	14	4049	20 39 17
20 41 47	---	07 52 59	69.9	399.6	-2.1		-112.8	150	4059	20 39 18
20 41 47	M82PTCEN	07 52 59	68.2	389.0	-2.1		-123.3	-36	4059	No stop
20 46 27	---	07 57 40	68.6	388.4	-2.0		-125.0	244	4077	20 41 48
20 47 17	J0958+65	07 58 30	70.5	398.9	-2.0		-114.7	14	4077	20 47 17
20 49 47	---	08 01 01	70.7	398.6	-2.0		-115.6	150	4087	20 47 18
20 49 47	M82PTCEN	08 01 01	68.8	387.9	-1.9		-126.2	-36	4087	No stop
20 54 27	---	08 05 41	69.1	387.3	-1.9		-127.9	244	4104	20 49 48
20 55 17	J0958+65	08 06 32	71.2	397.8	-1.9		-117.6	14	4104	20 55 17
20 57 47	---	08 09 02	71.5	397.4	-1.9		-118.5	150	4114	20 55 18
20 57 47	M82PTCEN	08 09 02	69.4	386.7	-1.8		-129.2	-36	4114	No stop
21 02 22	---	08 13 38	69.7	386.0	-1.7		-130.9	239	4132	20 57 48
21 03 17	J0958+65	08 14 33	71.9	396.5	-1.8		-120.6	19	4132	21 03 17
21 05 47	---	08 17 03	72.2	396.1	-1.7		-121.6	150	4141	21 03 18
21 05 47	M82PTCEN	08 17 03	69.9	385.4	-1.7		-132.3	-36	4141	No stop
21 10 22	---	08 21 39	70.2	384.6	-1.6		-134.1	239	4159	21 05 48
21 11 17	J0958+65	08 22 34	72.7	395.0	-1.6		-123.8	19	4159	21 11 17
21 13 47	---	08 25 05	72.9	394.5	-1.6		-124.8	150	4169	21 11 18
21 13 47	M82PTCEN	08 25 05	70.4	384.0	-1.5		-135.5	-36	4169	No stop
21 18 22	---	08 29 40	70.7	383.1	-1.5		-137.4	239	4186	21 13 48

Schedule for TORUN (Code Tr) Page 22

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 19 Feb 2016 Day 50 ---										
21 19 17	J0958+65	08 30 35	73.3	393.4	-1.5		-127.2	19	4186	21 19 17
21 21 47	---	08 33 06	73.5	392.8	-1.4		-128.3	150	4196	21 19 18
21 21 47	M82PTCEN	08 33 06	70.9	382.5	-1.4		-138.9	-36	4196	No stop
21 26 22	---	08 37 42	71.1	381.5	-1.3		-140.8	239	4213	21 21 48
21 27 17	J0958+65	08 38 37	74.0	391.5	-1.4		-130.8	20	4213	21 27 17
21 29 47	---	08 41 07	74.2	390.9	-1.3		-132.0	150	4223	21 27 18
21 29 47	M82PTCEN	08 41 07	71.3	380.8	-1.3		-142.3	-35	4223	No stop
21 34 22	---	08 45 43	71.6	379.8	-1.2		-144.3	240	4241	21 29 48
21 35 17	J0958+65	08 46 38	74.6	389.4	-1.2		-134.7	20	4241	21 35 17
21 37 47	---	08 49 09	74.8	388.7	-1.2		-135.9	150	4250	21 35 18
21 37 47	M82PTCEN	08 49 09	71.7	379.0	-1.1		-145.9	-35	4250	No stop
21 42 22	---	08 53 44	72.0	377.9	-1.1		-148.0	240	4268	21 37 48
21 43 17	J0958+65	08 54 39	75.2	387.1	-1.1		-138.7	21	4268	21 43 17
21 45 47	---	08 57 10	75.3	386.3	-1.0		-140.0	150	4278	21 43 18
21 45 47	M82PTCEN	08 57 10	72.1	377.1	-1.0		-149.6	-34	4278	No stop
21 50 22	---	09 01 46	72.3	376.0	-0.9		-151.7	241	4295	21 45 48
21 51 17	J0958+65	09 02 41	75.7	384.6	-1.0		-143.0	22	4295	21 51 17
21 53 47	---	09 05 11	75.8	383.7	-0.9		-144.4	150	4305	21 51 18
21 53 47	M82PTCEN	09 05 11	72.4	375.1	-0.9		-153.4	-32	4305	No stop
21 58 22	---	09 09 47	72.6	373.9	-0.8		-155.6	243	4322	21 53 48
21 59 17	J0958+65	09 10 42	76.2	381.7	-0.8		-147.6	24	4322	21 59 17
22 01 47	---	09 13 12	76.3	380.8	-0.8		-149.0	150	4332	21 59 18
22 01 47	M82PTCEN	09 13 12	72.7	373.0	-0.7		-157.3	-31	4332	No stop
22 06 22	---	09 17 48	72.9	371.7	-0.7		-159.6	244	4350	22 01 48
22 07 17	J0958+65	09 18 43	76.6	378.7	-0.7		-152.4	26	4350	22 07 17
22 09 47	---	09 21 14	76.7	377.7	-0.6		-153.9	150	4359	22 07 18
22 09 47	M82PTCEN	09 21 14	73.0	370.7	-0.6		-161.3	-29	4359	No stop
22 14 22	---	09 25 50	73.1	369.4	-0.5		-163.6	246	4377	22 09 48
22 15 17	J0958+65	09 26 45	76.9	375.4	-0.6		-157.4	27	4377	22 15 17
22 17 47	---	09 29 15	77.0	374.3	-0.5		-159.0	150	4387	22 15 18

Schedule for TORUN (Code Tr) Page 23

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 19 Feb 2016 Day 50 ---										
22 17 47	M82PTCEN	09 29 15	73.2	368.4	-0.5		-165.4	-28	4387	No stop
22 22 22	---	09 33 51	73.3	367.1	-0.4		-167.7	247	4404	22 17 48
22 23 17	J0958+65	09 34 46	77.2	371.9	-0.4		-162.6	26	4404	22 23 17
22 25 47	---	09 37 16	77.3	370.8	-0.4		-164.3	150	4414	22 23 18
22 25 47	M82PTCEN	09 37 16	73.3	366.1	-0.3		-169.5	-29	4414	No stop
22 30 22	---	09 41 52	73.4	364.7	-0.3		-171.9	246	4431	22 25 48
22 31 17	J0958+65	09 42 47	77.4	368.2	-0.3		-168.0	26	4431	22 31 17
22 33 47	---	09 45 18	77.5	367.1	-0.2		-169.7	150	4441	22 31 18
22 33 47	M82PTCEN	09 45 18	73.4	363.6	-0.2		-173.7	-29	4441	No stop
22 38 22	---	09 49 53	73.5	362.2	-0.1		-176.1	246	4459	22 33 48
22 39 17	J0958+65	09 50 49	77.6	364.4	-0.2		-173.6	26	4459	22 39 17
22 41 47	---	09 53 19	77.6	363.2	-0.1		-175.3	150	4468	22 39 18
22 41 47	M82PTCEN	09 53 19	73.5	361.2	-0.1		-177.9	-29	4468	No stop
22 46 22	---	09 57 55	73.5	359.8	0.0		179.6	246	4486	22 41 48
22 47 17	J0958+65	09 58 50	77.6	360.6	-0.0		-179.2	26	4486	22 47 17
22 49 47	---	10 01 20	77.6	359.4	0.0		179.1	150	4495	22 47 18
22 49 47	M82PTCEN	10 01 20	73.5	358.7	0.1		177.8	-29	4495	No stop
22 54 22	---	10 05 56	73.5	357.3	0.1		175.4	246	4513	22 49 48
22 55 17	J0958+65	10 06 51	77.6	356.7	0.1		175.2	26	4513	22 55 17
22 57 47	---	10 09 22	77.6	355.5	0.2		173.5	150	4523	22 55 18
22 57 47	M82PTCEN	10 09 22	73.4	356.3	0.2		173.6	-29	4523	No stop
23 02 22	---	10 13 57	73.4	354.9	0.3		171.2	246	4540	22 57 48
23 03 17	J0958+65	10 14 53	77.5	352.9	0.2		169.7	26	4540	23 03 17
23 05 47	---	10 17 23	77.4	351.7	0.3		168.0	150	4550	23 03 18
23 05 47	M82PTCEN	10 17 23	73.3	353.9	0.3		169.4	-29	4550	No stop
23 10 22	---	10 21 59	73.3	352.5	0.4		167.0	246	4568	23 05 48
23 11 17	J0958+65	10 22 54	77.3	349.2	0.4		164.2	26	4568	23 11 17
23 13 47	---	10 25 24	77.2	348.1	0.4		162.6	150	4577	23 11 18
23 13 47	M82PTCEN	10 25 24	73.2	351.5	0.5		165.3	-29	4577	No stop
23 18 22	---	10 30 00	73.1	350.2	0.5		162.9	246	4595	23 13 48

```
Schedule for TORUN     (Code Tr )                                  Page  24
              High-resolution, multi-frequency mapping of the compact sources in M82
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Fri  19 Feb 2016   Day  50 ---

23 19 17  J0958+65     10 30 55  77.0 345.6  0.5     159.0    26     4595   23 19 17
23 21 47  ---          10 33 26  76.9 344.6  0.6     157.3   150     4604   23 19 18

23 21 47  M82PTCEN     10 33 26  73.0 349.2  0.6     161.2   -29     4604   No stop
23 26 22  ---          10 38 01  72.8 347.9  0.7     158.9   246     4622   23 21 48

23 27 17  J0958+65     10 38 57  76.7 342.3  0.6     153.9    27     4622   23 27 17
23 29 47  ---          10 41 27  76.6 341.3  0.7     152.3   150     4632   23 27 18

23 29 47  M82PTCEN     10 41 27  72.7 347.0  0.7     157.2   -28     4632   No stop
23 34 22  ---          10 46 03  72.6 345.8  0.8     154.9   247     4649   23 29 48

23 35 17  J0958+65     10 46 58  76.3 339.2  0.8     149.0    27     4649   23 35 17
23 37 47  ---          10 49 28  76.2 338.2  0.8     147.5   150     4659   23 35 18

23 37 47  M82PTCEN     10 49 28  72.4 344.9  0.9     153.3   -28     4659   No stop
23 42 22  ---          10 54 04  72.2 343.7  0.9     151.1   247     4677   23 37 48

23 43 17  J0958+65     10 54 59  75.8 336.3  0.9     144.4    25     4677   23 43 17
23 45 47  ---          10 57 30  75.7 335.4  1.0     143.0   150     4686   23 43 18

23 45 47  M82PTCEN     10 57 30  72.1 342.9  1.0     149.5   -30     4686   No stop
23 50 22  ---          11 02 05  71.9 341.7  1.1     147.3   245     4704   23 45 48

23 51 17  J0958+65     11 03 00  75.3 333.6  1.0     140.0    24     4704   23 51 17
23 53 47  ---          11 05 31  75.2 332.9  1.1     138.7   150     4713   23 51 18

23 53 47  M82PTCEN     11 05 31  71.7 341.0  1.1     145.8   -31     4713   No stop
23 57 27  ---          11 09 11  71.5 340.1  1.2     144.1   189     4728   23 53 48

23 57 47  J0958+65     11 09 32  74.9 331.7  1.2     136.6   -12     4728   23 57 47
23 59 45  ---          11 11 30  74.7 331.1  1.2     135.6   106     4735   23 57 48



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: sess116.C512glob

   Setup group:   20         Station: TORUN            Total bit rate:   512
   Format: MARK5B            Bits per sample: 2        Sample rate: 16.000
   Number of channels: 16    DBE type: DBBC_DDC        Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00
            4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00
  Net SB=         L         L         U         U         L         L         U         U
                  L         L         U         U         L         L         U         U
  IF SB =         U         U         U         U         U         U         U         U
                  U         U         U         U         U         U         U         U
  Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
                RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
  BBC   =         1         5         1         5         2         6         2         6
                  3         7         3         7         4         8         4         8
  BBC SB=         L         L         U         U         L         L         U         U
                  L         L         U         U         L         L         U         U
  IF    =        A1        B1        A1        B1        A1        B1        A1        B1
                 A1        B1        A1        B1        A1        B1        A1        B1

 The following frequency sets based on these setups were used.

  Frequency Set:   7  Setup file default.  Used with PCAL = off
  LO sum=   4932.25  4932.25  4932.25  4932.25  4948.25  4948.25  4948.25  4948.25
            4964.25  4964.25  4964.25  4964.25  4980.25  4980.25  4980.25  4980.25
  BBC fr=    732.25   732.25   732.25   732.25   748.25   748.25   748.25   748.25
             764.25   764.25   764.25   764.25   780.25   780.25   780.25   780.25
  Bandwd=      8.00     8.00     8.00     8.00     8.00     8.00     8.00     8.00
               8.00     8.00     8.00     8.00     8.00     8.00     8.00     8.00
   Matching frequency sets:   7

  Track assignments are:
   track1=  18, 26,  2, 10, 20, 28,  4, 12, 22, 30,  6, 14, 24, 32,  8, 16
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                       (B1950)            (J2000)            (Date)            (mas)

* M82PTCEN          09 51 42.970082   * 09 55 51.700000     09 57 13.368307       0.00
                    69 55 00.43524    * 69 40 46.70000      69 36 01.60467        0.00

* 3C84              03 16 29.567263   * 03 19 48.160094     03 20 52.493734       1.30
  J0319+4130        41 19 51.91701    * 41 30 42.10413      41 34 09.99437        2.69
  0316+413          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
  J0319+41          GSFC 2015a astro solution, unpublished  10208 observations.

  4C39.25           09 23 55.319215   * 09 27 03.013936     09 28 04.619441       0.30
  J0927+3902        39 15 23.56645    * 39 02 20.85186      38 57 56.69607        0.16
  0923+392          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
* J0927+39          GSFC 2015a astro solution, unpublished 245753 observations.

  0954+658          09 54 57.847923   * 09 58 47.245104     10 00 02.552138       0.02
  J0958+6533        65 48 15.53888    * 65 33 54.81807      65 29 07.09653        0.01
* J0958+65          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
                    GSFC 2015a astro solution, unpublished  13811 observations.
```

rk12potr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Sat  20 Feb 2016   Day  51 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

11 00 00  1617+229     22 13 33  18.9 -77.1  5.9      39.4     0        0   11 00 00
11 14 30  ---          22 28 06  16.8 -74.3  6.1      38.8   870       28   11 00 01

11 15 00  1617+229     22 28 36  16.8 -74.2  6.1      38.8    24       28   11 15 00
11 29 30  ---          22 43 08  14.7 -71.5  6.4      38.1   870       56   11 15 01

11 30 00  1617+229     22 43 38  14.6 -71.4  6.4      38.1    24       56   11 30 00
11 44 30  ---          22 58 11  12.6 -68.7  6.6      37.3   870       84   11 30 01

11 45 00  1617+229     22 58 41  12.5 -68.6  6.6      37.3    24       84   11 45 00
12 00 00  ---          23 13 43  10.4 -65.8  6.9      36.4   900      112   11 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    3         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4100.00   4100.00   4100.00   4100.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   4  Setup file default.  Used with PCAL = 1MHz
  LO sum=   4836.00  4836.00  4836.00  4836.00
  BBC fr=    736.00   736.00   736.00   736.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   4

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

```
  Source                        Source position (RA/Dec)                        Error
                       (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 54.846465       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 26.08616        0.00
                    fake circumpolar target for a TS to look at

* 1617+229          16 17 06.466940   * 16 19 14.824597     16 19 55.940332       0.00
  J1619+2247        22 54 58.47369    * 22 47 47.85093      22 45 24.80399        0.00
                    ./rk12po_sources.radioastron
                    AGN, MASIV, rfc_2013d Petrov, 2013, unpublished 8180 observations, RA-AO3-04, RA
```

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1617+229            92.7

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12pptr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/K-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Sat  20 Feb 2016   Day  51 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

23 00 00  1253-055     10 15 32  21.9 136.0 -2.7     -24.8     0        0   23 00 00
23 14 30  ---          10 30 04  23.4 139.6 -2.4     -23.0   870       28   23 00 01

23 15 00  1253-055     10 30 34  23.4 139.7 -2.4     -23.0    24       28   23 15 00
23 29 30  ---          10 45 07  24.8 143.4 -2.2     -21.1   870       56   23 15 01

23 30 00  1253-055     10 45 37  24.8 143.5 -2.2     -21.0    24       56   23 30 00
23 44 30  ---          11 00 09  26.1 147.3 -1.9     -19.0   870       84   23 30 01

23 45 00  1253-055     11 00 39  26.1 147.4 -1.9     -19.0    24       84   23 45 00
23 59 59  ---          11 15 42  27.3 151.4 -1.7     -16.8   899      112   23 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    4         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4100.00   4100.00   4100.00   4100.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   1  Setup file default.  Used with PCAL = 1MHz
  LO sum=   4836.00  4836.00  4836.00  4836.00
  BBC fr=    736.00   736.00   736.00   736.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   1

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

```
  Source                        Source position (RA/Dec)                        Error
                       (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 54.928113       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 26.21702        0.00
                    fake circumpolar target for a TS to look at

* 1253-055          12 53 35.831289   * 12 56 11.166557     12 57 02.255244       0.00
  J1256-0547       -05 31 07.99603    *-05 47 21.52489     -05 52 38.40390        0.00
  3C279             ./rk12pp_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 7924 observations, RA-AO3-04, RA-AO3-05
```

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1253-055           136.4

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12pqtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Sun  21 Feb 2016   Day  52 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

04 00 00  1351-018     15 16 21  32.2 204.2  1.4      14.3     0        0   04 00 00
04 14 30  ---          15 30 53  31.2 208.3  1.6      16.6   870       28   04 00 01

04 15 00  1351-018     15 31 23  31.2 208.5  1.6      16.7    24       28   04 15 00
04 29 30  ---          15 45 56  30.0 212.5  1.8      18.8   870       56   04 15 01

04 30 00  1351-018     15 46 26  30.0 212.6  1.9      18.9    24       56   04 30 00
04 44 30  ---          16 00 58  28.8 216.6  2.1      21.0   870       84   04 30 01

04 45 00  1351-018     16 01 28  28.7 216.7  2.1      21.0    24       84   04 45 00
05 00 00  ---          16 16 31  27.3 220.6  2.4      23.0   900      112   04 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    9         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
 1st LO=   2400.00   2400.00   2400.00   2400.00
 Net SB=         L         L         U         U
 IF SB =         L         L         L         L
 Pol.  =       RCP       LCP       RCP       LCP
 BBC   =         1         2         1         2
 BBC SB=         U         U         L         L
 IF    =         C         A         C         A

The following frequency sets based on these setups were used.

 Frequency Set:   6  Setup file default.  Used with PCAL = 1MHz
 LO sum=   1668.00  1668.00  1668.00  1668.00
 BBC fr=    732.00   732.00   732.00   732.00
 Bandwd=     16.00    16.00    16.00    16.00
  Matching frequency sets:   6

 Track assignments are:
  track1=   2, 18,  3, 19
  barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 54.961798       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 26.27288        0.00
                    fake circumpolar target for a TS to look at

* 1351-018          13 51 32.032818   * 13 54 06.895322     13 54 57.534096       0.00
  J1354-0206       -01 51 20.07716    *-02 06 03.19066     -02 10 49.10461        0.00
                    ./rk12pq_sources.radioastron
                    AGN, HIGHz, rfc_2013d Petrov, 2013, unpublished 22569 observations, RA-AO3-04, R


EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1351-018           124.0

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12prtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*

```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865

Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                   Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Sun  21 Feb 2016   Day  52 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

09 00 00  1538+149     20 17 10  24.4 262.1  4.6      38.0     0        0   09 00 00
09 14 30  ---          20 31 43  22.2 265.1  4.8      38.2   870       28   09 00 01

09 15 00  1538+149     20 32 13  22.1 265.2  4.8      38.2    24       28   09 15 00
09 29 30  ---          20 46 45  19.9 268.1  5.1      38.4   870       56   09 15 01

09 30 00  1538+149     20 47 15  19.9 268.2  5.1      38.4    24       56   09 30 00
09 44 30  ---          21 01 48  17.7 271.2  5.3      38.4   870       84   09 30 01

09 45 00  1538+149     21 02 18  17.6 271.3  5.3      38.4    24       84   09 45 00
10 00 00  ---          21 17 20  15.4 274.2  5.6      38.3   900      112   09 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    2         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4100.00   4100.00   4100.00   4100.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   2  Setup file default.  Used with PCAL = 1MHz
  LO sum=   4836.00  4836.00  4836.00  4836.00
  BBC fr=    736.00   736.00   736.00   736.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   2

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

```
  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 54.995221       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 26.32954        0.00
                    fake circumpolar target for a TS to look at

* 1538+149          15 38 30.232265   * 15 40 49.491516     15 41 34.404497       0.00
  J1540+1447        14 57 21.79415    * 14 47 45.88462      14 44 37.32490        0.00
                    ./rk12pr_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 1559 observations, RA-AO3-04
```

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1538+149           101.1

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12pstr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/K-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Sun  21 Feb 2016   Day  52 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

22 00 00  1226+023     09 19 18  25.6 125.0 -3.2     -29.5     0        0   22 00 00
22 14 30  ---          09 33 51  27.3 128.6 -2.9     -28.0   870       28   22 00 01

22 15 00  1226+023     09 34 21  27.4 128.7 -2.9     -28.0    24       28   22 15 00
22 29 30  ---          09 48 53  29.0 132.4 -2.7     -26.4   870       56   22 15 01

22 30 00  1226+023     09 49 23  29.1 132.5 -2.7     -26.3    24       56   22 30 00
22 44 30  ---          10 03 56  30.6 136.3 -2.4     -24.5   870       84   22 30 01

22 45 00  1226+023     10 04 26  30.7 136.4 -2.4     -24.5    24       84   22 45 00
23 00 00  ---          10 19 28  32.2 140.5 -2.2     -22.5   900      112   22 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    4         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4100.00   4100.00   4100.00   4100.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   1  Setup file default.  Used with PCAL = 1MHz
  LO sum=   4836.00  4836.00  4836.00  4836.00
  BBC fr=    736.00   736.00   736.00   736.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   1

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off



 POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                       (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 55.080594       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 26.48046        0.00
                    fake circumpolar target for a TS to look at

* 1226+023          12 26 33.245835   * 12 29 06.699731     12 29 57.189461       0.00
  J1229+0203        02 19 43.30547    * 02 03 08.59797      01 57 41.60095        0.00
  3C273B            ./rk12ps_sources.radioastron
  3C273             AGN, rfc_2013d Petrov, 2013, unpublished 32011 observations, RA-AO3-04, RA-AO3-0


EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1226+023           146.3

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

gm073btr

Gravitational lensing by low-mass dark matter haloes
PI: *John McKean*

```
Address:  ASTRON
Observing mode: 6cm 2048-32-2

Schedule for TORUN     (Code Tr )                                  Page   2
               Gravitational lensing by low-mass dark matter haloes
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------
 --- Mon  22 Feb 2016   Day  53 ---
 Next scan frequencies:  4900.25  4900.25  4900.25  4900.25  4964.25  4964.25  4964.25  4964.25
 Next BBC frequencies:    700.25   700.25   700.25   700.25   764.25   764.25   764.25   764.25
 Next scan bandwidths:     32.00    32.00    32.00    32.00    32.00    32.00    32.00    32.00

01 00 00  J1933+654    12 19 48  40.6  30.9 -7.2     -48.5     0        0   01 00 00
01 04 30  ---          12 24 19  40.9  31.3 -7.2     -49.3   270       35   01 00 01

01 04 30  B1938+666    12 24 19  41.3  29.8 -7.2     -49.3   -16       35   No stop
01 08 00  ---          12 27 49  41.6  30.1 -7.2     -49.9   194       62   01 04 31

01 08 30  J1933+654    12 28 19  41.2  31.6 -7.1     -50.0    14       62   01 08 30
01 10 00  ---          12 29 50  41.3  31.8 -7.1     -50.2    90       73   01 08 31

01 10 00  B1938+666    12 29 50  41.7  30.2 -7.1     -50.2   -16       73   No stop
01 13 30  ---          12 33 20  42.0  30.5 -7.1     -50.9   194      100   01 10 01

01 13 30  J1933+654    12 33 20  41.6  32.1 -7.0     -50.8   -16      100   No stop
01 15 00  ---          12 34 50  41.7  32.2 -7.0     -51.1    74      112   01 13 31

01 15 00  B1938+666    12 34 50  42.1  30.6 -7.1     -51.1   -16      112   No stop
01 18 30  ---          12 38 21  42.4  30.9 -7.0     -51.7   194      138   01 15 01

01 19 00  J1933+654    12 38 51  42.1  32.6 -6.9     -51.8    14      138   01 19 00
01 20 30  ---          12 40 21  42.2  32.7 -6.9     -52.0    90      150   01 19 01

01 20 30  B1938+666    12 40 21  42.5  31.1 -7.0     -52.1   -16      150   No stop
01 24 00  ---          12 43 52  42.8  31.4 -6.9     -52.7   194      177   01 20 31

01 24 00  J1933+654    12 43 52  42.5  33.0 -6.8     -52.6   -16      177   No stop
01 25 30  ---          12 45 22  42.6  33.1 -6.8     -52.9    74      188   01 24 01

01 25 30  B1938+666    12 45 22  42.9  31.5 -6.9     -53.0   -16      188   No stop
01 29 00  ---          12 48 53  43.2  31.8 -6.8     -53.6   194      215   01 25 31

01 29 30  J1933+654    12 49 23  42.9  33.5 -6.7     -53.6    14      215   01 29 30
01 31 00  ---          12 50 53  43.0  33.6 -6.7     -53.8    90      227   01 29 31

01 31 00  B1938+666    12 50 53  43.4  31.9 -6.8     -53.9   -16      227   No stop
01 34 30  ---          12 54 24  43.6  32.2 -6.7     -54.5   194      254   01 31 01

01 34 30  J1933+654    12 54 24  43.3  33.9 -6.7     -54.4   -17      254   No stop
01 36 00  ---          12 55 54  43.5  34.0 -6.6     -54.7    73      265   01 34 31
```

Schedule for TORUN (Code Tr) Page 3

Gravitational lensing by low-mass dark matter haloes

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon	22 Feb 2016	Day 53 ---								
01 36 00	B1938+666	12 55 54	43.8	32.3	-6.7		-54.8	-16	265	No stop
01 39 30	---	12 59 24	44.0	32.6	-6.7		-55.4	194	292	01 36 01
01 40 00	J1933+654	12 59 55	43.8	34.3	-6.6		-55.4	13	292	01 40 00
01 41 30	---	13 01 25	43.9	34.4	-6.5		-55.6	90	304	01 40 01
01 41 30	B1938+666	13 01 25	44.2	32.8	-6.6		-55.8	-16	304	No stop
01 45 00	---	13 04 55	44.5	33.0	-6.6		-56.4	194	331	01 41 31
01 45 00	J1933+654	13 04 55	44.2	34.7	-6.5		-56.2	-17	331	No stop
01 46 30	---	13 06 26	44.4	34.8	-6.5		-56.5	73	342	01 45 01
01 46 30	B1938+666	13 06 26	44.6	33.2	-6.5		-56.7	-17	342	No stop
01 50 00	---	13 09 56	44.9	33.4	-6.5		-57.3	193	369	01 46 31
01 50 30	J1933+654	13 10 26	44.7	35.2	-6.4		-57.2	13	369	01 50 30
01 52 00	---	13 11 56	44.8	35.3	-6.4		-57.4	90	381	01 50 31
01 52 00	B1938+666	13 11 56	45.1	33.6	-6.4		-57.6	-17	381	No stop
01 55 30	---	13 15 27	45.4	33.8	-6.4		-58.3	193	408	01 52 01
01 55 30	J1933+654	13 15 27	45.1	35.5	-6.3		-58.0	-17	408	No stop
01 57 00	---	13 16 57	45.3	35.7	-6.3		-58.3	73	419	01 55 31
01 57 00	B1938+666	13 16 57	45.5	33.9	-6.4		-58.5	-17	419	No stop
02 00 30	---	13 20 28	45.8	34.2	-6.3		-59.1	193	446	01 57 01
02 01 00	J1933+654	13 20 58	45.6	36.0	-6.2		-59.0	13	446	02 01 00
02 02 30	---	13 22 28	45.8	36.1	-6.2		-59.3	90	458	02 01 01
02 02 30	B1938+666	13 22 28	46.0	34.3	-6.3		-59.5	-17	458	No stop
02 06 00	---	13 25 59	46.3	34.6	-6.2		-60.1	193	485	02 02 31
02 06 00	J1933+654	13 25 59	46.1	36.3	-6.1		-59.9	-17	485	No stop
02 07 30	---	13 27 29	46.2	36.5	-6.1		-60.1	73	496	02 06 01
02 07 30	B1938+666	13 27 29	46.4	34.7	-6.2		-60.4	-17	496	No stop
02 11 00	---	13 31 00	46.7	34.9	-6.1		-61.0	193	523	02 07 31
02 11 30	J1933+654	13 31 30	46.6	36.7	-6.0		-60.8	13	523	02 11 30
02 13 00	---	13 33 00	46.7	36.9	-6.0		-61.1	90	535	02 11 31
02 13 00	B1938+666	13 33 00	46.9	35.1	-6.1		-61.4	-17	535	No stop
02 16 30	---	13 36 31	47.2	35.3	-6.0		-62.0	193	562	02 13 01
02 16 30	J1933+654	13 36 31	47.0	37.1	-6.0		-61.7	-17	562	No stop
02 18 00	---	13 38 01	47.1	37.2	-5.9		-62.0	73	573	02 16 31

Schedule for TORUN (Code Tr) Page 4

Gravitational lensing by low-mass dark matter haloes

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 22 Feb 2016 Day 53 ---										
02 18 00	B1938+666	13 38 01	47.3	35.4	-6.0		-62.3	-17	573	No stop
02 21 30	---	13 41 31	47.6	35.7	-5.9		-62.9	193	600	02 18 01
02 22 00	J1933+654	13 42 01	47.5	37.5	-5.9		-62.7	13	600	02 22 00
02 23 30	---	13 43 32	47.7	37.6	-5.8		-63.0	90	612	02 22 01
02 23 30	B1938+666	13 43 32	47.8	35.8	-5.9		-63.3	-17	612	No stop
02 27 00	---	13 47 02	48.1	36.0	-5.9		-63.9	193	638	02 23 31
02 27 00	J1933+654	13 47 02	48.0	37.8	-5.8		-63.6	-17	638	No stop
02 28 30	---	13 48 32	48.1	38.0	-5.8		-63.8	73	650	02 27 01
02 28 30	B1938+666	13 48 32	48.2	36.1	-5.8		-64.2	-17	650	No stop
02 32 00	---	13 52 03	48.5	36.3	-5.8		-64.8	193	677	02 28 31
02 32 30	J1933+654	13 52 33	48.5	38.2	-5.7		-64.6	13	677	02 32 30
02 34 00	---	13 54 03	48.6	38.3	-5.7		-64.8	90	688	02 32 31
02 34 00	B1938+666	13 54 03	48.7	36.5	-5.7		-65.2	-17	688	No stop
02 37 30	---	13 57 34	49.0	36.7	-5.7		-65.8	193	715	02 34 01
02 37 30	J1933+654	13 57 34	49.0	38.6	-5.6		-65.4	-17	715	No stop
02 39 00	---	13 59 04	49.1	38.6	-5.6		-65.7	73	727	02 37 31
02 39 00	B1938+666	13 59 04	49.2	36.8	-5.7		-66.1	-17	727	No stop
02 42 30	---	14 02 35	49.5	37.0	-5.6		-66.8	193	754	02 39 01
02 43 00	J1933+654	14 03 05	49.5	38.9	-5.5		-66.4	13	754	02 43 00
02 44 30	---	14 04 35	49.6	39.0	-5.5		-66.7	90	765	02 43 01
02 44 30	B1938+666	14 04 35	49.7	37.1	-5.6		-67.1	-17	765	No stop
02 48 00	---	14 08 06	50.0	37.3	-5.5		-67.8	193	792	02 44 31
02 48 00	J1933+654	14 08 06	49.9	39.2	-5.4		-67.3	-17	792	No stop
02 49 30	---	14 09 36	50.1	39.3	-5.4		-67.6	73	804	02 48 01
02 49 30	B1938+666	14 09 36	50.1	37.4	-5.5		-68.1	-17	804	No stop
02 53 00	---	14 13 07	50.4	37.6	-5.4		-68.7	193	831	02 49 31
02 53 30	J1933+654	14 13 37	50.5	39.6	-5.3		-68.3	13	831	02 53 30
02 55 00	---	14 15 07	50.6	39.6	-5.3		-68.6	90	842	02 53 31
02 55 00	B1938+666	14 15 07	50.6	37.7	-5.4		-69.1	-17	842	No stop
02 58 30	---	14 18 37	50.9	37.9	-5.3		-69.8	193	869	02 55 01

Schedule for TORUN (Code Tr) Page 5

Gravitational lensing by low-mass dark matter haloes

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 22 Feb 2016 Day 53 ---										
02 58 30	J1933+654	14 18 37	51.0	39.8	-5.3		-69.3	-18	869	No stop
03 00 00	---	14 20 08	51.1	39.9	-5.2		-69.5	72	881	02 58 31
03 00 00	B1938+666	14 20 08	51.1	38.0	-5.3		-70.0	-17	881	No stop
03 03 30	---	14 23 38	51.4	38.2	-5.2		-70.7	193	908	03 00 01
03 04 00	J1933+654	14 24 08	51.5	40.2	-5.2		-70.3	12	908	03 04 00
03 05 30	---	14 25 39	51.6	40.2	-5.1		-70.5	90	919	03 04 01
03 05 30	B1938+666	14 25 39	51.6	38.3	-5.2		-71.1	-18	919	No stop
03 09 00	---	14 29 09	51.9	38.4	-5.2		-71.7	192	946	03 05 31
03 09 00	J1933+654	14 29 09	52.0	40.4	-5.1		-71.2	-18	946	No stop
03 10 30	---	14 30 39	52.1	40.5	-5.1		-71.5	72	958	03 09 01
03 15 30	3C345	14 35 40	64.6	108.6	-2.1		-47.8	150	958	03 15 30
03 25 30	---	14 45 42	66.0	111.8	-2.0		-46.5	600	1035	03 15 31
03 30 30	3C380	14 50 43	56.0	74.7	-3.7		-61.5	210	1035	03 30 30
03 35 30	---	14 55 43	56.8	75.4	-3.6		-61.8	300	1073	03 30 31
03 36 00	J1933+654	14 56 14	54.6	41.7	-4.6		-76.3	-52	1073	03 36 00
03 40 30	---	15 00 44	55.1	41.9	-4.6		-77.2	218	1108	03 36 01
03 40 30	B1938+666	15 00 44	54.9	39.8	-4.6		-77.9	-18	1108	No stop
03 44 00	---	15 04 15	55.2	39.9	-4.6		-78.6	192	1135	03 40 31
03 44 30	J1933+654	15 04 45	55.5	42.1	-4.5		-78.0	12	1135	03 44 30
03 46 00	---	15 06 15	55.6	42.1	-4.5		-78.3	90	1146	03 44 31
03 46 00	B1938+666	15 06 15	55.4	40.0	-4.5		-79.0	-18	1146	No stop
03 49 30	---	15 09 46	55.8	40.1	-4.5		-79.7	192	1173	03 46 01
03 49 30	J1933+654	15 09 46	56.0	42.3	-4.4		-79.0	-18	1173	No stop
03 51 00	---	15 11 16	56.2	42.3	-4.4		-79.3	72	1185	03 49 31
03 51 00	B1938+666	15 11 16	55.9	40.2	-4.5		-80.1	-18	1185	No stop
03 54 30	---	15 14 47	56.3	40.3	-4.4		-80.8	192	1212	03 51 01
03 55 00	J1933+654	15 15 17	56.6	42.4	-4.3		-80.1	12	1212	03 55 00
03 56 30	---	15 16 47	56.7	42.5	-4.3		-80.4	90	1223	03 55 01
03 56 30	B1938+666	15 16 47	56.5	40.3	-4.4		-81.2	-18	1223	No stop
04 00 00	---	15 20 18	56.8	40.4	-4.3		-81.9	192	1250	03 56 31

Schedule for TORUN (Code Tr) Page 6

Gravitational lensing by low-mass dark matter haloes

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 22 Feb 2016 Day 53 ---										
04 00 00	J1933+654	15 20 18	57.1	42.6	-4.2		-81.1	-18	1250	No stop
04 01 30	---	15 21 48	57.2	42.6	-4.2		-81.4	72	1262	04 00 01
04 01 30	B1938+666	15 21 48	56.9	40.4	-4.3		-82.2	-18	1262	No stop
04 05 00	---	15 25 18	57.3	40.5	-4.2		-83.0	192	1288	04 01 31
04 05 30	J1933+654	15 25 48	57.6	42.8	-4.1		-82.2	12	1288	04 05 30
04 07 00	---	15 27 19	57.8	42.8	-4.1		-82.5	90	1300	04 05 31
04 07 00	B1938+666	15 27 19	57.5	40.6	-4.2		-83.4	-18	1300	No stop
04 10 30	---	15 30 49	57.8	40.6	-4.1		-84.1	192	1327	04 07 01
04 10 30	J1933+654	15 30 49	58.1	42.9	-4.1		-83.3	-18	1327	No stop
04 12 00	---	15 32 19	58.3	42.9	-4.0		-83.6	72	1338	04 10 31
04 12 00	B1938+666	15 32 19	58.0	40.7	-4.1		-84.5	-18	1338	No stop
04 15 30	---	15 35 50	58.3	40.7	-4.0		-85.2	192	1365	04 12 01
04 16 00	J1933+654	15 36 20	58.7	43.0	-4.0		-84.4	12	1365	04 16 00
04 17 30	---	15 37 50	58.9	43.0	-3.9		-84.7	90	1377	04 16 01
04 17 30	B1938+666	15 37 50	58.5	40.8	-4.0		-85.7	-18	1377	No stop
04 21 00	---	15 41 21	58.9	40.8	-4.0		-86.4	192	1404	04 17 31
04 21 00	J1933+654	15 41 21	59.2	43.1	-3.9		-85.5	-19	1404	No stop
04 22 30	---	15 42 51	59.4	43.1	-3.9		-85.8	71	1415	04 21 01
04 22 30	B1938+666	15 42 51	59.0	40.8	-3.9		-86.8	-19	1415	No stop
04 26 00	---	15 46 22	59.3	40.8	-3.9		-87.5	191	1442	04 22 31
04 26 30	J1933+654	15 46 52	59.8	43.2	-3.8		-86.7	11	1442	04 26 30
04 28 00	---	15 48 22	59.9	43.2	-3.8		-87.0	90	1454	04 26 31
04 28 00	B1938+666	15 48 22	59.5	40.9	-3.8		-88.0	-19	1454	No stop
04 31 30	---	15 51 53	59.9	40.9	-3.8		-88.8	191	1481	04 28 01
04 31 30	J1933+654	15 51 53	60.3	43.2	-3.7		-87.8	-19	1481	No stop
04 33 00	---	15 53 23	60.5	43.2	-3.7		-88.1	71	1492	04 31 31
04 33 00	B1938+666	15 53 23	60.0	40.9	-3.8		-89.1	-19	1492	No stop
04 36 30	---	15 56 54	60.4	40.9	-3.7		-89.9	191	1519	04 33 01
04 37 00	J1933+654	15 57 24	60.9	43.2	-3.6		-89.0	11	1519	04 37 00
04 38 30	---	15 58 54	61.0	43.2	-3.6		-89.3	90	1531	04 37 01

Schedule for TORUN (Code Tr) Page 7

Gravitational lensing by low-mass dark matter haloes

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 22 Feb 2016 Day 53 ---										
04 38 30	B1938+666	15 58 54	60.6	40.9	-3.7		-90.4	-19	1531	No stop
04 42 00	---	16 02 24	60.9	40.9	-3.6		-91.2	191	1558	04 38 31
04 42 00	J1933+654	16 02 24	61.4	43.2	-3.5		-90.1	-19	1558	No stop
04 43 30	---	16 03 55	61.5	43.2	-3.5		-90.5	71	1569	04 42 01
04 43 30	B1938+666	16 03 55	61.1	40.9	-3.6		-91.5	-19	1569	No stop
04 47 00	---	16 07 25	61.4	40.9	-3.5		-92.4	191	1596	04 43 31
04 47 30	J1933+654	16 07 55	61.9	43.2	-3.4		-91.4	11	1596	04 47 30
04 49 00	---	16 09 26	62.1	43.2	-3.4		-91.8	90	1608	04 47 31
04 49 00	B1938+666	16 09 26	61.6	40.8	-3.5		-92.8	-19	1608	No stop
04 52 30	---	16 12 56	62.0	40.8	-3.4		-93.7	191	1635	04 49 01
04 52 30	J1933+654	16 12 56	62.5	43.2	-3.4		-92.6	-19	1635	No stop
04 54 00	---	16 14 26	62.6	43.2	-3.3		-92.9	71	1646	04 52 31
04 54 00	B1938+666	16 14 26	62.1	40.8	-3.4		-94.1	-19	1646	No stop
04 57 30	---	16 17 57	62.4	40.7	-3.3		-94.9	191	1673	04 54 01
04 58 00	J1933+654	16 18 27	63.0	43.1	-3.3		-93.9	11	1673	04 58 00
04 59 30	---	16 19 57	63.2	43.1	-3.2		-94.3	90	1685	04 58 01
04 59 30	B1938+666	16 19 57	62.6	40.7	-3.3		-95.4	-19	1685	No stop
05 03 00	---	16 23 28	63.0	40.6	-3.2		-96.3	191	1712	04 59 31
05 03 00	J1933+654	16 23 28	63.5	43.0	-3.2		-95.1	-19	1712	No stop
05 04 30	---	16 24 58	63.7	43.0	-3.2		-95.5	71	1723	05 03 01
05 04 30	B1938+666	16 24 58	63.1	40.6	-3.2		-96.7	-19	1723	No stop
05 08 00	---	16 28 29	63.5	40.5	-3.2		-97.6	191	1750	05 04 31
05 08 30	J1933+654	16 28 59	64.1	42.9	-3.1		-96.5	11	1750	05 08 30
05 10 00	---	16 30 29	64.3	42.9	-3.1		-96.9	90	1762	05 08 31
05 10 00	B1938+666	16 30 29	63.7	40.4	-3.1		-98.1	-19	1762	No stop
05 13 30	---	16 34 00	64.0	40.3	-3.1		-99.0	191	1788	05 10 01
05 13 30	J1933+654	16 34 00	64.6	42.8	-3.0		-97.8	-19	1788	No stop
05 15 00	---	16 35 30	64.8	42.7	-3.0		-98.2	71	1800	05 13 31
05 15 00	B1938+666	16 35 30	64.2	40.2	-3.0		-99.4	-19	1800	No stop
05 18 30	---	16 39 00	64.5	40.1	-3.0		-100.3	191	1827	05 15 01

Schedule for TORUN (Code Tr) Page 8

Gravitational lensing by low-mass dark matter haloes

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 22 Feb 2016 Day 53 ---										
05 19 00	J1933+654	16 39 30	65.2	42.6	-2.9		-99.2	11	1827	05 19 00
05 20 30	---	16 41 01	65.3	42.5	-2.9		-99.6	90	1838	05 19 01
05 20 30	B1938+666	16 41 01	64.7	40.0	-3.0		-100.8	-19	1838	No stop
05 24 00	---	16 44 31	65.0	39.9	-2.9		-101.8	191	1865	05 20 31
05 24 00	J1933+654	16 44 31	65.7	42.3	-2.8		-100.5	-19	1865	No stop
05 25 30	---	16 46 02	65.8	42.3	-2.8		-101.0	71	1877	05 24 01
05 25 30	B1938+666	16 46 02	65.2	39.8	-2.9		-102.2	-19	1877	No stop
05 29 00	---	16 49 32	65.5	39.6	-2.8		-103.2	191	1904	05 25 31
05 29 30	J1933+654	16 50 02	66.2	42.1	-2.7		-102.1	11	1904	05 29 30
05 31 00	---	16 51 32	66.4	42.0	-2.7		-102.5	90	1915	05 29 31
05 31 00	B1938+666	16 51 32	65.7	39.5	-2.8		-103.7	-19	1915	No stop
05 34 30	---	16 55 03	66.0	39.3	-2.7		-104.7	191	1942	05 31 01
05 34 30	J1933+654	16 55 03	66.7	41.8	-2.6		-103.5	-19	1942	No stop
05 36 00	---	16 56 33	66.9	41.7	-2.6		-103.9	71	1954	05 34 31
05 36 00	B1938+666	16 56 33	66.2	39.2	-2.7		-105.2	-19	1954	No stop
05 39 30	---	17 00 04	66.5	39.0	-2.6		-106.2	191	1981	05 36 01
05 40 00	J1933+654	17 00 34	67.3	41.4	-2.6		-105.0	11	1981	05 40 00
05 41 30	---	17 02 04	67.4	41.3	-2.5		-105.5	90	1992	05 40 01
05 41 30	B1938+666	17 02 04	66.7	38.8	-2.6		-106.8	-19	1992	No stop
05 45 00	---	17 05 35	67.0	38.6	-2.5		-107.8	191	2019	05 41 31
05 45 00	J1933+654	17 05 35	67.8	41.1	-2.5		-106.5	-19	2019	No stop
05 46 30	---	17 07 05	67.9	40.9	-2.4		-107.0	71	2031	05 45 01
05 47 00	J1933+654	17 07 35	68.0	40.9	-2.4		-107.1	24	2031	05 47 00
05 51 30	---	17 12 06	68.4	40.5	-2.4		-108.5	270	2065	05 47 01
05 51 30	B1938+666	17 12 06	67.6	38.0	-2.4		-109.8	-19	2065	No stop
05 55 00	---	17 15 36	68.0	37.7	-2.4		-110.9	191	2092	05 51 31
05 55 30	J1933+654	17 16 06	68.8	40.1	-2.3		-109.8	11	2092	05 55 30
05 57 00	---	17 17 37	69.0	40.0	-2.3		-110.2	90	2104	05 55 31
05 57 00	B1938+666	17 17 37	68.1	37.5	-2.3		-111.6	-19	2104	No stop
06 00 30	---	17 21 07	68.5	37.2	-2.3		-112.7	191	2131	05 57 01

Schedule for TORUN (Code Tr) Page 9

Gravitational lensing by low-mass dark matter haloes

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 22 Feb 2016 Day 53 ---										
06 00 30	J1933+654	17 21 07	69.3	39.6	-2.2		-111.4	-19	2131	No stop
06 02 00	---	17 22 38	69.5	39.5	-2.2		-111.9	71	2142	06 00 31
06 02 00	B1938+666	17 22 38	68.6	37.0	-2.3		-113.2	-19	2142	No stop
06 05 30	---	17 26 08	68.9	36.6	-2.2		-114.3	191	2169	06 02 01
06 06 00	J1933+654	17 26 38	69.8	39.0	-2.1		-113.2	11	2169	06 06 00
06 07 30	---	17 28 08	70.0	38.8	-2.1		-113.7	90	2181	06 06 01
06 07 30	B1938+666	17 28 08	69.1	36.4	-2.2		-115.0	-19	2181	No stop
06 11 00	---	17 31 39	69.4	36.0	-2.1		-116.2	191	2208	06 07 31
06 11 00	J1933+654	17 31 39	70.3	38.4	-2.0		-114.9	-19	2208	No stop
06 12 30	---	17 33 09	70.4	38.2	-2.0		-115.5	71	2219	06 11 01
06 12 30	B1938+666	17 33 09	69.5	35.8	-2.1		-116.7	-19	2219	No stop
06 16 00	---	17 36 40	69.8	35.3	-2.0		-118.0	191	2246	06 12 31
06 16 30	J1933+654	17 37 10	70.8	37.7	-1.9		-116.9	11	2246	06 16 30
06 18 00	---	17 38 40	71.0	37.4	-1.9		-117.4	90	2258	06 16 31
06 18 00	B1938+666	17 38 40	70.0	35.0	-2.0		-118.7	-19	2258	No stop
06 21 30	---	17 42 11	70.3	34.6	-1.9		-120.0	191	2285	06 18 01
06 21 30	J1933+654	17 42 11	71.3	36.9	-1.9		-118.7	-19	2285	No stop
06 23 00	---	17 43 41	71.4	36.7	-1.8		-119.3	71	2296	06 21 31
06 23 00	B1938+666	17 43 41	70.4	34.3	-1.9		-120.5	-19	2296	No stop
06 26 30	---	17 47 12	70.7	33.8	-1.9		-121.8	191	2323	06 23 01
06 27 00	J1933+654	17 47 42	71.8	36.0	-1.8		-120.8	11	2323	06 27 00
06 28 30	---	17 49 12	71.9	35.8	-1.7		-121.4	90	2335	06 27 01
06 28 30	B1938+666	17 49 12	70.9	33.5	-1.8		-122.6	-19	2335	No stop
06 32 00	---	17 52 42	71.2	32.9	-1.8		-124.0	191	2362	06 28 31
06 32 00	J1933+654	17 52 42	72.2	35.2	-1.7		-122.8	-18	2362	No stop
06 33 30	---	17 54 13	72.3	34.9	-1.7		-123.4	72	2373	06 32 01
06 33 30	B1938+666	17 54 13	71.3	32.6	-1.7		-124.6	-19	2373	No stop
06 37 00	---	17 57 43	71.6	32.0	-1.7		-126.0	191	2400	06 33 31
06 37 30	J1933+654	17 58 13	72.7	34.1	-1.6		-125.1	12	2400	06 37 30
06 39 00	---	17 59 44	72.8	33.8	-1.6		-125.7	90	2412	06 37 31

Schedule for TORUN (Code Tr) Page 10

Gravitational lensing by low-mass dark matter haloes

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 22 Feb 2016 Day 53 ---										
06 39 00	B1938+666	17 59 44	71.8	31.6	-1.6		-126.8	-18	2412	No stop
06 42 30	---	18 03 14	72.0	31.0	-1.6		-128.2	192	2438	06 39 01
06 42 30	J1933+654	18 03 14	73.1	33.1	-1.5		-127.2	-18	2438	No stop
06 44 00	---	18 04 44	73.2	32.7	-1.5		-127.9	72	2450	06 42 31
06 44 00	B1938+666	18 04 44	72.1	30.7	-1.6		-128.8	-18	2450	No stop
06 47 30	---	18 08 15	72.4	29.9	-1.5		-130.3	192	2477	06 44 01
06 48 00	J1933+654	18 08 45	73.5	31.8	-1.4		-129.6	12	2477	06 48 00
06 49 30	---	18 10 15	73.6	31.5	-1.4		-130.3	90	2488	06 48 01
06 49 30	B1938+666	18 10 15	72.6	29.5	-1.5		-131.2	-18	2488	No stop
06 53 00	---	18 13 46	72.8	28.7	-1.4		-132.8	192	2515	06 49 31
06 53 00	J1933+654	18 13 46	73.9	30.6	-1.3		-131.9	-17	2515	No stop
06 54 30	---	18 15 16	74.0	30.3	-1.3		-132.6	73	2527	06 53 01
06 54 30	B1938+666	18 15 16	72.9	28.4	-1.4		-133.4	-17	2527	No stop
06 58 00	---	18 18 47	73.2	27.6	-1.3		-135.0	193	2554	06 54 31
06 58 30	J1933+654	18 19 17	74.3	29.2	-1.2		-134.6	13	2554	06 58 30
07 00 00	---	18 20 47	74.4	28.8	-1.2		-135.3	90	2565	06 58 31
07 05 00	3C345	18 25 48	68.1	242.8	1.7		44.0	-145	2565	07 05 00
07 15 00	---	18 35 50	66.8	246.4	1.9		45.7	455	2642	07 05 01
07 20 00	3C380	18 40 50	85.3	202.7	0.2		20.6	184	2642	07 20 00
07 25 00	---	18 45 51	85.0	211.6	0.3		28.5	300	2681	07 20 01
07 30 00	B1938+666	18 50 52	75.1	378.3	-0.8		-151.3	-48	2681	07 30 00
07 33 30	---	18 54 23	75.2	377.1	-0.7		-153.2	162	2708	07 30 01
07 34 00	J1933+654	18 54 53	76.5	377.4	-0.7		-154.1	12	2708	07 34 00
07 35 30	---	18 56 23	76.5	376.8	-0.6		-155.0	90	2719	07 34 01
07 35 30	B1938+666	18 56 23	75.3	376.4	-0.7		-154.4	-18	2719	No stop
07 39 00	---	18 59 53	75.5	375.2	-0.6		-156.4	192	2746	07 35 31
07 39 00	J1933+654	18 59 53	76.7	375.4	-0.6		-157.2	-18	2746	No stop
07 40 30	---	19 01 24	76.7	374.8	-0.5		-158.2	72	2758	07 39 01
07 40 30	B1938+666	19 01 24	75.5	374.7	-0.6		-157.3	-18	2758	No stop
07 44 00	---	19 04 54	75.6	373.4	-0.6		-159.3	192	2785	07 40 31

Schedule for TORUN (Code Tr) Page 11

Gravitational lensing by low-mass dark matter haloes

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Mon 22 Feb 2016 Day 53 ---										
07 44 30	J1933+654	19 05 24	76.9	373.1	-0.5		-160.7	12	2785	07 44 30
07 46 00	---	19 06 55	76.9	372.4	-0.5		-161.7	90	2796	07 44 31
07 46 00	B1938+666	19 06 55	75.7	372.6	-0.5		-160.5	-18	2796	No stop
07 49 30	---	19 10 25	75.8	371.3	-0.5		-162.6	192	2823	07 46 01
07 49 30	J1933+654	19 10 25	77.1	370.9	-0.4		-164.0	-18	2823	No stop
07 51 00	---	19 11 55	77.1	370.2	-0.4		-165.0	72	2835	07 49 31
07 51 00	B1938+666	19 11 55	75.9	370.7	-0.4		-163.5	-18	2835	No stop
07 54 30	---	19 15 26	76.0	369.4	-0.4		-165.6	192	2862	07 51 01
07 55 00	J1933+654	19 15 56	77.2	368.4	-0.3		-167.7	12	2862	07 55 00
07 56 30	---	19 17 26	77.2	367.7	-0.3		-168.7	90	2873	07 55 01
07 56 30	B1938+666	19 17 26	76.0	368.6	-0.4		-166.9	-18	2873	No stop
08 00 00	---	19 20 57	76.1	367.2	-0.3		-169.0	192	2900	07 56 31
08 00 00	J1933+654	19 20 57	77.3	366.1	-0.2		-171.1	-18	2900	No stop
08 01 30	---	19 22 27	77.3	365.4	-0.2		-172.1	72	2912	08 00 01
08 01 30	B1938+666	19 22 27	76.1	366.6	-0.3		-170.0	-18	2912	No stop
08 05 00	---	19 25 58	76.2	365.1	-0.2		-172.1	192	2938	08 01 31
08 05 30	J1933+654	19 26 28	77.4	363.6	-0.1		-174.8	12	2938	08 05 30
08 07 00	---	19 27 58	77.4	362.8	-0.1		-175.8	90	2950	08 05 31
08 07 00	B1938+666	19 27 58	76.2	364.3	-0.2		-173.4	-18	2950	No stop
08 10 30	---	19 31 29	76.2	362.9	-0.1		-175.6	192	2977	08 07 01
08 10 30	J1933+654	19 31 29	77.4	361.2	-0.0		-178.3	-17	2977	No stop
08 12 00	---	19 32 59	77.4	360.5	-0.0		-179.3	73	2988	08 10 31
08 12 00	B1938+666	19 32 59	76.2	362.3	-0.1		-176.5	-17	2988	No stop
08 15 30	---	19 36 29	76.2	360.8	-0.0		-178.8	193	3015	08 12 01
08 16 00	J1933+654	19 37 00	77.4	358.6	0.0		178.0	12	3015	08 16 00
08 17 30	---	19 38 30	77.4	357.9	0.1		176.9	90	3027	08 16 01
08 17 30	B1938+666	19 38 30	76.2	360.0	0.0		180.0	-18	3027	No stop
08 21 00	---	19 42 00	76.2	358.5	0.1		177.8	192	3054	08 17 31
08 21 00	J1933+654	19 42 00	77.4	356.2	0.1		174.5	-19	3054	No stop
08 22 30	---	19 43 31	77.3	355.5	0.2		173.5	71	3065	08 21 01

Schedule for TORUN (Code Tr) Page 12

Gravitational lensing by low-mass dark matter haloes

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 22 Feb 2016 Day 53 ---										
08 22 30	B1938+666	19 43 31	76.2	357.9	0.1		176.8	-18	3065	No stop
08 26 00	---	19 47 01	76.2	356.5	0.1		174.6	192	3092	08 22 31
08 26 30	J1933+654	19 47 31	77.3	353.7	0.2		170.8	10	3092	08 26 30
08 28 00	---	19 49 02	77.3	353.0	0.3		169.7	90	3104	08 26 31
08 28 00	B1938+666	19 49 02	76.2	355.6	0.2		173.3	-19	3104	No stop
08 31 30	---	19 52 32	76.1	354.2	0.2		171.1	191	3131	08 28 01
08 31 30	J1933+654	19 52 32	77.2	351.4	0.3		167.4	-20	3131	No stop
08 33 00	---	19 54 02	77.1	350.7	0.3		166.4	70	3142	08 31 31
08 33 00	B1938+666	19 54 02	76.1	353.6	0.3		170.2	-20	3142	No stop
08 36 30	---	19 57 33	76.0	352.2	0.3		168.0	190	3169	08 33 01
08 37 00	J1933+654	19 58 03	77.0	348.9	0.4		163.7	9	3169	08 37 00
08 38 30	---	19 59 33	77.0	348.3	0.4		162.7	90	3181	08 37 01
08 38 30	B1938+666	19 59 33	76.0	351.4	0.4		166.8	-21	3181	No stop
08 42 00	---	20 03 04	75.9	350.0	0.4		164.7	189	3208	08 38 31
08 42 00	J1933+654	20 03 04	76.9	346.8	0.5		160.5	-21	3208	No stop
08 43 30	---	20 04 34	76.8	346.1	0.5		159.5	69	3219	08 42 01
08 43 30	B1938+666	20 04 34	75.9	349.4	0.4		163.7	-21	3219	No stop
08 47 00	---	20 08 05	75.8	348.1	0.5		161.6	189	3246	08 43 31
08 47 30	J1933+654	20 08 35	76.7	344.4	0.6		157.0	8	3246	08 47 30
08 49 00	---	20 10 05	76.6	343.8	0.6		156.0	90	3258	08 47 31
08 49 00	B1938+666	20 10 05	75.7	347.3	0.5		160.4	-21	3258	No stop
08 52 30	---	20 13 36	75.6	346.0	0.6		158.4	189	3285	08 49 01
08 52 30	J1933+654	20 13 36	76.5	342.4	0.7		153.9	-22	3285	No stop
08 54 00	---	20 15 06	76.4	341.8	0.7		152.9	68	3296	08 52 31
08 54 00	B1938+666	20 15 06	75.5	345.5	0.6		157.5	-22	3296	No stop
08 57 30	---	20 18 36	75.4	344.2	0.7		155.5	188	3323	08 54 01
08 58 00	J1933+654	20 19 06	76.2	340.3	0.8		150.5	7	3323	08 58 00
08 59 30	---	20 20 37	76.1	339.7	0.8		149.6	90	3335	08 58 01
08 59 30	B1938+666	20 20 37	75.3	343.5	0.7		154.3	-22	3335	No stop
09 03 00	---	20 24 07	75.2	342.3	0.8		152.3	188	3362	08 59 31

Schedule for TORUN (Code Tr) Page 13

Gravitational lensing by low-mass dark matter haloes

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Mon 22 Feb 2016 Day 53 ---										
09 03 00	J1933+654	20 24 07	75.9	338.5	0.8		147.6	-23	3362	No stop
09 04 30	---	20 25 38	75.8	337.9	0.9		146.8	67	3373	09 03 01
09 04 30	B1938+666	20 25 38	75.1	341.8	0.8		151.5	-22	3373	No stop
09 08 00	---	20 29 08	74.9	340.6	0.8		149.6	188	3400	09 04 31
09 08 30	J1933+654	20 29 38	75.6	336.6	0.9		144.5	7	3400	09 08 30
09 10 00	---	20 31 08	75.5	336.1	1.0		143.7	90	3412	09 08 31
09 10 00	B1938+666	20 31 08	74.8	340.0	0.9		148.5	-23	3412	No stop
09 13 30	---	20 34 39	74.6	338.9	0.9		146.6	187	3438	09 10 01
09 13 30	J1933+654	20 34 39	75.3	334.9	1.0		141.8	-23	3438	No stop
09 15 00	---	20 36 09	75.2	334.4	1.0		141.0	67	3450	09 13 31
09 15 00	B1938+666	20 36 09	74.6	338.4	1.0		145.8	-23	3450	No stop
09 18 30	---	20 39 40	74.4	337.4	1.0		144.0	187	3477	09 15 01
09 19 00	J1933+654	20 40 10	74.9	333.2	1.1		138.9	7	3477	09 19 00
09 20 30	---	20 41 40	74.8	332.8	1.1		138.1	90	3488	09 19 01
09 20 30	B1938+666	20 41 40	74.2	336.8	1.1		143.0	-23	3488	No stop
09 24 00	---	20 45 11	74.0	335.8	1.1		141.2	187	3515	09 20 31
09 24 00	J1933+654	20 45 11	74.6	331.8	1.2		136.3	-23	3515	No stop
09 25 30	---	20 46 41	74.5	331.3	1.2		135.6	67	3527	09 24 01
09 25 30	B1938+666	20 46 41	73.9	335.4	1.1		140.5	-23	3527	No stop
09 29 00	---	20 50 12	73.7	334.4	1.2		138.8	187	3554	09 25 31
09 29 30	J1933+654	20 50 42	74.2	330.3	1.3		133.6	7	3554	09 29 30
09 31 00	---	20 52 12	74.1	329.9	1.3		132.9	90	3565	09 29 31
09 31 00	B1938+666	20 52 12	73.6	333.9	1.2		137.8	-23	3565	No stop
09 34 30	---	20 55 42	73.3	333.0	1.3		136.1	187	3592	09 31 01
09 34 30	J1933+654	20 55 42	73.8	329.0	1.4		131.3	-23	3592	No stop
09 36 00	---	20 57 13	73.7	328.6	1.4		130.6	67	3604	09 34 31
09 36 30	J1933+654	20 57 43	73.7	328.5	1.4		130.4	24	3604	09 36 30
09 41 00	---	21 02 14	73.3	327.5	1.5		128.3	270	3638	09 36 31
09 41 00	B1938+666	21 02 14	72.9	331.5	1.4		133.2	-23	3638	No stop
09 44 30	---	21 05 44	72.6	330.7	1.5		131.6	187	3665	09 41 01

Schedule for TORUN (Code Tr) Page 14

Gravitational lensing by low-mass dark matter haloes

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 22 Feb 2016 Day 53 ---										
09 45 00	J1933+654	21 06 14	73.0	326.6	1.5		126.6	7	3665	09 45 00
09 46 30	---	21 07 44	72.8	326.3	1.6		126.0	90	3677	09 45 01
09 46 30	B1938+666	21 07 44	72.5	330.3	1.5		130.7	-23	3677	No stop
09 50 00	---	21 11 15	72.2	329.5	1.5		129.2	187	3704	09 46 31
09 50 00	J1933+654	21 11 15	72.5	325.6	1.6		124.5	-23	3704	No stop
09 51 30	---	21 12 45	72.4	325.3	1.6		123.9	67	3715	09 50 01
09 51 30	B1938+666	21 12 45	72.1	329.2	1.6		128.6	-23	3715	No stop
09 55 00	---	21 16 16	71.8	328.5	1.6		127.1	187	3742	09 51 31
09 55 30	J1933+654	21 16 46	72.1	324.6	1.7		122.3	7	3742	09 55 30
09 57 00	---	21 18 16	71.9	324.3	1.7		121.7	90	3754	09 55 31
09 57 00	B1938+666	21 18 16	71.7	328.2	1.7		126.3	-22	3754	No stop
10 00 30	---	21 21 47	71.4	327.5	1.7		124.9	188	3781	09 57 01
10 00 30	J1933+654	21 21 47	71.6	323.7	1.8		120.3	-23	3781	No stop
10 02 00	---	21 23 17	71.5	323.5	1.8		119.7	67	3792	10 00 31
10 02 00	B1938+666	21 23 17	71.3	327.3	1.7		124.3	-22	3792	No stop
10 05 30	---	21 26 48	71.0	326.7	1.8		123.0	188	3819	10 02 01
10 06 00	J1933+654	21 27 18	71.1	322.9	1.9		118.2	8	3819	10 06 00
10 07 30	---	21 28 48	71.0	322.6	1.9		117.7	90	3831	10 06 01
10 07 30	B1938+666	21 28 48	70.8	326.4	1.8		122.2	-22	3831	No stop
10 11 00	---	21 32 18	70.5	325.8	1.9		120.9	188	3858	10 07 31
10 11 00	J1933+654	21 32 18	70.7	322.1	2.0		116.4	-22	3858	No stop
10 12 30	---	21 33 49	70.5	321.9	2.0		115.9	68	3869	10 11 01
10 12 30	B1938+666	21 33 49	70.4	325.6	1.9		120.3	-22	3869	No stop
10 16 00	---	21 37 19	70.1	325.1	2.0		119.0	188	3896	10 12 31
10 16 30	J1933+654	21 37 49	70.2	321.4	2.1		114.4	8	3896	10 16 30
10 18 00	---	21 39 20	70.0	321.2	2.1		113.9	90	3908	10 16 31
10 18 00	B1938+666	21 39 20	69.9	324.8	2.0		118.3	-22	3908	No stop
10 21 30	---	21 42 50	69.6	324.3	2.1		117.1	188	3935	10 18 01
10 21 30	J1933+654	21 42 50	69.7	320.8	2.1		112.7	-22	3935	No stop
10 23 00	---	21 44 20	69.6	320.6	2.2		112.2	68	3946	10 21 31

Schedule for TORUN (Code Tr) Page 15

Gravitational lensing by low-mass dark matter haloes

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	 AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 22 Feb 2016 Day 53 ---										
10 23 00	B1938+666	21 44 20	69.5	324.1	2.1		116.5	-22	3946	No stop
10 26 30	---	21 47 51	69.2	323.7	2.2		115.3	188	3973	10 23 01
10 27 00	J1933+654	21 48 21	69.2	320.2	2.2		110.9	8	3973	10 27 00
10 28 30	---	21 49 51	69.0	320.1	2.3		110.4	90	3985	10 27 01
10 28 30	B1938+666	21 49 51	69.0	323.5	2.2		114.6	-21	3985	No stop
10 32 00	---	21 53 22	68.7	323.1	2.2		113.5	189	4012	10 28 31
10 32 00	J1933+654	21 53 22	68.7	319.7	2.3		109.3	-22	4012	No stop
10 33 30	---	21 54 52	68.5	319.6	2.3		108.8	68	4023	10 32 01
10 33 30	B1938+666	21 54 52	68.5	322.9	2.3		113.0	-21	4023	No stop
10 37 00	---	21 58 23	68.2	322.6	2.3		111.8	189	4050	10 33 31
10 37 30	J1933+654	21 58 53	68.1	319.2	2.4		107.6	9	4050	10 37 30
10 39 00	---	22 00 23	68.0	319.1	2.4		107.1	90	4062	10 37 31
10 39 00	B1938+666	22 00 23	68.0	322.4	2.4		111.2	-21	4062	No stop
10 42 30	---	22 03 54	67.7	322.1	2.4		110.1	189	4088	10 39 01
10 42 30	J1933+654	22 03 54	67.7	318.8	2.5		106.1	-21	4088	No stop
10 44 00	---	22 05 24	67.5	318.7	2.5		105.6	69	4100	10 42 31
10 44 00	B1938+666	22 05 24	67.6	321.9	2.4		109.6	-21	4100	No stop
10 47 30	---	22 08 54	67.3	321.6	2.5		108.6	189	4127	10 44 01
10 48 00	J1933+654	22 09 25	67.1	318.4	2.6		104.5	9	4127	10 48 00
10 49 30	---	22 10 55	67.0	318.3	2.6		104.0	90	4138	10 48 01
10 49 30	B1938+666	22 10 55	67.1	321.5	2.5		107.9	-21	4138	No stop
10 53 00	---	22 14 25	66.7	321.2	2.6		106.9	189	4165	10 49 31
10 53 00	J1933+654	22 14 25	66.6	318.1	2.7		103.0	-21	4165	No stop
10 54 30	---	22 15 56	66.5	318.0	2.7		102.6	69	4177	10 53 01
10 54 30	B1938+666	22 15 56	66.6	321.1	2.6		106.5	-21	4177	No stop
10 58 00	---	22 19 26	66.3	320.9	2.7		105.4	189	4204	10 54 31
10 58 30	J1933+654	22 19 56	66.1	317.8	2.8		101.5	9	4204	10 58 30
11 00 00	---	22 21 27	65.9	317.8	2.8		101.1	90	4215	10 58 31
11 00 00	B1938+666	22 21 27	66.1	320.7	2.7		104.9	-20	4215	No stop
11 03 30	---	22 24 57	65.7	320.5	2.8		103.9	190	4242	11 00 01

Schedule for TORUN (Code Tr) Page 16

Gravitational lensing by low-mass dark matter haloes

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 22 Feb 2016 Day 53 ---										
11 03 30	J1933+654	22 24 57	65.5	317.6	2.8		100.2	-20	4242	No stop
11 05 00	---	22 26 27	65.4	317.5	2.9		99.8	70	4254	11 03 31
11 05 00	B1938+666	22 26 27	65.6	320.4	2.8		103.4	-20	4254	No stop
11 08 30	---	22 29 58	65.3	320.3	2.9		102.5	190	4281	11 05 01
11 09 00	J1933+654	22 30 28	65.0	317.4	2.9		98.7	10	4281	11 09 00
11 10 30	---	22 31 58	64.8	317.3	3.0		98.3	90	4292	11 09 01
11 10 30	B1938+666	22 31 58	65.1	320.2	2.9		101.9	-20	4292	No stop
11 14 00	---	22 35 29	64.7	320.0	3.0		101.0	190	4319	11 10 31
11 14 00	J1933+654	22 35 29	64.5	317.2	3.0		97.4	-20	4319	No stop
11 15 30	---	22 36 59	64.3	317.2	3.0		97.0	70	4331	11 14 01
11 15 30	B1938+666	22 36 59	64.6	319.9	3.0		100.5	-20	4331	No stop
11 19 00	---	22 40 30	64.2	319.8	3.0		99.6	190	4358	11 15 31
11 19 30	J1933+654	22 41 00	63.9	317.0	3.1		96.0	10	4358	11 19 30
11 21 00	---	22 42 30	63.8	317.0	3.1		95.6	90	4369	11 19 31
11 21 00	B1938+666	22 42 30	64.1	319.7	3.1		99.1	-20	4369	No stop
11 24 30	---	22 46 01	63.7	319.6	3.1		98.2	190	4396	11 21 01
11 24 30	J1933+654	22 46 01	63.4	316.9	3.2		94.8	-20	4396	No stop
11 26 00	---	22 47 31	63.2	316.9	3.2		94.4	70	4408	11 24 31
11 26 00	B1938+666	22 47 31	63.6	319.6	3.2		97.8	-20	4408	No stop
11 29 30	---	22 51 01	63.2	319.5	3.2		96.9	190	4435	11 26 01
11 30 00	J1933+654	22 51 31	62.8	316.8	3.3		93.4	11	4435	11 30 00
11 31 30	---	22 53 02	62.7	316.8	3.3		93.1	90	4446	11 30 01
11 31 30	B1938+666	22 53 02	63.0	319.4	3.2		96.4	-19	4446	No stop
11 35 00	---	22 56 32	62.7	319.3	3.3		95.5	191	4473	11 31 31
11 35 00	J1933+654	22 56 32	62.3	316.8	3.4		92.2	-19	4473	No stop
11 36 30	---	22 58 03	62.2	316.8	3.4		91.9	71	4485	11 35 01
11 36 30	B1938+666	22 58 03	62.5	319.3	3.3		95.1	-19	4485	No stop
11 40 00	---	23 01 33	62.2	319.2	3.4		94.3	191	4512	11 36 31
11 40 30	J1933+654	23 02 03	61.8	316.8	3.5		91.0	11	4512	11 40 30
11 42 00	---	23 03 33	61.6	316.8	3.5		90.6	90	4523	11 40 31

Schedule for TORUN (Code Tr) Page 17

Gravitational lensing by low-mass dark matter haloes

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 22 Feb 2016 Day 53 ---										
11 42 00	B1938+666	23 03 33	62.0	319.2	3.4		93.8	-19	4523	No stop
11 45 30	---	23 07 04	61.7	319.2	3.5		92.9	191	4550	11 42 01
11 45 30	J1933+654	23 07 04	61.2	316.8	3.6		89.8	-19	4550	No stop
11 47 00	---	23 08 34	61.1	316.8	3.6		89.5	71	4562	11 45 31
11 52 00	3C345	23 13 35	26.8	301.4	6.5		41.8	159	4562	11 52 00
12 02 00	---	23 23 37	25.5	303.0	6.7		41.0	600	4638	11 52 01
12 07 00	3C380	23 28 38	44.9	296.1	5.0		54.8	212	4638	12 07 00
12 12 00	---	23 33 38	44.2	296.8	5.1		54.4	300	4677	12 07 01
12 12 30	J1933+654	23 34 08	58.5	317.1	4.0		83.9	-37	4677	12 12 30
12 17 00	---	23 38 39	58.0	317.2	4.1		83.0	233	4712	12 12 31
12 17 00	B1938+666	23 38 39	58.6	319.2	4.0		85.7	-18	4712	No stop
12 20 30	---	23 42 10	58.2	319.3	4.1		85.0	192	4738	12 17 01
12 21 00	J1933+654	23 42 40	57.6	317.3	4.1		82.1	12	4738	12 21 00
12 22 30	---	23 44 10	57.4	317.3	4.2		81.8	90	4750	12 21 01
12 22 30	B1938+666	23 44 10	58.0	319.3	4.1		84.6	-18	4750	No stop
12 26 00	---	23 47 41	57.7	319.4	4.2		83.8	192	4777	12 22 31
12 26 00	J1933+654	23 47 41	57.1	317.4	4.2		81.1	-18	4777	No stop
12 27 30	---	23 49 11	56.9	317.4	4.3		80.8	72	4788	12 26 01
12 27 30	B1938+666	23 49 11	57.5	319.4	4.2		83.5	-18	4788	No stop
12 31 00	---	23 52 41	57.2	319.5	4.2		82.7	192	4815	12 27 31
12 31 30	J1933+654	23 53 12	56.5	317.6	4.3		80.0	13	4815	12 31 30
12 33 00	---	23 54 42	56.4	317.6	4.3		79.7	90	4827	12 31 31
12 33 00	B1938+666	23 54 42	57.0	319.5	4.3		82.3	-17	4827	No stop
12 36 30	---	23 58 12	56.6	319.6	4.3		81.6	193	4854	12 33 01
12 36 30	J1933+654	23 58 12	56.0	317.7	4.4		79.0	-17	4854	No stop
12 38 00	---	23 59 43	55.9	317.8	4.4		78.7	73	4865	12 36 31
12 38 00	B1938+666	23 59 43	56.5	319.7	4.4		81.3	-17	4865	No stop
12 41 30	---	00 03 13	56.2	319.8	4.4		80.5	193	4892	12 38 01
12 42 00	J1933+654	00 03 43	55.5	317.9	4.5		77.9	13	4892	12 42 00
12 43 30	---	00 05 14	55.3	318.0	4.5		77.6	90	4904	12 42 01

Schedule for TORUN (Code Tr) Page 18

Gravitational lensing by low-mass dark matter haloes

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 22 Feb 2016 Day 53 ---										
12 43 30	B1938+666	00 05 14	56.0	319.8	4.4		80.1	-17	4904	No stop
12 47 00	---	00 08 44	55.6	319.9	4.5		79.4	193	4931	12 43 31
12 47 00	J1933+654	00 08 44	55.0	318.1	4.6		76.9	-17	4931	No stop
12 48 30	---	00 10 14	54.8	318.2	4.6		76.6	73	4942	12 47 01
12 48 30	B1938+666	00 10 14	55.5	320.0	4.5		79.1	-17	4942	No stop
12 52 00	---	00 13 45	55.1	320.1	4.6		78.4	193	4969	12 48 31
12 52 30	J1933+654	00 14 15	54.4	318.4	4.7		75.8	13	4969	12 52 30
12 54 00	---	00 15 45	54.2	318.4	4.7		75.6	90	4981	12 52 31
12 54 00	B1938+666	00 15 45	54.9	320.2	4.6		78.0	-17	4981	No stop
12 57 30	---	00 19 16	54.6	320.3	4.7		77.3	193	5008	12 54 01
12 57 30	J1933+654	00 19 16	53.9	318.6	4.8		74.9	-17	5008	No stop
12 59 00	---	00 20 46	53.8	318.7	4.8		74.6	73	5019	12 57 31
12 59 00	B1938+666	00 20 46	54.5	320.4	4.7		77.0	-17	5019	No stop
13 02 30	---	00 24 17	54.1	320.5	4.8		76.3	193	5046	12 59 01
13 03 00	J1933+654	00 24 47	53.4	318.8	4.8		73.8	13	5046	13 03 00
13 04 30	---	00 26 17	53.2	318.9	4.9		73.6	90	5058	13 03 01
13 04 30	B1938+666	00 26 17	53.9	320.6	4.8		75.9	-17	5058	No stop
13 08 00	---	00 29 48	53.6	320.7	4.9		75.2	193	5085	13 04 31
13 08 00	J1933+654	00 29 48	52.9	319.1	4.9		72.9	-16	5085	No stop
13 09 30	---	00 31 18	52.7	319.2	5.0		72.6	74	5096	13 08 01
13 09 30	B1938+666	00 31 18	53.5	320.8	4.9		74.9	-16	5096	No stop
13 13 00	---	00 34 48	53.1	320.9	4.9		74.2	194	5123	13 09 31
13 13 30	J1933+654	00 35 18	52.3	319.4	5.0		71.9	14	5123	13 13 30
13 15 00	---	00 36 49	52.2	319.5	5.0		71.6	90	5135	13 13 31
13 15 00	B1938+666	00 36 49	52.9	321.0	5.0		73.8	-16	5135	No stop
13 18 30	---	00 40 19	52.6	321.2	5.0		73.2	194	5162	13 15 01
13 18 30	J1933+654	00 40 19	51.8	319.6	5.1		70.9	-16	5162	No stop
13 20 00	---	00 41 50	51.7	319.7	5.1		70.7	74	5173	13 18 31
13 20 00	B1938+666	00 41 50	52.5	321.3	5.1		72.9	-16	5173	No stop
13 23 30	---	00 45 20	52.1	321.4	5.1		72.2	194	5200	13 20 01

Schedule for TORUN (Code Tr) Page 19

Gravitational lensing by low-mass dark matter haloes

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 22 Feb 2016 Day 53 ---										
13 24 00	J1933+654	00 45 50	51.3	319.9	5.2		69.9	14	5200	13 24 00
13 25 30	---	00 47 20	51.2	320.0	5.2		69.6	90	5212	13 24 01
13 25 30	B1938+666	00 47 20	51.9	321.5	5.1		71.8	-16	5212	No stop
13 29 00	---	00 50 51	51.6	321.7	5.2		71.2	194	5238	13 25 31
13 29 00	J1933+654	00 50 51	50.8	320.2	5.3		69.0	-16	5238	No stop
13 30 30	---	00 52 21	50.7	320.3	5.3		68.7	74	5250	13 29 01
13 30 30	B1938+666	00 52 21	51.5	321.8	5.2		70.9	-16	5250	No stop
13 34 00	---	00 55 52	51.2	322.0	5.3		70.2	194	5277	13 30 31
13 34 30	J1933+654	00 56 22	50.3	320.6	5.4		68.0	14	5277	13 34 30
13 36 00	---	00 57 52	50.1	320.7	5.4		67.7	90	5288	13 34 31
13 36 00	B1938+666	00 57 52	51.0	322.1	5.3		69.8	-16	5288	No stop
13 39 30	---	01 01 23	50.6	322.3	5.4		69.2	194	5315	13 36 01
13 39 30	J1933+654	01 01 23	49.8	320.9	5.5		67.1	-16	5315	No stop
13 41 00	---	01 02 53	49.7	321.0	5.5		66.8	74	5327	13 39 31
13 41 00	B1938+666	01 02 53	50.5	322.4	5.4		68.9	-16	5327	No stop
13 44 30	---	01 06 24	50.2	322.6	5.5		68.2	194	5354	13 41 01
13 45 00	J1933+654	01 06 54	49.3	321.2	5.5		66.1	14	5354	13 45 00
13 46 30	---	01 08 24	49.1	321.3	5.6		65.8	90	5365	13 45 01
13 46 30	B1938+666	01 08 24	50.0	322.7	5.5		67.9	-16	5365	No stop
13 50 00	---	01 11 54	49.7	322.9	5.6		67.2	194	5392	13 46 31
13 50 00	J1933+654	01 11 54	48.8	321.5	5.6		65.2	-16	5392	No stop
13 51 30	---	01 13 25	48.7	321.6	5.7		64.9	74	5404	13 50 01
13 51 30	B1938+666	01 13 25	49.6	323.0	5.6		66.9	-16	5404	No stop
13 55 00	---	01 16 55	49.2	323.2	5.6		66.3	194	5431	13 51 31
13 55 30	J1933+654	01 17 25	48.3	321.9	5.7		64.2	14	5431	13 55 30
13 57 00	---	01 18 56	48.2	322.0	5.7		63.9	90	5442	13 55 31
13 57 00	B1938+666	01 18 56	49.1	323.3	5.7		65.9	-16	5442	No stop
14 00 30	---	01 22 26	48.7	323.5	5.7		65.3	194	5469	13 57 01
14 00 30	J1933+654	01 22 26	47.8	322.3	5.8		63.3	-16	5469	No stop
14 02 00	---	01 23 56	47.7	322.4	5.8		63.1	74	5481	14 00 31

Schedule for TORUN (Code Tr) Page 20

Gravitational lensing by low-mass dark matter haloes

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 22 Feb 2016 Day 53 ---										
14 02 00	B1938+666	01 23 56	48.6	323.6	5.8		65.0	-16	5481	No stop
14 05 30	---	01 27 27	48.3	323.8	5.8		64.4	194	5508	14 02 01
14 06 00	J1933+654	01 27 57	47.3	322.6	5.9		62.3	14	5508	14 06 00
14 07 30	---	01 29 27	47.2	322.7	5.9		62.1	90	5519	14 06 01
14 07 30	B1938+666	01 29 27	48.1	324.0	5.9		64.0	-16	5519	No stop
14 11 00	---	01 32 58	47.8	324.2	5.9		63.4	194	5546	14 07 31
14 11 00	J1933+654	01 32 58	46.9	323.0	6.0		61.5	-16	5546	No stop
14 12 30	---	01 34 28	46.7	323.1	6.0		61.2	74	5558	14 11 01
14 12 30	B1938+666	01 34 28	47.7	324.3	5.9		63.1	-16	5558	No stop
14 16 00	---	01 37 59	47.4	324.5	6.0		62.5	194	5585	14 12 31
14 16 30	J1933+654	01 38 29	46.4	323.4	6.1		60.5	14	5585	14 16 30
14 18 00	---	01 39 59	46.3	323.5	6.1		60.2	90	5596	14 16 31
14 18 00	B1938+666	01 39 59	47.2	324.7	6.0		62.1	-16	5596	No stop
14 21 30	---	01 43 30	46.9	324.9	6.1		61.5	194	5623	14 18 01
14 21 30	J1933+654	01 43 30	45.9	323.8	6.2		59.6	-16	5623	No stop
14 23 00	---	01 45 00	45.8	323.9	6.2		59.4	74	5635	14 21 31
14 23 30	J1933+654	01 45 30	45.8	323.9	6.2		59.3	24	5635	14 23 30
14 28 30	---	01 50 31	45.3	324.3	6.3		58.4	300	5673	14 23 31
14 28 30	B1938+666	01 50 31	46.3	325.4	6.2		60.2	-16	5673	No stop
14 32 00	---	01 54 01	46.0	325.6	6.3		59.6	194	5700	14 28 31
14 32 30	J1933+654	01 54 31	45.0	324.6	6.3		57.7	13	5700	14 32 30
14 34 00	---	01 56 02	44.8	324.7	6.4		57.5	90	5712	14 32 31
14 34 00	B1938+666	01 56 02	45.8	325.8	6.3		59.2	-16	5712	No stop
14 37 30	---	01 59 32	45.5	326.0	6.4		58.6	194	5738	14 34 01
14 37 30	J1933+654	01 59 32	44.5	325.0	6.4		56.8	-17	5738	No stop
14 39 00	---	02 01 02	44.4	325.1	6.5		56.6	73	5750	14 37 31
14 39 00	B1938+666	02 01 02	45.4	326.1	6.4		58.3	-16	5750	No stop
14 42 30	---	02 04 33	45.1	326.4	6.4		57.7	194	5777	14 39 01
14 43 00	J1933+654	02 05 03	44.1	325.4	6.5		55.9	13	5777	14 43 00
14 44 30	---	02 06 33	43.9	325.6	6.5		55.6	90	5788	14 43 01

```
Schedule for TORUN     (Code Tr )                                  Page  21
               Gravitational lensing by low-mass dark matter haloes
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Mon  22 Feb 2016   Day  53 ---

14 44 30  B1938+666    02 06 33  44.9 326.5  6.5      57.3   -16     5788   No stop
14 48 00  ---          02 10 04  44.7 326.8  6.5      56.7   194     5815   14 44 31

14 48 00  J1933+654    02 10 04  43.6 325.8  6.6      55.0   -17     5815   No stop
14 49 30  ---          02 11 34  43.5 326.0  6.6      54.8    73     5827   14 48 01

14 49 30  B1938+666    02 11 34  44.5 326.9  6.6      56.5   -17     5827   No stop
14 53 00  ---          02 15 05  44.2 327.2  6.6      55.8   193     5854   14 49 31

14 53 30  J1933+654    02 15 35  43.2 326.3  6.7      54.1    13     5854   14 53 30
14 55 00  ---          02 17 05  43.1 326.4  6.7      53.8    90     5865   14 53 31

14 55 00  B1938+666    02 17 05  44.1 327.4  6.6      55.5   -17     5865   No stop
14 58 30  ---          02 20 36  43.8 327.6  6.7      54.9   193     5892   14 55 01

14 58 30  J1933+654    02 20 36  42.8 326.7  6.8      53.2   -17     5892   No stop
15 00 00  ---          02 22 06  42.6 326.8  6.8      53.0    73     5904   14 58 31



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: sess116.C2048glob

   Setup group:   25         Station: TORUN            Total bit rate:  1024
   Format: MARK5B            Bits per sample: 2        Sample rate: 64.000
   Number of channels:  8    DBE type: DBBC_DDC        Speedup factor:   1.00

   Disk used to record data.
```

```
 1st LO=   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00
 Net SB=         L         L         U         U         L         L         U         U
 IF SB =         U         U         U         U         U         U         U         U
 Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
 BBC   =         1         5         1         5         3         7         3         7
 BBC SB=         L         L         U         U         L         L         U         U
 IF    =        A1        B1        A1        B1        A1        B1        A1        B1

The following frequency sets based on these setups were used.

 Frequency Set:   8  Setup file default.  Used with PCAL = off
 LO sum=   4900.25  4900.25  4900.25  4900.25  4964.25  4964.25  4964.25  4964.25
 BBC fr=    700.25   700.25   700.25   700.25   764.25   764.25   764.25   764.25
 Bandwd=     32.00    32.00    32.00    32.00    32.00    32.00    32.00    32.00
  Matching frequency sets:   8

 Track assignments are:
  track1=  10, 14,  2,  6, 12, 16,  4,  8
  barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* B1938+666	19 38 12.926552	* 19 38 25.290000	19 38 26.996111	0.00
	66 41 56.17018	* 66 48 52.96000	66 51 02.42898	0.00
* J1933+654	19 33 38.733696	* 19 33 57.337209	19 34 01.182069	0.00
	65 33 38.07682	* 65 40 16.82838	65 42 20.31960	0.00
* 3C345	16 41 17.606231	* 16 42 58.809968	16 43 30.964404	0.00
	39 54 10.81493	* 39 48 36.99399	39 46 41.38785	0.00
* 3C454.3	22 51 29.519744	* 22 53 57.747943	22 54 44.421203	0.00
	15 52 54.34808	* 16 08 53.56091	16 14 00.35603	0.00
* 3C380	18 28 13.501488	* 18 29 31.780879	18 29 55.897280	0.00
	48 42 40.18597	* 48 44 46.16040	48 45 20.40149	0.00

rk12pttr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/K-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Mon  22 Feb 2016   Day  53 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

22 30 00  1253-055     09 53 20  19.5 130.7 -3.1     -27.2     0        0   22 30 00
22 44 30  ---          10 07 52  21.1 134.2 -2.8     -25.7   870       28   22 30 01

22 45 00  1253-055     10 08 22  21.2 134.3 -2.8     -25.6    24       28   22 45 00
22 59 30  ---          10 22 55  22.7 137.8 -2.6     -23.9   870       56   22 45 01

23 00 00  1253-055     10 23 25  22.7 137.9 -2.6     -23.9    24       56   23 00 00
23 14 30  ---          10 37 57  24.1 141.6 -2.3     -22.0   870       84   23 00 01

23 15 00  1253-055     10 38 27  24.2 141.7 -2.3     -22.0    24       84   23 15 00
23 30 00  ---          10 53 30  25.5 145.5 -2.1     -20.0   900      112   23 15 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    5         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4100.00   4100.00   4100.00   4100.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   3  Setup file default.  Used with PCAL = 1MHz
  LO sum=   4836.00  4836.00  4836.00  4836.00
  BBC fr=    736.00   736.00   736.00   736.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   3

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

```
  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 55.233598       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 26.77807        0.00
                    fake circumpolar target for a TS to look at

* 1253-055          12 53 35.831289   * 12 56 11.166557     12 57 02.292795       0.00
  J1256-0547       -05 31 07.99603    *-05 47 21.52489     -05 52 38.66408        0.00
  3C279             ./rk12pt_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 7924 observations, RA-AO3-04, RA-AO3-05
```

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1253-055           138.4

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

em119atr

Heart of a spiral DRAGN

PI: *Minnie Mao*

Address: JIVE Phone: +31-521-596508 EMAIL: mao@jive.eu

Observing mode:
Schedule for TORUN (Code Tr) Page 2
Heart of a spiral DRAGN
UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 23 Feb 2016 Day 54 ---										
Next scan frequencies:		4942.49	4942.49	4942.49	4942.49		4974.49	4974.49	4974.49	4974.49
		5006.49	5006.49	5006.49	5006.49		5038.49	5038.49	5038.49	5038.49
Next BBC frequencies:		742.49	742.49	742.49	742.49		774.49	774.49	774.49	774.49
		806.49	806.49	806.49	806.49		838.49	838.49	838.49	838.49
Next scan bandwidths:		16.00	16.00	16.00	16.00		16.00	16.00	16.00	16.00
		16.00	16.00	16.00	16.00		16.00	16.00	16.00	16.00
00 00 00	J1649+2635	11 23 35	25.8	79.5	-5.4		-41.3	0	0	00 00 00
00 03 30	---	11 27 05	26.4	80.1	-5.4		-41.4	210	27	00 00 01
00 03 30	J1642+2523	11 27 05	26.4	82.3	-5.3		-41.2	-18	27	No stop
00 05 00	=1640+254	11 28 35	26.7	82.6	-5.2		-41.2	72	38	00 03 31
00 05 00	J1649+2635	11 28 35	26.6	80.4	-5.4		-41.4	-18	38	No stop
00 08 30	---	11 32 06	27.1	81.1	-5.3		-41.5	192	65	00 05 01
00 08 30	J1642+2523	11 32 06	27.2	83.3	-5.2		-41.3	-18	65	No stop
00 10 00	=1640+254	11 33 36	27.4	83.5	-5.2		-41.3	72	77	00 08 31
00 10 00	J1649+2635	11 33 36	27.3	81.4	-5.3		-41.6	-18	77	No stop
00 13 30	---	11 37 07	27.8	82.0	-5.2		-41.7	192	104	00 10 01
00 14 30	J1642+2523	11 38 07	28.1	84.4	-5.1		-41.4	42	104	00 14 30
00 16 00	=1640+254	11 39 37	28.3	84.7	-5.1		-41.4	90	115	00 14 31
00 16 00	J1649+2635	11 39 37	28.2	82.5	-5.2		-41.7	-18	115	No stop
00 19 30	---	11 43 08	28.7	83.2	-5.1		-41.8	192	142	00 16 01
00 19 30	J1642+2523	11 43 08	28.8	85.4	-5.0		-41.5	-18	142	No stop
00 21 00	=1640+254	11 44 38	29.1	85.7	-5.0		-41.5	72	154	00 19 31
00 21 00	J1649+2635	11 44 38	29.0	83.5	-5.1		-41.8	-18	154	No stop
00 24 30	---	11 48 09	29.5	84.1	-5.0		-41.9	192	181	00 21 01
00 24 30	J1642+2523	11 48 09	29.6	86.3	-4.9		-41.5	-18	181	No stop
00 26 00	=1640+254	11 49 39	29.8	86.6	-4.9		-41.6	72	192	00 24 31
00 26 00	J1649+2635	11 49 39	29.7	84.4	-5.0		-41.9	-18	192	No stop
00 29 30	---	11 53 09	30.2	85.1	-4.9		-42.0	192	219	00 26 01
00 30 30	J1642+2523	11 54 10	30.5	87.5	-4.8		-41.6	42	219	00 30 30
00 32 00	=1640+254	11 55 40	30.7	87.8	-4.8		-41.6	90	231	00 30 31

Schedule for TORUN (Code Tr) Page 3

Heart of a spiral DRAGN

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Tue	23 Feb 2016	Day 54 ---								
00 32 00	J1649+2635	11 55 40	30.6	85.6	-4.9		-42.0	-18	231	No stop
00 35 30	---	11 59 10	31.1	86.3	-4.8		-42.1	192	258	00 32 01
00 35 30	J1642+2523	11 59 10	31.2	88.5	-4.7		-41.6	-19	258	No stop
00 37 00	=1640+254	12 00 41	31.5	88.8	-4.7		-41.6	71	269	00 35 31
00 37 00	J1649+2635	12 00 41	31.4	86.5	-4.8		-42.1	-18	269	No stop
00 40 30	---	12 04 11	31.9	87.2	-4.8		-42.1	192	296	00 37 01
00 40 30	J1642+2523	12 04 11	32.0	89.5	-4.7		-41.6	-19	296	No stop
00 42 00	=1640+254	12 05 42	32.2	89.8	-4.6		-41.6	71	308	00 40 31
00 42 00	J1649+2635	12 05 42	32.1	87.5	-4.7		-42.1	-18	308	No stop
00 45 30	---	12 09 12	32.6	88.2	-4.7		-42.1	192	335	00 42 01
00 46 30	J1642+2523	12 10 12	32.9	90.7	-4.6		-41.6	41	335	00 46 30
00 48 00	=1640+254	12 11 43	33.1	91.0	-4.5		-41.6	90	346	00 46 31
00 48 00	J1649+2635	12 11 43	33.0	88.7	-4.6		-42.2	-18	346	No stop
00 51 30	---	12 15 13	33.5	89.4	-4.6		-42.2	192	373	00 48 01
00 51 30	J1642+2523	12 15 13	33.7	91.7	-4.5		-41.6	-19	373	No stop
00 53 00	=1640+254	12 16 43	33.9	92.0	-4.4		-41.6	71	385	00 51 31
00 53 00	J1649+2635	12 16 43	33.8	89.7	-4.6		-42.2	-18	385	No stop
00 56 30	---	12 20 14	34.3	90.4	-4.5		-42.2	192	412	00 53 01
00 56 30	J1642+2523	12 20 14	34.4	92.7	-4.4		-41.6	-19	412	No stop
00 58 00	=1640+254	12 21 44	34.6	93.0	-4.4		-41.6	71	423	00 56 31
00 58 00	J1649+2635	12 21 44	34.5	90.7	-4.5		-42.2	-19	423	No stop
01 01 30	---	12 25 15	35.0	91.4	-4.4		-42.2	191	450	00 58 01
01 02 30	J1642+2523	12 26 15	35.3	94.0	-4.3		-41.5	41	450	01 02 30
01 04 00	=1640+254	12 27 45	35.5	94.3	-4.3		-41.5	90	462	01 02 31
01 04 00	OQ208	12 27 45	59.2	133.5	-1.7		-29.7	-103	462	No stop
01 10 00	---	12 33 46	59.8	135.7	-1.6		-28.4	257	508	01 04 01
01 11 30	J1649+2635	12 35 16	36.6	93.5	-4.2		-42.1	-11	508	01 11 30
01 15 00	---	12 38 47	37.1	94.2	-4.2		-42.0	199	535	01 11 31
01 16 00	J1642+2523	12 39 47	37.3	96.8	-4.1		-41.3	41	535	01 16 00
01 17 30	=1640+254	12 41 17	37.6	97.1	-4.0		-41.2	90	546	01 16 01
01 17 30	J1649+2635	12 41 17	37.5	94.7	-4.1		-42.0	-19	546	No stop
01 21 00	---	12 44 48	38.0	95.5	-4.1		-41.9	191	573	01 17 31

Schedule for TORUN (Code Tr) Page 4

Heart of a spiral DRAGN

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 23 Feb 2016 Day 54 ---										
01 21 00	J1642+2523	12 44 48	38.1	97.9	-4.0		-41.2	-19	573	No stop
01 22 30	=1640+254	12 46 18	38.3	98.2	-4.0		-41.1	71	585	01 21 01
01 22 30	J1649+2635	12 46 18	38.2	95.8	-4.1		-41.9	-19	585	No stop
01 26 00	---	12 49 49	38.7	96.5	-4.0		-41.8	191	612	01 22 31
01 26 00	J1642+2523	12 49 49	38.8	99.0	-3.9		-41.0	-19	612	No stop
01 27 30	=1640+254	12 51 19	39.0	99.3	-3.9		-41.0	71	623	01 26 01
01 27 30	J1649+2635	12 51 19	38.9	96.8	-4.0		-41.8	-19	623	No stop
01 31 00	---	12 54 50	39.5	97.6	-3.9		-41.7	191	650	01 27 31
01 32 00	J1642+2523	12 55 50	39.7	100.3	-3.8		-40.8	41	650	01 32 00
01 33 30	=1640+254	12 57 20	39.9	100.6	-3.8		-40.8	90	662	01 32 01
01 33 30	J1649+2635	12 57 20	39.8	98.1	-3.9		-41.6	-19	662	No stop
01 37 00	---	13 00 51	40.4	98.9	-3.8		-41.5	191	688	01 33 31
01 37 00	J1642+2523	13 00 51	40.5	101.4	-3.7		-40.6	-19	688	No stop
01 38 30	=1640+254	13 02 21	40.7	101.8	-3.7		-40.6	71	700	01 37 01
01 38 30	J1649+2635	13 02 21	40.6	99.2	-3.8		-41.5	-19	700	No stop
01 42 00	---	13 05 51	41.1	100.0	-3.7		-41.4	191	727	01 38 31
01 42 00	J1642+2523	13 05 51	41.2	102.6	-3.6		-40.4	-19	727	No stop
01 43 30	=1640+254	13 07 22	41.4	102.9	-3.6		-40.4	71	738	01 42 01
01 43 30	J1649+2635	13 07 22	41.3	100.4	-3.7		-41.3	-19	738	No stop
01 47 00	---	13 10 52	41.8	101.1	-3.7		-41.2	191	765	01 43 31
01 48 00	J1642+2523	13 11 52	42.1	104.0	-3.5		-40.2	40	765	01 48 00
01 49 30	=1640+254	13 13 23	42.3	104.3	-3.5		-40.1	90	777	01 48 01
01 49 30	J1649+2635	13 13 23	42.2	101.7	-3.6		-41.1	-19	777	No stop
01 53 00	---	13 16 53	42.7	102.5	-3.6		-40.9	191	804	01 49 31
01 53 00	J1642+2523	13 16 53	42.8	105.1	-3.4		-39.9	-20	804	No stop
01 54 30	=1640+254	13 18 23	43.0	105.5	-3.4		-39.8	70	815	01 53 01
01 54 30	J1649+2635	13 18 23	43.0	102.9	-3.5		-40.9	-19	815	No stop
01 58 00	---	13 21 54	43.5	103.7	-3.5		-40.7	191	842	01 54 31
01 58 00	J1642+2523	13 21 54	43.5	106.3	-3.4		-39.6	-20	842	No stop
01 59 30	=1640+254	13 23 24	43.7	106.7	-3.3		-39.5	70	854	01 58 01

Schedule for TORUN (Code Tr) Page 5

Heart of a spiral DRAGN

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 23 Feb 2016 Day 54 ---										
01 59 30	J1649+2635	13 23 24	43.7	104.0	-3.4		-40.6	-19	854	No stop
02 03 00	---	13 26 55	44.2	104.9	-3.4		-40.5	191	881	01 59 31
02 04 00	J1642+2523	13 27 55	44.4	107.8	-3.3		-39.3	40	881	02 04 00
02 05 30	=1640+254	13 29 25	44.6	108.2	-3.2		-39.2	90	892	02 04 01
02 05 30	J1649+2635	13 29 25	44.6	105.4	-3.3		-40.3	-20	892	No stop
02 09 00	---	13 32 56	45.1	106.3	-3.3		-40.1	190	919	02 05 31
02 09 00	J1642+2523	13 32 56	45.1	109.0	-3.2		-38.9	-20	919	No stop
02 10 30	=1640+254	13 34 26	45.3	109.4	-3.1		-38.8	70	931	02 09 01
02 10 30	J1649+2635	13 34 26	45.3	106.7	-3.3		-40.0	-20	931	No stop
02 14 00	---	13 37 57	45.8	107.5	-3.2		-39.8	190	958	02 10 31
02 14 00	J1642+2523	13 37 57	45.8	110.3	-3.1		-38.6	-20	958	No stop
02 15 30	=1640+254	13 39 27	46.0	110.7	-3.1		-38.4	70	969	02 14 01
02 15 30	J1649+2635	13 39 27	46.0	107.9	-3.2		-39.7	-20	969	No stop
02 19 00	---	13 42 57	46.5	108.8	-3.1		-39.5	190	996	02 15 31
02 20 00	J1642+2523	13 43 58	46.6	111.8	-3.0		-38.1	40	996	02 20 00
02 21 30	=1640+254	13 45 28	46.9	112.2	-3.0		-38.0	90	1008	02 20 01
02 21 30	J1649+2635	13 45 28	46.9	109.4	-3.1		-39.3	-20	1008	No stop
02 25 00	---	13 48 58	47.4	110.3	-3.0		-39.0	190	1035	02 21 31
02 25 00	J1642+2523	13 48 58	47.3	113.1	-2.9		-37.7	-20	1035	No stop
02 26 30	=1640+254	13 50 29	47.6	113.5	-2.9		-37.5	70	1046	02 25 01
02 26 30	NRAO512	13 50 29	58.3	97.5	-2.8		-50.7	-55	1046	No stop
02 32 30	---	13 56 30	59.2	98.9	-2.7		-50.5	305	1092	02 26 31
02 32 30	J1642+2523	13 56 30	48.4	115.2	-2.8		-37.0	-54	1092	No stop
02 34 00	=1640+254	13 58 00	48.6	115.6	-2.8		-36.8	36	1104	02 32 31
02 35 00	J1649+2635	13 59 00	48.8	112.9	-2.9		-38.2	40	1104	02 35 00
02 38 30	---	14 02 31	49.2	113.9	-2.8		-37.9	210	1131	02 35 01
02 38 30	J1642+2523	14 02 31	49.2	116.8	-2.7		-36.4	-21	1131	No stop
02 40 00	=1640+254	14 04 01	49.4	117.2	-2.7		-36.2	69	1142	02 38 31
02 40 00	J1649+2635	14 04 01	49.4	114.3	-2.8		-37.7	-20	1142	No stop
02 43 30	---	14 07 32	49.9	115.2	-2.7		-37.4	190	1169	02 40 01

Schedule for TORUN (Code Tr) Page 6

Heart of a spiral DRAGN

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 23 Feb 2016 Day 54 ---										
02 43 30	J1642+2523	14 07 32	49.9	118.2	-2.6		-35.8	-21	1169	No stop
02 45 00	=1640+254	14 09 02	50.1	118.6	-2.6		-35.7	69	1181	02 43 31
02 45 00	J1649+2635	14 09 02	50.1	115.6	-2.7		-37.2	-20	1181	No stop
02 48 30	---	14 12 32	50.6	116.6	-2.6		-36.9	190	1208	02 45 01
02 48 30	J1642+2523	14 12 32	50.5	119.7	-2.5		-35.3	-21	1208	No stop
02 50 00	=1640+254	14 14 03	50.7	120.1	-2.5		-35.1	69	1219	02 48 31
02 51 00	J1649+2635	14 15 03	50.9	117.3	-2.6		-36.6	40	1219	02 51 00
02 54 30	---	14 18 33	51.4	118.3	-2.5		-36.2	210	1246	02 51 01
02 54 30	J1642+2523	14 18 33	51.3	121.4	-2.4		-34.5	-21	1246	No stop
02 56 00	=1640+254	14 20 04	51.5	121.9	-2.4		-34.4	69	1258	02 54 31
02 56 00	J1649+2635	14 20 04	51.6	118.8	-2.5		-36.0	-21	1258	No stop
02 59 30	---	14 23 34	52.1	119.8	-2.4		-35.6	189	1285	02 56 01
02 59 30	J1642+2523	14 23 34	51.9	122.9	-2.3		-33.9	-21	1285	No stop
03 01 00	=1640+254	14 25 04	52.1	123.4	-2.3		-33.7	69	1296	02 59 31
03 01 00	J1649+2635	14 25 04	52.2	120.3	-2.4		-35.4	-21	1296	No stop
03 04 30	---	14 28 35	52.7	121.3	-2.4		-35.0	189	1323	03 01 01
03 04 30	J1642+2523	14 28 35	52.6	124.5	-2.2		-33.2	-21	1323	No stop
03 06 00	=1640+254	14 30 05	52.7	124.9	-2.2		-33.0	69	1335	03 04 31
03 07 00	J1649+2635	14 31 05	53.0	122.1	-2.3		-34.7	39	1335	03 07 00
03 10 30	---	14 34 36	53.5	123.1	-2.3		-34.2	210	1362	03 07 01
03 10 30	J1642+2523	14 34 36	53.3	126.4	-2.1		-32.3	-21	1362	No stop
03 12 00	=1640+254	14 36 06	53.5	126.8	-2.1		-32.1	69	1373	03 10 31
03 12 00	J1649+2635	14 36 06	53.7	123.6	-2.2		-34.0	-21	1373	No stop
03 15 30	---	14 39 37	54.1	124.7	-2.2		-33.5	189	1400	03 12 01
03 15 30	J1642+2523	14 39 37	53.9	128.0	-2.1		-31.6	-21	1400	No stop
03 17 00	=1640+254	14 41 07	54.1	128.5	-2.0		-31.3	69	1412	03 15 31
03 17 00	J1649+2635	14 41 07	54.3	125.2	-2.1		-33.3	-21	1412	No stop
03 20 30	---	14 44 38	54.7	126.3	-2.1		-32.7	189	1438	03 17 01
03 20 30	J1642+2523	14 44 38	54.5	129.6	-2.0		-30.8	-21	1438	No stop
03 22 00	=1640+254	14 46 08	54.7	130.1	-2.0		-30.5	69	1450	03 20 31

Schedule for TORUN (Code Tr) Page 7

Heart of a spiral DRAGN

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 23 Feb 2016 Day 54 ---										
03 23 00	J1649+2635	14 47 08	55.0	127.2	-2.0		-32.3	39	1450	03 23 00
03 26 30	---	14 50 39	55.4	128.3	-2.0		-31.8	210	1477	03 23 01
03 26 30	J1642+2523	14 50 39	55.2	131.7	-1.9		-29.8	-22	1477	No stop
03 28 00	=1640+254	14 52 09	55.3	132.2	-1.9		-29.5	68	1488	03 26 31
03 28 00	J1649+2635	14 52 09	55.6	128.8	-2.0		-31.5	-21	1488	No stop
03 31 30	---	14 55 39	56.0	130.0	-1.9		-30.9	189	1515	03 28 01
03 31 30	J1642+2523	14 55 39	55.7	133.4	-1.8		-28.9	-22	1515	No stop
03 33 00	=1640+254	14 57 10	55.9	134.0	-1.8		-28.6	68	1527	03 31 31
03 33 00	J1649+2635	14 57 10	56.2	130.5	-1.9		-30.7	-21	1527	No stop
03 36 30	---	15 00 40	56.6	131.8	-1.8		-30.0	189	1554	03 33 01
03 36 30	J1642+2523	15 00 40	56.3	135.2	-1.7		-27.9	-22	1554	No stop
03 38 00	=1640+254	15 02 10	56.4	135.7	-1.7		-27.6	68	1565	03 36 31
03 39 00	J1649+2635	15 03 11	56.9	132.6	-1.8		-29.6	39	1565	03 39 00
03 42 30	---	15 06 41	57.2	133.9	-1.7		-28.9	210	1592	03 39 01
03 42 30	J1642+2523	15 06 41	56.9	137.4	-1.6		-26.7	-22	1592	No stop
03 44 00	=1640+254	15 08 11	57.0	138.0	-1.6		-26.4	68	1604	03 42 31
03 44 00	J1649+2635	15 08 11	57.4	134.5	-1.7		-28.6	-21	1604	No stop
03 47 30	---	15 11 42	57.8	135.7	-1.6		-27.9	189	1631	03 44 01
03 47 30	J1642+2523	15 11 42	57.4	139.3	-1.5		-25.7	-22	1631	No stop
03 49 00	=1640+254	15 13 12	57.5	139.8	-1.5		-25.4	68	1642	03 47 31
03 49 00	J1649+2635	15 13 12	57.9	136.3	-1.6		-27.6	-22	1642	No stop
03 52 30	---	15 16 43	58.3	137.6	-1.6		-26.9	188	1669	03 49 01
03 52 30	J1642+2523	15 16 43	57.9	141.2	-1.4		-24.6	-22	1669	No stop
03 54 00	=1640+254	15 18 13	58.0	141.8	-1.4		-24.3	68	1681	03 52 31
03 55 00	J1649+2635	15 19 13	58.5	138.6	-1.5		-26.4	38	1681	03 55 00
03 58 30	---	15 22 44	58.9	139.9	-1.5		-25.6	210	1708	03 55 01
03 58 30	J1642+2523	15 22 44	58.4	143.5	-1.3		-23.3	-22	1708	No stop
04 00 00	=1640+254	15 24 14	58.5	144.1	-1.3		-22.9	68	1719	03 58 31
04 00 00	J1649+2635	15 24 14	59.0	140.5	-1.4		-25.3	-22	1719	No stop
04 03 30	---	15 27 45	59.4	141.9	-1.4		-24.5	188	1746	04 00 01

```
Schedule for TORUN     (Code Tr )                                Page   8
              Heart of a spiral DRAGN
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Tue  23 Feb 2016   Day  54 ---

04 03 30  J1642+2523   15 27 45  58.8 145.5 -1.3     -22.1   -22     1746   No stop
04 05 00  =1640+254    15 29 15  59.0 146.2 -1.2     -21.7    68     1758   04 03 31

04 05 00  J1649+2635   15 29 15  59.5 142.5 -1.3     -24.1   -22     1758   No stop
04 08 30  ---          15 32 45  59.8 143.9 -1.3     -23.3   188     1785   04 05 01

04 08 30  J1642+2523   15 32 45  59.3 147.6 -1.2     -20.9   -22     1785   No stop
04 10 00  =1640+254    15 34 16  59.4 148.2 -1.2     -20.5    68     1796   04 08 31

04 11 00  J1649+2635   15 35 16  60.0 145.0 -1.2     -22.7    38     1796   04 11 00
04 14 30  ---          15 38 46  60.3 146.4 -1.2     -21.8   210     1823   04 11 01

04 14 30  J1642+2523   15 38 46  59.7 150.1 -1.1     -19.3   -22     1823   No stop
04 16 00  =1640+254    15 40 17  59.8 150.7 -1.1     -18.9    68     1835   04 14 31

04 16 00  J1649+2635   15 40 17  60.4 147.1 -1.2     -21.4   -22     1835   No stop
04 19 30  ---          15 43 47  60.7 148.6 -1.1     -20.5   188     1862   04 16 01

04 19 30  J1642+2523   15 43 47  60.1 152.2 -1.0     -18.0   -22     1862   No stop
04 21 00  =1640+254    15 45 18  60.2 152.9 -1.0     -17.6    68     1873   04 19 31

04 21 00  J1649+2635   15 45 18  60.8 149.2 -1.1     -20.1   -22     1873   No stop
04 24 30  ---          15 48 48  61.1 150.7 -1.0     -19.2   188     1900   04 21 01

04 25 30  J1642+2523   15 49 48  60.5 154.9 -0.9     -16.4    37     1900   04 25 30
04 27 00  =1640+254    15 51 19  60.6 155.5 -0.9     -16.0    90     1912   04 25 31

04 27 00  J1649+2635   15 51 19  61.3 151.8 -1.0     -18.5   -22     1912   No stop
04 30 00  ---          15 54 19  61.5 153.2 -0.9     -17.6   158     1935   04 27 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: sess116.C1024

   Setup group:   10         Station: TORUN            Total bit rate:  1024
   Format: MARK5B            Bits per sample: 2        Sample rate: 32.000
   Number of channels: 16    DBE type: DBBC_DDC        Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00
            4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00
  Net SB=         L         L         U         U         L         L         U         U
                  L         L         U         U         L         L         U         U
  IF SB =         U         U         U         U         U         U         U         U
                  U         U         U         U         U         U         U         U
  Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
                RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
  BBC   =         1         5         1         5         2         6         2         6
                  3         7         3         7         4         8         4         8
  BBC SB=         L         L         U         U         L         L         U         U
                  L         L         U         U         L         L         U         U
  IF    =        A1        B1        A1        B1        A1        B1        A1        B1
                 A1        B1        A1        B1        A1        B1        A1        B1

 The following frequency sets based on these setups were used.

  Frequency Set:   6  Setup file default.  Used with PCAL = off
  LO sum=   4942.49  4942.49  4942.49  4942.49  4974.49  4974.49  4974.49  4974.49
            5006.49  5006.49  5006.49  5006.49  5038.49  5038.49  5038.49  5038.49
  BBC fr=    742.49   742.49   742.49   742.49   774.49   774.49   774.49   774.49
             806.49   806.49   806.49   806.49   838.49   838.49   838.49   838.49
  Bandwd=     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
              16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
   Matching frequency sets:   6

  Track assignments are:
   track1=  18, 26,  2, 10, 20, 28,  4, 12, 22, 30,  6, 14, 24, 32,  8, 16
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                       (B1950)            (J2000)            (Date)            (mas)

* J1649+2635        16 47 22.095000   * 16 49 24.010000     16 50 02.946861       0.00
                    26 40 10.51727    * 26 35 02.54000      26 33 18.35922        0.00

* OQ208             14 04 45.615156   * 14 07 00.394414     14 07 44.273010       0.24
  J1407+2827        28 41 29.23518    * 28 27 14.69022      28 22 30.31447        0.34
  1404+286          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
  J1407+28          GSFC 2015a astro solution, unpublished  67871 observations.

* NRAO512           16 38 48.169688   * 16 40 29.632773     16 41 01.916024       0.00
  J1640+3946        39 52 30.08667    * 39 46 46.02848      39 44 46.95391        0.00
  1638+398          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
  J1640+39          GSFC 2015a astro solution, unpublished 110323 observations.

  1640+254          16 40 36.555189   * 16 42 40.411831     16 43 20.016409       0.07
* J1642+2523        25 28 43.57721    * 25 23 07.68216      25 21 14.67243        0.13
                    /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
                    GSFC 2015a astro solution, unpublished    163 observations.
```

rk12putr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Tue  23 Feb 2016   Day  54 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

05 00 00  1351-018     16 24 24  26.5 222.7  2.5      24.0     0        0   05 00 00
05 14 30  ---          16 38 56  25.0 226.3  2.7      25.8   870       28   05 00 01

05 15 00  1351-018     16 39 26  24.9 226.4  2.7      25.8    24       28   05 15 00
05 29 30  ---          16 53 59  23.3 230.0  3.0      27.4   870       56   05 15 01

05 30 00  1351-018     16 54 29  23.3 230.1  3.0      27.5    24       56   05 30 00
05 44 30  ---          17 09 01  21.5 233.6  3.2      28.9   870       84   05 30 01

05 45 00  1351-018     17 09 31  21.5 233.7  3.2      29.0    24       84   05 45 00
06 00 00  ---          17 24 34  19.6 237.2  3.5      30.3   900      112   05 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    9         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   2400.00   2400.00   2400.00   2400.00
  Net SB=         L         L         U         U
  IF SB =         L         L         L         L
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         U         U         L         L
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   6  Setup file default.  Used with PCAL = 1MHz
  LO sum=   1668.00  1668.00  1668.00  1668.00
  BBC fr=    732.00   732.00   732.00   732.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   6

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off



 POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 55.272108       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 26.85958        0.00
                    fake circumpolar target for a TS to look at

* 1351-018          13 51 32.032818   * 13 54 06.895322     13 54 57.580288       0.00
  J1354-0206       -01 51 20.07716    *-02 06 03.19066     -02 10 49.34286        0.00
                    ./rk12pu_sources.radioastron
                    AGN, HIGHz, rfc_2013d Petrov, 2013, unpublished 22569 observations, RA-AO3-04, R



EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1351-018           126.0

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12pvtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Tue  23 Feb 2016   Day  54 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

08 00 00  1324+224     19 24 54  17.9 -76.8  6.0      39.1     0        0   08 00 00
08 14 30  ---          19 39 26  15.8 -74.1  6.2      38.6   870       28   08 00 01

08 15 00  1324+224     19 39 56  15.7 -74.0  6.2      38.5    24       28   08 15 00
08 29 30  ---          19 54 28  13.7 -71.3  6.4      37.9   870       56   08 15 01

08 30 00  1324+224     19 54 58  13.6 -71.2  6.5      37.8    24       56   08 30 00
08 44 30  ---          20 09 31  11.5 -68.4  6.7      37.1   870       84   08 30 01

08 45 00  1324+224     20 10 01  11.5 -68.3  6.7      37.0    24       84   08 45 00
09 00 00  ---          20 25 03   9.4 -65.5  7.0      36.1   900      112   08 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    6         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
 1st LO=   2400.00   2400.00   2400.00   2400.00
 Net SB=         L         L         U         U
 IF SB =         L         L         L         L
 Pol.  =       RCP       LCP       RCP       LCP
 BBC   =         1         2         1         2
 BBC SB=         U         U         L         L
 IF    =         C         A         C         A

The following frequency sets based on these setups were used.

 Frequency Set:   5  Setup file default.  Used with PCAL = 1MHz
 LO sum=   1668.00  1668.00  1668.00  1668.00
 BBC fr=    732.00   732.00   732.00   732.00
 Bandwd=     16.00    16.00    16.00    16.00
  Matching frequency sets:   5

 Track assignments are:
  track1=   2, 18,  3, 19
  barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 55.289557       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 26.89751        0.00
                    fake circumpolar target for a TS to look at

* 1324+224          13 24 37.118626   * 13 27 00.861311     13 27 47.847815       0.00
  J1327+2210        22 26 22.70232    * 22 10 50.16276      22 05 41.04451        0.00
                    ./rk12pv_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 36026 observations, RA-AO3-04, RA-AO2-1


EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1324+224           134.4

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12pwtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Tue  23 Feb 2016   Day  54 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

13 00 00  1508+572     00 25 43  25.1 -23.3  9.3      25.9     0        0   13 00 00
13 14 30  ---          00 40 15  24.3 -21.4  9.5      23.7   870       28   13 00 01

13 15 00  1508+572     00 40 45  24.2 -21.3  9.5      23.6    24       28   13 15 00
13 29 30  ---          00 55 18  23.5 -19.3  9.7      21.4   870       56   13 15 01

13 30 00  1508+572     00 55 48  23.5 -19.2  9.8      21.3    24       56   13 30 00
13 44 30  ---          01 10 20  22.8 -17.2 10.0      19.0   870       84   13 30 01

13 45 00  1508+572     01 10 50  22.8 -17.1 10.0      18.9    24       84   13 45 00
14 00 00  ---          01 25 53  22.1 -15.0 10.3      16.6   900      112   13 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    6         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
 1st LO=   2400.00   2400.00   2400.00   2400.00
 Net SB=         L         L         U         U
 IF SB =         L         L         L         L
 Pol.  =       RCP       LCP       RCP       LCP
 BBC   =         1         2         1         2
 BBC SB=         U         U         L         L
 IF    =         C         A         C         A

The following frequency sets based on these setups were used.

 Frequency Set:   5  Setup file default.  Used with PCAL = 1MHz
 LO sum=   1668.00  1668.00  1668.00  1668.00
 BBC fr=    732.00   732.00   732.00   732.00
 Bandwd=     16.00    16.00    16.00    16.00
  Matching frequency sets:   5

 Track assignments are:
  track1=   2, 18,  3, 19
  barrel=roll_off
```

```
POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 55.318171       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 26.96113        0.00
                    fake circumpolar target for a TS to look at

* 1508+572          15 08 45.204538   * 15 10 02.922371     15 10 27.971049       0.00
  J1510+5702        57 14 02.08966    * 57 02 43.37583      56 58 52.04625        0.00
                    ./rk12pw_sources.radioastron
                    AGN, HIGHz, rfc_2013d Petrov, 2013, unpublished 2400 observations, RA-AO3-04, RA
```

```
EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1508+572           108.4

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12pxtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Tue  23 Feb 2016   Day  54 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

20 00 00  1508+572     07 26 52  31.8  35.2 -7.7     -39.5     0        0   20 00 00
20 14 30  ---          07 41 24  33.1  37.0 -7.5     -41.6   870       28   20 00 01

20 15 00  1508+572     07 41 54  33.2  37.1 -7.5     -41.6    24       28   20 15 00
20 29 30  ---          07 56 27  34.5  38.8 -7.2     -43.7   870       56   20 15 01

20 30 00  1508+572     07 56 57  34.6  38.9 -7.2     -43.8    24       56   20 30 00
20 44 30  ---          08 11 29  36.0  40.6 -7.0     -45.8   870       84   20 30 01

20 45 00  1508+572     08 11 59  36.0  40.7 -7.0     -45.9    24       84   20 45 00
21 00 00  ---          08 27 02  37.5  42.4 -6.7     -48.0   900      112   20 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    7         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   2400.00   2400.00   2400.00   2400.00
  Net SB=         L         L         U         U
  IF SB =         L         L         L         L
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         U         U         L         L
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   6  Setup file default.  Used with PCAL = 1MHz
  LO sum=   1668.00  1668.00  1668.00  1668.00
  BBC fr=    732.00   732.00   732.00   732.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   6

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off



 POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                       (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 55.357227       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 27.05098        0.00
                    fake circumpolar target for a TS to look at

* 1508+572          15 08 45.204538   * 15 10 02.922371     15 10 27.983834       0.00
  J1510+5702        57 14 02.08966    * 57 02 43.37583      56 58 52.05535        0.00
                    ./rk12px_sources.radioastron
                    AGN, HIGHz, rfc_2013d Petrov, 2013, unpublished 2400 observations, RA-AO3-04, RA



EFFECT OF SOLAR CORONA

  The solar corona can cause unstable phases for sources too close to the Sun.
  SCHED provides warnings at individual scans for distances less than 10 degrees.
  The distance from the Sun to each source in this schedule is:
    Source         Sun distance (deg)
   1508+572           108.5

  Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
  that the Sun will cause amplitude reductions on the  longest VLBA baselines
  at a solar distance of 60deg F^(-0.6) where F is in GHz.
  For common VLBI bands, this is:
       1.6 GHz         45. deg
       2.3 GHz         36. deg
       5.0 GHz         23. deg
       8.4 GHz         17. deg
      15.0 GHz         12. deg
      22.0 GHz          9. deg
```

em119btr

Heart of a spiral DRAGN

PI: *Minnie Mao*

Address: JIVE Phone: +31-521-596508 EMAIL: mao@jive.eu

```
Observing mode:
Schedule for TORUN     (Code Tr )                                  Page   2
               Heart of a spiral DRAGN
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source                Start / Stop                 Early    Disk   TPStart
Stop UT                   LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------
 --- Wed  24 Feb 2016   Day  55 ---
 Next scan frequencies:  4942.49  4942.49  4942.49  4942.49  4974.49  4974.49  4974.49  4974.49
                         5006.49  5006.49  5006.49  5006.49  5038.49  5038.49  5038.49  5038.49
 Next BBC frequencies:    742.49   742.49   742.49   742.49   774.49   774.49   774.49   774.49
                          806.49   806.49   806.49   806.49   838.49   838.49   838.49   838.49
 Next scan bandwidths:     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
                           16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00

00 00 00  J1649+2635   11 27 31  26.4  80.2 -5.4     -41.4     0        0   00 00 00
00 03 30  ---          11 31 02  26.9  80.9 -5.3     -41.5   210       27   00 00 01

00 03 30  J1642+2523   11 31 02  27.0  83.0 -5.2     -41.3   -18       27   No stop
00 05 00  =1640+254    11 32 32  27.3  83.3 -5.2     -41.3    72       38   00 03 31

00 05 00  J1649+2635   11 32 32  27.2  81.2 -5.3     -41.6   -18       38   No stop
00 08 30  ---          11 36 03  27.7  81.8 -5.2     -41.6   192       65   00 05 01

00 08 30  J1642+2523   11 36 03  27.8  84.0 -5.1     -41.4   -18       65   No stop
00 10 00  =1640+254    11 37 33  28.0  84.3 -5.1     -41.4    72       77   00 08 31

00 10 00  J1649+2635   11 37 33  27.9  82.1 -5.2     -41.7   -18       77   No stop
00 13 30  ---          11 41 03  28.4  82.8 -5.1     -41.8   192      104   00 10 01

00 14 30  J1642+2523   11 42 04  28.7  85.2 -5.0     -41.5    42      104   00 14 30
00 16 00  =1640+254    11 43 34  28.9  85.5 -5.0     -41.5    90      115   00 14 31

00 16 00  J1649+2635   11 43 34  28.8  83.3 -5.1     -41.8   -18      115   No stop
00 19 30  ---          11 47 04  29.3  83.9 -5.0     -41.9   192      142   00 16 01

00 19 30  J1642+2523   11 47 04  29.4  86.1 -4.9     -41.5   -18      142   No stop
00 21 00  =1640+254    11 48 35  29.7  86.4 -4.9     -41.5    72      154   00 19 31

00 21 00  J1649+2635   11 48 35  29.5  84.2 -5.0     -41.9   -18      154   No stop
00 24 30  ---          11 52 05  30.1  84.9 -5.0     -42.0   192      181   00 21 01

00 24 30  J1642+2523   11 52 05  30.2  87.1 -4.9     -41.6   -18      181   No stop
00 26 00  =1640+254    11 53 35  30.4  87.4 -4.8     -41.6    72      192   00 24 31

00 26 00  J1649+2635   11 53 35  30.3  85.2 -4.9     -42.0   -18      192   No stop
00 29 30  ---          11 57 06  30.8  85.8 -4.9     -42.0   192      219   00 26 01

00 30 30  J1642+2523   11 58 06  31.1  88.3 -4.8     -41.6    41      219   00 30 30
00 32 00  =1640+254    11 59 36  31.3  88.6 -4.7     -41.6    90      231   00 30 31
```

Schedule for TORUN (Code Tr) Page 3

Heart of a spiral DRAGN

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Wed 24 Feb 2016 Day 55 ---										
00 32 00	J1649+2635	11 59 36	31.2	86.3	-4.8		-42.1	-18	231	No stop
00 35 30	---	12 03 07	31.7	87.0	-4.8		-42.1	192	258	00 32 01
00 35 30	J1642+2523	12 03 07	31.8	89.3	-4.7		-41.6	-19	258	No stop
00 37 00	=1640+254	12 04 37	32.1	89.6	-4.6		-41.6	71	269	00 35 31
00 37 00	J1649+2635	12 04 37	32.0	87.3	-4.8		-42.1	-18	269	No stop
00 40 30	---	12 08 08	32.5	88.0	-4.7		-42.1	192	296	00 37 01
00 40 30	J1642+2523	12 08 08	32.6	90.3	-4.6		-41.6	-19	296	No stop
00 42 00	=1640+254	12 09 38	32.8	90.6	-4.6		-41.6	71	308	00 40 31
00 42 00	J1649+2635	12 09 38	32.7	88.3	-4.7		-42.1	-18	308	No stop
00 45 30	---	12 13 09	33.2	89.0	-4.6		-42.2	192	335	00 42 01
00 46 30	J1642+2523	12 14 09	33.5	91.5	-4.5		-41.6	41	335	00 46 30
00 48 00	=1640+254	12 15 39	33.7	91.8	-4.5		-41.6	90	346	00 46 31
00 48 00	J1649+2635	12 15 39	33.6	89.5	-4.6		-42.2	-18	346	No stop
00 51 30	---	12 19 10	34.1	90.2	-4.5		-42.2	192	373	00 48 01
00 51 30	J1642+2523	12 19 10	34.2	92.5	-4.4		-41.6	-19	373	No stop
00 53 00	=1640+254	12 20 40	34.5	92.8	-4.4		-41.6	71	385	00 51 31
00 53 00	J1649+2635	12 20 40	34.4	90.5	-4.5		-42.2	-19	385	No stop
00 56 30	---	12 24 10	34.9	91.2	-4.4		-42.2	191	412	00 53 01
00 56 30	J1642+2523	12 24 10	35.0	93.5	-4.3		-41.5	-19	412	No stop
00 58 00	=1640+254	12 25 41	35.2	93.9	-4.3		-41.5	71	423	00 56 31
00 58 00	J1649+2635	12 25 41	35.1	91.5	-4.4		-42.1	-19	423	No stop
01 01 30	---	12 29 11	35.6	92.2	-4.3		-42.1	191	450	00 58 01
01 02 30	J1642+2523	12 30 11	35.9	94.8	-4.2		-41.5	41	450	01 02 30
01 04 00	=1640+254	12 31 42	36.1	95.1	-4.2		-41.4	90	462	01 02 31
01 04 00	OQ208	12 31 42	59.6	134.9	-1.6		-28.9	-103	462	No stop
01 10 00	---	12 37 43	60.2	137.3	-1.5		-27.6	257	508	01 04 01
01 11 30	J1649+2635	12 39 13	37.1	94.3	-4.2		-42.0	-11	508	01 11 30
01 15 00	---	12 42 44	37.7	95.0	-4.1		-42.0	199	535	01 11 31
01 16 00	J1642+2523	12 43 44	37.9	97.7	-4.0		-41.2	41	535	01 16 00
01 17 30	=1640+254	12 45 14	38.1	98.0	-4.0		-41.2	90	546	01 16 01
01 17 30	J1649+2635	12 45 14	38.0	95.5	-4.1		-41.9	-19	546	No stop
01 21 00	---	12 48 45	38.6	96.3	-4.0		-41.9	191	573	01 17 31

Schedule for TORUN (Code Tr) Page 4

Heart of a spiral DRAGN

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 24 Feb 2016 Day 55 ---										
01 21 00	J1642+2523	12 48 45	38.7	98.8	-3.9		-41.1	-19	573	No stop
01 22 30	=1640+254	12 50 15	38.9	99.1	-3.9		-41.0	71	585	01 21 01
01 22 30	J1649+2635	12 50 15	38.8	96.6	-4.0		-41.8	-19	585	No stop
01 26 00	---	12 53 45	39.3	97.4	-3.9		-41.7	191	612	01 22 31
01 26 00	J1642+2523	12 53 45	39.4	99.9	-3.8		-40.9	-19	612	No stop
01 27 30	=1640+254	12 55 16	39.6	100.2	-3.8		-40.8	71	623	01 26 01
01 27 30	J1649+2635	12 55 16	39.5	97.7	-3.9		-41.7	-19	623	No stop
01 31 00	---	12 58 46	40.1	98.5	-3.9		-41.6	191	650	01 27 31
01 32 00	J1642+2523	12 59 46	40.3	101.2	-3.7		-40.7	41	650	01 32 00
01 33 30	=1640+254	13 01 17	40.5	101.5	-3.7		-40.6	90	662	01 32 01
01 33 30	J1649+2635	13 01 17	40.4	99.0	-3.8		-41.5	-19	662	No stop
01 37 00	---	13 04 47	40.9	99.8	-3.8		-41.4	191	688	01 33 31
01 37 00	J1642+2523	13 04 47	41.0	102.3	-3.6		-40.5	-19	688	No stop
01 38 30	=1640+254	13 06 17	41.3	102.7	-3.6		-40.4	71	700	01 37 01
01 38 30	J1649+2635	13 06 17	41.2	100.1	-3.7		-41.4	-19	700	No stop
01 42 00	---	13 09 48	41.7	100.9	-3.7		-41.2	191	727	01 38 31
01 42 00	J1642+2523	13 09 48	41.8	103.5	-3.6		-40.3	-20	727	No stop
01 43 30	=1640+254	13 11 18	42.0	103.8	-3.5		-40.2	70	738	01 42 01
01 43 30	J1649+2635	13 11 18	41.9	101.2	-3.6		-41.2	-19	738	No stop
01 47 00	---	13 14 49	42.4	102.0	-3.6		-41.0	191	765	01 43 31
01 48 00	J1642+2523	13 15 49	42.6	104.9	-3.5		-40.0	40	765	01 48 00
01 49 30	=1640+254	13 17 19	42.9	105.2	-3.4		-39.9	90	777	01 48 01
01 49 30	J1649+2635	13 17 19	42.8	102.6	-3.5		-40.9	-19	777	No stop
01 53 00	---	13 20 50	43.3	103.4	-3.5		-40.8	191	804	01 49 31
01 53 00	J1642+2523	13 20 50	43.4	106.1	-3.4		-39.7	-20	804	No stop
01 54 30	=1640+254	13 22 20	43.6	106.4	-3.4		-39.6	70	815	01 53 01
01 54 30	J1649+2635	13 22 20	43.5	103.8	-3.5		-40.7	-19	815	No stop
01 58 00	---	13 25 51	44.0	104.6	-3.4		-40.5	191	842	01 54 31
01 58 00	J1642+2523	13 25 51	44.1	107.3	-3.3		-39.4	-20	842	No stop
01 59 30	=1640+254	13 27 21	44.3	107.6	-3.3		-39.3	70	854	01 58 01

Schedule for TORUN (Code Tr) Page 5

Heart of a spiral DRAGN

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 24 Feb 2016 Day 55 ---										
01 59 30	J1649+2635	13 27 21	44.3	105.0	-3.4		-40.4	-20	854	No stop
02 03 00	---	13 30 51	44.8	105.8	-3.3		-40.2	190	881	01 59 31
02 04 00	J1642+2523	13 31 52	44.9	108.8	-3.2		-39.0	40	881	02 04 00
02 05 30	=1640+254	13 33 22	45.2	109.1	-3.2		-38.9	90	892	02 04 01
02 05 30	J1649+2635	13 33 22	45.1	106.4	-3.3		-40.1	-20	892	No stop
02 09 00	---	13 36 52	45.6	107.3	-3.2		-39.9	190	919	02 05 31
02 09 00	J1642+2523	13 36 52	45.7	110.0	-3.1		-38.6	-20	919	No stop
02 10 30	=1640+254	13 38 23	45.9	110.4	-3.1		-38.5	70	931	02 09 01
02 10 30	J1649+2635	13 38 23	45.8	107.6	-3.2		-39.8	-20	931	No stop
02 14 00	---	13 41 53	46.3	108.5	-3.1		-39.5	190	958	02 10 31
02 14 00	J1642+2523	13 41 53	46.4	111.3	-3.0		-38.3	-20	958	No stop
02 15 30	=1640+254	13 43 23	46.6	111.7	-3.0		-38.1	70	969	02 14 01
02 15 30	J1649+2635	13 43 23	46.6	108.9	-3.1		-39.4	-20	969	No stop
02 19 00	---	13 46 54	47.1	109.8	-3.1		-39.2	190	996	02 15 31
02 20 00	J1642+2523	13 47 54	47.2	112.9	-2.9		-37.8	40	996	02 20 00
02 21 30	=1640+254	13 49 24	47.4	113.3	-2.9		-37.6	90	1008	02 20 01
02 21 30	J1649+2635	13 49 24	47.4	110.4	-3.0		-39.0	-20	1008	No stop
02 25 00	---	13 52 55	47.9	111.3	-3.0		-38.7	190	1035	02 21 31
02 25 00	J1642+2523	13 52 55	47.9	114.2	-2.8		-37.3	-20	1035	No stop
02 26 30	=1640+254	13 54 25	48.1	114.6	-2.8		-37.2	70	1046	02 25 01
02 26 30	NRAO512	13 54 25	58.9	98.4	-2.8		-50.6	-55	1046	No stop
02 32 30	---	14 00 26	59.8	99.8	-2.7		-50.3	305	1092	02 26 31
02 32 30	J1642+2523	14 00 26	48.9	116.2	-2.7		-36.6	-54	1092	No stop
02 34 00	=1640+254	14 01 57	49.1	116.6	-2.7		-36.4	36	1104	02 32 31
02 35 00	J1649+2635	14 02 57	49.3	114.0	-2.8		-37.8	40	1104	02 35 00
02 38 30	---	14 06 27	49.8	114.9	-2.7		-37.5	210	1131	02 35 01
02 38 30	J1642+2523	14 06 27	49.7	117.9	-2.6		-36.0	-21	1131	No stop
02 40 00	=1640+254	14 07 57	49.9	118.3	-2.6		-35.8	69	1142	02 38 31
02 40 00	J1649+2635	14 07 57	50.0	115.3	-2.7		-37.4	-20	1142	No stop
02 43 30	---	14 11 28	50.5	116.3	-2.6		-37.0	190	1169	02 40 01

Schedule for TORUN (Code Tr) Page 6

Heart of a spiral DRAGN

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 24 Feb 2016 Day 55 ---										
02 43 30	J1642+2523	14 11 28	50.4	119.3	-2.5		-35.4	-21	1169	No stop
02 45 00	=1640+254	14 12 58	50.6	119.8	-2.5		-35.2	69	1181	02 43 31
02 45 00	J1649+2635	14 12 58	50.7	116.7	-2.6		-36.8	-20	1181	No stop
02 48 30	---	14 16 29	51.1	117.7	-2.6		-36.5	190	1208	02 45 01
02 48 30	J1642+2523	14 16 29	51.0	120.8	-2.4		-34.8	-21	1208	No stop
02 50 00	=1640+254	14 17 59	51.2	121.3	-2.4		-34.6	69	1219	02 48 31
02 51 00	J1649+2635	14 18 59	51.5	118.5	-2.5		-36.2	39	1219	02 51 00
02 54 30	---	14 22 30	51.9	119.5	-2.5		-35.8	210	1246	02 51 01
02 54 30	J1642+2523	14 22 30	51.8	122.6	-2.3		-34.0	-21	1246	No stop
02 56 00	=1640+254	14 24 00	52.0	123.1	-2.3		-33.8	69	1258	02 54 31
02 56 00	J1649+2635	14 24 00	52.1	119.9	-2.4		-35.6	-21	1258	No stop
02 59 30	---	14 27 31	52.6	121.0	-2.4		-35.1	189	1285	02 56 01
02 59 30	J1642+2523	14 27 31	52.4	124.1	-2.3		-33.4	-21	1285	No stop
03 01 00	=1640+254	14 29 01	52.6	124.6	-2.2		-33.2	69	1296	02 59 31
03 01 00	J1649+2635	14 29 01	52.8	121.4	-2.4		-34.9	-21	1296	No stop
03 04 30	---	14 32 32	53.2	122.5	-2.3		-34.5	189	1323	03 01 01
03 04 30	J1642+2523	14 32 32	53.0	125.7	-2.2		-32.7	-21	1323	No stop
03 06 00	=1640+254	14 34 02	53.2	126.2	-2.2		-32.4	69	1335	03 04 31
03 07 00	J1649+2635	14 35 02	53.5	123.3	-2.3		-34.1	39	1335	03 07 00
03 10 30	---	14 38 33	54.0	124.4	-2.2		-33.6	210	1362	03 07 01
03 10 30	J1642+2523	14 38 33	53.8	127.6	-2.1		-31.7	-21	1362	No stop
03 12 00	=1640+254	14 40 03	53.9	128.1	-2.1		-31.5	69	1373	03 10 31
03 12 00	J1649+2635	14 40 03	54.1	124.9	-2.2		-33.4	-21	1373	No stop
03 15 30	---	14 43 33	54.6	126.0	-2.1		-32.9	189	1400	03 12 01
03 15 30	J1642+2523	14 43 33	54.4	129.3	-2.0		-31.0	-21	1400	No stop
03 17 00	=1640+254	14 45 04	54.5	129.8	-2.0		-30.7	69	1412	03 15 31
03 17 00	J1649+2635	14 45 04	54.8	126.5	-2.1		-32.7	-21	1412	No stop
03 20 30	---	14 48 34	55.2	127.6	-2.0		-32.1	189	1438	03 17 01
03 20 30	J1642+2523	14 48 34	54.9	131.0	-1.9		-30.1	-22	1438	No stop
03 22 00	=1640+254	14 50 04	55.1	131.5	-1.9		-29.9	68	1450	03 20 31

Schedule for TORUN (Code Tr) Page 7

Heart of a spiral DRAGN

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 24 Feb 2016 Day 55 ---										
03 23 00	J1649+2635	14 51 05	55.5	128.5	-2.0		-31.7	39	1450	03 23 00
03 26 30	---	14 54 35	55.9	129.7	-1.9		-31.1	210	1477	03 23 01
03 26 30	J1642+2523	14 54 35	55.6	133.0	-1.8		-29.1	-22	1477	No stop
03 28 00	=1640+254	14 56 05	55.8	133.6	-1.8		-28.8	68	1488	03 26 31
03 28 00	J1649+2635	14 56 05	56.1	130.2	-1.9		-30.9	-21	1488	No stop
03 31 30	---	14 59 36	56.5	131.4	-1.8		-30.2	189	1515	03 28 01
03 31 30	J1642+2523	14 59 36	56.1	134.8	-1.7		-28.1	-22	1515	No stop
03 33 00	=1640+254	15 01 06	56.3	135.4	-1.7		-27.8	68	1527	03 31 31
03 33 00	J1649+2635	15 01 06	56.6	131.9	-1.8		-30.0	-21	1527	No stop
03 36 30	---	15 04 37	57.0	133.2	-1.8		-29.3	189	1554	03 33 01
03 36 30	J1642+2523	15 04 37	56.7	136.6	-1.6		-27.1	-22	1554	No stop
03 38 00	=1640+254	15 06 07	56.8	137.2	-1.6		-26.8	68	1565	03 36 31
03 39 00	J1649+2635	15 07 07	57.3	134.1	-1.7		-28.8	39	1565	03 39 00
03 42 30	---	15 10 38	57.7	135.3	-1.7		-28.2	210	1592	03 39 01
03 42 30	J1642+2523	15 10 38	57.3	138.9	-1.5		-25.9	-22	1592	No stop
03 44 00	=1640+254	15 12 08	57.4	139.4	-1.5		-25.6	68	1604	03 42 31
03 44 00	J1649+2635	15 12 08	57.8	135.9	-1.6		-27.8	-22	1604	No stop
03 47 30	---	15 15 39	58.2	137.2	-1.6		-27.1	188	1631	03 44 01
03 47 30	J1642+2523	15 15 39	57.8	140.8	-1.5		-24.9	-22	1631	No stop
03 49 00	=1640+254	15 17 09	57.9	141.3	-1.4		-24.5	68	1642	03 47 31
03 49 00	J1649+2635	15 17 09	58.3	137.8	-1.5		-26.8	-22	1642	No stop
03 52 30	---	15 20 39	58.7	139.1	-1.5		-26.1	188	1669	03 49 01
03 52 30	J1642+2523	15 20 39	58.2	142.7	-1.4		-23.7	-22	1669	No stop
03 54 00	=1640+254	15 22 10	58.4	143.3	-1.4		-23.4	68	1681	03 52 31
03 55 00	J1649+2635	15 23 10	58.9	140.1	-1.4		-25.5	38	1681	03 55 00
03 58 30	---	15 26 40	59.3	141.5	-1.4		-24.7	210	1708	03 55 01
03 58 30	J1642+2523	15 26 40	58.8	145.1	-1.3		-22.3	-22	1708	No stop
04 00 00	=1640+254	15 28 11	58.9	145.7	-1.3		-22.0	68	1719	03 58 31
04 00 00	J1649+2635	15 28 11	59.4	142.1	-1.4		-24.4	-22	1719	No stop
04 03 30	---	15 31 41	59.7	143.5	-1.3		-23.5	188	1746	04 00 01

```
Schedule for TORUN     (Code Tr )                                Page   8
              Heart of a spiral DRAGN
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Wed  24 Feb 2016   Day  55 ---

04 03 30  J1642+2523   15 31 41  59.2 147.2 -1.2     -21.1   -22     1746   No stop
04 05 00  =1640+254    15 33 11  59.3 147.8 -1.2     -20.8    68     1758   04 03 31

04 05 00  J1649+2635   15 33 11  59.8 144.1 -1.3     -23.2   -22     1758   No stop
04 08 30  ---          15 36 42  60.2 145.6 -1.2     -22.3   188     1785   04 05 01

04 08 30  J1642+2523   15 36 42  59.6 149.2 -1.1     -19.9   -22     1785   No stop
04 10 00  =1640+254    15 38 12  59.7 149.9 -1.1     -19.5    68     1796   04 08 31

04 11 00  J1649+2635   15 39 12  60.4 146.6 -1.2     -21.7    38     1796   04 11 00
04 14 30  ---          15 42 43  60.6 148.1 -1.1     -20.8   210     1823   04 11 01

04 14 30  J1642+2523   15 42 43  60.0 151.8 -1.0     -18.3   -22     1823   No stop
04 16 00  =1640+254    15 44 13  60.1 152.4 -1.0     -17.9    68     1835   04 14 31

04 16 00  J1649+2635   15 44 13  60.8 148.7 -1.1     -20.4   -22     1835   No stop
04 19 30  ---          15 47 44  61.0 150.3 -1.0     -19.5   188     1862   04 16 01

04 19 30  J1642+2523   15 47 44  60.4 154.0 -0.9     -17.0   -22     1862   No stop
04 21 00  =1640+254    15 49 14  60.5 154.6 -0.9     -16.5    68     1873   04 19 31

04 21 00  J1649+2635   15 49 14  61.1 150.9 -1.0     -19.0   -22     1873   No stop
04 24 30  ---          15 52 45  61.4 152.5 -1.0     -18.1   188     1900   04 21 01

04 25 30  J1642+2523   15 53 45  60.7 156.6 -0.8     -15.3    37     1900   04 25 30
04 27 00  =1640+254    15 55 15  60.8 157.3 -0.8     -14.9    90     1912   04 25 31

04 27 00  J1649+2635   15 55 15  61.6 153.6 -0.9     -17.4   -22     1912   No stop
04 30 00  ---          15 58 16  61.8 154.9 -0.9     -16.5   158     1935   04 27 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: sess116.C1024

   Setup group:   10         Station: TORUN            Total bit rate:  1024
   Format: MARK5B            Bits per sample: 2        Sample rate: 32.000
   Number of channels: 16    DBE type: DBBC_DDC        Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00
            4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00
  Net SB=         L         L         U         U         L         L         U         U
                  L         L         U         U         L         L         U         U
  IF SB =         U         U         U         U         U         U         U         U
                  U         U         U         U         U         U         U         U
  Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
                RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
  BBC   =         1         5         1         5         2         6         2         6
                  3         7         3         7         4         8         4         8
  BBC SB=         L         L         U         U         L         L         U         U
                  L         L         U         U         L         L         U         U
  IF    =        A1        B1        A1        B1        A1        B1        A1        B1
                 A1        B1        A1        B1        A1        B1        A1        B1

 The following frequency sets based on these setups were used.

  Frequency Set:   6  Setup file default.  Used with PCAL = off
  LO sum=   4942.49  4942.49  4942.49  4942.49  4974.49  4974.49  4974.49  4974.49
            5006.49  5006.49  5006.49  5006.49  5038.49  5038.49  5038.49  5038.49
  BBC fr=    742.49   742.49   742.49   742.49   774.49   774.49   774.49   774.49
             806.49   806.49   806.49   806.49   838.49   838.49   838.49   838.49
  Bandwd=     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
              16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
   Matching frequency sets:   6

  Track assignments are:
   track1=  18, 26,  2, 10, 20, 28,  4, 12, 22, 30,  6, 14, 24, 32,  8, 16
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)            (mas)

* J1649+2635        16 47 22.095000   * 16 49 24.010000     16 50 02.974504       0.00
                    26 40 10.51727    * 26 35 02.54000      26 33 18.24910        0.00

* OQ208             14 04 45.615156   * 14 07 00.394414     14 07 44.297487       0.24
  J1407+2827        28 41 29.23518    * 28 27 14.69022      28 22 30.32719        0.34
  1404+286          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
  J1407+28          GSFC 2015a astro solution, unpublished  67871 observations.

* NRAO512           16 38 48.169688   * 16 40 29.632773     16 41 01.948169       0.00
  J1640+3946        39 52 30.08667    * 39 46 46.02848      39 44 46.85298        0.00
  1638+398          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
  J1640+39          GSFC 2015a astro solution, unpublished 110323 observations.

  1640+254          16 40 36.555189   * 16 42 40.411831     16 43 20.043892       0.07
* J1642+2523        25 28 43.57721    * 25 23 07.68216      25 21 14.56696        0.13
                    /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
                    GSFC 2015a astro solution, unpublished    163 observations.
```

rk12pytr

RadioAstron AGN Survey

PI: *Yuri Kovalev*

```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865

Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                   Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Wed  24 Feb 2016   Day  55 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

09 00 00  1538+149     20 29 00  22.6 264.5  4.8      38.2     0        0   09 00 00
09 14 30  ---          20 43 32  20.4 267.5  5.0      38.3   870       28   09 00 01

09 15 00  1538+149     20 44 02  20.4 267.6  5.0      38.3    24       28   09 15 00
09 29 30  ---          20 58 35  18.2 270.5  5.3      38.4   870       56   09 15 01

09 30 00  1538+149     20 59 05  18.1 270.6  5.3      38.4    24       56   09 30 00
09 44 30  ---          21 13 37  15.9 273.5  5.5      38.3   870       84   09 30 01

09 45 00  1538+149     21 14 07  15.8 273.6  5.5      38.3    24       84   09 45 00
10 00 00  ---          21 29 10  13.6 276.6  5.8      38.1   900      112   09 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    7         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   2400.00   2400.00   2400.00   2400.00
  Net SB=         L         L         U         U
  IF SB =         L         L         L         L
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         U         U         L         L
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   5  Setup file default.  Used with PCAL = 1MHz
  LO sum=   1668.00  1668.00  1668.00  1668.00
  BBC fr=    732.00   732.00   732.00   732.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   5

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off



 POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA           11 57 21.769299   * 12 00 00.000000     12 00 55.426578       0.00
                   85 16 41.77889    * 85 00 00.00000      84 54 27.21987        0.00
                   fake circumpolar target for a TS to look at

* 1538+149         15 38 30.232265   * 15 40 49.491516     15 41 34.484510       0.00
  J1540+1447       14 57 21.79415    * 14 47 45.88462      14 44 37.05869        0.00
                   ./rk12py_sources.radioastron
                   AGN, rfc_2013d Petrov, 2013, unpublished 1559 observations, RA-AO3-04



EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1538+149           103.6

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

eg089ctr

RadioAstron Imaging of high-redshift quasars

PI: *Leonid Gurvits*

Address: Joint Institute for VLBI in Europe Phone: +31 521 596 514 EMAIL: lgurvits@jive.eu

```
Observing mode: C-band, dual-pol
Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron Imaging of high-redshift quasars
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------
 --- Wed  24 Feb 2016   Day  55 ---
 ---------- C-band VLBI scans. Space segment 01 ----------
 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    636.00   636.00   636.00   636.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

13 00 00  1508+572     00 29 39  24.9 -22.8  9.3      25.3     0        0   13 00 00
13 18 51  ---          00 48 33  23.8 -20.2  9.6      22.4  1131       36   13 00 01

13 19 21  1508+572     00 49 04  23.8 -20.2  9.6      22.3    24       36   13 19 21
13 38 18  ---          01 08 04  22.9 -17.5 10.0      19.4  1137       73   13 19 22

13 38 48  1508+572     01 08 34  22.9 -17.5 10.0      19.3    24       73   13 38 48
13 57 45  ---          01 27 34  22.1 -14.8 10.3      16.3  1137      109   13 38 49

13 58 15  1508+572     01 28 04  22.0 -14.7 10.3      16.3    24      109   13 58 15
14 17 12  ---          01 47 04  21.4 -12.0 10.6      13.3  1137      146   13 58 16

14 17 42  1508+572     01 47 34  21.4 -12.0 10.6      13.2    24      146   14 17 42
14 36 39  ---          02 06 34  20.8  -9.2 10.9      10.2  1137      182   14 17 43

14 37 09  1508+572     02 07 04  20.8  -9.2 10.9      10.1    24      182   14 37 09
14 56 06  ---          02 26 04  20.5  -6.4 11.3       7.1  1137      218   14 37 10

14 56 36  1508+572     02 26 34  20.4  -6.4 11.3       7.0    24      218   14 56 36
15 15 33  ---          02 45 35  20.2  -3.6 11.6       4.0  1137      255   14 56 37

15 16 03  1508+572     02 46 05  20.2  -3.5 11.6       3.9    24      255   15 16 03
15 35 00  ---          03 05 05  20.1  -0.8 11.9       0.9  1137      291   15 16 04

 ---------- C-band VLBI scans. Ground-only segment 01 ----------

15 36 00  1508+572     03 06 05  20.1  -0.6 11.9       0.7    54      291   15 36 00
15 46 00  ---          03 16 07  20.1   0.8-11.9      -0.9   600      311   15 36 01

15 46 30  1508+572     03 16 37  20.1   0.9-11.9      -1.0    24      311   15 46 30
15 56 00  ---          03 26 08  20.1   2.3-11.7      -2.5   570      329   15 46 31

15 56 30  1508+572     03 26 38  20.1   2.3-11.7      -2.6    24      329   15 56 30
16 06 00  ---          03 36 10  20.2   3.7-11.6      -4.1   570      347   15 56 31

16 06 30  1508+572     03 36 40  20.2   3.8-11.6      -4.2    24      347   16 06 30
16 16 00  ---          03 46 12  20.3   5.2-11.4      -5.7   570      365   16 06 31
```

Schedule for TORUN (Code Tr) Page 3

RadioAstron Imaging of high-redshift quasars

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 24 Feb 2016 Day 55 ---										
16 16 30	1508+572	03 46 42	20.3	5.2	-11.4		-5.8	24	365	16 16 30
16 26 00	---	03 56 13	20.5	6.6	-11.2		-7.3	570	384	16 16 31
16 26 30	1508+572	03 56 43	20.5	6.7	-11.2		-7.4	24	384	16 26 30
16 36 00	---	04 06 15	20.7	8.1	-11.1		-8.9	570	402	16 26 31
16 36 30	1508+572	04 06 45	20.7	8.1	-11.1		-9.0	24	402	16 36 30
16 46 00	---	04 16 16	20.9	9.5	-10.9		-10.5	570	420	16 36 31
16 46 30	1508+572	04 16 47	20.9	9.6	-10.9		-10.6	24	420	16 46 30
16 56 00	---	04 26 18	21.2	10.9	-10.7		-12.1	570	438	16 46 31
16 56 30	1508+572	04 26 48	21.2	11.0	-10.7		-12.2	24	438	16 56 30
17 06 00	---	04 36 20	21.5	12.4	-10.6		-13.7	570	457	16 56 31
17 06 30	1508+572	04 36 50	21.5	12.4	-10.6		-13.7	24	457	17 06 30
17 16 00	---	04 46 21	21.8	13.8	-10.4		-15.2	570	475	17 06 31
17 16 30	1508+572	04 46 51	21.8	13.9	-10.4		-15.3	24	475	17 16 30
17 26 00	---	04 56 23	22.2	15.2	-10.2		-16.8	570	493	17 16 31
17 29 00	1849+670	04 59 24	32.0	-12.2	10.2		19.1	110	493	17 29 00
17 39 00	---	05 09 25	31.7	-11.1	10.3		17.3	600	512	17 29 01
17 41 00	2021+614	05 11 26	30.8	-24.1	8.8		31.2	79	512	17 41 00
17 51 00	---	05 21 27	30.2	-22.9	9.0		29.6	600	532	17 41 01
17 53 00	1508+572	05 23 27	23.4	19.0	-9.8		-21.0	21	532	17 53 00
18 03 00	---	05 33 29	23.9	20.4	-9.6		-22.6	600	551	17 53 01
18 03 30	1508+572	05 33 59	23.9	20.4	-9.6		-22.6	24	551	18 03 30
18 13 30	---	05 44 01	24.5	21.8	-9.4		-24.2	600	570	18 03 31
---------- C-band VLBI scans. Space segment 02 ----------										
18 15 00	1508+572	05 45 31	24.5	22.0	-9.4		-24.4	84	570	18 15 00
18 34 40	---	06 05 14	25.7	24.7	-9.1		-27.4	1180	608	18 15 01
18 35 10	1508+572	06 05 44	25.7	24.8	-9.1		-27.5	24	608	18 35 10
18 54 50	---	06 25 28	27.0	27.4	-8.8		-30.5	1180	646	18 35 11
18 55 20	1508+572	06 25 58	27.1	27.5	-8.7		-30.5	24	646	18 55 20
19 15 00	---	06 45 41	28.5	30.0	-8.4		-33.5	1180	684	18 55 21
---------- C-band VLBI scans. Ground-only segment 02 ----------										
19 16 00	1508+572	06 46 41	28.6	30.2	-8.4		-33.6	54	684	19 16 00
19 26 00	---	06 56 43	29.4	31.4	-8.2		-35.1	600	703	19 16 01

Schedule for TORUN (Code Tr) Page 4

RadioAstron Imaging of high-redshift quasars

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 24 Feb 2016 Day 55 ---										
19 26 30	1508+572	06 57 13	29.4	31.5	-8.2		-35.2	24	703	19 26 30
19 36 00	---	07 06 44	30.2	32.7	-8.1		-36.6	570	721	19 26 31
19 36 30	1508+572	07 07 14	30.2	32.8	-8.1		-36.6	24	721	19 36 30
19 46 00	---	07 16 46	31.0	34.0	-7.9		-38.0	570	739	19 36 31
19 46 30	1508+572	07 17 16	31.0	34.0	-7.9		-38.1	24	739	19 46 30
19 56 00	---	07 26 48	31.8	35.2	-7.7		-39.5	570	758	19 46 31
19 56 30	1508+572	07 27 18	31.9	35.3	-7.7		-39.5	24	758	19 56 30
20 06 00	---	07 36 49	32.7	36.5	-7.6		-40.9	570	776	19 56 31
20 06 30	1508+572	07 37 19	32.8	36.5	-7.6		-41.0	24	776	20 06 30
20 16 00	---	07 46 51	33.6	37.7	-7.4		-42.4	570	794	20 06 31
20 16 30	1508+572	07 47 21	33.7	37.7	-7.4		-42.4	24	794	20 16 30
20 26 00	---	07 56 53	34.6	38.9	-7.2		-43.8	570	812	20 16 31
20 26 30	1508+572	07 57 23	34.6	39.0	-7.2		-43.8	24	812	20 26 30
20 36 00	---	08 06 54	35.5	40.1	-7.1		-45.2	570	831	20 26 31
20 36 30	1508+572	08 07 24	35.6	40.1	-7.1		-45.3	24	831	20 36 30
20 46 00	---	08 16 56	36.5	41.3	-6.9		-46.6	570	849	20 36 31
20 46 30	1508+572	08 17 26	36.5	41.3	-6.9		-46.7	24	849	20 46 30
20 56 00	---	08 26 58	37.5	42.4	-6.7		-48.0	570	867	20 46 31
20 59 00	1849+670	08 29 58	31.7	11.2	-10.3		-17.5	102	867	20 59 00
21 09 00	---	08 40 00	32.0	12.3	-10.2		-19.2	600	887	20 59 01
21 11 00	2021+614	08 42 00	24.8	2.6	-11.7		-3.2	79	887	21 11 00
21 21 00	---	08 52 02	24.9	3.9	-11.5		-4.9	600	906	21 11 01
21 23 00	1508+572	08 54 02	40.3	45.5	-6.3		-51.8	22	906	21 23 00
21 32 30	---	09 03 34	41.3	46.5	-6.1		-53.1	570	924	21 23 01
21 33 00	1508+572	09 04 04	41.4	46.6	-6.1		-53.2	24	924	21 33 00
21 42 30	---	09 13 35	42.4	47.6	-5.9		-54.5	570	942	21 33 01
21 43 00	1508+572	09 14 05	42.5	47.7	-5.9		-54.5	24	942	21 43 00
21 52 30	---	09 23 37	43.6	48.7	-5.8		-55.8	570	961	21 43 01
21 53 00	1508+572	09 24 07	43.6	48.7	-5.8		-55.9	24	961	21 53 00
22 02 30	---	09 33 38	44.7	49.7	-5.6		-57.2	570	979	21 53 01

```
Schedule for TORUN     (Code Tr )                                  Page   5
              RadioAstron Imaging of high-redshift quasars
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Wed  24 Feb 2016   Day  55 ---

22 03 00  1508+572     09 34 09  44.8  49.8 -5.6     -57.3    24      979   22 03 00
22 09 40  ---          09 40 50  45.5  50.5 -5.5     -58.2   400      992   22 03 01

 ---------- C-band VLBI scans. Space segment 03 ----------

22 10 00  1508+572     09 41 10  45.6  50.5 -5.5     -58.2    14      992   22 10 00
22 29 45  ---          10 00 58  47.9  52.5 -5.2     -60.9  1185     1030   22 10 01

22 30 15  1508+572     10 01 28  48.0  52.5 -5.1     -61.0    24     1030   22 30 15
22 50 00  ---          10 21 16  50.4  54.4 -4.8     -63.7  1185     1068   22 30 16

 ---------- C-band VLBI scans. Ground-only segment 03 ----------

22 52 00  1849+670     10 23 17  36.7  23.0 -8.4     -37.0    42     1068   22 52 00
23 00 00  ---          10 31 18  37.2  23.7 -8.3     -38.4   480     1083   22 52 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    9         Station: TORUN            Total bit rate:   256
   Format: MARK5B            Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type: DBBC_DDC        Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4200.00   4200.00   4200.00   4200.00
  Net SB=         U         U         L         L
  IF SB =         U         U         U         U
  Pol.  =       RCP       LCP       RCP       LCP
  BBC   =         1         5         1         5
  BBC SB=         U         U         L         L
  IF    =        A1        B1        A1        B1

 The following frequency sets based on these setups were used.

  Frequency Set:   8  Setup file default.  Used with PCAL = 1MHz
  LO sum=   4836.00  4836.00  4836.00  4836.00
  BBC fr=    636.00   636.00   636.00   636.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   8  13

  Track assignments are:
   track1=   2,  4,  6,  8
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* 1508+572          15 08 45.204538   * 15 10 02.922371     15 10 28.014471       0.00
  J1510+5702        57 14 02.08966    * 57 02 43.37583      56 58 52.08433        0.00
                    ./eg089c_sources.radioastron
                    AGN, HIGHz, rfc_2013d Petrov, 2013, unpublished 2400 observations, RA-AO3-04, RA

* 1849+670          18 49 16.505869   * 18 49 16.072282     18 49 13.997153       0.00
  J1849+6705        67 02 07.88049    * 67 05 41.68023      67 06 42.60579        0.00
                    ./eg089c_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 7270 observations, RA-AO3-04, RA-AO2-12

* 2021+614          20 21 13.300234   * 20 22 06.681752     20 22 22.010385       0.00
  J2022+6136        61 27 18.15575    * 61 36 58.80476      61 40 02.65366        0.00
                    ./eg089c_sources.radioastron
                    AGN, CSO, rfc_2013d Petrov, 2013, unpublished 3249 observations, RA-AO3-04, RA-A
```

n16m1tr

Network Monitoring Experiment

PI: *Gabriele Surcis*

Address: JIVE Phone:+31-521-596508 EMAIL: surcis@jive.nl

Observing mode:

Schedule for TORUN (Code Tr) Page 2

Network Monitoring Experiment

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

--- Thu 25 Feb 2016 Day 56 ---

Next scan frequencies:			6661.49	6661.49	6661.49	6661.49	6665.49	6665.49	6665.49	6665.49	
			6669.49	6669.49	6669.49	6669.49	6673.49	6673.49	6673.49	6673.49	
Next BBC frequencies:			761.49	761.49	761.49	761.49	765.49	765.49	765.49	765.49	
			769.49	769.49	769.49	769.49	773.49	773.49	773.49	773.49	
Next scan bandwidths:			2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
			2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
Start UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC	
Stop UT											
12 00 00	0234+285	23 33 26	48.5	107.0	-3.1		-41.0	0	0	12 00 00	
12 05 00	---	23 38 27	49.2	108.2	-3.0		-40.6	300	5	12 00 01	
12 06 00	0234+285	23 39 27	49.4	108.5	-3.0		-40.6	54	5	12 06 00	
12 11 00	---	23 44 28	50.1	109.8	-2.9		-40.2	300	10	12 06 01	
12 14 00	0234+285	23 47 28	50.5	110.6	-2.9		-39.9	173	10	12 14 00	
12 24 00	---	23 57 30	51.9	113.3	-2.7		-39.0	600	19	12 14 01	
12 25 00	0234+285	23 58 30	52.0	113.6	-2.7		-38.9	54	19	12 25 00	
12 35 00	---	00 08 32	53.4	116.4	-2.5		-37.9	600	29	12 25 01	
12 36 00	0234+285	00 09 32	53.5	116.7	-2.5		-37.8	54	29	12 36 00	
12 46 00	---	00 19 34	54.9	119.7	-2.3		-36.6	600	38	12 36 01	
12 47 00	0234+285	00 20 34	55.0	120.0	-2.3		-36.4	54	38	12 47 00	
12 57 00	---	00 30 35	56.3	123.1	-2.1		-35.0	600	48	12 47 01	
12 58 00	0234+285	00 31 36	56.4	123.5	-2.1		-34.9	54	48	12 58 00	
13 03 00	---	00 36 36	57.0	125.1	-2.0		-34.1	300	53	12 58 01	
13 06 00	0234+285	00 39 37	57.4	126.1	-2.0		-33.6	173	53	13 06 00	
13 16 00	---	00 49 39	58.6	129.6	-1.8		-31.9	600	62	13 06 01	
13 17 00	0234+285	00 50 39	58.7	130.0	-1.8		-31.7	53	62	13 17 00	
13 27 00	---	01 00 40	59.8	133.7	-1.6		-29.7	600	72	13 17 01	
13 28 00	0234+285	01 01 40	59.9	134.0	-1.6		-29.5	53	72	13 28 00	
13 38 00	---	01 11 42	61.0	138.0	-1.5		-27.3	600	82	13 28 01	
13 39 00	0234+285	01 12 42	61.1	138.4	-1.4		-27.1	53	82	13 39 00	
13 49 00	---	01 22 44	62.0	142.5	-1.3		-24.7	600	91	13 39 01	
13 50 00	0234+285	01 23 44	62.1	142.9	-1.3		-24.4	53	91	13 50 00	
13 55 00	---	01 28 45	62.6	145.1	-1.2		-23.1	300	96	13 50 01	

```
Schedule for TORUN     (Code Tr )                                Page   3
               Network Monitoring Experiment
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------
 --- Thu  25 Feb 2016   Day  56 ---
13 58 00  0234+285     01 31 45  62.8 146.4 -1.1     -22.3   173       96   13 58 00
14 08 00  ---          01 41 47  63.6 151.0 -1.0     -19.4   600      106   13 58 01

14 09 00  0234+285     01 42 47  63.7 151.4 -0.9     -19.1    53      106   14 09 00
14 19 00  ---          01 52 49  64.3 156.2 -0.8     -16.1   600      115   14 09 01

14 20 00  0234+285     01 53 49  64.4 156.7 -0.8     -15.7    53      115   14 20 00
14 30 00  ---          02 03 51  64.9 161.7 -0.6     -12.4   600      125   14 20 01

14 31 00  0234+285     02 04 51  65.0 162.2 -0.6     -12.1    53      125   14 31 00
14 41 00  ---          02 14 52  65.4 167.3 -0.4      -8.6   600      135   14 31 01

14 42 00  0234+285     02 15 53  65.4 167.9 -0.4      -8.3    53      135   14 42 00
14 52 00  ---          02 25 54  65.7 173.1 -0.2      -4.7   600      144   14 42 01

14 53 00  0234+285     02 26 54  65.7 173.7 -0.2      -4.3    53      144   14 53 00
15 00 00  ---          02 33 56  65.8 177.4 -0.1      -1.8   420      151   14 53 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: sess116.M128nme

   Setup group:    7         Station: TORUN            Total bit rate:   128
   Format: MARK5B            Bits per sample: 2        Sample rate:  4.000
   Number of channels: 16    DBE type: DBBC_DDC        Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00
            5900.00   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00
  Net SB=         L         L         U         U         L         L         U         U
                  L         L         U         U         L         L         U         U
  IF SB =         U         U         U         U         U         U         U         U
                  U         U         U         U         U         U         U         U
  Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
                RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
  BBC   =         1         5         1         5         2         6         2         6
                  3         7         3         7         4         8         4         8
  BBC SB=         L         L         U         U         L         L         U         U
                  L         L         U         U         L         L         U         U
  IF    =        A1        B1        A1        B1        A1        B1        A1        B1
                 A1        B1        A1        B1        A1        B1        A1        B1

 The following frequency sets based on these setups were used.

  Frequency Set:   7  Setup file default.  Used with PCAL = off
  LO sum=   6661.49  6661.49  6661.49  6661.49  6665.49  6665.49  6665.49  6665.49
            6669.49  6669.49  6669.49  6669.49  6673.49  6673.49  6673.49  6673.49
  BBC fr=    761.49   761.49   761.49   761.49   765.49   765.49   765.49   765.49
             769.49   769.49   769.49   769.49   773.49   773.49   773.49   773.49
  Bandwd=      2.00     2.00     2.00     2.00     2.00     2.00     2.00     2.00
               2.00     2.00     2.00     2.00     2.00     2.00     2.00     2.00
   Matching frequency sets:   7  12

  Track assignments are:
   track1=  18, 26,  2, 10, 20, 28,  4, 12, 22, 30,  6, 14, 24, 32,  8, 16
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* 0234+285          02 34 55.589590   * 02 37 52.405677     02 38 49.205990       0.00
  J0237+2848        28 35 11.40776    * 28 48 08.99001      28 52 14.42404        0.00
  J0237+28          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
                    GSFC 2015a astro solution, unpublished  54650 observations.
```

rk12qatr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/K-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Thu  25 Feb 2016   Day  56 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

20 00 00  0838+133     07 34 45  47.9 155.3 -1.1     -14.9     0        0   20 00 00
20 14 30  ---          07 49 17  48.7 160.5 -0.9     -11.9   870       28   20 00 01

20 15 00  0838+133     07 49 47  48.7 160.6 -0.9     -11.8    24       28   20 15 00
20 29 30  ---          08 04 20  49.4 166.0 -0.6      -8.6   870       56   20 15 01

20 30 00  0838+133     08 04 50  49.4 166.1 -0.6      -8.5    24       56   20 30 00
20 44 30  ---          08 19 22  49.8 171.6 -0.4      -5.2   870       84   20 30 01

20 45 00  0838+133     08 19 52  49.8 171.7 -0.4      -5.1    24       84   20 45 00
21 00 00  ---          08 34 55  50.0 177.4 -0.1      -1.6   900      112   20 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    3         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4100.00   4100.00   4100.00   4100.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   1  Setup file default.  Used with PCAL = 1MHz
  LO sum=   4836.00  4836.00  4836.00  4836.00
  BBC fr=    736.00   736.00   736.00   736.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   1

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

```
  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 55.592872       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 27.68176        0.00
                    fake circumpolar target for a TS to look at

* 0838+133          08 38 01.723597   * 08 40 47.588427     08 41 42.144582       0.00
  J0840+1312        13 23 05.67979    * 13 12 23.56368      13 08 42.25998        0.00
                    ./rk12qa_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 196 observations, RA-AO3-04
```

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  0838+133           152.3

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12qbtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Fri  26 Feb 2016   Day  57 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

00 00 00  1351-018     11 35 24  27.5 139.9 -2.3     -22.8     0        0   00 00 00
00 14 30  ---          11 49 57  28.9 143.7 -2.1     -20.8   870       28   00 00 01

00 15 00  1351-018     11 50 27  28.9 143.8 -2.1     -20.8    24       28   00 15 00
00 29 30  ---          12 04 59  30.1 147.8 -1.8     -18.7   870       56   00 15 01

00 30 00  1351-018     12 05 29  30.2 147.9 -1.8     -18.6    24       56   00 30 00
00 44 30  ---          12 20 02  31.3 151.9 -1.6     -16.4   870       84   00 30 01

00 45 00  1351-018     12 20 32  31.3 152.1 -1.6     -16.3    24       84   00 45 00
01 00 00  ---          12 35 34  32.3 156.3 -1.3     -14.0   900      112   00 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    7         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
 1st LO=   2400.00   2400.00   2400.00   2400.00
 Net SB=         L         L         U         U
 IF SB =         L         L         L         L
 Pol.  =       RCP       LCP       RCP       LCP
 BBC   =         1         2         1         2
 BBC SB=         U         U         L         L
 IF    =         C         A         C         A

The following frequency sets based on these setups were used.

 Frequency Set:   4  Setup file default.  Used with PCAL = 1MHz
 LO sum=   1668.00  1668.00  1668.00  1668.00
 BBC fr=    732.00   732.00   732.00   732.00
 Bandwd=     16.00    16.00    16.00    16.00
  Matching frequency sets:   4

 Track assignments are:
  track1=   2, 18,  3, 19
  barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 55.610085       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 27.73471        0.00
                    fake circumpolar target for a TS to look at

* 1351-018          13 51 32.032818   * 13 54 06.895322     13 54 57.633772       0.00
  J1354-0206       -01 51 20.07716    *-02 06 03.19066     -02 10 49.57320        0.00
                    ./rk12qb_sources.radioastron
                    AGN, HIGHz, rfc_2013d Petrov, 2013, unpublished 22569 observations, RA-AO3-04, R



EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1351-018           128.8

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12qctr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Fri  26 Feb 2016   Day  57 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

06 00 00  1514+197     17 36 23  47.1 232.0  2.3      30.1     0        0   06 00 00
06 14 30  ---          17 50 56  45.3 236.2  2.6      32.0   870       28   06 00 01

06 15 00  1514+197     17 51 26  45.2 236.3  2.6      32.0    24       28   06 15 00
06 29 30  ---          18 05 58  43.4 240.4  2.8      33.6   870       56   06 15 01

06 30 00  1514+197     18 06 28  43.3 240.5  2.8      33.7    24       56   06 30 00
06 44 30  ---          18 21 01  41.4 244.3  3.1      35.0   870       84   06 30 01

06 45 00  1514+197     18 21 31  41.3 244.5  3.1      35.1    24       84   06 45 00
07 00 00  ---          18 36 33  39.2 248.2  3.3      36.3   900      112   06 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    3         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
 1st LO=   4100.00   4100.00   4100.00   4100.00
 Net SB=         L         L         U         U
 IF SB =         U         U         U         U
 Pol.  =       RCP       LCP       RCP       LCP
 BBC   =         1         2         1         2
 BBC SB=         L         L         U         U
 IF    =         C         A         C         A

The following frequency sets based on these setups were used.

 Frequency Set:   2  Setup file default.  Used with PCAL = 1MHz
 LO sum=   4836.00  4836.00  4836.00  4836.00
 BBC fr=    736.00   736.00   736.00   736.00
 Bandwd=     16.00    16.00    16.00    16.00
  Matching frequency sets:   2

 Track assignments are:
  track1=   2, 18,  3, 19
  barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 55.635275       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 27.81405        0.00
                    fake circumpolar target for a TS to look at

* 1514+197          15 14 40.985841   * 15 16 56.796164     15 17 40.813211       0.00
  J1516+1932        19 43 10.94234    * 19 32 12.99191      19 28 35.69178        0.00
                    ./rk12qc_sources.radioastron
                    AGN, MASIV, rfc_2013d Petrov, 2013, unpublished 2439 observations, RA-AO3-04, RA


EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1514+197           111.2

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

es079atr

Short-period maser, epoch 1

PI: **Marian Szymczak**

Address: Torun Centre for Astronomy

Observing mode: MKV, 256Mb/s
Schedule for TORUN (Code Tr) Page 2
Short-period maser, epoch 1
UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Fri 26 Feb 2016 Day 57 ---										
Next scan frequencies:		6662.79	6662.79	6662.79	6662.79	6670.79	6670.79	6670.79	6670.79	
		6678.79	6678.79	6678.79	6678.79	6686.79	6686.79	6686.79	6686.79	
Next BBC frequencies:		762.79	762.79	762.79	762.79	770.79	770.79	770.79	770.79	
		778.79	778.79	778.79	778.79	786.79	786.79	786.79	786.79	
Next scan bandwidths:		4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
		4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	
08 30 00	3C345	20 06 48	53.4	269.6	3.4		51.4	0	0	08 30 00
08 40 00	---	20 16 50	51.9	271.6	3.6		51.4	600	19	08 30 01
08 41 00	3C345	20 17 50	51.8	271.8	3.6		51.3	54	19	08 41 00
08 51 00	---	20 27 52	50.3	273.7	3.7		51.2	600	38	08 41 01
08 58 42	3C454.3	20 35 34	44.2	130.2	-2.3		-28.5	158	38	08 58 42
09 08 42	---	20 45 36	45.3	133.2	-2.2		-27.1	600	58	08 58 43
09 09 42	3C454.3	20 46 36	45.4	133.5	-2.1		-27.0	54	58	09 09 42
09 19 42	---	20 56 38	46.5	136.6	-2.0		-25.5	600	77	09 09 43
09 23 20	J2223+6249	21 00 17	75.3	39.9	-1.4		-122.3	10	77	09 23 20
09 25 05	=2221+625	21 02 02	75.5	39.4	-1.4		-123.1	105	80	09 23 21
09 25 05	G107.29	21 02 02	75.1	35.6	-1.3		-127.2	-23	80	No stop
09 28 20	---	21 05 18	75.4	34.8	-1.3		-128.8	172	87	09 25 06
09 28 20	J2223+6249	21 05 18	75.8	38.6	-1.3		-124.6	-22	87	No stop
09 30 05	=2221+625	21 07 03	76.0	38.1	-1.3		-125.5	83	90	09 28 21
09 30 05	G107.29	21 07 03	75.5	34.3	-1.2		-129.6	-23	90	No stop
09 33 20	---	21 10 19	75.8	33.4	-1.2		-131.3	172	96	09 30 06
09 33 20	J2223+6249	21 10 19	76.3	37.2	-1.2		-127.1	-22	96	No stop
09 35 05	=2221+625	21 12 04	76.4	36.7	-1.2		-128.0	83	100	09 33 21
09 36 05	G107.29	21 13 04	76.0	32.5	-1.1		-132.7	37	100	09 36 05
09 39 20	---	21 16 20	76.3	31.5	-1.1		-134.4	195	106	09 36 06
09 39 20	J2223+6249	21 16 20	76.8	35.4	-1.1		-130.2	-22	106	No stop
09 41 05	=2221+625	21 18 05	77.0	34.8	-1.1		-131.2	83	109	09 39 21
09 52 30	3C345	21 29 32	41.2	-75.4	4.8		49.1	446	109	09 52 30
09 57 30	---	21 34 32	40.4	-74.6	4.9		48.9	300	119	09 52 31

Schedule for TORUN (Code Tr) Page 3

Short-period maser, epoch 1

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Fri	26 Feb 2016	Day 57 ---								
09 57 30	3C345	21 34 32	40.4	-74.6	4.9		48.9	-5	119	No stop
10 02 30	---	21 39 33	39.7	-73.8	4.9		48.6	295	128	09 57 31
10 10 20	3C454.3	21 47 25	50.8	153.9	-1.1		-16.0	0	128	10 10 20
10 15 20	---	21 52 25	51.2	155.7	-1.0		-14.9	300	138	10 10 21
10 15 20	3C454.3	21 52 25	51.2	155.7	-1.0		-14.9	-5	138	No stop
10 20 20	---	21 57 26	51.5	157.6	-1.0		-13.8	295	148	10 15 21
10 20 20	3C454.3	21 57 26	51.5	157.6	-1.0		-13.8	-5	148	No stop
10 25 20	---	22 02 27	51.7	159.5	-0.9		-12.7	295	157	10 20 21
10 35 40	J2223+6249	22 12 49	80.1	7.3	-0.2		-170.4	307	157	10 35 40
10 37 25	=2221+625	22 14 34	80.1	6.1	-0.2		-171.9	105	161	10 35 41
10 37 25	G107.29	22 14 34	79.1	4.3	-0.1		-174.1	-18	161	No stop
10 40 40	---	22 17 49	79.1	2.4	-0.1		-176.7	177	167	10 37 26
10 40 40	J2223+6249	22 17 49	80.2	4.0	-0.1		-174.7	-17	167	No stop
10 42 25	=2221+625	22 19 35	80.2	2.8	-0.1		-176.3	88	170	10 40 41
10 42 25	G107.29	22 19 35	79.1	1.4	-0.0		-178.1	-17	170	No stop
10 45 40	---	22 22 50	79.2	-0.5	0.0		179.3	178	176	10 42 26
10 45 40	J2223+6249	22 22 50	80.2	0.7	-0.0		-179.1	-17	176	No stop
10 47 25	=2221+625	22 24 35	80.2	-0.5	0.0		179.3	88	180	10 45 41
10 48 25	G107.29	22 25 36	79.1	-2.1	0.1		177.1	43	180	10 48 25
10 51 40	---	22 28 51	79.1	-4.0	0.1		174.5	195	186	10 48 26
10 51 40	J2223+6249	22 28 51	80.2	-3.4	0.1		175.6	-17	186	No stop
10 53 25	=2221+625	22 30 36	80.1	-4.5	0.1		174.0	88	189	10 51 41
10 53 25	G107.29	22 30 36	79.1	-5.0	0.1		173.1	-17	189	No stop
10 56 40	---	22 33 52	79.0	-6.9	0.2		170.5	178	196	10 53 26
10 56 40	J2223+6249	22 33 52	80.1	-6.7	0.2		171.2	-17	196	No stop
10 58 25	=2221+625	22 35 37	80.1	-7.8	0.2		169.7	88	199	10 56 41
10 58 25	G107.29	22 35 37	79.0	-7.9	0.2		169.2	-17	199	No stop
11 01 40	---	22 38 53	78.9	-9.7	0.3		166.6	178	205	10 58 26
11 01 40	J2223+6249	22 38 53	80.0	-9.9	0.3		166.9	-17	205	No stop
11 03 25	=2221+625	22 40 38	79.9	-11.0	0.3		165.4	88	209	11 01 41
11 04 25	G107.29	22 41 38	78.9	-11.3	0.3		164.5	43	209	11 04 25
11 07 40	---	22 44 54	78.8	-13.0	0.4		162.1	195	215	11 04 26

Schedule for TORUN (Code Tr) Page 4

Short-period maser, epoch 1

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT / Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early / Dwell	Disk GBytes	TPStart / SYNC
--- Fri 26 Feb 2016 Day 57 ---										
11 07 40	J2223+6249	22 44 54	79.8	-13.7	0.4		161.8	-17	215	No stop
11 09 25	=2221+625	22 46 39	79.7	-14.7	0.4		160.4	88	218	11 07 41
11 09 25	G107.29	22 46 39	78.7	-14.0	0.4		160.7	-17	218	No stop
11 12 40	---	22 49 55	78.6	-15.7	0.5		158.3	178	225	11 09 26
11 12 40	J2223+6249	22 49 55	79.6	-16.7	0.4		157.8	-17	225	No stop
11 14 25	=2221+625	22 51 40	79.5	-17.7	0.5		156.4	88	228	11 12 41
11 14 25	G107.29	22 51 40	78.5	-16.6	0.5		157.1	-17	228	No stop
11 17 40	---	22 54 55	78.4	-18.2	0.5		154.7	178	234	11 14 26
11 17 40	J2223+6249	22 54 55	79.4	-19.5	0.5		153.8	-17	234	No stop
11 19 25	=2221+625	22 56 41	79.3	-20.5	0.5		152.5	88	237	11 17 41
11 20 25	G107.29	22 57 41	78.2	-19.5	0.6		152.8	43	237	11 20 25
11 23 40	---	23 00 56	78.0	-21.1	0.7		150.6	195	244	11 20 26
11 23 40	J2223+6249	23 00 56	79.0	-22.7	0.6		149.3	-17	244	No stop
11 25 25	=2221+625	23 02 42	78.9	-23.6	0.6		148.1	88	247	11 23 41
11 25 25	G107.29	23 02 42	78.0	-21.9	0.7		149.4	-17	247	No stop
11 28 40	---	23 05 57	77.8	-23.3	0.7		147.3	178	253	11 25 26
11 28 40	J2223+6249	23 05 57	78.7	-25.2	0.7		145.8	-18	253	No stop
11 30 25	=2221+625	23 07 43	78.6	-26.1	0.7		144.6	87	257	11 28 41
11 30 25	G107.29	23 07 43	77.7	-24.1	0.8		146.1	-17	257	No stop
11 33 40	---	23 10 58	77.5	-25.4	0.8		144.1	178	263	11 30 26
11 33 40	J2223+6249	23 10 58	78.4	-27.6	0.8		142.4	-18	263	No stop
11 35 25	=2221+625	23 12 43	78.3	-28.4	0.8		141.2	87	266	11 33 41
11 36 25	G107.29	23 13 43	77.3	-26.5	0.9		142.4	42	266	11 36 25
11 39 40	---	23 16 59	77.0	-27.8	0.9		140.4	195	273	11 36 26
11 39 40	J2223+6249	23 16 59	78.0	-30.2	0.9		138.5	-19	273	No stop
11 41 25	=2221+625	23 18 44	77.8	-30.9	0.9		137.4	86	276	11 39 41
11 41 25	G107.29	23 18 44	76.9	-28.4	0.9		139.4	-19	276	No stop
11 44 40	---	23 22 00	76.7	-29.6	1.0		137.5	176	282	11 41 26
11 44 40	J2223+6249	23 22 00	77.6	-32.1	1.0		135.5	-19	282	No stop
11 46 25	=2221+625	23 23 45	77.4	-32.8	1.0		134.4	86	286	11 44 41

Schedule for TORUN (Code Tr) Page 5

Short-period maser, epoch 1

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 26 Feb 2016 Day 57 ---										
11 46 25	G107.29	23 23 45	76.6	-30.2	1.0		136.5	-19	286	No stop
11 49 40	---	23 27 01	76.3	-31.3	1.1		134.7	176	292	11 46 26
11 49 40	J2223+6249	23 27 01	77.2	-33.9	1.1		132.6	-20	292	No stop
11 51 25	=2221+625	23 28 46	77.0	-34.5	1.1		131.6	85	295	11 49 41
11 52 25	G107.29	23 29 46	76.1	-32.2	1.1		133.2	41	295	11 52 25
11 55 40	---	23 33 02	75.8	-33.2	1.2		131.5	195	301	11 52 26
11 55 40	J2223+6249	23 33 02	76.7	-35.9	1.2		129.3	-20	301	No stop
11 57 25	=2221+625	23 34 47	76.5	-36.5	1.2		128.4	85	305	11 55 41
11 57 25	G107.29	23 34 47	75.7	-33.7	1.2		130.7	-20	305	No stop
12 00 40	---	23 38 02	75.4	-34.6	1.3		129.0	175	311	11 57 26
12 00 40	J2223+6249	23 38 02	76.2	-37.4	1.2		126.7	-20	311	No stop
12 02 25	=2221+625	23 39 48	76.0	-37.9	1.3		125.9	85	314	12 00 41
12 02 25	G107.29	23 39 48	75.3	-35.1	1.3		128.2	-20	314	No stop
12 05 40	---	23 43 03	75.0	-35.9	1.4		126.6	175	321	12 02 26
12 05 40	J2223+6249	23 43 03	75.7	-38.8	1.3		124.3	-20	321	No stop
12 07 25	=2221+625	23 44 49	75.6	-39.2	1.3		123.5	85	324	12 05 41
12 08 25	G107.29	23 45 49	74.7	-36.6	1.4		125.4	40	324	12 08 25
12 11 40	---	23 49 04	74.4	-37.4	1.5		123.9	195	330	12 08 26
12 11 40	J2223+6249	23 49 04	75.2	-40.3	1.4		121.5	-20	330	No stop
12 13 25	=2221+625	23 50 50	75.0	-40.7	1.5		120.7	85	334	12 11 41
12 13 25	G107.29	23 50 50	74.3	-37.8	1.5		123.1	-20	334	No stop
12 16 40	---	23 54 05	74.0	-38.5	1.5		121.7	175	340	12 13 26
12 16 40	J2223+6249	23 54 05	74.7	-41.4	1.5		119.3	-20	340	No stop
12 18 25	=2221+625	23 55 50	74.5	-41.8	1.5		118.6	85	343	12 16 41
12 18 25	G107.29	23 55 50	73.8	-38.8	1.6		121.0	-20	343	No stop
12 21 40	---	23 59 06	73.5	-39.5	1.6		119.6	175	350	12 18 26
12 21 40	J2223+6249	23 59 06	74.2	-42.4	1.6		117.2	-20	350	No stop
12 23 25	=2221+625	00 00 51	74.0	-42.7	1.6		116.5	85	353	12 21 41
12 24 25	G107.29	00 01 51	73.2	-40.0	1.7		118.5	40	353	12 24 25
12 27 40	---	00 05 07	72.9	-40.6	1.7		117.2	195	359	12 24 26

Schedule for TORUN (Code Tr) Page 6

Short-period maser, epoch 1

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 26 Feb 2016 Day 57 ---										
12 27 40	J2223+6249	00 05 07	73.6	-43.5	1.7		114.9	-20	359	No stop
12 29 25	=2221+625	00 06 52	73.4	-43.8	1.7		114.2	85	362	12 27 41
12 29 25	G107.29	00 06 52	72.7	-40.9	1.7		116.5	-20	362	No stop
12 32 40	---	00 10 08	72.4	-41.4	1.8		115.3	175	369	12 29 26
12 32 40	J2223+6249	00 10 08	73.0	-44.3	1.8		113.0	-20	369	No stop
12 34 25	=2221+625	00 11 53	72.8	-44.5	1.8		112.3	85	372	12 32 41
12 34 25	G107.29	00 11 53	72.2	-41.7	1.8		114.7	-20	372	No stop
12 37 40	---	00 15 09	71.9	-42.1	1.9		113.5	175	378	12 34 26
12 37 40	J2223+6249	00 15 09	72.5	-45.0	1.9		111.2	-20	378	No stop
12 39 25	=2221+625	00 16 54	72.3	-45.2	1.9		110.6	85	382	12 37 41
12 40 25	G107.29	00 17 54	71.6	-42.5	1.9		112.5	40	382	12 40 25
12 43 40	---	00 21 10	71.3	-42.9	2.0		111.4	195	388	12 40 26
12 43 40	J2223+6249	00 21 10	71.9	-45.8	2.0		109.1	-20	388	No stop
12 45 25	=2221+625	00 22 55	71.7	-46.0	2.0		108.5	85	391	12 43 41
12 45 25	G107.29	00 22 55	71.1	-43.2	2.0		110.8	-20	391	No stop
12 48 40	---	00 26 10	70.8	-43.5	2.1		109.7	175	398	12 45 26
12 48 40	J2223+6249	00 26 10	71.3	-46.3	2.0		107.4	-20	398	No stop
12 50 25	=2221+625	00 27 56	71.1	-46.5	2.1		106.9	85	401	12 48 41
12 50 25	G107.29	00 27 56	70.6	-43.7	2.1		109.1	-20	401	No stop
12 53 40	---	00 31 11	70.3	-44.1	2.2		108.1	175	407	12 50 26
12 53 40	J2223+6249	00 31 11	70.8	-46.9	2.1		105.9	-20	407	No stop
12 55 25	=2221+625	00 32 56	70.6	-47.0	2.2		105.3	85	411	12 53 41
12 56 25	G107.29	00 33 57	70.0	-44.3	2.2		107.2	40	411	12 56 25
12 59 40	---	00 37 12	69.6	-44.6	2.3		106.2	195	417	12 56 26
12 59 40	J2223+6249	00 37 12	70.1	-47.4	2.2		104.0	-20	417	No stop
13 01 25	=2221+625	00 38 57	69.9	-47.5	2.3		103.5	85	420	12 59 41
13 01 25	G107.29	00 38 57	69.5	-44.8	2.3		105.6	-20	420	No stop
13 04 40	---	00 42 13	69.1	-45.1	2.3		104.7	175	426	13 01 26
13 04 40	J2223+6249	00 42 13	69.6	-47.8	2.3		102.5	-20	426	No stop
13 06 25	=2221+625	00 43 58	69.4	-47.9	2.3		102.0	85	430	13 04 41

Schedule for TORUN (Code Tr) Page 7

Short-period maser, epoch 1

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Fri 26 Feb 2016 Day 57 ---										
13 06 25	G107.29	00 43 58	68.9	-45.2	2.4		104.1	-20	430	No stop
13 09 40	---	00 47 14	68.6	-45.4	2.4		103.2	175	436	13 06 26
13 09 40	J2223+6249	00 47 14	69.0	-48.1	2.4		101.1	-20	436	No stop
13 11 25	=2221+625	00 48 59	68.8	-48.2	2.4		100.6	85	439	13 09 41
13 12 25	G107.29	00 49 59	68.3	-45.6	2.5		102.4	40	439	13 12 25
13 15 40	---	00 53 15	67.9	-45.8	2.5		101.5	195	446	13 12 26
13 15 40	J2223+6249	00 53 15	68.3	-48.4	2.5		99.5	-20	446	No stop
13 17 25	=2221+625	00 55 00	68.1	-48.5	2.5		99.0	85	449	13 15 41
13 17 25	G107.29	00 55 00	67.7	-45.9	2.6		101.0	-19	449	No stop
13 20 40	---	00 58 16	67.4	-46.1	2.6		100.1	176	455	13 17 26
13 20 40	J2223+6249	00 58 16	67.8	-48.7	2.6		98.1	-19	455	No stop
13 22 25	=2221+625	01 00 01	67.6	-48.7	2.6		97.7	86	459	13 20 41
13 22 25	G107.29	01 00 01	67.2	-46.2	2.6		99.6	-19	459	No stop
13 25 40	---	01 03 16	66.8	-46.3	2.7		98.8	176	465	13 22 26
13 25 40	J2223+6249	01 03 16	67.2	-48.9	2.7		96.8	-19	465	No stop
13 27 25	=2221+625	01 05 02	67.0	-48.9	2.7		96.4	86	468	13 25 41
13 28 25	G107.29	01 06 02	66.5	-46.4	2.7		98.0	41	468	13 28 25
13 31 40	---	01 09 17	66.2	-46.5	2.8		97.2	195	475	13 28 26
13 31 40	J2223+6249	01 09 17	66.5	-49.0	2.8		95.3	-19	475	No stop
13 33 25	=2221+625	01 11 03	66.3	-49.1	2.8		94.9	86	478	13 31 41
13 33 25	G107.29	01 11 03	66.0	-46.6	2.8		96.8	-19	478	No stop
13 36 40	---	01 14 18	65.6	-46.7	2.9		95.9	176	484	13 33 26
13 36 40	J2223+6249	01 14 18	65.9	-49.2	2.8		94.1	-19	484	No stop
13 38 25	=2221+625	01 16 04	65.7	-49.2	2.9		93.7	86	487	13 36 41
13 38 25	G107.29	01 16 04	65.4	-46.7	2.9		95.5	-19	487	No stop
13 41 40	---	01 19 19	65.1	-46.8	3.0		94.7	176	494	13 38 26
13 41 40	J2223+6249	01 19 19	65.4	-49.2	2.9		92.9	-19	494	No stop
13 43 25	=2221+625	01 21 04	65.2	-49.3	3.0		92.5	86	497	13 41 41
13 44 25	G107.29	01 22 05	64.8	-46.9	3.0		94.0	41	497	13 44 25
13 47 40	---	01 25 20	64.4	-46.9	3.1		93.3	195	503	13 44 26

Schedule for TORUN (Code Tr) Page 8

Short-period maser, epoch 1

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 26 Feb 2016 Day 57 ---										
13 47 40	J2223+6249	01 25 20	64.7	-49.3	3.0		91.5	-19	503	No stop
13 49 25	=2221+625	01 27 05	64.5	-49.3	3.1		91.1	86	507	13 47 41
13 49 25	G107.29	01 27 05	64.2	-46.9	3.1		92.8	-19	507	No stop
13 52 40	---	01 30 21	63.9	-47.0	3.1		92.1	176	513	13 49 26
13 52 40	J2223+6249	01 30 21	64.1	-49.3	3.1		90.4	-19	513	No stop
13 54 25	=2221+625	01 32 06	63.9	-49.3	3.1		90.0	86	516	13 52 41
13 54 25	G107.29	01 32 06	63.7	-47.0	3.2		91.7	-19	516	No stop
13 57 40	---	01 35 22	63.3	-47.0	3.2		90.9	176	523	13 54 26
13 57 40	J2223+6249	01 35 22	63.5	-49.3	3.2		89.3	-19	523	No stop
13 59 25	=2221+625	01 37 07	63.3	-49.3	3.2		88.9	86	526	13 57 41
14 10 25	G107.29	01 48 09	61.9	-47.0	3.4		88.1	641	526	14 10 25
14 13 40	---	01 51 24	61.6	-47.0	3.5		87.4	195	532	14 10 26
14 13 40	J2223+6249	01 51 24	61.7	-49.2	3.5		85.8	-18	532	No stop
14 15 25	=2221+625	01 53 10	61.5	-49.1	3.5		85.5	87	536	14 13 41
14 15 25	G107.29	01 53 10	61.4	-46.9	3.5		87.0	-18	536	No stop
14 18 40	---	01 56 25	61.0	-46.9	3.6		86.3	177	542	14 15 26
14 18 40	J2223+6249	01 56 25	61.2	-49.1	3.5		84.8	-18	542	No stop
14 20 25	=2221+625	01 58 10	61.0	-49.0	3.6		84.5	87	545	14 18 41
14 20 25	G107.29	01 58 10	60.8	-46.9	3.6		85.9	-18	545	No stop
14 23 40	---	02 01 26	60.5	-46.8	3.7		85.2	177	551	14 20 26
14 23 40	J2223+6249	02 01 26	60.6	-48.9	3.6		83.8	-18	551	No stop
14 25 25	=2221+625	02 03 11	60.4	-48.9	3.7		83.5	87	555	14 23 41
14 26 25	G107.29	02 04 11	60.2	-46.8	3.7		84.7	42	555	14 26 25
14 29 40	---	02 07 27	59.8	-46.7	3.8		84.0	195	561	14 26 26
14 29 40	J2223+6249	02 07 27	59.9	-48.8	3.7		82.6	-18	561	No stop
14 31 25	=2221+625	02 09 12	59.7	-48.7	3.8		82.3	87	564	14 29 41
14 31 25	G107.29	02 09 12	59.6	-46.6	3.8		83.6	-18	564	No stop
14 34 40	---	02 12 28	59.3	-46.6	3.8		83.0	177	571	14 31 26
14 34 40	J2223+6249	02 12 28	59.3	-48.6	3.8		81.6	-18	571	No stop
14 36 25	=2221+625	02 14 13	59.1	-48.6	3.8		81.3	87	574	14 34 41

Schedule for TORUN (Code Tr) Page 9

Short-period maser, epoch 1

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 26 Feb 2016 Day 57 ---										
14 36 25	G107.29	02 14 13	59.1	-46.5	3.9		82.6	-18	574	No stop
14 39 40	---	02 17 29	58.7	-46.4	3.9		82.0	177	580	14 36 26
14 39 40	J2223+6249	02 17 29	58.8	-48.4	3.9		80.7	-18	580	No stop
14 41 25	=2221+625	02 19 14	58.6	-48.4	3.9		80.3	87	584	14 39 41
14 42 25	G107.29	02 20 14	58.4	-46.3	4.0		81.4	42	584	14 42 25
14 45 40	---	02 23 30	58.1	-46.2	4.0		80.8	195	590	14 42 26
14 45 40	J2223+6249	02 23 30	58.1	-48.2	4.0		79.5	-18	590	No stop
14 47 25	=2221+625	02 25 15	57.9	-48.2	4.0		79.2	87	593	14 45 41
14 47 25	G107.29	02 25 15	57.9	-46.2	4.1		80.4	-18	593	No stop
14 50 40	---	02 28 30	57.5	-46.1	4.1		79.8	177	600	14 47 26
14 50 40	J2223+6249	02 28 30	57.5	-48.0	4.1		78.6	-18	600	No stop
14 52 25	=2221+625	02 30 16	57.3	-47.9	4.1		78.2	87	603	14 50 41
14 52 25	G107.29	02 30 16	57.3	-46.0	4.1		79.5	-18	603	No stop
14 55 40	---	02 33 31	57.0	-45.9	4.2		78.8	177	609	14 52 26
14 55 40	J2223+6249	02 33 31	57.0	-47.8	4.2		77.6	-17	609	No stop
14 57 25	=2221+625	02 35 17	56.8	-47.7	4.2		77.3	88	612	14 55 41
14 58 25	G107.29	02 36 17	56.7	-45.8	4.2		78.3	43	612	14 58 25
15 01 40	---	02 39 32	56.3	-45.6	4.3		77.7	195	619	14 58 26
15 01 40	J2223+6249	02 39 32	56.3	-47.5	4.3		76.5	-17	619	No stop
15 03 25	=2221+625	02 41 18	56.1	-47.4	4.3		76.2	88	622	15 01 41
15 03 25	G107.29	02 41 18	56.2	-45.5	4.3		77.4	-17	622	No stop
15 06 40	---	02 44 33	55.8	-45.4	4.4		76.7	178	628	15 03 26
15 06 40	J2223+6249	02 44 33	55.8	-47.3	4.3		75.6	-17	628	No stop
15 08 25	=2221+625	02 46 18	55.6	-47.2	4.4		75.3	88	632	15 06 41
15 08 25	G107.29	02 46 18	55.6	-45.3	4.4		76.4	-17	632	No stop
15 11 40	---	02 49 34	55.3	-45.2	4.5		75.8	178	638	15 08 26
15 11 40	J2223+6249	02 49 34	55.2	-47.0	4.4		74.7	-17	638	No stop
15 13 25	=2221+625	02 51 19	55.0	-46.9	4.5		74.4	88	641	15 11 41
15 14 25	G107.29	02 52 19	55.0	-45.0	4.5		75.3	43	641	15 14 25
15 17 40	---	02 55 35	54.6	-44.9	4.6		74.7	195	648	15 14 26

Schedule for TORUN (Code Tr) Page 10

Short-period maser, epoch 1

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Fri 26 Feb 2016 Day 57 ---										
15 17 40	J2223+6249	02 55 35	54.5	-46.7	4.5		73.6	-17	648	No stop
15 19 25	=2221+625	02 57 20	54.4	-46.6	4.6		73.3	88	651	15 17 41
15 19 25	G107.29	02 57 20	54.4	-44.8	4.6		74.4	-17	651	No stop
15 22 40	---	03 00 36	54.1	-44.6	4.6		73.8	178	657	15 19 26
15 22 40	J2223+6249	03 00 36	54.0	-46.4	4.6		72.8	-17	657	No stop
15 24 25	=2221+625	03 02 21	53.8	-46.3	4.6		72.4	88	661	15 22 41
15 24 25	G107.29	03 02 21	53.9	-44.5	4.7		73.5	-17	661	No stop
15 27 40	---	03 05 36	53.6	-44.4	4.7		72.9	178	667	15 24 26
15 27 40	J2223+6249	03 05 36	53.5	-46.1	4.7		71.9	-17	667	No stop
15 29 25	=2221+625	03 07 22	53.3	-46.0	4.7		71.6	88	670	15 27 41
15 30 25	G107.29	03 08 22	53.3	-44.2	4.8		72.4	43	670	15 30 25
15 33 40	---	03 11 37	52.9	-44.0	4.8		71.8	195	676	15 30 26
15 33 40	J2223+6249	03 11 37	52.8	-45.8	4.8		70.8	-17	676	No stop
15 35 25	=2221+625	03 13 23	52.6	-45.6	4.8		70.5	88	680	15 33 41
15 35 25	G107.29	03 13 23	52.8	-43.9	4.9		71.5	-17	680	No stop
15 38 40	---	03 16 38	52.4	-43.7	4.9		70.9	178	686	15 35 26
15 38 40	J2223+6249	03 16 38	52.3	-45.4	4.9		70.0	-17	686	No stop
15 40 25	=2221+625	03 18 24	52.1	-45.3	4.9		69.7	88	689	15 38 41
15 40 25	G107.29	03 18 24	52.2	-43.6	4.9		70.6	-17	689	No stop
15 43 40	---	03 21 39	51.9	-43.4	5.0		70.0	178	696	15 40 26
15 43 40	J2223+6249	03 21 39	51.7	-45.1	5.0		69.1	-17	696	No stop
15 45 25	=2221+625	03 23 24	51.5	-45.0	5.0		68.8	88	699	15 43 41
15 46 25	G107.29	03 24 25	51.6	-43.3	5.0		69.5	43	699	15 46 25
15 49 40	---	03 27 40	51.3	-43.1	5.1		68.9	195	705	15 46 26
15 49 40	J2223+6249	03 27 40	51.1	-44.7	5.1		68.1	-16	705	No stop
15 51 25	=2221+625	03 29 25	50.9	-44.6	5.1		67.8	89	709	15 49 41
15 51 25	G107.29	03 29 25	51.1	-42.9	5.1		68.6	-17	709	No stop
15 54 40	---	03 32 41	50.8	-42.7	5.2		68.1	178	715	15 51 26
15 54 40	J2223+6249	03 32 41	50.6	-44.4	5.1		67.2	-16	715	No stop
15 56 25	=2221+625	03 34 26	50.4	-44.2	5.2		66.9	89	718	15 54 41

Schedule for TORUN (Code Tr) Page 11

Short-period maser, epoch 1

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 26 Feb 2016 Day 57 ---										
15 56 25	G107.29	03 34 26	50.6	-42.6	5.2		67.8	-16	718	No stop
15 59 40	---	03 37 42	50.3	-42.4	5.3		67.2	179	725	15 56 26
15 59 40	J2223+6249	03 37 42	50.0	-44.0	5.2		66.4	-16	725	No stop
16 01 25	=2221+625	03 39 27	49.9	-43.9	5.3		66.1	89	728	15 59 41
16 02 25	G107.29	03 40 27	50.0	-42.2	5.3		66.7	44	728	16 02 25
16 05 40	---	03 43 43	49.7	-42.0	5.4		66.2	195	734	16 02 26
16 05 40	J2223+6249	03 43 43	49.4	-43.6	5.3		65.4	-16	734	No stop
16 07 25	=2221+625	03 45 28	49.2	-43.5	5.4		65.1	89	737	16 05 41
16 07 25	G107.29	03 45 28	49.5	-41.9	5.4		65.9	-16	737	No stop
16 10 40	---	03 48 44	49.2	-41.7	5.4		65.3	179	744	16 07 26
16 10 40	J2223+6249	03 48 44	48.9	-43.2	5.4		64.5	-16	744	No stop
16 12 25	=2221+625	03 50 29	48.7	-43.1	5.4		64.2	89	747	16 10 41
16 12 25	G107.29	03 50 29	49.0	-41.5	5.5		65.0	-16	747	No stop
16 15 40	---	03 53 44	48.7	-41.3	5.5		64.4	179	753	16 12 26
16 15 40	J2223+6249	03 53 44	48.4	-42.8	5.5		63.7	-16	753	No stop
16 17 25	=2221+625	03 55 30	48.2	-42.7	5.5		63.4	89	757	16 15 41
16 18 25	G107.29	03 56 30	48.4	-41.1	5.6		64.0	44	757	16 18 25
16 21 40	---	03 59 45	48.1	-40.9	5.6		63.4	195	763	16 18 26
16 21 40	J2223+6249	03 59 45	47.8	-42.4	5.6		62.7	-16	763	No stop
16 23 25	=2221+625	04 01 31	47.6	-42.2	5.6		62.4	89	766	16 21 41
16 23 25	G107.29	04 01 31	47.9	-40.7	5.7		63.1	-16	766	No stop
16 26 40	---	04 04 46	47.6	-40.5	5.7		62.6	179	773	16 23 26
16 26 40	J2223+6249	04 04 46	47.3	-42.0	5.7		61.9	-16	773	No stop
16 28 25	=2221+625	04 06 31	47.1	-41.8	5.7		61.6	89	776	16 26 41
16 28 25	G107.29	04 06 31	47.4	-40.4	5.7		62.3	-16	776	No stop
16 31 40	---	04 09 47	47.1	-40.1	5.8		61.7	179	782	16 28 26
16 31 40	J2223+6249	04 09 47	46.8	-41.6	5.8		61.1	-16	782	No stop
16 33 25	=2221+625	04 11 32	46.6	-41.4	5.8		60.8	89	786	16 31 41
16 34 25	G107.29	04 12 32	46.8	-39.9	5.8		61.3	44	786	16 34 25
16 37 40	---	04 15 48	46.5	-39.6	5.9		60.7	195	792	16 34 26

Schedule for TORUN (Code Tr) Page 12

Short-period maser, epoch 1

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 26 Feb 2016 Day 57 ---										
16 37 40	J2223+6249	04 15 48	46.2	-41.1	5.9		60.1	-16	792	No stop
16 39 25	=2221+625	04 17 33	46.0	-40.9	5.9		59.8	89	795	16 37 41
16 39 25	G107.29	04 17 33	46.3	-39.5	5.9		60.4	-16	795	No stop
16 42 40	---	04 20 49	46.0	-39.2	6.0		59.9	179	801	16 39 26
16 42 40	J2223+6249	04 20 49	45.7	-40.7	6.0		59.3	-16	801	No stop
16 44 25	=2221+625	04 22 34	45.5	-40.5	6.0		59.0	89	805	16 42 41
16 44 25	G107.29	04 22 34	45.9	-39.1	6.0		59.6	-16	805	No stop
16 47 40	---	04 25 50	45.6	-38.8	6.1		59.0	179	811	16 44 26
16 47 40	J2223+6249	04 25 50	45.2	-40.3	6.0		58.4	-16	811	No stop
16 49 25	=2221+625	04 27 35	45.0	-40.1	6.1		58.2	89	814	16 47 41
16 50 25	G107.29	04 28 35	45.3	-38.6	6.1		58.6	44	814	16 50 25
16 53 40	---	04 31 51	45.0	-38.4	6.2		58.0	195	821	16 50 26
16 53 40	J2223+6249	04 31 51	44.6	-39.7	6.1		57.5	-15	821	No stop
16 55 25	=2221+625	04 33 36	44.4	-39.6	6.2		57.2	90	824	16 53 41
16 55 25	G107.29	04 33 36	44.8	-38.2	6.2		57.7	-16	824	No stop
16 58 40	---	04 36 51	44.5	-37.9	6.2		57.2	179	830	16 55 26
16 58 40	J2223+6249	04 36 51	44.1	-39.3	6.2		56.6	-15	830	No stop
17 00 25	=2221+625	04 38 37	44.0	-39.2	6.2		56.4	90	834	16 58 41
17 00 25	G107.29	04 38 37	44.4	-37.8	6.3		56.9	-16	834	No stop
17 03 40	---	04 41 52	44.1	-37.5	6.3		56.4	179	840	17 00 26
17 03 40	J2223+6249	04 41 52	43.7	-38.9	6.3		55.8	-15	840	No stop
17 05 25	=2221+625	04 43 38	43.5	-38.7	6.3		55.6	90	843	17 03 41
17 06 25	G107.29	04 44 38	43.8	-37.3	6.4		55.9	45	843	17 06 25
17 09 40	---	04 47 53	43.5	-37.0	6.4		55.4	195	850	17 06 26
17 09 40	J2223+6249	04 47 53	43.1	-38.3	6.4		54.9	-15	850	No stop
17 11 25	=2221+625	04 49 39	42.9	-38.2	6.4		54.6	90	853	17 09 41
17 11 25	G107.29	04 49 39	43.4	-36.9	6.5		55.1	-15	853	No stop
17 14 40	---	04 52 54	43.1	-36.6	6.5		54.5	180	859	17 11 26
17 14 40	J2223+6249	04 52 54	42.6	-37.9	6.5		54.1	-15	859	No stop
17 16 25	=2221+625	04 54 39	42.5	-37.7	6.5		53.8	90	862	17 14 41

Schedule for TORUN (Code Tr) Page 13

Short-period maser, epoch 1

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 26 Feb 2016 Day 57 ---										
17 16 25	G107.29	04 54 39	42.9	-36.4	6.5		54.2	-15	862	No stop
17 19 40	---	04 57 55	42.6	-36.1	6.6		53.7	180	869	17 16 26
17 19 40	J2223+6249	04 57 55	42.2	-37.4	6.6		53.3	-15	869	No stop
17 21 25	=2221+625	04 59 40	42.0	-37.3	6.6		53.0	90	872	17 19 41
17 22 25	G107.29	05 00 40	42.4	-35.9	6.6		53.3	45	872	17 22 25
17 25 40	---	05 03 56	42.1	-35.6	6.7		52.7	195	878	17 22 26
17 25 40	J2223+6249	05 03 56	41.6	-36.9	6.7		52.3	-15	878	No stop
17 27 25	=2221+625	05 05 41	41.5	-36.7	6.7		52.0	90	882	17 25 41
17 27 25	G107.29	05 05 41	41.9	-35.4	6.7		52.4	-15	882	No stop
17 30 40	---	05 08 57	41.7	-35.1	6.8		51.9	180	888	17 27 26
17 30 40	J2223+6249	05 08 57	41.2	-36.4	6.8		51.5	-15	888	No stop
17 32 25	=2221+625	05 10 42	41.0	-36.2	6.8		51.2	90	891	17 30 41
17 32 25	G107.29	05 10 42	41.5	-35.0	6.8		51.6	-15	891	No stop
17 35 40	---	05 13 58	41.2	-34.7	6.9		51.1	180	898	17 32 26
17 35 40	J2223+6249	05 13 58	40.7	-35.9	6.8		50.7	-15	898	No stop
17 37 25	=2221+625	05 15 43	40.6	-35.8	6.9		50.4	90	901	17 35 41
17 38 25	G107.29	05 16 43	41.0	-34.4	6.9		50.6	45	901	17 38 25
17 41 40	---	05 19 59	40.7	-34.1	7.0		50.1	195	907	17 38 26
17 41 40	J2223+6249	05 19 59	40.2	-35.3	6.9		49.7	-15	907	No stop
17 43 25	=2221+625	05 21 44	40.1	-35.2	7.0		49.4	90	911	17 41 41
17 43 25	G107.29	05 21 44	40.6	-34.0	7.0		49.8	-15	911	No stop
17 46 40	---	05 24 59	40.3	-33.7	7.1		49.3	180	917	17 43 26
17 46 40	J2223+6249	05 24 59	39.8	-34.9	7.0		48.9	-15	917	No stop
17 48 25	=2221+625	05 26 45	39.6	-34.7	7.0		48.6	90	920	17 46 41
17 48 25	G107.29	05 26 45	40.1	-33.5	7.1		49.0	-15	920	No stop
17 51 40	---	05 30 00	39.9	-33.2	7.1		48.4	180	926	17 48 26
17 51 40	J2223+6249	05 30 00	39.3	-34.4	7.1		48.1	-15	926	No stop
17 53 25	=2221+625	05 31 45	39.2	-34.2	7.1		47.8	90	930	17 51 41
17 54 25	G107.29	05 32 46	39.7	-32.9	7.2		48.0	45	930	17 54 25
17 57 40	---	05 36 01	39.4	-32.6	7.2		47.5	195	936	17 54 26

```
Schedule for TORUN     (Code Tr )                                  Page  14
               Short-period maser, epoch 1
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Fri  26 Feb 2016   Day  57 ---

17 57 40  J2223+6249   05 36 01  38.8 -33.8  7.2      47.1   -15      936   No stop
17 59 25  =2221+625    05 37 46  38.7 -33.6  7.2      46.9    90      939   17 57 41

17 59 25  G107.29      05 37 46  39.2 -32.4  7.3      47.2   -15      939   No stop
18 02 40  ---          05 41 02  39.0 -32.1  7.3      46.6   180      946   17 59 26

18 02 40  J2223+6249   05 41 02  38.4 -33.3  7.3      46.3   -15      946   No stop
18 04 25  =2221+625    05 42 47  38.3 -33.1  7.3      46.1    90      949   18 02 41

18 04 25  G107.29      05 42 47  38.8 -32.0  7.3      46.3   -15      949   No stop
18 07 40  ---          05 46 03  38.6 -31.6  7.4      45.8   180      955   18 04 26

18 07 40  J2223+6249   05 46 03  38.0 -32.8  7.4      45.5   -14      955   No stop
18 09 25  =2221+625    05 47 48  37.9 -32.6  7.4      45.3    91      959   18 07 41

18 10 25  G107.29      05 48 48  38.4 -31.4  7.4      45.4    45      959   18 10 25
18 13 40  ---          05 52 04  38.1 -31.0  7.5      44.8   195      965   18 10 26

18 13 40  J2223+6249   05 52 04  37.5 -32.2  7.5      44.6   -14      965   No stop
18 15 25  =2221+625    05 53 49  37.4 -32.0  7.5      44.3    91      968   18 13 41

18 15 25  G107.29      05 53 49  38.0 -30.9  7.5      44.5   -14      968   No stop
18 18 40  ---          05 57 05  37.7 -30.5  7.6      44.0   181      975   18 15 26

18 18 40  J2223+6249   05 57 05  37.1 -31.6  7.6      43.8   -14      975   No stop
18 20 25  =2221+625    05 58 50  37.0 -31.5  7.6      43.5    91      978   18 18 41

18 20 25  G107.29      05 58 50  37.6 -30.4  7.6      43.7   -14      978   No stop
18 23 40  ---          06 02 05  37.4 -30.0  7.7      43.2   181      984   18 20 26

18 23 40  J2223+6249   06 02 05  36.7 -31.1  7.6      43.0   -14      984   No stop
18 25 25  =2221+625    06 03 51  36.6 -30.9  7.7      42.7    91      987   18 23 41

18 26 25  G107.29      06 04 51  37.1 -29.8  7.7      42.7    46      987   18 26 25
18 29 40  ---          06 08 06  36.9 -29.4  7.8      42.2   195      994   18 26 26

18 29 40  J2223+6249   06 08 06  36.3 -30.5  7.7      42.0   -14      994   No stop
18 31 25  =2221+625    06 09 52  36.1 -30.3  7.8      41.7    91      997   18 29 41


SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: sess116.M256

   Setup group:    6         Station: TORUN            Total bit rate:   256
   Format: MARK5B            Bits per sample: 2        Sample rate:  8.000
   Number of channels: 16    DBE type: DBBC_DDC        Speedup factor:   1.00
```

```
  Disk used to record data.

  1st LO=   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00
            5900.00   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00
  Net SB=         L         L         U         U         L         L         U         U
                  L         L         U         U         L         L         U         U
  IF SB =         U         U         U         U         U         U         U         U
                  U         U         U         U         U         U         U         U
  Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
                RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
  BBC   =         1         5         1         5         2         6         2         6
                  3         7         3         7         4         8         4         8
  BBC SB=         L         L         U         U         L         L         U         U
                  L         L         U         U         L         L         U         U
  IF    =        A1        B1        A1        B1        A1        B1        A1        B1
                 A1        B1        A1        B1        A1        B1        A1        B1

 The following frequency sets based on these setups were used.

 Frequency Set:   5  Based on FREQ, BW, and/or DOPPLER in schedule.  Used with PCAL = off
  LO sum=   6662.79  6662.79  6662.79  6662.79  6670.79  6670.79  6670.79  6670.79
            6678.79  6678.79  6678.79  6678.79  6686.79  6686.79  6686.79  6686.79
  BBC fr=    762.79   762.79   762.79   762.79   770.79   770.79   770.79   770.79
             778.79   778.79   778.79   778.79   786.79   786.79   786.79   786.79
  Bandwd=      4.00     4.00     4.00     4.00     4.00     4.00     4.00     4.00
               4.00     4.00     4.00     4.00     4.00     4.00     4.00     4.00
   Matching frequency sets:   5

  Track assignments are:
   track1=  18, 26,  2, 10, 20, 28,  4, 12, 22, 30,  6, 14, 24, 32,  8, 16
   barrel=roll_off


POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* G107.29           22 19 49.845621   * 22 21 26.769000     22 21 56.228433       0.00
                    63 36 28.33825    * 63 51 37.52200      63 56 32.06200        0.00
                    Doppler based on LSR frame and radio definition.  Velocities:
                       -10.00   -10.00   -10.00   -10.00   -10.00   -10.00   -10.00   -10.00
                       -10.00   -10.00   -10.00   -10.00   -10.00   -10.00

* 3C345             16 41 17.606228   * 16 42 58.809966     16 43 31.102041       0.76
  J1642+3948        39 54 10.81496    * 39 48 36.99402      39 46 40.99794        0.52
  1641+399          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
  J1642+39          GSFC 2015a astro solution, unpublished  53430 observations.
                    Doppler based on other sources.

  2221+625          22 21 37.739320   * 22 23 18.096566     22 23 48.733854       1.64
* J2223+6249        62 34 21.29402    * 62 49 33.80564      62 54 29.38031        1.26
                    /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
                    GSFC 2015a astro solution, unpublished     36 observations.
                    Doppler based on other sources.

* 3C454.3           22 51 29.519738   * 22 53 57.747938     22 54 44.411632       0.67
  J2253+1608        15 52 54.34810    * 16 08 53.56093      16 13 59.68862        0.70
  2251+158          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
  J2253+16          GSFC 2015a astro solution, unpublished  40748 observations.
                    Doppler based on other sources.
```

rk12qdtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/K-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Fri  26 Feb 2016   Day  57 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

21 00 00  0730+504     08 38 51  79.8 260.7  1.1      68.2     0        0   21 00 00
21 14 30  ---          08 53 24  77.6 265.0  1.3      69.6   870       28   21 00 01

21 15 00  0730+504     08 53 54  77.5 265.1  1.3      69.6    24       28   21 15 00
21 29 30  ---          09 08 26  75.4 268.5  1.6      70.1   870       56   21 15 01

21 30 00  0730+504     09 08 56  75.3 268.6  1.6      70.1    24       56   21 30 00
21 44 30  ---          09 23 29  73.1 271.5  1.8      70.1   870       84   21 30 01

21 45 00  0730+504     09 23 59  73.0 271.6  1.8      70.1    24       84   21 45 00
22 00 00  ---          09 39 01  70.8 274.3  2.1      69.7   900      112   21 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    2         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4100.00   4100.00   4100.00   4100.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   1  Setup file default.  Used with PCAL = 1MHz
  LO sum=   4836.00  4836.00  4836.00  4836.00
  BBC fr=    736.00   736.00   736.00   736.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   1

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

```
  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 55.695194       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 28.01151        0.00
                    fake circumpolar target for a TS to look at

* 0730+504          07 30 04.386239   * 07 33 52.520582     07 35 07.158311       0.00
  J0733+5022        50 28 40.45211    * 50 22 09.06206      50 19 56.49537        0.00
                    ./rk12qd_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 574 observations, RA-AO3-04
```

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  0730+504           123.9

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

em117atr

A 3-D View of high-mass star formation: gas Kinematics and Magnetic

PI: *L. Moscadelli*

Address: Osservatorio Astrofisico di ArcetriPhone: +39 055 2752220 EMAIL: mosca@arcetri.astro.it

```
Observing mode: Polarization observations of 1 source at 6.7 GHz (128 Mb/s
Schedule for TORUN     (Code Tr )                                  Page   2
               A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source                Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------
 --- Sat  27 Feb 2016   Day  58 ---
 Next scan frequencies:  6665.14  6665.14  6665.14  6665.14  6669.13  6669.13  6669.13  6669.13
                         6673.13  6673.13  6673.13  6673.13  6677.13  6677.13  6677.13  6677.13
 Next BBC frequencies:    765.14   765.14   765.14   765.14   769.13   769.13   769.13   769.13
                          773.13   773.13   773.13   773.13   777.13   777.13   777.13   777.13
 Next scan bandwidths:      2.00     2.00     2.00     2.00     2.00     2.00     2.00     2.00
                            2.00     2.00     2.00     2.00     2.00     2.00     2.00     2.00

02 30 00  J1331+3030   14 09 46  66.3 200.7  0.6      14.2     0        0   02 30 00
02 40 00  =3C286       14 19 47  65.7 205.8  0.8      17.6   600       10   02 30 01

02 40 30  J1331+3030   14 20 17  65.7 206.0  0.8      17.8    23       10   02 40 30
02 50 30  =3C286       14 30 19  65.0 210.9  1.0      21.0   600       19   02 40 31

02 54 50  3C345        14 34 40  64.4 108.3 -2.1     -47.9    39       19   02 54 50
03 04 50  ---          14 44 41  65.8 111.4 -2.0     -46.7   600       29   02 54 51

03 05 20  3C345        14 45 11  65.9 111.6 -2.0     -46.6    24       29   03 05 20
03 15 20  ---          14 55 13  67.3 115.0 -1.8     -45.1   600       38   03 05 21

03 20 20  J1331+3030   15 00 14  62.2 224.1  1.5      29.0    68       38   03 20 20
03 30 20  =3C286       15 10 15  61.1 228.0  1.6      31.2   600       48   03 20 21

03 34 50  J1832-2039   15 14 46   4.7 134.4 -3.3     -27.3    44       48   03 34 50
03 39 50  =1829-207    15 19 47   5.3 135.4 -3.2     -26.8   300       53   03 34 51

03 39 50 G012.68-0.18  15 19 47   9.5 138.2 -2.9     -24.9   -30       53   No stop
03 41 50  ---          15 21 47   9.7 138.6 -2.9     -24.7    90       55   03 39 51

03 42 30  J1832-2039   15 22 27   5.5 136.0 -3.2     -26.5    10       55   03 42 30
03 45 30  =1829-207    15 25 28   5.8 136.6 -3.1     -26.2   180       58   03 42 31

03 45 30 G012.68-0.18  15 25 28  10.1 139.4 -2.8     -24.3   -30       58   No stop
03 47 30  ---          15 27 28  10.3 139.9 -2.8     -24.0    90       60   03 45 31

03 47 30  J1832-2039   15 27 28   6.1 137.0 -3.1     -25.9   -29       60   No stop
03 50 30  =1829-207    15 30 29   6.4 137.7 -3.0     -25.6   151       62   03 47 31

03 50 30 G012.68-0.18  15 30 29  10.5 140.5 -2.7     -23.7   -30       62   No stop
03 52 30  ---          15 32 29  10.7 141.0 -2.7     -23.4    90       64   03 50 31

03 53 10  J1832-2039   15 33 09   6.6 138.2 -3.0     -25.3    11       64   03 53 10
03 56 10  =1829-207    15 36 10   6.9 138.9 -2.9     -25.0   180       67   03 53 11
```

Schedule for TORUN (Code Tr) Page 3

A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Sat 27 Feb 2016 Day 58 ---										
03 56 10	G012.68-0.18	15 36 10	11.1	141.8	-2.6		-23.0	-30	67	No stop
03 58 10	---	15 38 10	11.3	142.2	-2.6		-22.8	90	69	03 56 11
03 58 10	J1832-2039	15 38 10	7.1	139.3	-2.9		-24.7	-29	69	No stop
04 01 10	=1829-207	15 41 10	7.4	140.0	-2.9		-24.4	151	72	03 58 11
04 01 10	G012.68-0.18	15 41 10	11.5	142.9	-2.6		-22.4	-29	72	No stop
04 03 10	---	15 43 11	11.7	143.4	-2.5		-22.1	91	74	04 01 11
04 03 10	J1832-2039	15 43 11	7.6	140.4	-2.8		-24.2	-29	74	No stop
04 06 10	=1829-207	15 46 11	7.9	141.0	-2.8		-23.8	151	77	04 03 11
04 06 10	G012.68-0.18	15 46 11	12.0	144.0	-2.5		-21.8	-29	77	No stop
04 08 10	---	15 48 12	12.2	144.5	-2.4		-21.5	91	79	04 06 11
04 08 50	J1832-2039	15 48 52	8.1	141.6	-2.7		-23.5	11	79	04 08 50
04 11 50	=1829-207	15 51 52	8.4	142.3	-2.7		-23.1	180	82	04 08 51
04 11 50	G012.68-0.18	15 51 52	12.5	145.3	-2.4		-21.1	-29	82	No stop
04 13 50	---	15 53 53	12.6	145.8	-2.3		-20.8	91	84	04 11 51
04 13 50	J1832-2039	15 53 53	8.6	142.7	-2.7		-22.9	-29	84	No stop
04 16 50	=1829-207	15 56 53	8.9	143.4	-2.6		-22.5	151	87	04 13 51
04 21 20	J1331+3030	16 01 24	54.7	245.0	2.5		39.1	52	87	04 21 20
04 31 20	=3C286	16 11 25	53.3	247.9	2.7		40.2	600	96	04 21 21
04 39 00	J2202+4216	16 19 07	34.7	423.7	-5.7		-46.8	94	96	04 39 00
04 49 00	=VR422201	16 29 08	36.1	425.3	-5.6		-47.6	600	106	04 39 01
04 58 20	J1832-2039	16 38 30	12.2	152.7	-1.9		-17.1	0	106	04 58 20
05 01 20	=1829-207	16 41 30	12.4	153.4	-1.9		-16.7	180	109	04 58 21
05 01 20	G012.68-0.18	16 41 30	16.1	156.9	-1.6		-14.3	-28	109	No stop
05 03 20	---	16 43 31	16.2	157.4	-1.5		-14.0	92	111	05 01 21
05 03 20	J1832-2039	16 43 31	12.5	153.8	-1.8		-16.4	-28	111	No stop
05 06 20	=1829-207	16 46 31	12.7	154.5	-1.8		-16.0	152	113	05 03 21
05 06 20	G012.68-0.18	16 46 31	16.4	158.1	-1.5		-13.6	-28	113	No stop
05 08 20	---	16 48 32	16.5	158.6	-1.4		-13.3	92	115	05 06 21
05 08 20	J1832-2039	16 48 32	12.9	155.0	-1.7		-15.8	-27	115	No stop
05 11 20	=1829-207	16 51 32	13.0	155.7	-1.7		-15.3	153	118	05 08 21
05 11 20	G012.68-0.18	16 51 32	16.6	159.3	-1.4		-12.9	-27	118	No stop
05 13 20	---	16 53 32	16.7	159.8	-1.4		-12.6	93	120	05 11 21

Schedule for TORUN (Code Tr) Page 4

A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sat 27 Feb 2016 Day 58 ---										
05 14 00	J1832-2039	16 54 12	13.2	156.3	-1.6		-15.0	13	120	05 14 00
05 17 00	=1829-207	16 57 13	13.4	157.0	-1.6		-14.5	180	123	05 14 01
05 17 00	G012.68-0.18	16 57 13	16.9	160.7	-1.3		-12.0	-27	123	No stop
05 19 00	---	16 59 13	17.0	161.2	-1.3		-11.7	93	125	05 17 01
05 19 00	J1832-2039	16 59 13	13.5	157.5	-1.6		-14.2	-27	125	No stop
05 22 00	=1829-207	17 02 14	13.7	158.2	-1.5		-13.8	153	128	05 19 01
05 27 30	J1331+3030	17 07 45	45.2	261.7	3.6		43.6	109	128	05 27 30
05 35 30	=3C286	17 15 46	44.0	263.5	3.7		43.8	480	136	05 27 31
05 41 00	J1832-2039	17 21 17	14.6	162.6	-1.2		-11.0	112	136	05 41 00
05 44 00	=1829-207	17 24 17	14.8	163.4	-1.1		-10.6	180	138	05 41 01
05 44 00	G012.68-0.18	17 24 17	18.0	167.4	-0.8		-7.9	-26	138	No stop
05 46 00	---	17 26 18	18.1	167.9	-0.8		-7.6	94	140	05 44 01
05 46 00	J1832-2039	17 26 18	14.8	163.8	-1.1		-10.3	-26	140	No stop
05 49 00	=1829-207	17 29 18	15.0	164.6	-1.1		-9.8	154	143	05 46 01
05 49 00	G012.68-0.18	17 29 18	18.2	168.6	-0.8		-7.2	-26	143	No stop
05 51 00	---	17 31 19	18.3	169.1	-0.7		-6.9	94	145	05 49 01
05 51 00	J1832-2039	17 31 19	15.0	165.0	-1.0		-9.5	-26	145	No stop
05 54 00	=1829-207	17 34 19	15.2	165.8	-1.0		-9.1	154	148	05 51 01
05 54 00	G012.68-0.18	17 34 19	18.3	169.8	-0.7		-6.4	-26	148	No stop
05 56 00	---	17 36 19	18.4	170.3	-0.6		-6.1	94	150	05 54 01
05 56 40	J1832-2039	17 36 59	15.3	166.4	-0.9		-8.7	14	150	05 56 40
05 59 40	=1829-207	17 40 00	15.4	167.1	-0.9		-8.2	180	153	05 56 41
05 59 40	G012.68-0.18	17 40 00	18.5	171.3	-0.6		-5.5	-26	153	No stop
06 01 40	---	17 42 00	18.5	171.8	-0.5		-5.2	94	155	05 59 41
06 01 40	J1832-2039	17 42 00	15.4	167.6	-0.9		-7.9	-25	155	No stop
06 04 40	=1829-207	17 45 01	15.5	168.3	-0.8		-7.5	155	158	06 01 41
06 04 40	G012.68-0.18	17 45 01	18.6	172.5	-0.5		-4.7	-25	158	No stop
06 06 40	---	17 47 01	18.6	173.0	-0.5		-4.4	95	160	06 04 41
06 06 40	J1832-2039	17 47 01	15.6	168.8	-0.8		-7.2	-25	160	No stop
06 09 40	=1829-207	17 50 02	15.7	169.5	-0.7		-6.7	155	162	06 06 41

Schedule for TORUN (Code Tr) Page 5

A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sat 27 Feb 2016 Day 58 ---										
06 09 40	G012.68-0.18	17 50 02	18.7	173.8	-0.4		-3.9	-25	162	No stop
06 11 40	---	17 52 02	18.7	174.3	-0.4		-3.6	95	164	06 09 41
06 12 20	J1832-2039	17 52 42	15.7	170.2	-0.7		-6.3	15	164	06 12 20
06 15 20	=1829-207	17 55 43	15.8	170.9	-0.6		-5.8	180	167	06 12 21
06 15 20	G012.68-0.18	17 55 43	18.8	175.2	-0.3		-3.0	-25	167	No stop
06 17 20	---	17 57 43	18.8	175.7	-0.3		-2.7	95	169	06 15 21
06 17 20	J1832-2039	17 57 43	15.9	171.4	-0.6		-5.5	-25	169	No stop
06 20 20	=1829-207	18 00 43	15.9	172.1	-0.5		-5.0	155	172	06 17 21
06 20 20	G012.68-0.18	18 00 43	18.8	176.5	-0.2		-2.2	-25	172	No stop
06 22 20	---	18 02 44	18.8	177.0	-0.2		-1.9	95	174	06 20 21
06 22 20	J1832-2039	18 02 44	16.0	172.6	-0.5		-4.7	-25	174	No stop
06 25 20	=1829-207	18 05 44	16.0	173.3	-0.5		-4.3	155	177	06 22 21
06 25 20	G012.68-0.18	18 05 44	18.9	177.7	-0.2		-1.4	-25	177	No stop
06 27 20	---	18 07 45	18.9	178.2	-0.1		-1.1	95	179	06 25 21
06 28 00	J1832-2039	18 08 25	16.1	174.0	-0.4		-3.9	16	179	06 28 00
06 31 00	=1829-207	18 11 25	16.1	174.7	-0.4		-3.4	180	182	06 28 01
06 36 40	J1331+3030	18 17 06	34.8	275.8	4.8		43.9	124	182	06 36 40
06 44 40	=3C286	18 25 07	33.6	277.3	4.9		43.7	480	189	06 36 41
06 49 50	J1832-2039	18 30 18	16.3	179.3	-0.0		-0.4	98	189	06 49 50
06 52 50	=1829-207	18 33 19	16.3	180.0	0.0		0.0	180	192	06 49 51
06 52 50	G012.68-0.18	18 33 19	18.8	184.6	0.3		2.9	-24	192	No stop
06 54 50	---	18 35 19	18.7	185.1	0.3		3.2	96	194	06 52 51
06 54 50	J1832-2039	18 35 19	16.3	180.5	0.0		0.3	-24	194	No stop
06 57 50	=1829-207	18 38 20	16.2	181.3	0.1		0.8	156	197	06 54 51
06 57 50	G012.68-0.18	18 38 20	18.7	185.9	0.4		3.7	-24	197	No stop
06 59 50	---	18 40 20	18.7	186.4	0.4		4.0	96	199	06 57 51
06 59 50	J1832-2039	18 40 20	16.2	181.8	0.1		1.1	-24	199	No stop
07 02 50	=1829-207	18 43 20	16.2	182.5	0.2		1.6	156	202	06 59 51
07 02 50	G012.68-0.18	18 43 20	18.6	187.1	0.5		4.5	-24	202	No stop
07 04 50	---	18 45 21	18.6	187.6	0.5		4.8	96	204	07 02 51

Schedule for TORUN (Code Tr) Page 6

A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sat 27 Feb 2016 Day 58 ---										
07 05 30	J1832-2039	18 46 01	16.2	183.1	0.2		2.0	16	204	07 05 30
07 08 30	=1829-207	18 49 01	16.2	183.9	0.3		2.5	180	207	07 05 31
07 08 30	G012.68-0.18	18 49 01	18.5	188.6	0.6		5.4	-25	207	No stop
07 10 30	---	18 51 02	18.5	189.1	0.6		5.7	95	209	07 08 31
07 10 30	J1832-2039	18 51 02	16.2	184.4	0.3		2.8	-24	209	No stop
07 13 30	=1829-207	18 54 02	16.1	185.1	0.3		3.3	156	212	07 10 31
07 13 30	G012.68-0.18	18 54 02	18.4	189.8	0.7		6.2	-25	212	No stop
07 15 30	---	18 56 02	18.3	190.3	0.7		6.5	95	213	07 13 31
07 15 30	J1832-2039	18 56 02	16.1	185.6	0.4		3.6	-24	213	No stop
07 18 30	=1829-207	18 59 03	16.0	186.3	0.4		4.0	156	216	07 15 31
07 18 30	G012.68-0.18	18 59 03	18.2	191.1	0.7		7.0	-25	216	No stop
07 20 30	---	19 01 03	18.2	191.6	0.8		7.3	95	218	07 18 31
07 21 10	J1832-2039	19 01 43	16.0	187.0	0.5		4.5	16	218	07 21 10
07 24 10	=1829-207	19 04 44	15.9	187.7	0.5		4.9	180	221	07 21 11
07 24 10	G012.68-0.18	19 04 44	18.1	192.5	0.8		7.8	-25	221	No stop
07 26 10	---	19 06 44	18.0	193.0	0.9		8.1	95	223	07 24 11
07 26 10	J1832-2039	19 06 44	15.9	188.2	0.6		5.2	-24	223	No stop
07 29 10	=1829-207	19 09 45	15.8	188.9	0.6		5.7	156	226	07 26 11
07 29 10	G012.68-0.18	19 09 45	17.9	193.7	0.9		8.6	-25	226	No stop
07 31 10	---	19 11 45	17.8	194.2	0.9		8.9	95	228	07 29 11
07 31 10	J1832-2039	19 11 45	15.8	189.4	0.6		6.0	-24	228	No stop
07 34 10	=1829-207	19 14 45	15.7	190.1	0.7		6.5	156	231	07 31 11
07 39 40	J1331+3030	19 20 16	25.5	287.4	5.8		41.7	121	231	07 39 40
07 47 40	=3C286	19 28 18	24.4	288.8	5.9		41.2	480	238	07 39 41
07 52 50	J1832-2039	19 33 29	15.1	194.6	1.0		9.3	106	238	07 52 50
07 55 50	=1829-207	19 36 29	15.0	195.3	1.1		9.8	180	241	07 52 51
07 55 50	G012.68-0.18	19 36 29	16.7	200.3	1.4		12.6	-25	241	No stop
07 57 50	---	19 38 29	16.6	200.7	1.4		12.9	95	243	07 55 51
07 57 50	J1832-2039	19 38 29	14.9	195.8	1.1		10.1	-25	243	No stop
08 00 50	=1829-207	19 41 30	14.8	196.5	1.1		10.5	155	246	07 57 51

Schedule for TORUN (Code Tr) Page 7

A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sat 27 Feb 2016 Day 58 ---										
08 00 50	G012.68-0.18	19 41 30	16.5	201.5	1.4		13.4	-25	246	No stop
08 02 50	---	19 43 30	16.3	202.0	1.5		13.7	95	248	08 00 51
08 02 50	J1832-2039	19 43 30	14.7	197.0	1.2		10.8	-25	248	No stop
08 05 50	=1829-207	19 46 31	14.6	197.7	1.2		11.3	155	251	08 02 51
08 05 50	G012.68-0.18	19 46 31	16.2	202.7	1.5		14.1	-25	251	No stop
08 07 50	---	19 48 31	16.1	203.2	1.6		14.4	95	253	08 05 51
08 08 30	J1832-2039	19 49 11	14.4	198.3	1.3		11.7	15	253	08 08 30
08 11 30	=1829-207	19 52 12	14.3	199.1	1.3		12.1	180	256	08 08 31
08 11 30	G012.68-0.18	19 52 12	15.8	204.0	1.6		14.9	-25	256	No stop
08 13 30	---	19 54 12	15.7	204.5	1.7		15.2	95	258	08 11 31
08 13 30	J1832-2039	19 54 12	14.2	199.5	1.4		12.4	-25	258	No stop
08 16 30	=1829-207	19 57 12	14.0	200.2	1.4		12.8	155	261	08 13 31
08 16 30	G012.68-0.18	19 57 12	15.5	205.2	1.7		15.6	-25	261	No stop
08 18 30	---	19 59 13	15.4	205.7	1.7		15.9	95	262	08 16 31
08 18 30	J1832-2039	19 59 13	13.9	200.7	1.4		13.1	-25	262	No stop
08 21 30	=1829-207	20 02 13	13.8	201.4	1.5		13.6	155	265	08 18 31
08 21 30	G012.68-0.18	20 02 13	15.2	206.4	1.8		16.3	-25	265	No stop
08 23 30	---	20 04 14	15.1	206.9	1.8		16.6	95	267	08 21 31
08 24 10	J1832-2039	20 04 54	13.6	202.0	1.5		13.9	15	267	08 24 10
08 27 10	=1829-207	20 07 54	13.4	202.7	1.6		14.4	180	270	08 24 11
08 27 10	G012.68-0.18	20 07 54	14.8	207.8	1.9		17.1	-25	270	No stop
08 29 10	---	20 09 55	14.7	208.2	1.9		17.4	95	272	08 27 11
08 29 10	J1832-2039	20 09 55	13.3	203.2	1.6		14.6	-25	272	No stop
08 32 10	=1829-207	20 12 55	13.2	203.9	1.7		15.1	155	275	08 29 11
08 32 10	G012.68-0.18	20 12 55	14.4	208.9	2.0		17.8	-25	275	No stop
08 34 10	---	20 14 55	14.3	209.4	2.0		18.1	95	277	08 32 11
08 34 50	J1832-2039	20 15 35	13.0	204.5	1.7		15.5	15	277	08 34 50
08 37 50	=1829-207	20 18 36	12.8	205.2	1.8		15.9	180	280	08 34 51
08 43 10	J1331+3030	20 23 57	16.8	298.7	6.9		37.7	119	280	08 43 10
08 51 10	=3C286	20 31 58	15.7	300.1	7.0		37.0	480	287	08 43 11

Schedule for TORUN (Code Tr) Page 8

A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Sat 27 Feb 2016 Day 58 ---										
08 56 20	J1832-2039	20 37 09	11.5	209.5	2.1		18.4	113	287	08 56 20
08 59 20	=1829-207	20 40 09	11.3	210.1	2.1		18.8	180	290	08 56 21
08 59 20	G012.68-0.18	20 40 09	12.3	215.2	2.4		21.3	-25	290	No stop
09 01 20	---	20 42 10	12.1	215.7	2.5		21.6	95	292	08 59 21
09 01 20	J1832-2039	20 42 10	11.1	210.6	2.2		19.1	-25	292	No stop
09 04 20	=1829-207	20 45 10	10.9	211.3	2.2		19.5	155	295	09 01 21
09 04 20	G012.68-0.18	20 45 10	11.8	216.3	2.5		22.0	-25	295	No stop
09 06 20	---	20 47 11	11.7	216.8	2.5		22.2	95	297	09 04 21
09 06 20	J1832-2039	20 47 11	10.8	211.7	2.2		19.7	-25	297	No stop
09 09 20	=1829-207	20 50 11	10.5	212.4	2.3		20.1	155	300	09 06 21
09 09 20	G012.68-0.18	20 50 11	11.4	217.5	2.6		22.6	-25	300	No stop
09 11 20	---	20 52 11	11.2	217.9	2.6		22.8	95	302	09 09 21
09 12 01	J1832-2039	20 52 53	10.3	213.0	2.3		20.5	16	302	09 12 01
09 15 01	=1829-207	20 55 53	10.0	213.7	2.4		20.8	180	305	09 12 02
09 15 01	G012.68-0.18	20 55 53	10.9	218.7	2.7		23.3	-25	305	No stop
09 17 01	---	20 57 53	10.7	219.2	2.7		23.5	95	307	09 15 02
09 17 01	J1832-2039	20 57 53	9.9	214.1	2.4		21.1	-25	307	No stop
09 20 01	=1829-207	21 00 54	9.6	214.8	2.5		21.5	155	310	09 17 02
09 20 01	G012.68-0.18	21 00 54	10.4	219.8	2.8		23.9	-25	310	No stop
09 22 01	---	21 02 54	10.2	220.3	2.8		24.1	95	312	09 20 02
09 22 01	J1832-2039	21 02 54	9.4	215.2	2.5		21.7	-25	312	No stop
09 25 01	=1829-207	21 05 55	9.2	215.9	2.5		22.1	155	314	09 22 02
09 25 01	G012.68-0.18	21 05 55	9.9	221.0	2.9		24.4	-25	314	No stop
09 27 01	---	21 07 55	9.7	221.4	2.9		24.7	95	316	09 25 02
09 27 42	J1832-2039	21 08 36	8.9	216.5	2.6		22.4	16	316	09 27 42
09 30 42	=1829-207	21 11 37	8.7	217.1	2.6		22.8	180	319	09 27 43
09 30 42	G012.68-0.18	21 11 37	9.3	222.2	2.9		25.1	-25	319	No stop
09 32 42	---	21 13 37	9.1	222.6	3.0		25.3	95	321	09 30 43
09 32 42	J1832-2039	21 13 37	8.5	217.6	2.7		23.0	-25	321	No stop
09 35 42	=1829-207	21 16 37	8.2	218.2	2.7		23.4	155	324	09 32 43

Schedule for TORUN (Code Tr) Page 9

A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sat 27 Feb 2016 Day 58 ---										
09 35 42	G012.68-0.18	21 16 37	8.8	223.3	3.0		25.7	-25	324	No stop
09 37 42	---	21 18 38	8.6	223.7	3.1		25.9	95	326	09 35 43
09 38 23	J1832-2039	21 19 19	8.0	218.8	2.8		23.7	16	326	09 38 23
09 41 23	=1829-207	21 22 19	7.7	219.5	2.8		24.1	180	329	09 38 24
09 46 33	J1331+3030	21 27 30	8.9	310.2	7.9		32.1	114	329	09 46 33
09 53 33	=3C286	21 34 31	8.1	311.5	8.0		31.5	420	336	09 46 34
09 58 33	J1832-2039	21 39 32	6.0	223.1	3.1		26.0	108	336	09 58 33
10 01 33	=1829-207	21 42 33	5.7	223.8	3.2		26.3	180	338	09 58 34
10 01 33	G012.68-0.18	21 42 33	6.0	228.8	3.5		28.4	-25	338	No stop
10 03 33	---	21 44 33	5.8	229.2	3.5		28.6	95	340	10 01 34
10 03 33	J1832-2039	21 44 33	5.5	224.2	3.2		26.6	-25	340	No stop
10 06 33	=1829-207	21 47 34	5.1	224.8	3.2		26.9	155	343	10 03 34
10 06 33	G012.68-0.18	21 47 34	5.4	229.9	3.5		28.9	-25	343	No stop
10 08 33	---	21 49 34	5.2	230.3	3.6		29.1	95	345	10 06 34
10 08 33	J1832-2039	21 49 34	4.9	225.2	3.3		27.1	-25	345	No stop
10 11 33	=1829-207	21 52 34	4.6	225.9	3.3		27.4	155	348	10 08 34
10 11 33	G012.68-0.18	21 52 34	4.9	230.9	3.6		29.4	-25	348	No stop
10 13 33	---	21 54 35	4.6	231.3	3.7		29.5	95	350	10 11 34
10 14 13	J1832-2039	21 55 15	4.3	226.4	3.4		27.7	15	350	10 14 13
10 17 13	=1829-207	21 58 15	4.0	227.0	3.4		28.0	180	353	10 14 14
10 17 13	G012.68-0.18	21 58 15	4.2	232.1	3.7		29.9	-25	353	No stop
10 19 13	---	22 00 16	4.0	232.5	3.8		30.1	95	355	10 17 14
10 19 13	J1832-2039	22 00 16	3.8	227.5	3.5		28.2	-25	355	No stop
10 22 13	=1829-207	22 03 16	3.4	228.1	3.5		28.5	155	358	10 19 14
10 22 13	G012.68-0.18	22 03 16	3.6	233.1	3.8		30.3	-25	358	No stop
10 24 13	---	22 05 16	3.4	233.5	3.8		30.5	95	360	10 22 14
10 24 13	J1832-2039	22 05 16	3.2	228.5	3.5		28.7	-25	360	No stop
10 27 13	=1829-207	22 08 17	2.9	229.1	3.6	D	29.0	0	362	10 24 14
10 51 43	3C84	22 32 51	42.0	73.3	-4.8		-50.2	1137	362	10 51 43
10 59 43	---	22 40 52	43.2	74.6	-4.7		-50.7	480	370	10 51 44

SETUP FILE INFORMATION:

```
  NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


======== Setup file: sess116.M128

  Setup group:    7         Station: TORUN            Total bit rate:   128
  Format: MARK5B            Bits per sample: 2        Sample rate:  4.000
  Number of channels: 16    DBE type: DBBC_DDC        Speedup factor:   1.00

  Disk used to record data.

  1st LO=   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00
            5900.00   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00
  Net SB=         L         L         U         U         L         L         U         U
                  L         L         U         U         L         L         U         U
  IF SB =         U         U         U         U         U         U         U         U
                  U         U         U         U         U         U         U         U
  Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
                RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
  BBC   =         1         5         1         5         2         6         2         6
                  3         7         3         7         4         8         4         8
  BBC SB=         L         L         U         U         L         L         U         U
                  L         L         U         U         L         L         U         U
  IF    =        A1        B1        A1        B1        A1        B1        A1        B1
                 A1        B1        A1        B1        A1        B1        A1        B1

 The following frequency sets based on these setups were used.

 Frequency Set:   7  Based on FREQ, BW, and/or DOPPLER in schedule.  Used with PCAL = off
  LO sum=   6665.14  6665.14  6665.14  6665.14  6669.13  6669.13  6669.13  6669.13
            6673.13  6673.13  6673.13  6673.13  6677.13  6677.13  6677.13  6677.13
  BBC fr=    765.14   765.14   765.14   765.14   769.13   769.13   769.13   769.13
             773.13   773.13   773.13   773.13   777.13   777.13   777.13   777.13
  Bandwd=      2.00     2.00     2.00     2.00     2.00     2.00     2.00     2.00
               2.00     2.00     2.00     2.00     2.00     2.00     2.00     2.00
   Matching frequency sets:   7

  Track assignments are:
   track1=  18, 26,  2, 10, 20, 28,  4, 12, 22, 30,  6, 14, 24, 32,  8, 16
   barrel=roll_off




POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* G012.68-0.18      18 10 59.237691   * 18 13 54.750000     18 14 50.683477       0.00
                   -18 02 40.99379    *-18 01 46.57000     -18 01 19.53498        0.00
                     Doppler based on LSR frame and radio definition.  Velocities:
                         57.50    57.50    57.50    57.50    57.50    57.50    57.50    57.50
                         57.50    57.50    57.50    57.50    57.50    57.50

* 3C84              03 16 29.567263   * 03 19 48.160094     03 20 52.276392       1.30
  J0319+4130        41 19 51.91701    * 41 30 42.10413      41 34 09.42345        2.69
  0316+413          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
  J0319+41          GSFC 2015a astro solution, unpublished  10208 observations.
                    Doppler based on other sources.

  3C286             13 28 49.657758   * 13 31 08.288051     13 31 53.636002       0.18
* J1331+3030        30 45 58.64059    * 30 30 32.95924      30 25 24.85410        0.17
  1328+307          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
```

```
  J1331+30          GSFC 2015a astro solution, unpublished    225 observations.
                    Doppler based on other sources.

* 3C345             16 41 17.606228   * 16 42 58.809966     16 43 31.125669       0.76
  J1642+3948        39 54 10.81496    * 39 48 36.99402      39 46 40.96182        0.52
  1641+399          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
  J1642+39          GSFC 2015a astro solution, unpublished  53430 observations.
                    Doppler based on other sources.

  1829-207          18 29 12.261812   * 18 32 11.046476     18 33 07.898771       0.28
* J1832-2039       -20 42 02.03615    *-20 39 48.20378     -20 38 55.03370        0.41
                    /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
                    GSFC 2015a astro solution, unpublished    110 observations.
                    Doppler based on other sources.

  VR422201          22 00 39.362505   * 22 02 43.291372     22 03 22.032751       0.00
* J2202+4216        42 02 08.59077    * 42 16 39.97990      42 21 19.67288        0.00
  BLLAC             /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
  2200+420          GSFC 2015a astro solution, unpublished  51226 observations.
  J2202+42          Doppler based on other sources.
```

rk12qetr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Sat  27 Feb 2016   Day  58 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

13 00 00  1508+572     00 41 29  24.2 -21.2  9.5      23.5     0        0   13 00 00
13 14 30  ---          00 56 01  23.5 -19.2  9.8      21.2   870       28   13 00 01

13 15 00  1508+572     00 56 31  23.4 -19.1  9.8      21.2    24       28   13 15 00
13 29 30  ---          01 11 04  22.7 -17.1 10.0      18.9   870       56   13 15 01

13 30 00  1508+572     01 11 34  22.7 -17.0 10.0      18.8    24       56   13 30 00
13 44 30  ---          01 26 06  22.1 -15.0 10.3      16.6   870       84   13 30 01

13 45 00  1508+572     01 26 36  22.1 -14.9 10.3      16.5    24       84   13 45 00
14 00 00  ---          01 41 39  21.6 -12.8 10.5      14.1   900      112   13 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    6         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   2400.00   2400.00   2400.00   2400.00
  Net SB=         L         L         U         U
  IF SB =         L         L         L         L
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         U         U         L         L
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   5  Setup file default.  Used with PCAL = 1MHz
  LO sum=   1668.00  1668.00  1668.00  1668.00
  BBC fr=    732.00   732.00   732.00   732.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   5

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off



 POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                       (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 55.754938       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 28.21987        0.00
                    fake circumpolar target for a TS to look at

* 1508+572          15 08 45.204538   * 15 10 02.922371     15 10 28.137991       0.00
  J1510+5702        57 14 02.08966    * 57 02 43.37583      56 58 52.28675        0.00
                    ./rk12qe_sources.radioastron
                    AGN, HIGHz, rfc_2013d Petrov, 2013, unpublished 2400 observations, RA-AO3-04, RA



EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1508+572           109.2

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

em117btr

A 3-D View of high-mass star formation: gas Kinematics and Magnetic

PI: *L. Moscadelli*

Address: Osservatorio Astrofisico di Arcetri Phone: +39 055 220039 EMAIL: mosca@arcetri.astro.it

Observing mode: Polarization observations of 1 source at 6.7 GHz (128 Mb/s
Schedule for TORUN (Code Tr) Page 2
A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel
UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sun 28 Feb 2016 Day 59 ---										
Next scan frequencies:		6665.50	6665.50	6665.50	6665.50		6669.50	6669.50	6669.50	6669.50
		6673.50	6673.50	6673.50	6673.50		6677.50	6677.50	6677.50	6677.50
Next BBC frequencies:		765.50	765.50	765.50	765.50		769.50	769.50	769.50	769.50
		773.50	773.50	773.50	773.50		777.50	777.50	777.50	777.50
Next scan bandwidths:		2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00
		2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00
02 30 00	J2202+4216	14 13 42	19.5	44.1	-7.8		-34.4	0	0	02 30 00
02 38 00	=VR422201	14 21 43	20.4	45.4	-7.7		-35.4	480	8	02 30 01
02 45 35	J1331+3030	14 29 20	65.0	210.4	1.0		20.7	112	8	02 45 35
02 50 35	=3C286	14 34 20	64.6	212.8	1.0		22.2	300	12	02 45 36
02 51 05	J1331+3030	14 34 51	64.6	213.0	1.0		22.3	23	12	02 51 05
02 59 05	=3C286	14 42 52	63.9	216.7	1.2		24.6	480	20	02 51 06
03 03 31	3C345	14 47 19	66.2	112.3	-1.9		-46.3	42	20	03 03 31
03 13 31	---	14 57 20	67.6	115.7	-1.8		-44.7	600	30	03 03 32
03 18 11	J2202+4216	15 02 01	24.9	51.8	-7.0		-39.7	105	30	03 18 11
03 26 11	=VR422201	15 10 02	25.9	53.1	-6.9		-40.5	480	37	03 18 12
03 30 06	J1821-0502	15 13 58	19.7	129.3	-3.1		-27.8	68	37	03 30 06
03 35 06	=1818-050	15 18 59	20.3	130.4	-3.1		-27.3	300	42	03 30 07
03 35 06	G25.65+1.05	15 18 59	17.9	127.8	-3.3		-28.5	-23	42	No stop
03 37 06	---	15 20 59	18.2	128.3	-3.2		-28.3	97	44	03 35 07
03 37 41	J1821-0502	15 21 34	20.6	131.1	-3.0		-27.0	12	44	03 37 41
03 40 41	=1818-050	15 24 35	20.9	131.8	-3.0		-26.7	180	47	03 37 42
03 40 41	G25.65+1.05	15 24 35	18.6	129.1	-3.2		-27.9	-23	47	No stop
03 42 41	---	15 26 35	18.8	129.6	-3.1		-27.7	97	49	03 40 42
03 42 41	J1821-0502	15 26 35	21.2	132.2	-2.9		-26.5	-23	49	No stop
03 45 41	=1818-050	15 29 36	21.5	133.0	-2.9		-26.2	157	52	03 42 42
03 45 41	G25.65+1.05	15 29 36	19.2	130.3	-3.1		-27.4	-22	52	No stop
03 47 41	---	15 31 36	19.4	130.8	-3.1		-27.2	98	54	03 45 42
03 48 16	J1821-0502	15 32 11	21.8	133.6	-2.8		-25.9	12	54	03 48 16
03 51 16	=1818-050	15 35 11	22.1	134.3	-2.8		-25.5	180	57	03 48 17

Schedule for TORUN (Code Tr) Page 3

A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Sun	28 Feb 2016	Day 59 ---								
03 51 16	G25.65+1.05	15 35 11	19.8	131.6	-3.0		-26.8	-22	57	No stop
03 53 16	---	15 37 12	20.0	132.1	-3.0		-26.6	98	59	03 51 17
03 53 16	J1821-0502	15 37 12	22.3	134.8	-2.7		-25.3	-23	59	No stop
03 56 16	=1818-050	15 40 12	22.6	135.5	-2.7		-25.0	157	62	03 53 17
03 56 16	G25.65+1.05	15 40 12	20.4	132.8	-2.9		-26.3	-22	62	No stop
03 58 16	---	15 42 13	20.6	133.3	-2.9		-26.1	98	63	03 56 17
03 58 16	J1821-0502	15 42 13	22.9	136.0	-2.7		-24.7	-22	63	No stop
04 01 16	=1818-050	15 45 13	23.2	136.8	-2.6		-24.4	158	66	03 58 17
04 01 16	G25.65+1.05	15 45 13	20.9	134.0	-2.8		-25.7	-22	66	No stop
04 03 16	---	15 47 13	21.1	134.5	-2.8		-25.5	98	68	04 01 17
04 03 51	J1821-0502	15 47 48	23.4	137.4	-2.6		-24.1	13	68	04 03 51
04 06 51	=1818-050	15 50 49	23.7	138.2	-2.5		-23.7	180	71	04 03 52
04 06 51	G25.65+1.05	15 50 49	21.5	135.4	-2.7		-25.1	-22	71	No stop
04 08 51	---	15 52 49	21.7	135.8	-2.7		-24.9	98	73	04 06 52
04 08 51	J1821-0502	15 52 49	23.9	138.7	-2.5		-23.5	-22	73	No stop
04 11 51	=1818-050	15 55 50	24.2	139.4	-2.4		-23.1	158	76	04 08 52
04 15 51	J2202+4216	15 59 50	32.1	60.8	-6.1		-45.2	67	76	04 15 51
04 23 51	=VR422201	16 07 52	33.2	62.0	-5.9		-45.8	480	84	04 15 52
04 28 01	J1821-0502	16 12 02	25.7	143.5	-2.2		-21.0	73	84	04 28 01
04 31 01	=1818-050	16 15 03	26.0	144.3	-2.1		-20.6	180	87	04 28 02
04 31 01	G25.65+1.05	16 15 03	23.9	141.3	-2.3		-22.2	-22	87	No stop
04 33 01	---	16 17 03	24.1	141.8	-2.3		-21.9	98	88	04 31 02
04 33 01	J1821-0502	16 17 03	26.2	144.8	-2.1		-20.3	-22	88	No stop
04 36 01	=1818-050	16 20 04	26.4	145.6	-2.0		-19.9	158	91	04 33 02
04 36 01	G25.65+1.05	16 20 04	24.4	142.6	-2.3		-21.5	-21	91	No stop
04 38 01	---	16 22 04	24.6	143.1	-2.2		-21.2	99	93	04 36 02
04 38 01	J1821-0502	16 22 04	26.6	146.2	-2.0		-19.6	-22	93	No stop
04 41 01	=1818-050	16 25 05	26.9	146.9	-1.9		-19.2	158	96	04 38 02
04 41 01	G25.65+1.05	16 25 05	24.8	143.9	-2.2		-20.8	-21	96	No stop
04 43 01	---	16 27 05	25.0	144.4	-2.1		-20.6	99	98	04 41 02
04 43 36	J1821-0502	16 27 40	27.1	147.6	-1.9		-18.8	14	98	04 43 36
04 46 36	=1818-050	16 30 41	27.3	148.4	-1.9		-18.4	180	101	04 43 37

Schedule for TORUN (Code Tr) Page 4

A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sun 28 Feb 2016 Day 59 ---										
04 46 36	G25.65+1.05	16 30 41	25.3	145.3	-2.1		-20.1	-21	101	No stop
04 48 36	---	16 32 41	25.5	145.8	-2.0		-19.8	99	103	04 46 37
04 48 36	J1821-0502	16 32 41	27.5	149.0	-1.8		-18.1	-21	103	No stop
04 51 36	=1818-050	16 35 41	27.7	149.8	-1.8		-17.7	159	106	04 48 37
04 51 36	G25.65+1.05	16 35 41	25.8	146.6	-2.0		-19.4	-21	106	No stop
04 53 36	---	16 37 42	25.9	147.2	-2.0		-19.1	99	108	04 51 37
04 53 36	J1821-0502	16 37 42	27.8	150.3	-1.7		-17.4	-21	108	No stop
04 56 36	=1818-050	16 40 42	28.1	151.1	-1.7		-16.9	159	111	04 53 37
04 56 36	G25.65+1.05	16 40 42	26.2	147.9	-1.9		-18.7	-21	111	No stop
04 58 36	---	16 42 42	26.3	148.5	-1.9		-18.4	99	112	04 56 37
04 59 11	J1821-0502	16 43 18	28.3	151.8	-1.6		-16.5	14	112	04 59 11
05 02 11	=1818-050	16 46 18	28.5	152.6	-1.6		-16.1	180	115	04 59 12
05 02 11	G25.65+1.05	16 46 18	26.6	149.4	-1.8		-17.9	-21	115	No stop
05 04 11	---	16 48 18	26.8	149.9	-1.8		-17.6	99	117	05 02 12
05 04 11	J1821-0502	16 48 18	28.6	153.2	-1.6		-15.8	-21	117	No stop
05 07 11	=1818-050	16 51 19	28.8	154.0	-1.5		-15.3	159	120	05 04 12
05 11 26	J2202+4216	16 55 35	39.7	69.4	-5.1		-49.5	70	120	05 11 26
05 19 26	=VR422201	17 03 36	40.8	70.6	-5.0		-50.0	480	128	05 11 27
05 23 46	J1821-0502	17 07 57	29.8	158.6	-1.2		-12.7	70	128	05 23 46
05 26 46	=1818-050	17 10 57	30.0	159.5	-1.2		-12.2	180	131	05 23 47
05 26 46	G25.65+1.05	17 10 57	28.3	156.1	-1.4		-14.2	-21	131	No stop
05 28 46	---	17 12 57	28.4	156.6	-1.4		-13.9	99	133	05 26 47
05 28 46	J1821-0502	17 12 57	30.1	160.0	-1.2		-11.9	-22	133	No stop
05 31 46	=1818-050	17 15 58	30.2	160.9	-1.1		-11.4	158	136	05 28 47
05 31 46	G25.65+1.05	17 15 58	28.6	157.4	-1.3		-13.4	-21	136	No stop
05 33 46	---	17 17 58	28.7	158.0	-1.3		-13.1	99	137	05 31 47
05 33 46	J1821-0502	17 17 58	30.3	161.4	-1.1		-11.1	-22	137	No stop
05 36 46	=1818-050	17 20 59	30.5	162.3	-1.0		-10.6	158	140	05 33 47
05 36 46	G25.65+1.05	17 20 59	28.9	158.8	-1.2		-12.6	-21	140	No stop
05 38 46	---	17 22 59	29.0	159.4	-1.2		-12.3	99	142	05 36 47

Schedule for TORUN (Code Tr) Page 5

A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sun 28 Feb 2016 Day 59 ---										
05 39 21	J1821-0502	17 23 34	30.6	163.0	-1.0		-10.1	13	142	05 39 21
05 42 21	=1818-050	17 26 35	30.7	163.9	-0.9		-9.6	180	145	05 39 22
05 42 21	G25.65+1.05	17 26 35	29.2	160.4	-1.1		-11.7	-22	145	No stop
05 44 21	---	17 28 35	29.3	160.9	-1.1		-11.4	98	147	05 42 22
05 44 21	J1821-0502	17 28 35	30.8	164.5	-0.9		-9.3	-22	147	No stop
05 47 21	=1818-050	17 31 35	30.9	165.3	-0.8		-8.8	158	150	05 44 22
05 47 21	G25.65+1.05	17 31 35	29.4	161.8	-1.1		-10.9	-22	150	No stop
05 49 21	---	17 33 36	29.5	162.3	-1.0		-10.6	98	152	05 47 22
05 49 21	J1821-0502	17 33 36	31.0	165.9	-0.8		-8.5	-22	152	No stop
05 52 21	=1818-050	17 36 36	31.1	166.8	-0.8		-7.9	158	155	05 49 22
05 52 21	G25.65+1.05	17 36 36	29.6	163.2	-1.0		-10.1	-22	155	No stop
05 54 21	---	17 38 37	29.7	163.7	-0.9		-9.7	98	157	05 52 22
05 54 56	J1821-0502	17 39 12	31.2	167.5	-0.7		-7.5	13	157	05 54 56
05 57 56	=1818-050	17 42 12	31.3	168.4	-0.7		-7.0	180	160	05 54 57
05 57 56	G25.65+1.05	17 42 12	29.9	164.8	-0.9		-9.1	-22	160	No stop
05 59 56	---	17 44 13	29.9	165.3	-0.8		-8.8	98	162	05 57 57
05 59 56	J1821-0502	17 44 13	31.3	169.0	-0.6		-6.6	-22	162	No stop
06 02 56	=1818-050	17 47 13	31.4	169.8	-0.6		-6.1	158	164	05 59 57
06 07 26	J2202+4216	17 51 44	47.8	78.4	-4.2		-52.7	72	164	06 07 26
06 15 26	=VR422201	17 59 45	49.0	79.7	-4.1		-53.1	480	172	06 07 27
06 20 06	J1821-0502	18 04 26	31.8	174.8	-0.3		-3.1	76	172	06 20 06
06 23 06	=1818-050	18 07 26	31.8	175.7	-0.2		-2.6	180	175	06 20 07
06 23 06	G25.65+1.05	18 07 26	30.6	172.0	-0.5		-4.8	-22	175	No stop
06 25 06	---	18 09 27	30.7	172.5	-0.4		-4.5	98	177	06 23 07
06 25 06	J1821-0502	18 09 27	31.8	176.3	-0.2		-2.2	-23	177	No stop
06 28 06	=1818-050	18 12 27	31.8	177.2	-0.2		-1.7	157	180	06 25 07
06 28 06	G25.65+1.05	18 12 27	30.7	173.4	-0.4		-4.0	-22	180	No stop
06 30 06	---	18 14 28	30.8	174.0	-0.3		-3.6	98	182	06 28 07
06 30 06	J1821-0502	18 14 28	31.9	177.8	-0.1		-1.3	-23	182	No stop
06 33 06	=1818-050	18 17 28	31.9	178.7	-0.1		-0.8	157	185	06 30 07

```
Schedule for TORUN     (Code Tr )                                  Page   6
              A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Sun  28 Feb 2016   Day  59 ---

06 33 06  G25.65+1.05  18 17 28  30.8 174.9 -0.3      -3.1   -22      185   No stop
06 35 06  ---          18 19 28  30.8 175.4 -0.3      -2.7    98      187   06 33 07

06 35 41  J1821-0502   18 20 03  31.9 179.4 -0.0      -0.4    12      187   06 35 41
06 38 41  =1818-050    18 23 04  31.9 180.3  0.0       0.2   180      189   06 35 42

06 38 41  G25.65+1.05  18 23 04  30.9 176.5 -0.2      -2.1   -22      189   No stop
06 40 41  ---          18 25 04  30.9 177.1 -0.2      -1.8    98      191   06 38 42

06 40 41  J1821-0502   18 25 04  31.9 180.9  0.1       0.5   -23      191   No stop
06 43 41  =1818-050    18 28 05  31.9 181.8  0.1       1.1   157      194   06 40 42

06 43 41  G25.65+1.05  18 28 05  30.9 177.9 -0.1      -1.2   -22      194   No stop
06 45 41  ---          18 30 05  30.9 178.5 -0.1      -0.9    98      196   06 43 42

06 45 41  J1821-0502   18 30 05  31.8 182.4  0.1       1.4   -23      196   No stop
06 48 41  =1818-050    18 33 06  31.8 183.2  0.2       2.0   157      199   06 45 42

06 48 41  G25.65+1.05  18 33 06  30.9 179.4 -0.0      -0.4   -22      199   No stop
06 50 41  ---          18 35 06  30.9 180.0 -0.0      -0.0    98      201   06 48 42

06 51 16  J1821-0502   18 35 41  31.8 184.0  0.2       2.4    12      201   06 51 16
06 54 16  =1818-050    18 38 41  31.8 184.9  0.3       2.9   180      204   06 51 17

06 54 16  G25.65+1.05  18 38 41  30.9 181.0  0.1       0.6   -22      204   No stop
06 56 16  ---          18 40 42  30.9 181.6  0.1       1.0    98      206   06 54 17

06 56 16  J1821-0502   18 40 42  31.7 185.5  0.3       3.3   -23      206   No stop
06 59 16  =1818-050    18 43 42  31.7 186.3  0.4       3.8   157      209   06 56 17

07 04 06  J2202+4216   18 48 33  56.3  88.5 -3.2     -54.3    79      209   07 04 06
07 12 06  =VR422201    18 56 34  57.5  90.1 -3.1     -54.3   480      216   07 04 07

07 17 06  J1821-0502   19 01 35  31.3 191.5  0.7       6.9    83      216   07 17 06
07 20 06  =1818-050    19 04 36  31.2 192.4  0.7       7.4   180      219   07 17 07

07 20 06  G25.65+1.05  19 04 36  30.6 188.5  0.5       5.1   -23      219   No stop
07 22 06  ---          19 06 36  30.6 189.1  0.5       5.5    97      221   07 20 07

07 22 06  J1821-0502   19 06 36  31.1 193.0  0.7       7.8   -23      221   No stop
07 25 06  =1818-050    19 09 37  31.0 193.9  0.8       8.3   157      224   07 22 07

07 25 06  G25.65+1.05  19 09 37  30.5 189.9  0.6       6.0   -23      224   No stop
07 27 06  ---          19 11 37  30.4 190.5  0.6       6.3    97      226   07 25 07
```

Schedule for TORUN (Code Tr) Page 7

A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Sun 28 Feb 2016 Day 59 ---										
07 27 06	J1821-0502	19 11 37	30.9	194.4	0.8		8.6	-23	226	No stop
07 30 06	=1818-050	19 14 37	30.8	195.3	0.9		9.1	157	229	07 27 07
07 30 06	G25.65+1.05	19 14 37	30.3	191.4	0.7		6.8	-23	229	No stop
07 32 06	---	19 16 38	30.3	191.9	0.7		7.2	97	231	07 30 07
07 32 41	J1821-0502	19 17 13	30.7	196.0	0.9		9.6	12	231	07 32 41
07 35 41	=1818-050	19 20 13	30.6	196.9	1.0		10.1	180	234	07 32 42
07 35 41	G25.65+1.05	19 20 13	30.2	193.0	0.8		7.8	-23	234	No stop
07 37 41	---	19 22 14	30.1	193.5	0.8		8.1	97	236	07 35 42
07 37 41	J1821-0502	19 22 14	30.5	197.5	1.0		10.4	-23	236	No stop
07 40 41	=1818-050	19 25 14	30.4	198.3	1.1		10.9	157	238	07 37 42
07 40 41	G25.65+1.05	19 25 14	30.0	194.4	0.8		8.6	-23	238	No stop
07 42 41	---	19 27 14	29.9	195.0	0.9		9.0	97	240	07 40 42
07 42 41	J1821-0502	19 27 14	30.3	198.9	1.1		11.3	-23	240	No stop
07 45 41	=1818-050	19 30 15	30.1	199.7	1.1		11.7	157	243	07 42 42
07 45 41	G25.65+1.05	19 30 15	29.8	195.8	0.9		9.5	-23	243	No stop
07 47 41	---	19 32 15	29.7	196.4	1.0		9.8	97	245	07 45 42
07 48 16	J1821-0502	19 32 50	30.0	200.5	1.2		12.2	12	245	07 48 16
07 51 16	=1818-050	19 35 51	29.8	201.3	1.2		12.7	180	248	07 48 17
07 51 16	G25.65+1.05	19 35 51	29.5	197.4	1.0		10.4	-23	248	No stop
07 53 16	---	19 37 51	29.5	198.0	1.0		10.7	97	250	07 51 17
07 53 16	J1821-0502	19 37 51	29.7	201.9	1.3		13.0	-23	250	No stop
07 56 16	=1818-050	19 40 52	29.5	202.7	1.3		13.5	157	253	07 53 17
08 01 26	J2202+4216	19 46 03	64.8	101.3	-2.3		-52.8	91	253	08 01 26
08 09 26	=VR422201	19 54 04	66.0	103.5	-2.2		-52.2	480	261	08 01 27
08 14 26	J1821-0502	19 59 05	28.4	207.7	1.6		16.3	77	261	08 14 26
08 17 26	=1818-050	20 02 05	28.2	208.5	1.7		16.7	180	263	08 14 27
08 17 26	G25.65+1.05	20 02 05	28.1	204.7	1.4		14.6	-22	263	No stop
08 19 26	---	20 04 05	28.0	205.2	1.5		14.9	98	265	08 17 27
08 19 26	J1821-0502	20 04 05	28.0	209.1	1.7		17.0	-23	265	No stop
08 22 26	=1818-050	20 07 06	27.8	209.9	1.8		17.5	157	268	08 19 27

Schedule for TORUN (Code Tr) Page 8

A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sun 28 Feb 2016 Day 59 ---										
08 22 26	G25.65+1.05	20 07 06	27.8	206.0	1.5		15.4	-22	268	No stop
08 24 26	---	20 09 06	27.7	206.6	1.6		15.7	98	270	08 22 27
08 24 26	J1821-0502	20 09 06	27.6	210.4	1.8		17.8	-23	270	No stop
08 27 26	=1818-050	20 12 07	27.4	211.2	1.8		18.2	157	273	08 24 27
08 27 26	G25.65+1.05	20 12 07	27.5	207.4	1.6		16.1	-22	273	No stop
08 29 26	---	20 14 07	27.3	207.9	1.6		16.4	98	275	08 27 27
08 30 01	J1821-0502	20 14 42	27.2	211.9	1.9		18.6	12	275	08 30 01
08 33 01	=1818-050	20 17 43	27.0	212.7	1.9		19.0	180	278	08 30 02
08 33 01	G25.65+1.05	20 17 43	27.1	208.9	1.7		17.0	-22	278	No stop
08 35 01	---	20 19 43	26.9	209.4	1.7		17.3	98	280	08 33 02
08 35 01	J1821-0502	20 19 43	26.8	213.2	2.0		19.3	-23	280	No stop
08 38 01	=1818-050	20 22 44	26.6	214.0	2.0		19.7	157	283	08 35 02
08 38 01	G25.65+1.05	20 22 44	26.7	210.2	1.8		17.7	-22	283	No stop
08 40 01	---	20 24 44	26.6	210.8	1.8		18.0	98	285	08 38 02
08 40 01	J1821-0502	20 24 44	26.4	214.6	2.0		20.0	-23	285	No stop
08 43 01	=1818-050	20 27 44	26.1	215.3	2.1		20.4	157	287	08 40 02
08 43 01	G25.65+1.05	20 27 44	26.3	211.5	1.9		18.4	-22	287	No stop
08 45 01	---	20 29 45	26.2	212.1	1.9		18.7	98	289	08 43 02
08 45 36	J1821-0502	20 30 20	25.9	216.0	2.1		20.8	12	289	08 45 36
08 48 36	=1818-050	20 33 20	25.6	216.8	2.2		21.2	180	292	08 45 37
08 48 36	G25.65+1.05	20 33 20	25.9	213.0	2.0		19.2	-22	292	No stop
08 50 36	---	20 35 21	25.7	213.5	2.0		19.5	98	294	08 48 37
08 50 36	J1821-0502	20 35 21	25.4	217.3	2.2		21.4	-23	294	No stop
08 53 36	=1818-050	20 38 21	25.2	218.1	2.3		21.8	157	297	08 50 37
08 59 01	J2202+4216	20 43 47	72.9	121.0	-1.3		-44.2	114	297	08 59 01
09 07 01	=VR422201	20 51 48	74.0	124.8	-1.2		-41.9	480	305	08 59 02
09 12 36	J1821-0502	20 57 24	23.3	222.9	2.6		24.2	125	305	09 12 36
09 15 36	=1818-050	21 00 25	23.0	223.6	2.6		24.6	180	308	09 12 37
09 15 36	G25.65+1.05	21 00 25	23.5	219.9	2.4		22.8	-22	308	No stop
09 17 36	---	21 02 25	23.3	220.4	2.5		23.1	98	310	09 15 37

Schedule for TORUN (Code Tr) Page 9

A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sun 28 Feb 2016 Day 59 ---										
09 17 36	J1821-0502	21 02 25	22.8	224.1	2.7		24.8	-22	310	No stop
09 20 36	=1818-050	21 05 26	22.5	224.8	2.7		25.2	158	312	09 17 37
09 20 36	G25.65+1.05	21 05 26	23.0	221.2	2.5		23.4	-22	312	No stop
09 22 36	---	21 07 26	22.8	221.7	2.5		23.7	98	314	09 20 37
09 22 36	J1821-0502	21 07 26	22.3	225.3	2.8		25.4	-22	314	No stop
09 25 36	=1818-050	21 10 26	21.9	226.1	2.8		25.7	158	317	09 22 37
09 25 36	G25.65+1.05	21 10 26	22.5	222.4	2.6		24.0	-22	317	No stop
09 27 36	---	21 12 27	22.3	222.9	2.6		24.3	98	319	09 25 37
09 28 11	J1821-0502	21 13 02	21.7	226.7	2.8		26.0	13	319	09 28 11
09 31 11	=1818-050	21 16 02	21.3	227.4	2.9		26.3	180	322	09 28 12
09 31 11	G25.65+1.05	21 16 02	21.9	223.8	2.7		24.7	-22	322	No stop
09 33 11	---	21 18 03	21.7	224.3	2.7		24.9	98	324	09 31 12
09 33 11	J1821-0502	21 18 03	21.1	227.9	2.9		26.6	-22	324	No stop
09 36 11	=1818-050	21 21 03	20.8	228.6	3.0		26.9	158	327	09 33 12
09 36 11	G25.65+1.05	21 21 03	21.4	225.0	2.8		25.3	-22	327	No stop
09 38 11	---	21 23 03	21.1	225.5	2.8		25.5	98	329	09 36 12
09 38 11	J1821-0502	21 23 03	20.5	229.1	3.0		27.1	-22	329	No stop
09 41 11	=1818-050	21 26 04	20.2	229.8	3.1		27.4	158	332	09 38 12
09 41 11	G25.65+1.05	21 26 04	20.8	226.2	2.8		25.8	-22	332	No stop
09 43 11	---	21 28 04	20.6	226.7	2.9		26.1	98	334	09 41 12
09 43 46	J1821-0502	21 28 39	19.9	230.4	3.1		27.7	13	334	09 43 46
09 46 46	=1818-050	21 31 40	19.6	231.1	3.2		28.0	180	337	09 43 47
09 46 46	G25.65+1.05	21 31 40	20.2	227.5	2.9		26.5	-22	337	No stop
09 48 46	---	21 33 40	20.0	228.0	3.0		26.7	98	338	09 46 47
09 48 46	J1821-0502	21 33 40	19.3	231.6	3.2		28.2	-22	338	No stop
09 51 46	=1818-050	21 36 41	19.0	232.3	3.2		28.5	158	341	09 48 47
09 57 11	J2202+4216	21 42 07	78.7	159.6	-0.4		-16.5	87	341	09 57 11
10 05 11	=VR422201	21 50 08	79.0	167.0	-0.2		-10.5	480	349	09 57 12
10 10 41	J1821-0502	21 55 39	16.7	236.6	3.6		30.2	83	349	10 10 41
10 13 41	=1818-050	21 58 39	16.3	237.3	3.6		30.5	180	352	10 10 42

Schedule for TORUN (Code Tr) Page 10

A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Sun 28 Feb 2016 Day 59 ---										
10 13 41	G25.65+1.05	21 58 39	17.1	233.8	3.4		29.2	-21	352	No stop
10 15 41	---	22 00 40	16.8	234.3	3.4		29.3	99	354	10 13 42
10 15 41	J1821-0502	22 00 40	16.0	237.7	3.6		30.6	-22	354	No stop
10 18 41	=1818-050	22 03 40	15.6	238.4	3.7		30.9	158	357	10 15 42
10 18 41	G25.65+1.05	22 03 40	16.5	234.9	3.5		29.6	-21	357	No stop
10 20 41	---	22 05 40	16.2	235.4	3.5		29.8	99	359	10 18 42
10 20 41	J1821-0502	22 05 40	15.4	238.8	3.7		31.0	-22	359	No stop
10 23 41	=1818-050	22 08 41	15.0	239.5	3.8		31.3	158	362	10 20 42
10 23 41	G25.65+1.05	22 08 41	15.8	236.1	3.6		30.1	-21	362	No stop
10 25 41	---	22 10 41	15.6	236.5	3.6		30.2	99	363	10 23 42
10 26 16	J1821-0502	22 11 16	14.7	240.1	3.8		31.5	13	363	10 26 16
10 29 16	=1818-050	22 14 17	14.3	240.7	3.9		31.7	180	366	10 26 17
10 29 16	G25.65+1.05	22 14 17	15.1	237.3	3.7		30.5	-21	366	No stop
10 31 16	---	22 16 17	14.9	237.8	3.7		30.7	99	368	10 29 17
10 31 16	J1821-0502	22 16 17	14.0	241.2	3.9		31.9	-22	368	No stop
10 34 16	=1818-050	22 19 18	13.6	241.8	4.0		32.1	158	371	10 31 17
10 34 16	G25.65+1.05	22 19 18	14.5	238.4	3.7		31.0	-21	371	No stop
10 36 16	---	22 21 18	14.2	238.9	3.8		31.1	99	373	10 34 17
10 36 16	J1821-0502	22 21 18	13.3	242.2	4.0		32.2	-22	373	No stop
10 39 16	=1818-050	22 24 18	12.9	242.9	4.0		32.5	158	376	10 36 17
10 39 16	G25.65+1.05	22 24 18	13.9	239.5	3.8		31.4	-21	376	No stop
10 41 16	---	22 26 19	13.6	240.0	3.9		31.5	99	378	10 39 17
10 41 51	J1821-0502	22 26 54	12.6	243.5	4.1		32.6	13	378	10 41 51
10 44 51	=1818-050	22 29 54	12.2	244.1	4.1		32.8	180	381	10 41 52
10 44 51	G25.65+1.05	22 29 54	13.1	240.7	3.9		31.8	-21	381	No stop
10 46 51	---	22 31 55	12.9	241.2	3.9		31.9	99	383	10 44 52
10 46 51	J1821-0502	22 31 55	11.9	244.5	4.2		33.0	-22	383	No stop
10 49 51	=1818-050	22 34 55	11.5	245.2	4.2		33.2	158	386	10 46 52
10 54 41	J2202+4216	22 39 46	77.7	213.2	0.6		26.4	28	386	10 54 41
11 02 41	=VR422201	22 47 47	77.0	219.1	0.7		30.8	480	393	10 54 42

```
Schedule for TORUN     (Code Tr )                                  Page  11
              A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Sun  28 Feb 2016   Day  59 ---

11 07 26  J1821-0502   22 52 33   9.1 248.9  4.5      34.2    17      393   11 07 26
11 10 26  =1818-050    22 55 34   8.6 249.5  4.6      34.4   180      396   11 07 27

11 10 26  G25.65+1.05  22 55 34   9.7 246.2  4.3      33.5   -21      396   No stop
11 12 26  ---          22 57 34   9.4 246.6  4.4      33.7    99      398   11 10 27

11 12 51  J1821-0502   22 57 59   8.3 250.0  4.6      34.5     4      398   11 12 51
11 17 51  =1818-050    23 03 00   7.6 251.0  4.7      34.8   300      403   11 12 52

11 22 40  J2202+4216   23 07 50  74.8 231.5  1.1      39.5    23      403   11 22 40
11 30 00  =VR422201    23 15 11  73.9 235.3  1.2      41.9   440      410   11 22 41



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: sess116.M128

   Setup group:    7         Station: TORUN            Total bit rate:   128
   Format: MARK5B            Bits per sample: 2        Sample rate:  4.000
   Number of channels: 16    DBE type: DBBC_DDC        Speedup factor:   1.00

   Disk used to record data.

   1st LO=   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00
             5900.00   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00
   Net SB=         L         L         U         U         L         L         U         U
                   L         L         U         U         L         L         U         U
   IF SB =         U         U         U         U         U         U         U         U
                   U         U         U         U         U         U         U         U
   Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
                 RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
   BBC   =         1         5         1         5         2         6         2         6
                   3         7         3         7         4         8         4         8
   BBC SB=         L         L         U         U         L         L         U         U
                   L         L         U         U         L         L         U         U
   IF    =        A1        B1        A1        B1        A1        B1        A1        B1
                  A1        B1        A1        B1        A1        B1        A1        B1

  The following frequency sets based on these setups were used.

  Frequency Set:   6  Based on FREQ, BW, and/or DOPPLER in schedule.  Used with PCAL = off
   LO sum=   6665.50  6665.50  6665.50  6665.50  6669.50  6669.50  6669.50  6669.50
             6673.50  6673.50  6673.50  6673.50  6677.50  6677.50  6677.50  6677.50
   BBC fr=    765.50   765.50   765.50   765.50   769.50   769.50   769.50   769.50
              773.50   773.50   773.50   773.50   777.50   777.50   777.50   777.50
```

```
  Bandwd=      2.00     2.00     2.00     2.00     2.00     2.00     2.00     2.00
               2.00     2.00     2.00     2.00     2.00     2.00     2.00     2.00
   Matching frequency sets:   6

  Track assignments are:
   track1=  18, 26,  2, 10, 20, 28,  4, 12, 22, 30,  6, 14, 24, 32,  8, 16
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* G25.65+1.05       18 31 40.145161   * 18 34 20.900000     18 35 12.025539       0.00
                   -06 02 05.96283    *-05 59 42.10000     -05 58 50.47653        0.00
                    Doppler based on LSR frame and radio definition.  Velocities:
                        41.60    41.60    41.60    41.60    41.60    41.60    41.60    41.60
                        41.60    41.60    41.60    41.60    41.60    41.60

  3C286             13 28 49.657758   * 13 31 08.288051     13 31 53.656563       0.18
* J1331+3030        30 45 58.64059    * 30 30 32.95924      30 25 24.92879        0.17
  1328+307          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
  J1331+30          GSFC 2015a astro solution, unpublished    225 observations.
                    Doppler based on other sources.

* 3C345             16 41 17.606228   * 16 42 58.809966     16 43 31.157818       0.76
  J1642+3948        39 54 10.81496    * 39 48 36.99402      39 46 40.92272        0.52
  1641+399          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
  J1642+39          GSFC 2015a astro solution, unpublished  53430 observations.
                    Doppler based on other sources.

  1818-050          18 18 32.138835   * 18 21 11.809558     18 22 02.659645       0.32
* J1821-0502       -05 03 46.86946    *-05 02 20.08539     -05 01 47.03899        0.52
                    /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
                    GSFC 2015a astro solution, unpublished    107 observations.
                    Doppler based on other sources.

  VR422201          22 00 39.362505   * 22 02 43.291372     22 03 22.040381       0.00
* J2202+4216        42 02 08.59077    * 42 16 39.97990      42 21 19.41844        0.00
  BLLAC             /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
  2200+420          GSFC 2015a astro solution, unpublished  51226 observations.
  J2202+42          Doppler based on other sources.
```

rk12qftr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/K-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Sun  28 Feb 2016   Day  59 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

22 00 00  1226+023     09 46 54  28.8 131.9 -2.7     -26.6     0        0   22 00 00
22 14 30  ---          10 01 27  30.4 135.6 -2.5     -24.8   870       28   22 00 01

22 15 00  1226+023     10 01 57  30.4 135.8 -2.5     -24.8    24       28   22 15 00
22 29 30  ---          10 16 29  31.9 139.6 -2.2     -22.9   870       56   22 15 01

22 30 00  1226+023     10 16 59  32.0 139.8 -2.2     -22.8    24       56   22 30 00
22 44 30  ---          10 31 32  33.3 143.8 -2.0     -20.8   870       84   22 30 01

22 45 00  1226+023     10 32 02  33.4 143.9 -2.0     -20.7    24       84   22 45 00
23 00 00  ---          10 47 04  34.6 148.2 -1.7     -18.5   900      112   22 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    4         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4100.00   4100.00   4100.00   4100.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   2  Setup file default.  Used with PCAL = 1MHz
  LO sum=   4836.00  4836.00  4836.00  4836.00
  BBC fr=    736.00   736.00   736.00   736.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   2

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off



 POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 55.868756       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 28.63866        0.00
                    fake circumpolar target for a TS to look at

* 1226+023          12 26 33.245835   * 12 29 06.699731     12 29 57.284144       0.00
  J1229+0203        02 19 43.30547    * 02 03 08.59797      01 57 41.17494        0.00
  3C273B            ./rk12qf_sources.radioastron
  3C273             AGN, rfc_2013d Petrov, 2013, unpublished 32011 observations, RA-AO3-04, RA-AO3-0


EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1226+023           153.3

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

em117ctr

A 3-D View of high-mass star formation: gas Kinematics and Magnetic

PI: *L. Moscadelli*

Address: Osservatorio Astrofisico di Arcetri Phone: +39 055 220039 EMAIL: mosca@arcetri.astro.it

```
Observing mode: Polarization observations of 1 source at 6.7 GHz (128 Mb/s
Schedule for TORUN     (Code Tr )                                  Page   2
               A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source                Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------
 --- Mon  29 Feb 2016   Day  60 ---
 Next scan frequencies:  6665.38  6665.38  6665.38  6665.38  6669.38  6669.38  6669.38  6669.38
                         6673.38  6673.38  6673.38  6673.38  6677.38  6677.38  6677.38  6677.38
 Next BBC frequencies:    765.38   765.38   765.38   765.38   769.38   769.38   769.38   769.38
                          773.38   773.38   773.38   773.38   777.38   777.38   777.38   777.38
 Next scan bandwidths:      2.00     2.00     2.00     2.00     2.00     2.00     2.00     2.00
                            2.00     2.00     2.00     2.00     2.00     2.00     2.00     2.00

02 30 00  J2202+4216   14 17 39  20.0  44.7 -7.8     -34.9     0        0   02 30 00
02 38 00  =VR422201    14 25 40  20.8  46.0 -7.6     -35.8   480        8   02 30 01

02 45 35  J1331+3030   14 33 16  64.7 212.3  1.0      21.8   109        8   02 45 35
02 50 35  =3C286       14 38 17  64.3 214.6  1.1      23.3   300       12   02 45 36

02 51 00  J1331+3030   14 38 42  64.3 214.8  1.1      23.4    18       12   02 51 00
02 59 00  =3C286       14 46 43  63.6 218.4  1.2      25.6   480       20   02 51 01

03 03 35  3C345        14 51 19  66.8 113.6 -1.9     -45.7    50       20   03 03 35
03 13 35  ---          15 01 21  68.1 117.2 -1.7     -44.0   600       30   03 03 36

03 18 15  J2202+4216   15 06 02  25.4  52.4 -7.0     -40.1   105       30   03 18 15
03 26 15  =VR422201    15 14 03  26.4  53.7 -6.8     -40.9   480       37   03 18 16

03 29 45  J1825-1718   15 17 33   8.7 134.8 -3.1     -26.5    33       37   03 29 45
03 34 45  =1822-173    15 22 34   9.2 135.9 -3.1     -25.9   300       42   03 29 46

03 34 45 IRAS18264-11  15 22 34  13.8 132.6 -3.1     -26.8   -31       42   No stop
03 36 45  ---          15 24 35  14.0 133.1 -3.1     -26.6    89       44   03 34 46

03 37 25  J1825-1718   15 25 15   9.5 136.5 -3.0     -25.7     9       44   03 37 25
03 40 25  =1822-173    15 28 15   9.8 137.2 -3.0     -25.3   180       47   03 37 26

03 40 25 IRAS18264-11  15 28 15  14.4 133.9 -3.0     -26.2   -31       47   No stop
03 42 25  ---          15 30 16  14.6 134.4 -3.0     -26.0    89       49   03 40 26

03 42 25  J1825-1718   15 30 16  10.0 137.6 -2.9     -25.1   -31       49   No stop
03 45 25  =1822-173    15 33 16  10.3 138.3 -2.9     -24.8   149       52   03 42 26

03 45 25 IRAS18264-11  15 33 16  14.9 135.1 -2.9     -25.7   -31       52   No stop
03 47 25  ---          15 35 16  15.1 135.5 -2.9     -25.5    89       54   03 45 26

03 48 00  J1825-1718   15 35 51  10.6 138.8 -2.8     -24.5     4       54   03 48 00
03 51 00  =1822-173    15 38 52  10.9 139.5 -2.8     -24.1   180       57   03 48 01
```

Schedule for TORUN (Code Tr) Page 3

A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 29 Feb 2016 Day 60 ---										
03 51 00	IRAS18264-11	15 38 52	15.5	136.3	-2.9		-25.1	-31	57	No stop
03 53 00	---	15 40 52	15.7	136.8	-2.8		-24.8	89	59	03 51 01
03 53 00	J1825-1718	15 40 52	11.1	139.9	-2.8		-23.9	-31	59	No stop
03 56 00	=1822-173	15 43 53	11.4	140.6	-2.7		-23.5	149	62	03 53 01
03 56 00	IRAS18264-11	15 43 53	16.0	137.5	-2.8		-24.5	-31	62	No stop
03 58 00	---	15 45 53	16.2	138.0	-2.7		-24.3	89	63	03 56 01
03 58 00	J1825-1718	15 45 53	11.6	141.1	-2.7		-23.3	-31	63	No stop
04 01 00	=1822-173	15 48 54	11.8	141.7	-2.6		-22.9	149	66	03 58 01
04 01 00	IRAS18264-11	15 48 54	16.5	138.7	-2.7		-23.9	-32	66	No stop
04 03 00	---	15 50 54	16.7	139.1	-2.7		-23.7	88	68	04 01 01
04 03 40	J1825-1718	15 51 34	12.1	142.3	-2.6		-22.6	9	68	04 03 40
04 06 40	=1822-173	15 54 35	12.4	143.0	-2.5		-22.2	180	71	04 03 41
04 06 40	IRAS18264-11	15 54 35	17.1	140.0	-2.6		-23.2	-32	71	No stop
04 08 40	---	15 56 35	17.3	140.5	-2.6		-23.0	88	73	04 06 41
04 08 40	J1825-1718	15 56 35	12.5	143.5	-2.5		-22.0	-31	73	No stop
04 11 40	=1822-173	15 59 35	12.8	144.2	-2.4		-21.6	149	76	04 08 41
04 16 00	J2202+4216	16 03 56	32.7	61.4	-6.0		-45.5	79	76	04 16 00
04 24 00	=VR422201	16 11 57	33.7	62.6	-5.9		-46.2	480	84	04 16 01
04 28 25	J1825-1718	16 16 23	14.2	148.0	-2.2		-19.5	80	84	04 28 25
04 31 25	=1822-173	16 19 24	14.4	148.7	-2.1		-19.1	180	87	04 28 26
04 31 25	IRAS18264-11	16 19 24	19.3	145.9	-2.2		-20.1	-32	87	No stop
04 33 25	---	16 21 24	19.5	146.4	-2.1		-19.8	88	88	04 31 26
04 33 25	J1825-1718	16 21 24	14.6	149.2	-2.1		-18.8	-32	88	No stop
04 36 25	=1822-173	16 24 24	14.8	149.9	-2.0		-18.4	148	91	04 33 26
04 36 25	IRAS18264-11	16 24 24	19.7	147.2	-2.1		-19.4	-32	91	No stop
04 38 25	---	16 26 25	19.9	147.7	-2.1		-19.2	88	93	04 36 26
04 38 25	J1825-1718	16 26 25	15.0	150.4	-2.0		-18.1	-32	93	No stop
04 41 25	=1822-173	16 29 25	15.2	151.1	-2.0		-17.7	148	96	04 38 26
04 41 25	IRAS18264-11	16 29 25	20.1	148.4	-2.0		-18.8	-33	96	No stop
04 43 25	---	16 31 26	20.3	148.9	-2.0		-18.5	87	98	04 41 26
04 44 05	J1825-1718	16 32 06	15.4	151.7	-1.9		-17.4	8	98	04 44 05
04 47 05	=1822-173	16 35 06	15.6	152.4	-1.9		-16.9	180	101	04 44 06

Schedule for TORUN (Code Tr) Page 4

A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 29 Feb 2016 Day 60 ---										
04 47 05	IRAS18264-11	16 35 06	20.6	149.8	-1.9		-18.0	-33	101	No stop
04 49 05	---	16 37 06	20.7	150.3	-1.9		-17.7	87	103	04 47 06
04 49 05	J1825-1718	16 37 06	15.7	152.9	-1.8		-16.7	-32	103	No stop
04 52 05	=1822-173	16 40 07	15.9	153.6	-1.8		-16.2	148	106	04 49 06
04 52 05	IRAS18264-11	16 40 07	20.9	151.1	-1.8		-17.3	-33	106	No stop
04 54 05	---	16 42 07	21.1	151.6	-1.8		-17.0	87	108	04 52 06
04 54 05	J1825-1718	16 42 07	16.1	154.1	-1.7		-16.0	-33	108	No stop
04 57 05	=1822-173	16 45 08	16.3	154.8	-1.7		-15.5	147	111	04 54 06
04 57 05	IRAS18264-11	16 45 08	21.3	152.3	-1.7		-16.6	-33	111	No stop
04 59 05	---	16 47 08	21.4	152.8	-1.7		-16.3	87	112	04 57 06
04 59 45	J1825-1718	16 47 48	16.4	155.4	-1.6		-15.2	7	112	04 59 45
05 02 45	=1822-173	16 50 49	16.6	156.2	-1.6		-14.7	180	115	04 59 46
05 02 45	IRAS18264-11	16 50 49	21.7	153.7	-1.7		-15.7	-33	115	No stop
05 04 45	---	16 52 49	21.8	154.3	-1.6		-15.5	87	117	05 02 46
05 04 45	J1825-1718	16 52 49	16.8	156.6	-1.6		-14.4	-33	117	No stop
05 07 45	=1822-173	16 55 50	16.9	157.4	-1.5		-14.0	147	120	05 04 46
05 12 15	J2202+4216	17 00 20	40.4	70.1	-5.1		-49.8	80	120	05 12 15
05 20 15	=VR422201	17 08 22	41.5	71.4	-4.9		-50.4	480	128	05 12 16
05 24 50	J1825-1718	17 12 57	17.8	161.5	-1.2		-11.5	80	128	05 24 50
05 27 50	=1822-173	17 15 58	18.0	162.3	-1.2		-11.0	180	131	05 24 51
05 27 50	IRAS18264-11	17 15 58	23.2	160.2	-1.2		-12.0	-33	131	No stop
05 29 50	---	17 17 58	23.3	160.7	-1.2		-11.7	87	133	05 27 51
05 29 50	J1825-1718	17 17 58	18.1	162.8	-1.1		-10.7	-33	133	No stop
05 32 50	=1822-173	17 20 59	18.2	163.5	-1.1		-10.3	147	136	05 29 51
05 32 50	IRAS18264-11	17 20 59	23.4	161.5	-1.2		-11.2	-34	136	No stop
05 34 50	---	17 22 59	23.5	162.0	-1.1		-10.9	86	137	05 32 51
05 34 50	J1825-1718	17 22 59	18.3	164.0	-1.1		-10.0	-33	137	No stop
05 37 50	=1822-173	17 25 59	18.4	164.8	-1.0		-9.5	147	140	05 34 51
05 37 50	IRAS18264-11	17 25 59	23.6	162.8	-1.1		-10.4	-34	140	No stop
05 39 50	---	17 28 00	23.7	163.4	-1.0		-10.1	86	142	05 37 51

Schedule for TORUN (Code Tr) Page 5

A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 29 Feb 2016 Day 60 ---										
05 40 32	J1825-1718	17 28 42	18.5	165.4	-1.0		-9.1	8	142	05 40 32
05 43 32	=1822-173	17 31 42	18.6	166.2	-0.9		-8.6	180	145	05 40 33
05 43 32	IRAS18264-11	17 31 42	23.9	164.3	-1.0		-9.5	-34	145	No stop
05 45 32	---	17 33 43	24.0	164.9	-0.9		-9.2	86	147	05 43 33
05 45 32	J1825-1718	17 33 43	18.7	166.7	-0.9		-8.3	-34	147	No stop
05 48 32	=1822-173	17 36 43	18.8	167.4	-0.8		-7.9	146	150	05 45 33
05 48 32	IRAS18264-11	17 36 43	24.1	165.7	-0.9		-8.7	-34	150	No stop
05 50 32	---	17 38 44	24.2	166.2	-0.9		-8.4	86	152	05 48 33
05 50 32	J1825-1718	17 38 44	18.8	167.9	-0.8		-7.6	-34	152	No stop
05 53 32	=1822-173	17 41 44	18.9	168.7	-0.7		-7.1	146	155	05 50 33
05 53 32	IRAS18264-11	17 41 44	24.3	167.0	-0.8		-7.9	-34	155	No stop
05 55 32	---	17 43 44	24.3	167.5	-0.8		-7.6	86	157	05 53 33
05 56 14	J1825-1718	17 44 27	19.0	169.4	-0.7		-6.7	8	157	05 56 14
05 59 14	=1822-173	17 47 27	19.1	170.1	-0.7		-6.2	180	160	05 56 15
05 59 14	IRAS18264-11	17 47 27	24.4	168.5	-0.7		-7.0	-34	160	No stop
06 01 14	---	17 49 27	24.5	169.1	-0.7		-6.7	86	162	05 59 15
06 01 14	J1825-1718	17 49 27	19.1	170.6	-0.6		-5.9	-34	162	No stop
06 04 14	=1822-173	17 52 28	19.2	171.4	-0.6		-5.4	146	164	06 01 15
06 08 54	J2202+4216	17 57 09	48.6	79.3	-4.1		-53.0	80	164	06 08 54
06 16 54	=VR422201	18 05 10	49.8	80.6	-4.0		-53.3	480	172	06 08 55
06 21 44	J1825-1718	18 10 01	19.5	175.8	-0.3		-2.6	85	172	06 21 44
06 24 44	=1822-173	18 13 01	19.5	176.6	-0.2		-2.2	180	175	06 21 45
06 24 44	IRAS18264-11	18 13 01	25.0	175.4	-0.3		-2.8	-34	175	No stop
06 26 44	---	18 15 02	25.0	175.9	-0.3		-2.5	86	177	06 24 45
06 26 44	J1825-1718	18 15 02	19.6	177.1	-0.2		-1.8	-34	177	No stop
06 29 44	=1822-173	18 18 02	19.6	177.8	-0.1		-1.4	146	180	06 26 45
06 29 44	IRAS18264-11	18 18 02	25.0	176.7	-0.2		-2.0	-34	180	No stop
06 31 44	---	18 20 02	25.0	177.3	-0.2		-1.7	86	182	06 29 45
06 31 44	J1825-1718	18 20 02	19.6	178.4	-0.1		-1.0	-34	182	No stop
06 34 44	=1822-173	18 23 03	19.6	179.1	-0.1		-0.6	146	185	06 31 45

Schedule for TORUN (Code Tr) Page 6

A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 29 Feb 2016 Day 60 ---										
06 34 44	IRAS18264-11	18 23 03	25.1	178.1	-0.1		-1.2	-34	185	No stop
06 36 44	---	18 25 03	25.1	178.6	-0.1		-0.8	86	187	06 34 45
06 37 29	J1825-1718	18 25 48	19.6	179.8	-0.0		-0.1	11	187	06 37 29
06 40 29	=1822-173	18 28 49	19.6	180.6	0.0		0.4	180	189	06 37 30
06 40 29	IRAS18264-11	18 28 49	25.1	179.6	-0.0		-0.2	-34	189	No stop
06 42 29	---	18 30 49	25.1	180.2	0.0		0.1	86	191	06 40 30
06 42 29	J1825-1718	18 30 49	19.6	181.1	0.1		0.7	-34	191	No stop
06 45 29	=1822-173	18 33 50	19.6	181.8	0.1		1.2	146	194	06 42 30
06 45 29	IRAS18264-11	18 33 50	25.1	181.0	0.1		0.6	-34	194	No stop
06 47 29	---	18 35 50	25.1	181.5	0.1		0.9	86	196	06 45 30
06 47 29	J1825-1718	18 35 50	19.6	182.4	0.2		1.5	-34	196	No stop
06 50 29	=1822-173	18 38 50	19.6	183.1	0.2		2.0	146	199	06 47 30
06 50 29	IRAS18264-11	18 38 50	25.1	182.4	0.1		1.4	-34	199	No stop
06 52 29	---	18 40 51	25.0	182.9	0.2		1.8	86	201	06 50 30
06 53 14	J1825-1718	18 41 36	19.5	183.8	0.3		2.4	10	201	06 53 14
06 56 14	=1822-173	18 44 36	19.5	184.6	0.3		2.9	180	204	06 53 15
06 56 14	IRAS18264-11	18 44 36	25.0	183.9	0.2		2.4	-35	204	No stop
06 58 14	---	18 46 37	25.0	184.4	0.3		2.7	85	206	06 56 15
06 58 14	J1825-1718	18 46 37	19.5	185.1	0.3		3.2	-35	206	No stop
07 01 14	=1822-173	18 49 37	19.4	185.8	0.4		3.7	145	209	06 58 15
07 06 09	J2202+4216	18 54 33	57.2	89.7	-3.1		-54.3	87	209	07 06 09
07 14 09	=VR422201	19 02 34	58.4	91.3	-3.0		-54.3	480	216	07 06 10
07 19 14	J1825-1718	19 07 40	19.0	190.4	0.7		6.5	93	216	07 19 14
07 22 14	=1822-173	19 10 41	19.0	191.1	0.7		7.0	180	219	07 19 15
07 22 14	IRAS18264-11	19 10 41	24.5	190.9	0.7		6.7	-35	219	No stop
07 24 14	---	19 12 41	24.4	191.4	0.7		7.0	85	221	07 22 15
07 24 14	J1825-1718	19 12 41	18.9	191.6	0.8		7.3	-35	221	No stop
07 27 14	=1822-173	19 15 41	18.8	192.4	0.8		7.8	145	224	07 24 15
07 27 14	IRAS18264-11	19 15 41	24.3	192.2	0.8		7.5	-35	224	No stop
07 29 14	---	19 17 42	24.3	192.8	0.8		7.8	85	226	07 27 15

Schedule for TORUN (Code Tr) Page 7

A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 29 Feb 2016 Day 60 ---										
07 29 14	J1825-1718	19 17 42	18.7	192.9	0.9		8.1	-35	226	No stop
07 32 14	=1822-173	19 20 42	18.6	193.6	0.9		8.5	145	229	07 29 15
07 32 14	IRAS18264-11	19 20 42	24.2	193.6	0.8		8.3	-35	229	No stop
07 34 14	---	19 22 43	24.1	194.1	0.9		8.6	85	231	07 32 15
07 34 59	J1825-1718	19 23 28	18.5	194.3	0.9		9.0	10	231	07 34 59
07 37 59	=1822-173	19 26 28	18.4	195.1	1.0		9.4	180	234	07 35 00
07 37 59	IRAS18264-11	19 26 28	24.0	195.1	0.9		9.2	-35	234	No stop
07 39 59	---	19 28 29	23.9	195.6	1.0		9.5	85	236	07 38 00
07 39 59	J1825-1718	19 28 29	18.3	195.6	1.0		9.7	-35	236	No stop
07 42 59	=1822-173	19 31 29	18.2	196.3	1.1		10.2	145	238	07 40 00
07 42 59	IRAS18264-11	19 31 29	23.8	196.4	1.0		10.0	-35	238	No stop
07 44 59	---	19 33 29	23.7	197.0	1.1		10.3	85	240	07 43 00
07 44 59	J1825-1718	19 33 29	18.1	196.8	1.1		10.5	-35	240	No stop
07 47 59	=1822-173	19 36 30	18.0	197.6	1.2		10.9	145	243	07 45 00
07 47 59	IRAS18264-11	19 36 30	23.5	197.7	1.1		10.8	-35	243	No stop
07 49 59	---	19 38 30	23.4	198.3	1.1		11.1	85	245	07 48 00
07 50 44	J1825-1718	19 39 15	17.9	198.2	1.2		11.4	10	245	07 50 44
07 53 44	=1822-173	19 42 16	17.7	199.0	1.3		11.8	180	248	07 50 45
07 53 44	IRAS18264-11	19 42 16	23.3	199.3	1.2		11.7	-35	248	No stop
07 55 44	---	19 44 16	23.2	199.8	1.2		12.0	85	250	07 53 45
07 55 44	J1825-1718	19 44 16	17.6	199.5	1.3		12.1	-35	250	No stop
07 58 44	=1822-173	19 47 17	17.5	200.2	1.3		12.5	145	253	07 55 45
08 03 54	J2202+4216	19 52 27	65.8	103.0	-2.2		-52.3	100	253	08 03 54
08 11 54	=VR422201	20 00 29	67.0	105.3	-2.0		-51.6	480	261	08 03 55
08 17 09	J1825-1718	20 05 45	16.4	204.7	1.7		15.2	102	261	08 17 09
08 20 09	=1822-173	20 08 45	16.2	205.4	1.7		15.7	180	263	08 17 10
08 20 09	IRAS18264-11	20 08 45	21.7	206.1	1.6		15.6	-34	263	No stop
08 22 09	---	20 10 45	21.6	206.6	1.7		15.9	86	265	08 20 10
08 22 09	J1825-1718	20 10 45	16.1	205.9	1.7		15.9	-35	265	No stop
08 25 09	=1822-173	20 13 46	15.9	206.6	1.8		16.4	145	268	08 22 10

Schedule for TORUN (Code Tr) Page 8

A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 29 Feb 2016 Day 60 ---										
08 25 09	IRAS18264-11	20 13 46	21.4	207.3	1.7		16.4	-34	268	No stop
08 27 09	---	20 15 46	21.3	207.8	1.8		16.7	86	270	08 25 10
08 27 09	J1825-1718	20 15 46	15.8	207.1	1.8		16.6	-35	270	No stop
08 30 09	=1822-173	20 18 47	15.6	207.8	1.9		17.1	145	273	08 27 10
08 30 09	IRAS18264-11	20 18 47	21.0	208.6	1.8		17.1	-34	273	No stop
08 32 09	---	20 20 47	20.9	209.1	1.8		17.4	86	275	08 30 10
08 32 54	J1825-1718	20 21 32	15.4	208.4	1.9		17.4	10	275	08 32 54
08 35 54	=1822-173	20 24 33	15.1	209.1	2.0		17.8	180	278	08 32 55
08 35 54	IRAS18264-11	20 24 33	20.6	210.0	1.9		17.9	-34	278	No stop
08 37 54	---	20 26 33	20.5	210.5	1.9		18.2	86	280	08 35 55
08 37 54	J1825-1718	20 26 33	15.0	209.6	2.0		18.1	-35	280	No stop
08 40 54	=1822-173	20 29 34	14.8	210.3	2.1		18.5	145	283	08 37 55
08 40 54	IRAS18264-11	20 29 34	20.2	211.3	2.0		18.6	-34	283	No stop
08 42 54	---	20 31 34	20.1	211.8	2.0		18.9	86	285	08 40 55
08 42 54	J1825-1718	20 31 34	14.6	210.8	2.1		18.8	-35	285	No stop
08 45 54	=1822-173	20 34 34	14.4	211.5	2.1		19.2	145	287	08 42 55
08 45 54	IRAS18264-11	20 34 34	19.8	212.5	2.1		19.3	-34	287	No stop
08 47 54	---	20 36 35	19.7	213.0	2.1		19.5	86	289	08 45 55
08 48 39	J1825-1718	20 37 20	14.2	212.1	2.2		19.5	11	289	08 48 39
08 51 39	=1822-173	20 40 20	13.9	212.8	2.2		19.9	180	292	08 48 40
08 51 39	IRAS18264-11	20 40 20	19.4	213.9	2.2		20.0	-34	292	No stop
08 53 39	---	20 42 21	19.2	214.4	2.2		20.3	86	294	08 51 40
08 53 39	J1825-1718	20 42 21	13.8	213.3	2.3		20.2	-34	294	No stop
08 56 39	=1822-173	20 45 21	13.5	214.0	2.3		20.6	146	297	08 53 40
09 01 54	J2202+4216	20 50 37	73.8	124.2	-1.2		-42.2	76	297	09 01 54
09 09 54	=VR422201	20 58 38	74.8	128.4	-1.1		-39.6	480	305	09 01 55
09 15 19	J1825-1718	21 04 04	11.8	218.2	2.6		22.9	76	305	09 15 19
09 18 19	=1822-173	21 07 05	11.6	218.9	2.7		23.3	180	308	09 15 20
09 18 19	IRAS18264-11	21 07 05	16.9	220.3	2.6		23.4	-34	308	No stop
09 20 19	---	21 09 05	16.7	220.8	2.6		23.6	86	310	09 18 20

Schedule for TORUN (Code Tr) Page 9

A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 29 Feb 2016 Day 60 ---										
09 20 19	J1825-1718	21 09 05	11.4	219.4	2.7		23.5	-34	310	No stop
09 23 19	=1822-173	21 12 06	11.1	220.0	2.8		23.9	146	312	09 20 20
09 23 19	IRAS18264-11	21 12 06	16.4	221.5	2.7		24.0	-34	312	No stop
09 25 19	---	21 14 06	16.2	222.0	2.7		24.2	86	314	09 23 20
09 25 19	J1825-1718	21 14 06	10.9	220.5	2.8		24.1	-34	314	No stop
09 28 19	=1822-173	21 17 06	10.6	221.1	2.8		24.4	146	317	09 25 20
09 28 19	IRAS18264-11	21 17 06	15.9	222.7	2.8		24.6	-34	317	No stop
09 30 19	---	21 19 07	15.7	223.1	2.8		24.8	86	319	09 28 20
09 31 04	J1825-1718	21 19 52	10.3	221.8	2.9		24.8	11	319	09 31 04
09 34 04	=1822-173	21 22 52	10.0	222.4	2.9		25.1	180	322	09 31 05
09 34 04	IRAS18264-11	21 22 52	15.3	224.0	2.9		25.2	-34	322	No stop
09 36 04	---	21 24 53	15.1	224.5	2.9		25.4	86	324	09 34 05
09 36 04	J1825-1718	21 24 53	9.8	222.9	3.0		25.3	-34	324	No stop
09 39 04	=1822-173	21 27 53	9.5	223.5	3.0		25.7	146	327	09 36 05
09 39 04	IRAS18264-11	21 27 53	14.8	225.1	3.0		25.8	-34	327	No stop
09 41 04	---	21 29 53	14.6	225.6	3.0		26.0	86	329	09 39 05
09 41 04	J1825-1718	21 29 53	9.3	224.0	3.1		25.9	-34	329	No stop
09 44 04	=1822-173	21 32 54	9.0	224.6	3.1		26.2	146	332	09 41 05
09 44 04	IRAS18264-11	21 32 54	14.3	226.3	3.0		26.3	-34	332	No stop
09 46 04	---	21 34 54	14.1	226.7	3.1		26.5	86	334	09 44 05
09 46 49	J1825-1718	21 35 39	8.7	225.2	3.2		26.5	11	334	09 46 49
09 49 49	=1822-173	21 38 40	8.4	225.9	3.2		26.8	180	337	09 46 50
09 49 49	IRAS18264-11	21 38 40	13.6	227.6	3.1		26.9	-33	337	No stop
09 51 49	---	21 40 40	13.4	228.0	3.2		27.1	87	338	09 49 50
09 51 49	J1825-1718	21 40 40	8.2	226.3	3.2		27.0	-34	338	No stop
09 54 49	=1822-173	21 43 41	7.8	226.9	3.3		27.4	146	341	09 51 50
09 59 59	J2202+4216	21 48 52	79.0	165.8	-0.2		-11.5	29	341	09 59 59
10 07 59	=VR422201	21 56 53	79.2	173.6	-0.1		-5.2	480	349	10 00 00
10 13 09	J1825-1718	22 02 04	5.7	230.8	3.6		29.2	21	349	10 13 09
10 16 09	=1822-173	22 05 04	5.4	231.4	3.6		29.5	180	352	10 13 10

Schedule for TORUN (Code Tr) Page 10

A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 29 Feb 2016 Day 60 ---										
10 16 09	IRAS18264-11	22 05 04	10.6	233.4	3.6		29.5	-33	352	No stop
10 18 09	---	22 07 05	10.3	233.8	3.6		29.7	87	354	10 16 10
10 18 09	J1825-1718	22 07 05	5.2	231.9	3.7		29.7	-34	354	No stop
10 21 09	=1822-173	22 10 05	4.8	232.5	3.7		29.9	146	357	10 18 10
10 21 09	IRAS18264-11	22 10 05	10.0	234.5	3.7		30.0	-33	357	No stop
10 23 09	---	22 12 05	9.7	234.9	3.7		30.1	87	359	10 21 10
10 23 09	J1825-1718	22 12 05	4.6	232.9	3.8		30.1	-33	359	No stop
10 26 09	=1822-173	22 15 06	4.2	233.5	3.8		30.4	147	362	10 23 10
10 26 09	IRAS18264-11	22 15 06	9.4	235.6	3.7		30.4	-33	362	No stop
10 28 09	---	22 17 06	9.1	236.0	3.8		30.6	87	363	10 26 10
10 28 49	J1825-1718	22 17 46	3.9	234.1	3.9		30.6	7	363	10 28 49
10 31 49	=1822-173	22 20 47	3.5	234.7	3.9		30.9	180	366	10 28 50
10 31 49	IRAS18264-11	22 20 47	8.7	236.8	3.8		30.9	-33	366	No stop
10 33 49	---	22 22 47	8.4	237.2	3.9		31.0	87	368	10 31 50
10 33 49	J1825-1718	22 22 47	3.3	235.1	3.9		31.1	-33	368	No stop
10 36 49	=1822-173	22 25 48	2.9	235.7	4.0	D	31.3	0	371	10 33 50
10 36 49	IRAS18264-11	22 25 48	8.0	237.8	3.9		31.3	-33	371	No stop
10 38 49	---	22 27 48	7.8	238.3	4.0		31.4	87	373	10 36 50
10 41 49	IRAS18264-11	22 30 48	7.4	238.9	4.0		31.7	174	373	10 41 49
10 43 49	---	22 32 49	7.1	239.3	4.0		31.8	120	375	10 41 50
10 47 29	IRAS18264-11	22 36 29	6.6	240.1	4.1		32.1	213	375	10 47 29
10 49 29	---	22 38 30	6.4	240.5	4.1		32.3	120	377	10 47 30
10 56 49	J2202+4216	22 45 51	77.1	217.7	0.7		29.8	160	377	10 56 49
11 02 49	=VR422201	22 51 52	76.6	221.9	0.8		32.8	360	383	10 56 50
11 10 04	IRAS18264-11	22 59 08	3.6	244.7	4.5		33.7	149	383	11 10 04
11 12 04	---	23 01 08	3.4	245.2	4.5		33.8	120	385	11 10 05
11 22 14	J2202+4216	23 11 20	74.4	233.4	1.1		40.7	327	385	11 22 14
11 30 00	=VR422201	23 19 07	73.4	237.2	1.3		43.1	466	392	11 22 15

SETUP FILE INFORMATION:
NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

======== Setup file: sess116.M128

```
  Setup group:    7         Station: TORUN            Total bit rate:   128
  Format: MARK5B            Bits per sample: 2        Sample rate:  4.000
  Number of channels: 16    DBE type: DBBC_DDC        Speedup factor:   1.00

  Disk used to record data.

  1st LO=   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00
            5900.00   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00
  Net SB=         L         L         U         U         L         L         U         U
                  L         L         U         U         L         L         U         U
  IF SB =         U         U         U         U         U         U         U         U
                  U         U         U         U         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
               RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
  BBC   =         1         5         1         5         2         6         2         6
                  3         7         3         7         4         8         4         8
  BBC SB=         L         L         U         U         L         L         U         U
                  L         L         U         U         L         L         U         U
  IF    =        A1        B1        A1        B1        A1        B1        A1        B1
                 A1        B1        A1        B1        A1        B1        A1        B1

 The following frequency sets based on these setups were used.

 Frequency Set:   6  Based on FREQ, BW, and/or DOPPLER in schedule.  Used with PCAL = off
  LO sum=   6665.38  6665.38  6665.38  6665.38  6669.38  6669.38  6669.38  6669.38
            6673.38  6673.38  6673.38  6673.38  6677.38  6677.38  6677.38  6677.38
  BBC fr=    765.38   765.38   765.38   765.38   769.38   769.38   769.38   769.38
             773.38   773.38   773.38   773.38   777.38   777.38   777.38   777.38
  Bandwd=      2.00     2.00     2.00     2.00     2.00     2.00     2.00     2.00
               2.00     2.00     2.00     2.00     2.00     2.00     2.00     2.00
   Matching frequency sets:   6

  Track assignments are:
   track1=  18, 26,  2, 10, 20, 28,  4, 12, 22, 30,  6, 14, 24, 32,  8, 16
   barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)            (mas)

* IRAS18264-11      18 26 26.649085   * 18 29 14.360000     18 30 07.761228       0.00
                   -11 52 23.96488    *-11 50 22.50000     -11 49 36.15358        0.00

  3C286             13 28 49.657758   * 13 31 08.288051     13 31 53.678223       0.18
* J1331+3030        30 45 58.64059    * 30 30 32.95924      30 25 24.99919        0.17

* 3C345             16 41 17.606228   * 16 42 58.809966     16 43 31.191092       0.76
  J1642+3948        39 54 10.81496    * 39 48 36.99402      39 46 40.88951        0.52

  1822-173          18 22 42.013862   * 18 25 36.532313     18 26 32.125105       0.23
* J1825-1718       -17 20 35.28837    *-17 18 49.84725     -17 18 06.77707        0.41

  VR422201          22 00 39.362505   * 22 02 43.291372     22 03 22.050139       0.00
* J2202+4216        42 02 08.59077    * 42 16 39.97990      42 21 19.17747        0.00
```

rk12qgtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*

```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865

Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                   Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Tue   1 Mar 2016   Day  61 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

02 00 00  1213-172     13 51 30  16.4 203.6  1.6      14.6     0        0   02 00 00
02 14 30  ---          14 06 03  15.4 207.0  1.8      16.6   870       28   02 00 01

02 15 00  1213-172     14 06 33  15.4 207.1  1.8      16.7    24       28   02 15 00
02 29 30  ---          14 21 05  14.4 210.6  2.1      18.7   870       56   02 15 01

02 30 00  1213-172     14 21 35  14.3 210.7  2.1      18.7    24       56   02 30 00
02 44 30  ---          14 36 08  13.1 214.0  2.3      20.6   870       84   02 30 01

02 45 00  1213-172     14 36 38  13.1 214.1  2.3      20.7    24       84   02 45 00
03 00 00  ---          14 51 40  11.8 217.6  2.6      22.6   900      112   02 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    8         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
 1st LO=   2400.00   2400.00   2400.00   2400.00
 Net SB=         L         L         U         U
 IF SB =         L         L         L         L
 Pol.  =       RCP       LCP       RCP       LCP
 BBC   =         1         2         1         2
 BBC SB=         U         U         L         L
 IF    =         C         A         C         A

The following frequency sets based on these setups were used.

 Frequency Set:   5  Setup file default.  Used with PCAL = 1MHz
 LO sum=   1668.00  1668.00  1668.00  1668.00
 BBC fr=    732.00   732.00   732.00   732.00
 Bandwd=     16.00    16.00    16.00    16.00
  Matching frequency sets:   5

 Track assignments are:
  track1=   2, 18,  3, 19
  barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 55.961233       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 28.98002        0.00
                    fake circumpolar target for a TS to look at

* 1213-172          12 13 11.668008   * 12 15 46.751763     12 16 38.229976       0.00
  J1215-1731       -17 15 05.20080    *-17 31 45.40317     -17 37 12.09982        0.00
                    ./rk12qg_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 2101 observations, RA-AO3-04, RA-AO2-12


EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1213-172           147.0

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

em117dtr

A 3-D View of high-mass star formation: gas Kinematics and Magnetic

PI: *L. Moscadelli*

Address: Osservatorio Astrofisico di Arcetri Phone: +39 055 220039 EMAIL: mosca@arcetri.astro.it

```
Observing mode: Polarization observations of 1 source at 6.7 GHz (128 Mb/s
Schedule for TORUN     (Code Tr )                                  Page   2
               A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------
 --- Tue   1 Mar 2016   Day  61 ---
 Next scan frequencies:  6666.25  6666.25  6666.25  6666.25  6670.25  6670.25  6670.25  6670.25
                         6674.25  6674.25  6674.25  6674.25  6678.25  6678.25  6678.25  6678.25
 Next BBC frequencies:    766.25   766.25   766.25   766.25   770.25   770.25   770.25   770.25
                          774.25   774.25   774.25   774.25   778.25   778.25   778.25   778.25
 Next scan bandwidths:      2.00     2.00     2.00     2.00     2.00     2.00     2.00     2.00
                            2.00     2.00     2.00     2.00     2.00     2.00     2.00     2.00

05 30 00  J2202+4216   17 22 05  43.5  73.5 -4.7     -51.2     0        0   05 30 00
05 38 00  =VR422201    17 30 06  44.6  74.8 -4.6     -51.7   480        8   05 30 01

05 39 45  J2015+3710   17 31 51  57.6 102.6 -2.7     -47.4    35        8   05 39 45
05 44 45  =2013+370    17 36 52  58.3 103.9 -2.7     -47.1   300       12   05 39 46

05 44 45 G075.76+0.34  17 36 52  57.6 102.0 -2.8     -47.8   -17       12   No stop
05 46 45  ---          17 38 53  57.9 102.5 -2.7     -47.6   103       14   05 44 46

05 47 15  J2015+3710   17 39 23  58.7 104.5 -2.6     -46.9    12       14   05 47 15
05 50 15  =2013+370    17 42 23  59.1 105.3 -2.6     -46.7   180       17   05 47 16

05 50 15 G075.76+0.34  17 42 23  58.4 103.4 -2.7     -47.4   -17       17   No stop
05 52 15  ---          17 44 23  58.7 103.9 -2.6     -47.3   103       19   05 50 16

05 52 15  J2015+3710   17 44 23  59.4 105.9 -2.5     -46.5   -18       19   No stop
05 55 15  =2013+370    17 47 24  59.9 106.7 -2.5     -46.3   162       22   05 52 16

05 55 15 G075.76+0.34  17 47 24  59.1 104.7 -2.6     -47.1   -18       22   No stop
05 57 15  ---          17 49 24  59.4 105.2 -2.5     -46.9   102       24   05 55 16

05 57 45  J2015+3710   17 49 54  60.2 107.4 -2.4     -46.0    12       24   05 57 45
06 00 45  =2013+370    17 52 55  60.7 108.2 -2.4     -45.8   180       27   05 57 46

06 00 45 G075.76+0.34  17 52 55  59.9 106.1 -2.5     -46.6   -18       27   No stop
06 02 45  ---          17 54 55  60.2 106.7 -2.5     -46.5   102       29   06 00 46

06 03 15  J2015+3710   17 55 25  61.0 108.9 -2.3     -45.5    12       29   06 03 15
06 06 15  =2013+370    17 58 26  61.4 109.8 -2.3     -45.2   180       32   06 03 16

06 06 15 G075.76+0.34  17 58 26  60.7 107.7 -2.4     -46.1   -18       32   No stop
06 08 15  ---          18 00 26  61.0 108.2 -2.4     -45.9   102       34   06 06 16

06 08 15  J2015+3710   18 00 26  61.7 110.4 -2.3     -45.0   -18       34   No stop
06 11 15  =2013+370    18 03 27  62.1 111.3 -2.2     -44.6   162       37   06 08 16
```

```
Schedule for TORUN     (Code Tr )                                  Page   3
               A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------
 --- Tue   1 Mar 2016   Day  61 ---
06 19 55  J1331+3030   18 12 08  35.6 274.9  4.7      43.9   179       37   06 19 55
06 24 55  =3C286       18 17 09  34.8 275.8  4.8      43.9   300       41   06 19 56

06 25 15  J1331+3030   18 17 29  34.8 275.9  4.8      43.8    14       41   06 25 15
06 33 15  =3C286       18 25 30  33.6 277.4  4.9      43.7   480       49   06 25 16

06 40 35  J2202+4216   18 32 51  53.9  85.5 -3.5     -54.1    41       49   06 40 35
06 48 35  =VR422201    18 40 53  55.1  87.0 -3.4     -54.2   480       57   06 40 36

06 50 20  J2015+3710   18 42 38  67.3 125.0 -1.6     -38.1    14       57   06 50 20
06 53 20  =2013+370    18 45 38  67.7 126.3 -1.5     -37.5   180       60   06 50 21

06 53 20 G075.76+0.34  18 45 38  67.1 123.3 -1.6     -39.2   -20       60   No stop
06 55 20  ---          18 47 39  67.4 124.1 -1.6     -38.8   100       62   06 53 21

06 55 20  J2015+3710   18 47 39  67.9 127.1 -1.5     -37.0   -21       62   No stop
06 58 20  =2013+370    18 50 39  68.3 128.4 -1.4     -36.2   159       64   06 55 21

06 58 20 G075.76+0.34  18 50 39  67.7 125.4 -1.5     -38.1   -20       64   No stop
07 00 20  ---          18 52 40  68.0 126.2 -1.5     -37.6   100       66   06 58 21

07 00 20  J2015+3710   18 52 40  68.5 129.3 -1.4     -35.7   -21       66   No stop
07 03 20  =2013+370    18 55 40  68.9 130.6 -1.3     -34.9   159       69   07 00 21

07 03 20 G075.76+0.34  18 55 40  68.3 127.5 -1.4     -36.9   -21       69   No stop
07 05 20  ---          18 57 40  68.6 128.3 -1.4     -36.4    99       71   07 03 21

07 05 53  J2015+3710   18 58 14  69.2 131.8 -1.3     -34.2    12       71   07 05 53
07 08 53  =2013+370    19 01 14  69.5 133.2 -1.2     -33.4   180       74   07 05 54

07 08 53 G075.76+0.34  19 01 14  69.0 129.9 -1.4     -35.5   -21       74   No stop
07 10 53  ---          19 03 14  69.2 130.8 -1.3     -34.9    99       76   07 08 54

07 10 53  J2015+3710   19 03 14  69.7 134.1 -1.2     -32.8   -22       76   No stop
07 13 53  =2013+370    19 06 15  70.0 135.6 -1.2     -31.8   158       79   07 10 54

07 13 53 G075.76+0.34  19 06 15  69.6 132.2 -1.3     -34.1   -21       79   No stop
07 15 53  ---          19 08 15  69.8 133.2 -1.2     -33.5    99       81   07 13 54

07 15 53  J2015+3710   19 08 15  70.2 136.6 -1.1     -31.2   -22       81   No stop
07 18 53  =2013+370    19 11 16  70.5 138.2 -1.1     -30.2   158       84   07 15 54

07 18 53 G075.76+0.34  19 11 16  70.1 134.7 -1.2     -32.6   -21       84   No stop
07 20 53  ---          19 13 16  70.3 135.6 -1.2     -31.9    99       86   07 18 54

07 21 26  J2015+3710   19 13 49  70.8 139.5 -1.0     -29.3    11       86   07 21 26
07 24 26  =2013+370    19 16 50  71.1 141.1 -1.0     -28.3   180       88   07 21 27
```

Schedule for TORUN (Code Tr) Page 4

A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 1 Mar 2016 Day 61 ---										
07 24 26	G075.76+0.34	19 16 50	70.7	137.5	-1.1		-30.8	-22	88	No stop
07 26 26	---	19 18 50	70.9	138.5	-1.1		-30.1	98	90	07 24 27
07 26 26	J2015+3710	19 18 50	71.3	142.2	-1.0		-27.5	-23	90	No stop
07 29 26	=2013+370	19 21 50	71.5	143.9	-0.9		-26.4	157	93	07 26 27
07 29 26	G075.76+0.34	19 21 50	71.2	140.1	-1.0		-29.0	-22	93	No stop
07 31 26	---	19 23 51	71.4	141.2	-1.0		-28.3	98	95	07 29 27
07 31 26	J2015+3710	19 23 51	71.7	145.0	-0.9		-25.6	-23	95	No stop
07 34 26	=2013+370	19 26 51	72.0	146.7	-0.8		-24.4	157	98	07 31 27
07 36 21	J2202+4216	19 28 47	62.3	97.0	-2.6		-53.8	1	98	07 36 21
07 44 21	=VR422201	19 36 48	63.5	99.0	-2.4		-53.4	480	106	07 36 22
07 46 31	J2015+3710	19 38 58	72.9	154.2	-0.6		-19.2	5	106	07 46 31
07 49 31	=2013+370	19 41 59	73.1	156.1	-0.6		-17.8	180	109	07 46 32
07 49 31	G075.76+0.34	19 41 59	72.9	151.9	-0.7		-20.9	-23	109	No stop
07 51 31	---	19 43 59	73.0	153.1	-0.6		-20.0	97	111	07 49 32
07 51 31	J2015+3710	19 43 59	73.2	157.4	-0.5		-16.8	-24	111	No stop
07 54 31	=2013+370	19 46 59	73.4	159.4	-0.5		-15.4	156	113	07 51 32
07 54 31	G075.76+0.34	19 46 59	73.2	155.1	-0.6		-18.6	-23	113	No stop
07 56 31	---	19 49 00	73.3	156.4	-0.6		-17.6	97	115	07 54 32
07 56 31	J2015+3710	19 49 00	73.5	160.8	-0.5		-14.4	-24	115	No stop
07 59 31	=2013+370	19 52 00	73.6	162.8	-0.4		-12.9	156	118	07 56 32
07 59 31	G075.76+0.34	19 52 00	73.5	158.4	-0.5		-16.2	-23	118	No stop
08 01 31	---	19 54 01	73.6	159.7	-0.5		-15.2	97	120	07 59 32
08 02 11	J2015+3710	19 54 41	73.7	164.7	-0.4		-11.5	16	120	08 02 11
08 05 11	=2013+370	19 57 41	73.8	166.8	-0.3		-9.9	180	123	08 02 12
08 05 11	G075.76+0.34	19 57 41	73.8	162.3	-0.4		-13.3	-24	123	No stop
08 07 11	---	19 59 42	73.9	163.7	-0.4		-12.3	96	125	08 05 12
08 07 11	J2015+3710	19 59 42	73.9	168.2	-0.3		-8.9	-25	125	No stop
08 10 11	=2013+370	20 02 42	74.0	170.3	-0.2		-7.3	155	128	08 07 12
08 10 11	G075.76+0.34	20 02 42	74.0	165.8	-0.3		-10.7	-24	128	No stop
08 12 11	---	20 04 42	74.1	167.2	-0.3		-9.7	96	130	08 10 12

Schedule for TORUN (Code Tr) Page 5

A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 1 Mar 2016 Day 61 ---										
08 12 11	J2015+3710	20 04 42	74.0	171.8	-0.2		-6.2	-25	130	No stop
08 15 11	=2013+370	20 07 43	74.1	173.9	-0.1		-4.6	155	133	08 12 12
08 15 11	G075.76+0.34	20 07 43	74.2	169.4	-0.2		-8.0	-24	133	No stop
08 17 11	---	20 09 43	74.2	170.8	-0.2		-6.9	96	135	08 15 12
08 17 51	J2015+3710	20 10 23	74.1	175.9	-0.1		-3.1	15	135	08 17 51
08 20 51	=2013+370	20 13 24	74.1	178.1	-0.0		-1.5	180	137	08 17 52
08 20 51	G075.76+0.34	20 13 24	74.3	173.5	-0.1		-4.9	-24	137	No stop
08 22 51	---	20 15 24	74.3	174.9	-0.1		-3.8	96	139	08 20 52
08 22 51	J2015+3710	20 15 24	74.1	179.5	-0.0		-0.4	-25	139	No stop
08 25 51	=2013+370	20 18 25	74.1	181.7	0.0		1.3	155	142	08 22 52
08 25 51	G075.76+0.34	20 18 25	74.4	177.2	-0.1		-2.1	-24	142	No stop
08 27 51	---	20 20 25	74.4	178.6	-0.0		-1.0	96	144	08 25 52
08 27 51	J2015+3710	20 20 25	74.1	183.2	0.1		2.4	-25	144	No stop
08 30 51	=2013+370	20 23 25	74.1	185.4	0.1		4.0	155	147	08 27 52
08 33 31	J2202+4216	20 26 06	70.6	113.8	-1.6		-48.1	2	147	08 33 31
08 41 31	=VR422201	20 34 07	71.7	116.9	-1.5		-46.5	480	155	08 33 32
08 44 31	J2015+3710	20 37 08	73.7	195.1	0.4		11.3	9	155	08 44 31
08 47 31	=2013+370	20 40 08	73.6	197.2	0.4		12.9	180	158	08 44 32
08 47 31	G075.76+0.34	20 40 08	74.1	193.0	0.3		9.8	-23	158	No stop
08 49 31	---	20 42 09	74.0	194.4	0.3		10.9	97	160	08 47 32
08 49 31	J2015+3710	20 42 09	73.5	198.6	0.4		13.9	-24	160	No stop
08 52 31	=2013+370	20 45 09	73.3	200.6	0.5		15.4	156	162	08 49 32
08 52 31	G075.76+0.34	20 45 09	73.9	196.6	0.4		12.5	-23	162	No stop
08 54 31	---	20 47 09	73.8	197.9	0.4		13.5	97	164	08 52 32
08 54 31	J2015+3710	20 47 09	73.2	201.9	0.5		16.4	-23	164	No stop
08 57 31	=2013+370	20 50 10	73.1	203.9	0.6		17.8	157	167	08 54 32
08 57 31	G075.76+0.34	20 50 10	73.6	200.0	0.5		15.0	-22	167	No stop
08 59 31	---	20 52 10	73.5	201.4	0.5		16.0	98	169	08 57 32
09 00 16	J2015+3710	20 52 55	72.9	205.7	0.6		19.1	22	169	09 00 16
09 03 16	=2013+370	20 55 56	72.7	207.6	0.7		20.4	180	172	09 00 17

Schedule for TORUN (Code Tr) Page 6

A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 1 Mar 2016 Day 61 ---										
09 03 16	G075.76+0.34	20 55 56	73.3	203.9	0.6		17.8	-22	172	No stop
09 05 16	---	20 57 56	73.2	205.2	0.6		18.8	98	174	09 03 17
09 05 16	J2015+3710	20 57 56	72.5	208.8	0.7		21.3	-23	174	No stop
09 08 16	=2013+370	21 00 57	72.3	210.7	0.7		22.6	157	177	09 05 17
09 08 16	G075.76+0.34	21 00 57	73.0	207.1	0.6		20.2	-21	177	No stop
09 10 16	---	21 02 57	72.9	208.4	0.7		21.1	99	179	09 08 17
09 10 16	J2015+3710	21 02 57	72.2	211.9	0.8		23.5	-22	179	No stop
09 13 16	=2013+370	21 05 57	71.9	213.7	0.8		24.7	158	182	09 10 17
09 13 16	G075.76+0.34	21 05 57	72.6	210.3	0.7		22.4	-21	182	No stop
09 15 16	---	21 07 58	72.5	211.5	0.8		23.3	99	184	09 13 17
09 16 01	J2015+3710	21 08 43	71.7	215.2	0.9		25.8	23	184	09 16 01
09 19 01	=2013+370	21 11 43	71.4	216.9	0.9		27.0	180	187	09 16 02
09 19 01	G075.76+0.34	21 11 43	72.2	213.7	0.8		24.8	-21	187	No stop
09 21 01	---	21 13 44	72.0	214.9	0.9		25.6	99	188	09 19 02
09 21 01	J2015+3710	21 13 44	71.2	218.0	1.0		27.7	-21	188	No stop
09 24 01	=2013+370	21 16 44	71.0	219.7	1.0		28.8	159	191	09 21 02
09 24 01	G075.76+0.34	21 16 44	71.7	216.6	0.9		26.8	-20	191	No stop
09 26 01	---	21 18 45	71.6	217.7	0.9		27.6	100	193	09 24 02
09 26 01	J2015+3710	21 18 45	70.8	220.7	1.0		29.5	-21	193	No stop
09 29 01	=2013+370	21 21 45	70.5	222.3	1.1		30.5	159	196	09 26 02
09 29 01	G075.76+0.34	21 21 45	71.3	219.4	1.0		28.7	-20	196	No stop
09 31 01	---	21 23 45	71.1	220.5	1.0		29.4	100	198	09 29 02
09 31 01	J2015+3710	21 23 45	70.3	223.3	1.1		31.2	-20	198	No stop
09 34 01	=2013+370	21 26 46	69.9	224.8	1.2		32.1	160	201	09 31 02
09 38 01	J2202+4216	21 30 46	78.0	149.9	-0.5		-24.1	73	201	09 38 01
09 46 01	=VR422201	21 38 48	78.5	156.6	-0.4		-18.8	480	209	09 38 02
09 50 21	J2015+3710	21 43 09	68.1	232.3	1.5		36.7	95	209	09 50 21
09 53 21	=2013+370	21 46 09	67.7	233.6	1.5		37.4	180	212	09 50 22
09 53 21	G075.76+0.34	21 46 09	68.7	231.3	1.4		36.2	-18	212	No stop
09 55 21	---	21 48 09	68.4	232.2	1.4		36.7	102	213	09 53 22

Schedule for TORUN (Code Tr) Page 7

A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 1 Mar 2016 Day 61 ---										
09 55 21	J2015+3710	21 48 09	67.5	234.4	1.5		37.8	-19	213	No stop
09 58 21	=2013+370	21 51 10	67.1	235.7	1.6		38.5	161	216	09 55 22
09 58 21	G075.76+0.34	21 51 10	68.1	233.5	1.5		37.5	-18	216	No stop
10 00 21	---	21 53 10	67.8	234.3	1.5		37.9	102	218	09 58 22
10 00 21	J2015+3710	21 53 10	66.9	236.5	1.6		38.9	-18	218	No stop
10 03 21	=2013+370	21 56 11	66.5	237.6	1.7		39.6	162	221	10 00 22
10 03 21	G075.76+0.34	21 56 11	67.5	235.6	1.6		38.6	-18	221	No stop
10 05 21	---	21 58 11	67.2	236.4	1.6		39.1	102	223	10 03 22
10 06 01	J2015+3710	21 58 51	66.2	238.6	1.7		40.1	22	223	10 06 01
10 09 01	=2013+370	22 01 52	65.8	239.8	1.8		40.7	180	226	10 06 02
10 09 01	G075.76+0.34	22 01 52	66.7	237.8	1.7		39.8	-17	226	No stop
10 11 01	---	22 03 52	66.5	238.6	1.7		40.2	103	228	10 09 02
10 11 01	J2015+3710	22 03 52	65.5	240.5	1.8		41.0	-18	228	No stop
10 14 01	=2013+370	22 06 52	65.1	241.6	1.8		41.5	162	231	10 11 02
10 14 01	G075.76+0.34	22 06 52	66.1	239.7	1.7		40.8	-17	231	No stop
10 16 01	---	22 08 53	65.8	240.4	1.8		41.2	103	233	10 14 02
10 16 01	J2015+3710	22 08 53	64.8	242.3	1.9		41.9	-17	233	No stop
10 19 01	=2013+370	22 11 53	64.4	243.3	1.9		42.4	163	236	10 16 02
10 19 01	G075.76+0.34	22 11 53	65.4	241.5	1.8		41.7	-17	236	No stop
10 21 01	---	22 13 54	65.2	242.2	1.9		42.0	103	237	10 19 02
10 21 36	J2015+3710	22 14 29	64.1	244.2	2.0		42.8	18	237	10 21 36
10 24 36	=2013+370	22 17 29	63.7	245.2	2.0		43.2	180	240	10 21 37
10 24 36	G075.76+0.34	22 17 29	64.7	243.5	1.9		42.6	-17	240	No stop
10 26 36	---	22 19 29	64.4	244.2	2.0		42.9	103	242	10 24 37
10 26 36	J2015+3710	22 19 29	63.4	245.8	2.1		43.5	-17	242	No stop
10 29 36	=2013+370	22 22 30	63.0	246.8	2.1		43.9	163	245	10 26 37
10 29 36	G075.76+0.34	22 22 30	64.0	245.2	2.0		43.4	-17	245	No stop
10 31 36	---	22 24 30	63.8	245.8	2.0		43.7	103	247	10 29 37
10 31 36	J2015+3710	22 24 30	62.7	247.4	2.1		44.1	-17	247	No stop
10 34 36	=2013+370	22 27 31	62.3	248.4	2.2		44.5	163	250	10 31 37

Schedule for TORUN (Code Tr) Page 8

A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	 AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 1 Mar 2016 Day 61 ---										
10 38 56	J2202+4216	22 31 51	78.3	206.7	0.5		21.5	157	250	10 38 56
10 46 56	=VR422201	22 39 53	77.7	213.2	0.6		26.5	480	258	10 38 57
10 51 26	J2015+3710	22 44 24	59.9	253.2	2.5		46.2	177	258	10 51 26
10 54 26	=2013+370	22 47 24	59.5	254.1	2.5		46.5	180	261	10 51 27
10 54 26	G075.76+0.34	22 47 24	60.5	252.7	2.4		46.3	-17	261	No stop
10 56 26	---	22 49 24	60.2	253.3	2.5		46.4	103	262	10 54 27
10 56 26	J2015+3710	22 49 24	59.2	254.6	2.6		46.6	-17	262	No stop
10 59 26	=2013+370	22 52 25	58.7	255.4	2.6		46.9	163	265	10 56 27
10 59 26	G075.76+0.34	22 52 25	59.8	254.1	2.5		46.7	-17	265	No stop
11 01 26	---	22 54 25	59.5	254.6	2.5		46.8	103	267	10 59 27
11 01 26	J2015+3710	22 54 25	58.5	255.9	2.6		47.0	-17	267	No stop
11 04 26	=2013+370	22 57 26	58.0	256.7	2.7		47.2	163	270	11 01 27
11 04 26	G075.76+0.34	22 57 26	59.1	255.4	2.6		47.1	-17	270	No stop
11 06 26	---	22 59 26	58.8	255.9	2.6		47.2	103	272	11 04 27
11 06 56	J2015+3710	22 59 56	57.7	257.3	2.7		47.4	13	272	11 06 56
11 09 56	=2013+370	23 02 57	57.2	258.1	2.8		47.6	180	275	11 06 57
11 09 56	G075.76+0.34	23 02 57	58.3	256.9	2.7		47.5	-17	275	No stop
11 11 56	---	23 04 57	58.0	257.4	2.7		47.6	103	277	11 09 57
11 11 56	J2015+3710	23 04 57	56.9	258.6	2.8		47.7	-17	277	No stop
11 14 56	=2013+370	23 07 57	56.5	259.3	2.9		47.8	163	280	11 11 57
11 14 56	G075.76+0.34	23 07 57	57.6	258.1	2.8		47.8	-17	280	No stop
11 16 56	---	23 09 58	57.3	258.6	2.8		47.9	103	282	11 14 57
11 16 56	J2015+3710	23 09 58	56.2	259.8	2.9		47.9	-17	282	No stop
11 19 56	=2013+370	23 12 58	55.7	260.5	2.9		48.1	163	285	11 16 57
11 19 56	G075.76+0.34	23 12 58	56.8	259.3	2.8		48.0	-17	285	No stop
11 21 56	---	23 14 59	56.5	259.8	2.9		48.1	103	287	11 19 57
11 22 26	J2015+3710	23 15 29	55.4	261.1	3.0		48.2	13	287	11 22 26
11 25 26	=2013+370	23 18 29	54.9	261.8	3.0		48.3	180	289	11 22 27
11 25 26	G075.76+0.34	23 18 29	56.0	260.7	2.9		48.3	-17	289	No stop
11 27 26	---	23 20 29	55.7	261.1	3.0		48.4	103	291	11 25 27

Schedule for TORUN (Code Tr) Page 9

A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 1 Mar 2016 Day 61 ---										
11 27 26	J2015+3710	23 20 29	54.6	262.2	3.1		48.4	-17	291	No stop
11 30 26	=2013+370	23 23 30	54.2	262.9	3.1		48.5	163	294	11 27 27
11 30 26	G075.76+0.34	23 23 30	55.3	261.8	3.0		48.5	-17	294	No stop
11 32 26	---	23 25 30	55.0	262.3	3.1		48.6	103	296	11 30 27
11 32 26	J2015+3710	23 25 30	53.9	263.4	3.2		48.5	-17	296	No stop
11 35 26	=2013+370	23 28 31	53.4	264.1	3.2		48.6	163	299	11 32 27
11 38 41	J2202+4216	23 31 46	71.8	242.8	1.5		46.3	111	299	11 38 41
11 46 41	=VR422201	23 39 48	70.7	245.9	1.6		47.9	480	307	11 38 42
11 49 46	J2015+3710	23 42 53	51.3	267.1	3.4		48.9	99	307	11 49 46
11 52 46	=2013+370	23 45 54	50.8	267.8	3.5		48.9	180	310	11 49 47
11 52 46	G075.76+0.34	23 45 54	51.9	266.8	3.4		49.1	-17	310	No stop
11 54 46	---	23 47 54	51.6	267.2	3.4		49.1	103	312	11 52 47
11 54 46	J2015+3710	23 47 54	50.5	268.2	3.5		48.9	-17	312	No stop
11 57 46	=2013+370	23 50 54	50.1	268.8	3.6		48.9	163	314	11 54 47
11 57 46	G075.76+0.34	23 50 54	51.2	267.8	3.5		49.1	-17	314	No stop
11 59 46	---	23 52 55	50.9	268.2	3.5		49.1	103	316	11 57 47
11 59 46	J2015+3710	23 52 55	49.8	269.2	3.6		48.9	-17	316	No stop
12 02 46	=2013+370	23 55 55	49.3	269.8	3.7		49.0	163	319	11 59 47
12 02 46	G075.76+0.34	23 55 55	50.4	268.8	3.6		49.2	-17	319	No stop
12 04 46	---	23 57 56	50.1	269.2	3.6		49.2	103	321	12 02 47
12 05 16	J2015+3710	23 58 26	48.9	270.3	3.7		49.0	13	321	12 05 16
12 08 16	=2013+370	00 01 26	48.5	270.9	3.8		48.9	180	324	12 05 17
12 08 16	G075.76+0.34	00 01 26	49.6	270.0	3.7		49.2	-17	324	No stop
12 10 16	---	00 03 27	49.3	270.4	3.7		49.2	103	326	12 08 17
12 10 16	J2015+3710	00 03 27	48.2	271.3	3.8		48.9	-17	326	No stop
12 13 16	=2013+370	00 06 27	47.7	271.9	3.8		48.9	163	329	12 10 17
12 13 16	G075.76+0.34	00 06 27	48.8	270.9	3.7		49.2	-17	329	No stop
12 15 16	---	00 08 27	48.5	271.3	3.8		49.2	103	331	12 13 17
12 15 16	J2015+3710	00 08 27	47.4	272.3	3.9		48.9	-17	331	No stop
12 18 16	=2013+370	00 11 28	47.0	272.9	3.9		48.9	163	334	12 15 17

Schedule for TORUN (Code Tr) Page 10

A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 1 Mar 2016 Day 61 ---										
12 18 16	G075.76+0.34	00 11 28	48.1	271.9	3.8		49.1	-17	334	No stop
12 20 16	---	00 13 28	47.8	272.3	3.9		49.1	103	336	12 18 17
12 20 46	J2015+3710	00 13 58	46.6	273.3	4.0		48.8	13	336	12 20 46
12 23 46	=2013+370	00 16 59	46.2	273.9	4.0		48.8	180	338	12 20 47
12 23 46	G075.76+0.34	00 16 59	47.2	273.0	3.9		49.1	-17	338	No stop
12 25 46	---	00 18 59	46.9	273.4	3.9		49.1	103	340	12 23 47
12 25 46	J2015+3710	00 18 59	45.9	274.3	4.0		48.8	-17	340	No stop
12 28 46	=2013+370	00 22 00	45.4	274.8	4.1		48.7	163	343	12 25 47
12 28 46	G075.76+0.34	00 22 00	46.5	273.9	4.0		49.0	-17	343	No stop
12 30 46	---	00 24 00	46.2	274.3	4.0		49.0	103	345	12 28 47
12 30 46	J2015+3710	00 24 00	45.1	275.2	4.1		48.7	-17	345	No stop
12 33 46	=2013+370	00 27 00	44.7	275.8	4.2		48.6	163	348	12 30 47
12 35 36	J2202+4216	00 28 51	63.6	260.8	2.4		53.3	25	348	12 35 36
12 43 36	=VR422201	00 36 52	62.5	262.7	2.6		53.7	480	356	12 35 37
12 45 21	J2015+3710	00 38 37	42.9	277.9	4.4		48.3	18	356	12 45 21
12 48 21	=2013+370	00 41 38	42.5	278.4	4.4		48.2	180	359	12 45 22
12 48 21	G075.76+0.34	00 41 38	43.6	277.6	4.3		48.6	-17	359	No stop
12 50 21	---	00 43 38	43.3	277.9	4.4		48.5	103	361	12 48 22
12 50 21	J2015+3710	00 43 38	42.2	278.8	4.5		48.2	-17	361	No stop
12 53 21	=2013+370	00 46 39	41.7	279.3	4.5		48.1	163	363	12 50 22
12 53 21	G075.76+0.34	00 46 39	42.8	278.5	4.4		48.4	-17	363	No stop
12 55 21	---	00 48 39	42.5	278.8	4.4		48.4	103	365	12 53 22
12 55 21	J2015+3710	00 48 39	41.4	279.7	4.5		48.0	-17	365	No stop
12 58 21	=2013+370	00 51 39	41.0	280.2	4.6		47.9	163	368	12 55 22
12 58 21	G075.76+0.34	00 51 39	42.1	279.4	4.5		48.3	-17	368	No stop
13 00 21	---	00 53 40	41.8	279.7	4.5		48.2	103	370	12 58 22
13 00 51	J2015+3710	00 54 10	40.6	280.7	4.6		47.8	13	370	13 00 51
13 03 51	=2013+370	00 57 10	40.2	281.2	4.7		47.7	180	373	13 00 52
13 03 51	G075.76+0.34	00 57 10	41.3	280.4	4.6		48.1	-17	373	No stop
13 05 51	---	00 59 11	41.0	280.7	4.6		48.0	103	375	13 03 52

```
Schedule for TORUN     (Code Tr )                                  Page  11
               A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Tue   1 Mar 2016   Day  61 ---

13 05 51  J2015+3710   00 59 11  39.9 281.6  4.7      47.6   -17      375   No stop
13 08 51  =2013+370    01 02 11  39.4 282.1  4.8      47.5   163      378   13 05 52

13 08 51 G075.76+0.34  01 02 11  40.5 281.2  4.7      47.9   -17      378   No stop
13 10 51  ---          01 04 11  40.2 281.6  4.7      47.8   103      380   13 08 52

13 10 51  J2015+3710   01 04 11  39.1 282.4  4.8      47.4   -17      380   No stop
13 13 51  =2013+370    01 07 12  38.7 283.0  4.9      47.3   163      383   13 10 52

13 13 51 G075.76+0.34  01 07 12  39.8 282.1  4.7      47.7   -17      383   No stop
13 15 51  ---          01 09 12  39.5 282.5  4.8      47.6   103      385   13 13 52

13 16 21  J2015+3710   01 09 42  38.3 283.4  4.9      47.2    13      385   13 16 21
13 19 21  =2013+370    01 12 43  37.9 283.9  4.9      47.1   180      387   13 16 22

13 19 21 G075.76+0.34  01 12 43  39.0 283.1  4.8      47.5   -17      387   No stop
13 21 21  ---          01 14 43  38.7 283.4  4.9      47.4   103      389   13 19 22

13 21 21  J2015+3710   01 14 43  37.6 284.2  5.0      47.0   -17      389   No stop
13 24 21  =2013+370    01 17 44  37.2 284.8  5.0      46.8   163      392   13 21 22

13 24 21 G075.76+0.34  01 17 44  38.2 283.9  4.9      47.3   -17      392   No stop
13 26 21  ---          01 19 44  37.9 284.3  5.0      47.2   103      394   13 24 22

13 26 21  J2015+3710   01 19 44  36.9 285.1  5.1      46.7   -17      394   No stop
13 29 21  =2013+370    01 22 44  36.4 285.6  5.1      46.6   163      397   13 26 22

13 31 06  J2202+4216   01 24 30  55.3 272.7  3.4      54.3    20      397   13 31 06
13 39 06  =VR422201    01 32 31  54.1 274.2  3.5      54.1   480      405   13 31 07

13 40 51  J2015+3710   01 34 16  34.8 287.6  5.3      46.0    19      405   13 40 51
13 43 51  =2013+370    01 37 17  34.4 288.1  5.4      45.8   180      408   13 40 52

13 43 51 G075.76+0.34  01 37 17  35.4 287.2  5.3      46.3   -17      408   No stop
13 45 51  ---          01 39 17  35.1 287.6  5.3      46.2   103      410   13 43 52

13 45 51  J2015+3710   01 39 17  34.1 288.4  5.4      45.7   -17      410   No stop
13 48 51  =2013+370    01 42 18  33.6 288.9  5.4      45.5   163      412   13 45 52

13 48 51 G075.76+0.34  01 42 18  34.7 288.1  5.3      46.0   -17      412   No stop
13 50 51  ---          01 44 18  34.4 288.4  5.4      45.9   103      414   13 48 52

13 50 51  J2015+3710   01 44 18  33.4 289.2  5.5      45.4   -17      414   No stop
13 53 51  =2013+370    01 47 19  32.9 289.8  5.5      45.2   163      417   13 50 52
```

```
Schedule for TORUN     (Code Tr )                                  Page  12
              A 3-D View of high-mass star formation: gas Kinematics and Magnetic Fiel
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Tue   1 Mar 2016   Day  61 ---

13 53 51 G075.76+0.34  01 47 19  34.0 288.9  5.4      45.7   -17      417   No stop
13 55 51  ---          01 49 19  33.7 289.3  5.5      45.6   103      419   13 53 52

13 56 21  J2015+3710   01 49 49  32.6 290.2  5.6      45.1    13      419   13 56 21
13 59 21  =2013+370    01 52 49  32.2 290.7  5.6      44.9   180      422   13 56 22

13 59 21 G075.76+0.34  01 52 49  33.2 289.8  5.5      45.4   -17      422   No stop
14 01 21  ---          01 54 50  32.9 290.2  5.5      45.3   103      424   13 59 22

14 01 21  J2015+3710   01 54 50  31.9 291.0  5.6      44.8   -17      424   No stop
14 04 21  =2013+370    01 57 50  31.5 291.5  5.7      44.6   163      427   14 01 22

14 04 21 G075.76+0.34  01 57 50  32.5 290.7  5.6      45.1   -17      427   No stop
14 06 21  ---          01 59 51  32.2 291.0  5.6      44.9   103      429   14 04 22

14 06 21  J2015+3710   01 59 51  31.2 291.8  5.7      44.4   -17      429   No stop
14 09 21  =2013+370    02 02 51  30.8 292.3  5.8      44.2   163      432   14 06 22

14 09 21 G075.76+0.34  02 02 51  31.8 291.5  5.7      44.7   -17      432   No stop
14 11 21  ---          02 04 51  31.5 291.8  5.7      44.6   103      434   14 09 22

14 11 51  J2015+3710   02 05 21  30.4 292.8  5.8      44.1    13      434   14 11 51
14 14 51  =2013+370    02 08 22  30.0 293.3  5.9      43.9   180      437   14 11 52

14 14 51 G075.76+0.34  02 08 22  31.0 292.4  5.8      44.4   -17      437   No stop
14 16 51  ---          02 10 22  30.7 292.8  5.8      44.2   103      438   14 14 52

14 16 51  J2015+3710   02 10 22  29.7 293.6  5.9      43.7   -17      438   No stop
14 19 51  =2013+370    02 13 23  29.3 294.1  6.0      43.5   163      441   14 16 52

14 21 33  J2202+4216   02 15 05  47.8 281.6  4.2      52.7    19      441   14 21 33
14 30 00  =VR422201    02 23 33  46.5 283.0  4.3      52.3   507      449   14 21 34


SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: sess116.M128

   Setup group:    7         Station: TORUN            Total bit rate:   128
   Format: MARK5B            Bits per sample: 2        Sample rate:  4.000
   Number of channels: 16    DBE type: DBBC_DDC        Speedup factor:   1.00

   Disk used to record data.
   1st LO=   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00
             5900.00   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00
   Net SB=         L         L         U         U         L         L         U         U
                   L         L         U         U         L         L         U         U
```

```
 IF SB =        U         U         U         U         U         U         U         U
                U         U         U         U         U         U         U         U
 Pol.  =      RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
              RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
 BBC   =        1         5         1         5         2         6         2         6
                3         7         3         7         4         8         4         8
 BBC SB=        L         L         U         U         L         L         U         U
                L         L         U         U         L         L         U         U
 IF    =       A1        B1        A1        B1        A1        B1        A1        B1
               A1        B1        A1        B1        A1        B1        A1        B1

The following frequency sets based on these setups were used.

Frequency Set:   7  Based on FREQ, BW, and/or DOPPLER in schedule.  Used with PCAL = off
 LO sum=   6666.25  6666.25  6666.25  6666.25  6670.25  6670.25  6670.25  6670.25
           6674.25  6674.25  6674.25  6674.25  6678.25  6678.25  6678.25  6678.25
 BBC fr=    766.25   766.25   766.25   766.25   770.25   770.25   770.25   770.25
            774.25   774.25   774.25   774.25   778.25   778.25   778.25   778.25
 Bandwd=      2.00     2.00     2.00     2.00     2.00     2.00     2.00     2.00
              2.00     2.00     2.00     2.00     2.00     2.00     2.00     2.00
  Matching frequency sets:   7

 Track assignments are:
  track1=  18, 26,  2, 10, 20, 28,  4, 12, 22, 30,  6, 14, 24, 32,  8, 16
  barrel=roll_off


POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                       (B1950)            (J2000)            (Date)            (mas)

* G075.76+0.34      20 19 48.964357   * 20 21 41.094000     20 22 16.167756       0.00
                    37 15 51.67525    * 37 25 29.10000      37 28 31.48301        0.00

  3C286             13 28 49.657758   * 13 31 08.288051     13 31 53.704256       0.18
* J1331+3030        30 45 58.64059    * 30 30 32.95924      30 25 25.06967        0.17

  2013+370          20 13 37.014511   * 20 15 28.729797     20 16 03.684961       0.13
* J2015+3710        37 01 44.45895    * 37 10 59.51482      37 13 54.59117        0.18

  VR422201          22 00 39.362505   * 22 02 43.291372     22 03 22.063487       0.00
* J2202+4216        42 02 08.59077    * 42 16 39.97990      42 21 18.92116        0.00
```

rk12qitr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Tue   1 Mar 2016   Day  61 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

22 00 00  1124-186     09 54 47  15.1 157.2 -1.6     -14.2     0        0   22 00 00
22 14 30  ---          10 09 20  15.9 160.7 -1.3     -12.1   870       28   22 00 01

22 15 00  1124-186     10 09 50  15.9 160.8 -1.3     -12.0    24       28   22 15 00
22 29 30  ---          10 24 22  16.6 164.3 -1.1      -9.9   870       56   22 15 01

22 30 00  1124-186     10 24 52  16.6 164.5 -1.1      -9.8    24       56   22 30 00
22 44 30  ---          10 39 25  17.1 168.0 -0.8      -7.6   870       84   22 30 01

22 45 00  1124-186     10 39 55  17.1 168.1 -0.8      -7.5    24       84   22 45 00
23 00 00  ---          10 54 57  17.5 171.8 -0.5      -5.2   900      112   22 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    7         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
 1st LO=   2400.00   2400.00   2400.00   2400.00
 Net SB=         L         L         U         U
 IF SB =         L         L         L         L
 Pol.  =       RCP       LCP       RCP       LCP
 BBC   =         1         2         1         2
 BBC SB=         U         U         L         L
 IF    =         C         A         C         A

The following frequency sets based on these setups were used.

 Frequency Set:   4  Setup file default.  Used with PCAL = 1MHz
 LO sum=   1668.00  1668.00  1668.00  1668.00
 BBC fr=    732.00   732.00   732.00   732.00
 Bandwd=     16.00    16.00    16.00    16.00
  Matching frequency sets:   4

 Track assignments are:
  track1=   2, 18,  3, 19
  barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 56.028424       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 29.21614        0.00
                    fake circumpolar target for a TS to look at

* 1124-186          11 24 34.018124   * 11 27 04.392449     11 27 54.470021       0.00
  J1127-1857       -18 40 46.35977    *-18 57 17.44185     -19 02 44.72986        0.00
                    ./rk12qi_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 41937 observations, RA-AO3-04, RA-AO2-1


EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1124-186           152.4

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rg18gtr

RadioAstron Megamaser observations

PI: *Willem Baan, Alexei Alakoz*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: K-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron Megamaser observations
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Wed   2 Mar 2016   Day  62 ---

 ---------- 15 min. K-band VLBI scan of FF/clock offset calibrator for NGC3079 (23 deg. separation) --

 Next scan frequencies:  22172.00  22172.00  22172.00  22172.00
 Next BBC frequencies:     672.00    672.00    672.00    672.00
 Next scan bandwidths:      16.00     16.00     16.00     16.00

02 00 00  0716+714     13 55 27  47.0 -27.7  6.5      60.6     0        0   02 00 00
02 15 00  ---          14 10 29  45.9 -26.8  6.8      57.7   900       29   02 00 01

 ---------- K-band VLBI scan of NGC3079 ----------

02 27 00  NGC3079      14 22 31  53.5 -59.3  4.3      66.1   638       29   02 27 00
02 48 20  ---          14 43 55  50.8 -57.2  4.7      63.3  1280       70   02 27 01

02 49 20  NGC3079      14 44 55  50.6 -57.1  4.7      63.2    54       70   02 49 20
03 10 40  ---          15 06 18  48.0 -54.9  5.1      60.4  1280      111   02 49 21

03 11 40  NGC3079      15 07 19  47.9 -54.8  5.1      60.3    54      111   03 11 40
03 33 00  ---          15 28 42  45.3 -52.5  5.4      57.5  1280      152   03 11 41

 ---------- 15 min. K-band VLBI scan of FF/clock offset calibrator for NGC3079 (23 deg. separation) --

03 45 00  0716+714     15 40 44  40.5 -20.4  8.3      40.7   642      152   03 45 00
04 00 00  ---          15 55 47  39.7 -19.2  8.5      38.0   900      180   03 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra1cm2.set
   Matching groups in ./rg18g_freq.dat:
     tr1cm

   Setup group:    2         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00
```

```
  Disk used to record data.

  1st LO=  21500.00  21500.00  21500.00  21500.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =       RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =         C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   3  Setup file default.  Used with PCAL = off
  LO sum=   22172.00  22172.00  22172.00  22172.00
  BBC fr=     672.00    672.00    672.00    672.00
  Bandwd=      16.00     16.00     16.00     16.00
   Matching frequency sets:   3

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 56.041226       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 29.25951        0.00
                    fake circumpolar target for a TS to look at

* NGC3079           09 58 35.011191   * 10 01 57.802000     10 03 04.362408       0.00
  NGC3079_H2O       55 55 15.50111    * 55 40 47.26000      55 35 59.19818        0.00
                    ./rg18g_sources.radioastron
                    H2O maser; positions from 2005ApJ...618K, RA-AO3-10, RA-AO2-13

* 0716+714          07 16 13.029739   * 07 21 53.448474     07 23 44.741807       0.00
  J0721+7120        71 26 15.17406    * 71 20 36.36340      71 18 44.95536        0.00
                    ./rg18g_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 42370 observations, RA-AO3-04, RA-AO2-1
```

rk12qjtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Wed   2 Mar 2016   Day  62 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

09 00 00  1548+056     20 56 36  12.5 262.2  5.1      36.7     0        0   09 00 00
09 14 30  ---          21 11 08  10.4 265.2  5.3      36.9   870       28   09 00 01

09 15 00  1548+056     21 11 38  10.3 265.3  5.3      37.0    24       28   09 15 00
09 29 30  ---          21 26 11   8.1 268.2  5.6      37.1   870       56   09 15 01

09 30 00  1548+056     21 26 41   8.0 268.3  5.6      37.1    24       56   09 30 00
09 44 30  ---          21 41 13   5.8 271.2  5.8      37.1   870       84   09 30 01

09 45 00  1548+056     21 41 43   5.8 271.3  5.8      37.1    24       84   09 45 00
10 00 00  ---          21 56 46   3.5 274.3  6.1      37.0   900      112   09 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    3         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
 1st LO=   2400.00   2400.00   2400.00   2400.00
 Net SB=         L         L         U         U
 IF SB =         L         L         L         L
 Pol.  =       RCP       LCP       RCP       LCP
 BBC   =         1         2         1         2
 BBC SB=         U         U         L         L
 IF    =         C         A         C         A

The following frequency sets based on these setups were used.

 Frequency Set:   3  Setup file default.  Used with PCAL = 1MHz
 LO sum=   1668.00  1668.00  1668.00  1668.00
 BBC fr=    732.00   732.00   732.00   732.00
 Bandwd=     16.00    16.00    16.00    16.00
  Matching frequency sets:   3

 Track assignments are:
  track1=   2, 18,  3, 19
  barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 56.065726       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 29.34095        0.00
                    fake circumpolar target for a TS to look at

* 1548+056          15 48 06.931010   * 15 50 35.269243     15 51 23.385396       0.00
  J1550+0527        05 36 11.23071    * 05 27 10.44825      05 24 15.82291        0.00
                    ./rk12qj_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 8410 observations, RA-AO3-04, RA-AO2-12


EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1548+056           106.3

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12qktr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Wed   2 Mar 2016   Day  62 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

13 00 00  0951+693     00 57 15  36.5  18.4 -9.0     -31.9     0        0   13 00 00
13 14 30  ---          01 11 48  37.2  19.8 -8.8     -34.5   870       28   13 00 01

13 15 00  0951+693     01 12 18  37.2  19.8 -8.7     -34.6    25       28   13 15 00
13 29 30  ---          01 26 50  38.0  21.2 -8.5     -37.2   870       56   13 15 01

13 30 00  0951+693     01 27 20  38.0  21.2 -8.5     -37.3    25       56   13 30 00
13 44 30  ---          01 41 53  38.8  22.5 -8.3     -39.8   870       84   13 30 01

13 45 00  0951+693     01 42 23  38.8  22.5 -8.2     -39.9    24       84   13 45 00
14 00 00  ---          01 57 25  39.7  23.8 -8.0     -42.6   900      112   13 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    4         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   2400.00   2400.00   2400.00   2400.00
  Net SB=         L         L         U         U
  IF SB =         L         L         L         L
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         U         U         L         L
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   3  Setup file default.  Used with PCAL = 1MHz
  LO sum=   1668.00  1668.00  1668.00  1668.00
  BBC fr=    732.00   732.00   732.00   732.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   3

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off



 POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA           11 57 21.769299   * 12 00 00.000000     12 00 56.080730       0.00
                   85 16 41.77889    * 85 00 00.00000      84 54 29.38982        0.00
                   fake circumpolar target for a TS to look at

* 0951+693         09 51 27.310821   * 09 55 33.173065     09 56 53.890645       0.00
  J0955+6903       69 18 08.14417    * 69 03 55.06083      68 59 13.77315        0.00
  M81              ./rk12qk_sources.radioastron
                   rfc_2013d Petrov, 2013, unpublished 3429 observations, RA-AO3-07



EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  0951+693           117.2

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12qltr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Wed   2 Mar 2016   Day  62 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

23 00 00  1253-055     10 58 54  26.0 146.9 -2.0     -19.2     0        0   23 00 00
23 14 30  ---          11 13 26  27.1 150.8 -1.7     -17.1   870       28   23 00 01

23 15 00  1253-055     11 13 56  27.1 150.9 -1.7     -17.1    24       28   23 15 00
23 29 30  ---          11 28 29  28.1 154.8 -1.5     -14.9   870       56   23 15 01

23 30 00  1253-055     11 28 59  28.2 155.0 -1.5     -14.8    24       56   23 30 00
23 44 30  ---          11 43 31  29.0 159.0 -1.2     -12.5   870       84   23 30 01

23 45 00  1253-055     11 44 01  29.0 159.1 -1.2     -12.4    24       84   23 45 00
23 59 59  ---          11 59 04  29.8 163.3 -1.0     -10.0   899      112   23 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    2         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4100.00   4100.00   4100.00   4100.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   2  Setup file default.  Used with PCAL = 1MHz
  LO sum=   4836.00  4836.00  4836.00  4836.00
  BBC fr=    736.00   736.00   736.00   736.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   2

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

```
  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 56.116861       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 29.50444        0.00
                    fake circumpolar target for a TS to look at

* 1253-055          12 53 35.831289   * 12 56 11.166557     12 57 02.446845       0.00
  J1256-0547       -05 31 07.99603    *-05 47 21.52489     -05 52 39.61884        0.00
  3C279             ./rk12ql_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 7924 observations, RA-AO3-04, RA-AO3-05
```

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1253-055           147.4

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12qmtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: K-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Thu   3 Mar 2016   Day  63 ---

 ---------- K-band VLBI scans ----------

 Next scan frequencies:  22236.00  22236.00  22236.00  22236.00
 Next BBC frequencies:     736.00    736.00    736.00    736.00
 Next scan bandwidths:      16.00     16.00     16.00     16.00

03 00 00  0851+202     14 59 33  15.3 -76.9  6.1      38.5     0        0   03 00 00
03 14 30  ---          15 14 06  13.2 -74.2  6.3      37.9   870       28   03 00 01

03 15 00  0851+202     15 14 36  13.2 -74.1  6.3      37.9    24       28   03 15 00
03 29 30  ---          15 29 08  11.1 -71.3  6.6      37.3   870       56   03 15 01

03 30 00  0851+202     15 29 38  11.0 -71.2  6.6      37.2    24       56   03 30 00
03 44 30  ---          15 44 11   9.0 -68.4  6.8      36.5   870       84   03 30 01

03 45 00  0851+202     15 44 41   8.9 -68.3  6.8      36.4    24       84   03 45 00
04 00 00  ---          15 59 43   6.8 -65.4  7.1      35.5   900      112   03 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra1cm2.set
   Matching groups in ./rk12qm_freq.dat:
     tr1cm

   Setup group:    1         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=  21500.00  21500.00  21500.00  21500.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   2  Setup file default.  Used with PCAL = 1MHz
  LO sum=   22236.00  22236.00  22236.00  22236.00
  BBC fr=     736.00    736.00    736.00    736.00
  Bandwd=      16.00     16.00     16.00     16.00
   Matching frequency sets:   2

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off



 POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                       (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 56.131634       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 29.55011        0.00
                    fake circumpolar target for a TS to look at

* 0851+202          08 51 57.250618   * 08 54 48.874930     08 55 45.244309       0.00
  J0854+2006        20 17 58.41733    * 20 06 30.64078      20 02 35.97906        0.00
  OJ287             ./rk12qm_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 213710 observations, RA-AO3-04, RA-AO3-



EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  0851+202           147.6

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12qntr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Thu   3 Mar 2016   Day  63 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

08 00 00  1442+101     20 00 23  14.8 266.9  5.2      37.5     0        0   08 00 00
08 14 30  ---          20 14 55  12.6 269.8  5.5      37.6   870       28   08 00 01

08 15 00  1442+101     20 15 25  12.5 269.9  5.5      37.6    24       28   08 15 00
08 29 30  ---          20 29 57  10.3 272.8  5.7      37.5   870       56   08 15 01

08 30 00  1442+101     20 30 27  10.2 272.9  5.7      37.5    24       56   08 30 00
08 44 30  ---          20 45 00   8.1 275.8  6.0      37.3   870       84   08 30 01

08 45 00  1442+101     20 45 30   8.0 275.9  6.0      37.3    24       84   08 45 00
09 00 00  ---          21 00 32   5.8 278.8  6.2      37.0   900      112   08 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    2         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4100.00   4100.00   4100.00   4100.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   2  Setup file default.  Used with PCAL = 1MHz
  LO sum=   4836.00  4836.00  4836.00  4836.00
  BBC fr=    736.00   736.00   736.00   736.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   2

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off



 POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 56.150371       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 29.60711        0.00
                    fake circumpolar target for a TS to look at

* 1442+101          14 42 50.483804   * 14 45 16.465253     14 46 04.143733       0.00
  J1445+0958        10 11 12.14439    * 09 58 36.07265      09 54 28.79050        0.00
  OQ172             ./rk12qn_sources.radioastron
                    AGN, HIGHz, rfc_2013d Petrov, 2013, unpublished 1336 observations, RA-AO3-04, RA



EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1442+101           123.6

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

n16l1tr

Network Monitoring Experiment

PI: *Minnie Mao*

```
Address:  JIVE
Observing mode:

Schedule for TORUN     (Code Tr )                                  Page   2
               Network Monitoring Experiment
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source                Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------
 --- Thu   3 Mar 2016   Day  63 ---
 Next scan frequencies:  1634.49  1634.49  1634.49  1634.49  1650.49  1650.49  1650.49  1650.49
                         1666.49  1666.49  1666.49  1666.49  1682.49  1682.49  1682.49  1682.49
 Next BBC frequencies:    665.51   665.51   665.51   665.51   649.51   649.51   649.51   649.51
                          633.51   633.51   633.51   633.51   617.51   617.51   617.51   617.51
 Next scan bandwidths:      8.00     8.00     8.00     8.00     8.00     8.00     8.00     8.00
                            8.00     8.00     8.00     8.00     8.00     8.00     8.00     8.00

12 00 00  0234+285     00 01 02  52.4 114.3 -2.6     -38.7     0        0   12 00 00
12 04 00  ---          00 05 03  52.9 115.4 -2.6     -38.3   240       15   12 00 01

12 06 00  0234+285     00 07 03  53.2 116.0 -2.5     -38.1   113       15   12 06 00
12 10 00  ---          00 11 04  53.7 117.1 -2.5     -37.6   240       31   12 06 01

12 12 00  0234+285     00 13 04  54.0 117.7 -2.4     -37.4   113       31   12 12 00
12 15 00  ---          00 16 04  54.4 118.6 -2.4     -37.0   180       42   12 12 01

12 16 00  0234+285     00 17 05  54.5 118.9 -2.4     -36.9    54       42   12 16 00
12 24 00  ---          00 25 06  55.6 121.4 -2.2     -35.8   480       73   12 16 01

12 25 00  0234+285     00 26 06  55.7 121.7 -2.2     -35.7    54       73   12 25 00
12 33 00  ---          00 34 07  56.7 124.3 -2.1     -34.5   480      104   12 25 01

12 34 00  0234+285     00 35 08  56.8 124.6 -2.1     -34.3    53      104   12 34 00
12 42 00  ---          00 43 09  57.8 127.3 -1.9     -33.0   480      135   12 34 01

12 45 00  3C84         00 46 09  61.8  98.3 -2.6     -52.6   106      135   12 45 00
12 49 00  ---          00 50 10  62.4  99.3 -2.5     -52.4   240      150   12 45 01

12 51 00  3C84         00 52 10  62.7  99.8 -2.5     -52.3   114      150   12 51 00
12 55 00  ---          00 56 11  63.3 100.8 -2.4     -52.0   240      165   12 51 01

12 57 00  3C84         00 58 11  63.6 101.4 -2.4     -51.9   114      165   12 57 00
13 00 00  ---          01 01 12  64.0 102.1 -2.3     -51.7   180      177   12 57 01

13 01 00  3C84         01 02 12  64.2 102.4 -2.3     -51.6    54      177   13 01 00
13 09 00  ---          01 10 13  65.3 104.6 -2.2     -51.0   480      208   13 01 01

13 10 00  3C84         01 11 13  65.5 104.9 -2.2     -50.9    54      208   13 10 00
13 18 00  ---          01 19 15  66.6 107.2 -2.0     -50.0   480      238   13 10 01

13 19 00  3C84         01 20 15  66.8 107.5 -2.0     -49.9    54      238   13 19 00
13 27 00  ---          01 28 16  67.9 110.1 -1.9     -48.9   480      269   13 19 01
```

Schedule for TORUN (Code Tr) Page 3

Network Monitoring Experiment

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Thu 3 Mar 2016 Day 63 ---										
13 30 00	0234+285	01 31 17	62.8	146.2	-1.1		-22.4	94	269	13 30 00
13 34 00	---	01 35 17	63.1	148.0	-1.1		-21.3	240	285	13 30 01
13 36 00	0234+285	01 37 18	63.3	148.9	-1.0		-20.7	113	285	13 36 00
13 40 00	---	01 41 18	63.6	150.8	-1.0		-19.6	240	300	13 36 01
13 42 00	0234+285	01 43 19	63.7	151.7	-0.9		-19.0	113	300	13 42 00
13 45 00	---	01 46 19	63.9	153.1	-0.9		-18.1	180	312	13 42 01
13 46 00	0234+285	01 47 19	64.0	153.6	-0.9		-17.8	53	312	13 46 00
13 54 00	---	01 55 21	64.5	157.5	-0.7		-15.2	480	342	13 46 01
13 55 00	0234+285	01 56 21	64.5	157.9	-0.7		-14.9	53	342	13 55 00
14 03 00	---	02 04 22	65.0	162.0	-0.6		-12.3	480	373	13 55 01
14 04 00	0234+285	02 05 22	65.0	162.5	-0.6		-11.9	53	373	14 04 00
14 12 00	---	02 13 24	65.3	166.6	-0.4		-9.2	480	404	14 04 01
14 15 00	3C84	02 16 24	74.2	130.3	-1.1		-37.7	91	404	14 15 00
14 19 00	---	02 20 25	74.6	132.6	-1.0		-36.2	240	419	14 15 01
14 21 00	3C84	02 22 25	74.9	133.7	-1.0		-35.5	112	419	14 21 00
14 25 00	---	02 26 26	75.3	136.1	-0.9		-33.8	240	435	14 21 01
14 27 00	3C84	02 28 26	75.5	137.4	-0.9		-32.9	112	435	14 27 00
14 30 00	---	02 31 27	75.8	139.3	-0.8		-31.6	180	446	14 27 01
14 32 00	3C84	02 33 27	76.0	140.6	-0.8		-30.6	112	446	14 32 00
14 40 00	---	02 41 28	76.7	146.2	-0.7		-26.5	480	477	14 32 01
14 42 00	3C84	02 43 29	76.9	147.7	-0.6		-25.4	112	477	14 42 00
14 50 00	---	02 51 30	77.5	153.9	-0.5		-20.7	480	508	14 42 01
14 52 00	3C84	02 53 30	77.6	155.5	-0.5		-19.4	111	508	14 52 00
15 00 00	---	03 01 31	78.0	162.3	-0.3		-14.1	480	538	14 52 01

SETUP FILE INFORMATION:
NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

======== Setup file: sess116.L5nme

Setup group: 11 Station: TORUN Total bit rate: 512
Format: MARK5B Bits per sample: 2 Sample rate: 16.000
Number of channels: 16 DBE type: DBBC_DDC Speedup factor: 1.00

Disk used to record data.

```
  1st LO=   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00
            2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00
  Net SB=         L         L         U         U         L         L         U         U
                  L         L         U         U         L         L         U         U
  IF SB =         L         L         L         L         L         L         L         L
                  L         L         L         L         L         L         L         L
  Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
                RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
  BBC   =         1         5         1         5         2         6         2         6
                  3         7         3         7         4         8         4         8
  BBC SB=         U         U         L         L         U         U         L         L
                  U         U         L         L         U         U         L         L
  IF    =        A1        B1        A1        B1        A1        B1        A1        B1
                 A1        B1        A1        B1        A1        B1        A1        B1

 The following frequency sets based on these setups were used.

  Frequency Set:   6  Setup file default.  Used with PCAL = off
  LO sum=   1634.49  1634.49  1634.49  1634.49  1650.49  1650.49  1650.49  1650.49
            1666.49  1666.49  1666.49  1666.49  1682.49  1682.49  1682.49  1682.49
  BBC fr=    665.51   665.51   665.51   665.51   649.51   649.51   649.51   649.51
             633.51   633.51   633.51   633.51   617.51   617.51   617.51   617.51
  Bandwd=      8.00     8.00     8.00     8.00     8.00     8.00     8.00     8.00
               8.00     8.00     8.00     8.00     8.00     8.00     8.00     8.00
   Matching frequency sets:   6

  Track assignments are:
   track1=   2, 10, 18, 26,  4, 12, 20, 28,  6, 14, 22, 30,  8, 16, 24, 32
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                       (B1950)            (J2000)            (Date)            (mas)

* 0234+285          02 34 55.589590   * 02 37 52.405677     02 38 49.086810       0.00
  J0237+2848        28 35 11.40776    * 28 48 08.99001      28 52 13.64079        0.00
  J0237+28          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
                    GSFC 2015a astro solution, unpublished  54650 observations.

* 3C84              03 16 29.567263   * 03 19 48.160094     03 20 52.163420       1.30
  J0319+4130        41 19 51.91701    * 41 30 42.10413      41 34 08.86432        2.69
  0316+413          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
  J0319+41          GSFC 2015a astro solution, unpublished  10208 observations.
```

ej016atr

VLBI observations of HS0810+2554

PI: *Neal Jackson*

```
Address:  University of Manchester

Observing mode: MKIV
Schedule for TORUN     (Code Tr )                                   Page   2
               VLBI observations of HS0810+2554
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------
 --- Thu   3 Mar 2016   Day  63 ---
 Next scan frequencies:  1610.49  1610.49  1610.49  1610.49  1642.49  1642.49  1642.49  1642.49
                         1674.49  1674.49  1674.49  1674.49  1706.49  1706.49  1706.49  1706.49
 Next BBC frequencies:    689.51   689.51   689.51   689.51   657.51   657.51   657.51   657.51
                          625.51   625.51   625.51   625.51   593.51   593.51   593.51   593.51
 Next scan bandwidths:     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
                           16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00

17 30 00  J0813+25     05 31 56  49.3 116.2 -2.7     -36.7     0        0   17 30 00
17 34 00  ---          05 35 57  49.8 117.3 -2.6     -36.3   240       31   17 30 01

17 34 00  HS0810       05 35 57  49.8 117.1 -2.6     -36.4    -9       31   No stop
17 39 00  ---          05 40 58  50.4 118.5 -2.6     -35.8   291       69   17 34 01

17 39 40  J0813+25     05 41 38  50.5 118.9 -2.5     -35.7    31       69   17 39 40
17 41 10  ---          05 43 08  50.7 119.3 -2.5     -35.5    90       81   17 39 41

17 41 10  HS0810       05 43 08  50.7 119.2 -2.5     -35.6    -9       81   No stop
17 46 10  ---          05 48 09  51.4 120.6 -2.4     -35.0   291      119   17 41 11

17 46 10  J0813+25     05 48 09  51.4 120.8 -2.4     -34.9    -9      119   No stop
17 47 40  ---          05 49 39  51.6 121.3 -2.4     -34.7    81      131   17 46 11

17 47 40  HS0810       05 49 39  51.6 121.1 -2.4     -34.8    -9      131   No stop
17 52 40  ---          05 54 40  52.2 122.6 -2.3     -34.2   291      169   17 47 41

17 53 20  J0813+25     05 55 20  52.3 123.0 -2.3     -34.0    31      169   17 53 20
17 54 50  ---          05 56 50  52.5 123.4 -2.3     -33.8    90      181   17 53 21

17 54 50  HS0810       05 56 50  52.5 123.3 -2.3     -33.9    -9      181   No stop
17 59 50  ---          06 01 51  53.1 124.8 -2.2     -33.2   291      219   17 54 51

17 59 50  J0813+25     06 01 51  53.1 125.0 -2.2     -33.1    -9      219   No stop
18 01 20  ---          06 03 21  53.3 125.5 -2.2     -32.9    81      231   17 59 51

18 01 20  HS0810       06 03 21  53.3 125.3 -2.2     -33.0    -9      231   No stop
18 06 20  ---          06 08 22  53.9 126.9 -2.1     -32.2   291      269   18 01 21

18 07 00  J0813+25     06 09 02  54.0 127.3 -2.1     -32.0    31      269   18 07 00
18 08 30  ---          06 10 32  54.2 127.8 -2.1     -31.8    90      281   18 07 01

18 08 30  HS0810       06 10 32  54.2 127.6 -2.1     -31.9    -9      281   No stop
18 13 30  ---          06 15 33  54.7 129.3 -2.0     -31.1   291      319   18 08 31
```

Schedule for TORUN (Code Tr) Page 3

VLBI observations of HS0810+2554

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Thu 3 Mar 2016 Day 63 ---										
18 13 30	J0813+25	06 15 33	54.8	129.5	-2.0		-31.0	-9	319	No stop
18 15 00	---	06 17 04	54.9	130.0	-1.9		-30.7	81	331	18 13 31
18 15 00	HS0810	06 17 04	54.9	129.8	-2.0		-30.8	-9	331	No stop
18 20 00	---	06 22 04	55.5	131.5	-1.9		-30.0	291	369	18 15 01
18 20 40	J0813+25	06 22 44	55.6	131.9	-1.9		-29.7	31	369	18 20 40
18 22 10	---	06 24 15	55.7	132.4	-1.8		-29.5	90	381	18 20 41
18 22 10	HS0810	06 24 15	55.7	132.2	-1.8		-29.6	-9	381	No stop
18 27 10	---	06 29 16	56.3	134.0	-1.8		-28.7	291	419	18 22 11
18 27 10	J0813+25	06 29 16	56.3	134.2	-1.7		-28.5	-9	419	No stop
18 28 40	---	06 30 46	56.5	134.7	-1.7		-28.2	81	431	18 27 11
18 30 40	4C39.25	06 32 46	57.1	97.5	-2.9		-50.0	30	431	18 30 40
18 34 40	---	06 36 47	57.7	98.4	-2.9		-49.8	240	462	18 30 41
18 37 05	J0813+25	06 39 12	57.3	137.8	-1.6		-26.6	52	462	18 37 05
18 38 35	---	06 40 42	57.5	138.4	-1.6		-26.3	90	473	18 37 06
18 38 35	HS0810	06 40 42	57.5	138.2	-1.6		-26.4	-9	473	No stop
18 43 35	---	06 45 43	58.0	140.1	-1.5		-25.3	291	512	18 38 36
18 44 15	J0813+25	06 46 23	58.0	140.5	-1.5		-25.0	30	512	18 44 15
18 45 45	---	06 47 54	58.2	141.1	-1.4		-24.7	90	523	18 44 16
18 45 45	HS0810	06 47 54	58.2	140.9	-1.4		-24.8	-9	523	No stop
18 50 45	---	06 52 54	58.6	142.9	-1.4		-23.7	291	562	18 45 46
18 50 45	J0813+25	06 52 54	58.6	143.1	-1.4		-23.6	-9	562	No stop
18 52 15	---	06 54 25	58.8	143.7	-1.3		-23.2	81	573	18 50 46
18 52 15	HS0810	06 54 25	58.8	143.5	-1.3		-23.4	-9	573	No stop
18 57 15	---	06 59 25	59.2	145.5	-1.3		-22.2	291	612	18 52 16
18 57 55	J0813+25	07 00 06	59.3	146.0	-1.2		-21.9	30	612	18 57 55
18 59 25	---	07 01 36	59.4	146.6	-1.2		-21.5	90	623	18 57 56
18 59 25	HS0810	07 01 36	59.4	146.4	-1.2		-21.6	-9	623	No stop
19 04 25	---	07 06 37	59.8	148.5	-1.1		-20.4	291	662	18 59 26
19 04 25	J0813+25	07 06 37	59.8	148.7	-1.1		-20.3	-10	662	No stop
19 05 55	---	07 08 07	59.9	149.3	-1.1		-19.9	80	673	19 04 26
19 05 55	HS0810	07 08 07	59.9	149.1	-1.1		-20.0	-9	673	No stop
19 10 55	---	07 13 08	60.3	151.2	-1.0		-18.7	291	712	19 05 56

Schedule for TORUN (Code Tr) Page 4

VLBI observations of HS0810+2554

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Thu 3 Mar 2016 Day 63 ---										
19 11 35	J0813+25	07 13 48	60.3	151.8	-1.0		-18.4	30	712	19 11 35
19 13 05	---	07 15 18	60.4	152.4	-1.0		-18.0	90	723	19 11 36
19 13 05	HS0810	07 15 18	60.4	152.2	-1.0		-18.1	-9	723	No stop
19 18 05	---	07 20 19	60.8	154.4	-0.9		-16.8	291	762	19 13 06
19 18 05	J0813+25	07 20 19	60.8	154.6	-0.9		-16.6	-10	762	No stop
19 19 35	---	07 21 49	60.9	155.3	-0.9		-16.2	80	773	19 18 06
19 19 35	HS0810	07 21 49	60.9	155.0	-0.9		-16.3	-9	773	No stop
19 24 35	---	07 26 50	61.2	157.3	-0.8		-14.9	291	812	19 19 36
19 25 15	J0813+25	07 27 30	61.2	157.8	-0.8		-14.6	30	812	19 25 15
19 26 45	---	07 29 00	61.3	158.5	-0.8		-14.1	90	823	19 25 16
19 26 45	HS0810	07 29 00	61.3	158.3	-0.8		-14.3	-9	823	No stop
19 31 45	---	07 34 01	61.6	160.6	-0.7		-12.8	291	862	19 26 46
19 31 45	J0813+25	07 34 01	61.5	160.8	-0.7		-12.7	-10	862	No stop
19 33 15	---	07 35 31	61.6	161.5	-0.6		-12.2	80	873	19 31 46
19 33 15	HS0810	07 35 31	61.6	161.3	-0.6		-12.4	-9	873	No stop
19 38 15	---	07 40 32	61.9	163.6	-0.6		-10.8	291	912	19 33 16
19 38 55	J0813+25	07 41 12	61.9	164.2	-0.5		-10.5	30	912	19 38 55
19 40 25	---	07 42 43	61.9	164.9	-0.5		-10.0	90	923	19 38 56
19 40 25	HS0810	07 42 43	62.0	164.6	-0.5		-10.2	-9	923	No stop
19 45 25	---	07 47 43	62.1	167.0	-0.4		-8.6	291	962	19 40 26
19 45 25	J0813+25	07 47 43	62.1	167.2	-0.4		-8.5	-10	962	No stop
19 46 55	---	07 49 14	62.2	168.0	-0.4		-8.0	80	973	19 45 26
19 46 55	HS0810	07 49 14	62.2	167.7	-0.4		-8.1	-9	973	No stop
19 51 55	---	07 54 14	62.3	170.1	-0.3		-6.6	291	1012	19 46 56
19 52 35	J0813+25	07 54 55	62.3	170.7	-0.3		-6.2	30	1012	19 52 35
19 54 05	---	07 56 25	62.4	171.4	-0.3		-5.7	90	1023	19 52 36
19 54 05	HS0810	07 56 25	62.4	171.2	-0.3		-5.9	-9	1023	No stop
19 59 05	---	08 01 26	62.5	173.6	-0.2		-4.3	291	1062	19 54 06
19 59 05	J0813+25	08 01 26	62.5	173.8	-0.2		-4.1	-10	1062	No stop
20 00 35	---	08 02 56	62.5	174.6	-0.2		-3.6	80	1073	19 59 06

Schedule for TORUN (Code Tr) Page 5

VLBI observations of HS0810+2554

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Thu 3 Mar 2016 Day 63 ---										
20 00 35	HS0810	08 02 56	62.5	174.3	-0.2		-3.8	-9	1073	No stop
20 05 35	---	08 07 57	62.6	176.8	-0.1		-2.1	291	1112	20 00 36
20 06 15	J0813+25	08 08 37	62.5	177.3	-0.1		-1.8	30	1112	20 06 15
20 07 45	---	08 10 07	62.5	178.1	-0.1		-1.3	90	1123	20 06 16
20 07 45	HS0810	08 10 07	62.6	177.9	-0.1		-1.4	-9	1123	No stop
20 12 45	---	08 15 08	62.6	180.3	0.0		0.2	291	1162	20 07 46
20 12 45	J0813+25	08 15 08	62.6	180.5	0.0		0.4	-10	1162	No stop
20 14 15	---	08 16 38	62.6	181.3	0.0		0.8	80	1173	20 12 46
20 14 15	HS0810	08 16 38	62.6	181.0	0.0		0.7	-9	1173	No stop
20 19 15	---	08 21 39	62.6	183.5	0.1		2.3	291	1212	20 14 16
20 19 55	J0813+25	08 22 19	62.5	184.0	0.1		2.7	30	1212	20 19 55
20 21 25	---	08 23 49	62.5	184.8	0.2		3.2	90	1223	20 19 56
20 21 25	HS0810	08 23 49	62.5	184.6	0.2		3.0	-9	1223	No stop
20 26 25	---	08 28 50	62.5	187.0	0.2		4.7	291	1262	20 21 26
20 26 25	J0813+25	08 28 50	62.4	187.2	0.2		4.8	-9	1262	No stop
20 27 55	---	08 30 20	62.4	187.9	0.3		5.3	81	1273	20 26 26
20 27 55	HS0810	08 30 20	62.4	187.7	0.3		5.1	-9	1273	No stop
20 32 55	---	08 35 21	62.3	190.1	0.3		6.7	291	1312	20 27 56
20 33 35	J0813+25	08 36 01	62.2	190.7	0.4		7.1	30	1312	20 33 35
20 35 05	---	08 37 32	62.2	191.4	0.4		7.6	90	1323	20 33 36
20 35 05	HS0810	08 37 32	62.3	191.2	0.4		7.4	-9	1323	No stop
20 40 05	---	08 42 32	62.1	193.6	0.5		9.0	291	1362	20 35 06
20 40 05	J0813+25	08 42 32	62.0	193.8	0.5		9.1	-9	1362	No stop
20 41 35	---	08 44 03	62.0	194.5	0.5		9.6	81	1373	20 40 06
20 41 35	HS0810	08 44 03	62.0	194.3	0.5		9.5	-9	1373	No stop
20 46 35	---	08 49 03	61.8	196.7	0.6		11.0	291	1412	20 41 36
20 47 15	J0813+25	08 49 44	61.8	197.2	0.6		11.3	31	1412	20 47 15
20 48 45	---	08 51 14	61.7	197.9	0.6		11.8	90	1423	20 47 16
20 48 45	HS0810	08 51 14	61.8	197.7	0.6		11.7	-9	1423	No stop
20 53 45	---	08 56 15	61.5	200.0	0.7		13.2	291	1462	20 48 46

Schedule for TORUN (Code Tr) Page 6

VLBI observations of HS0810+2554

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Thu 3 Mar 2016 Day 63 ---										
20 53 45	J0813+25	08 56 15	61.4	200.2	0.7		13.3	-9	1462	No stop
20 55 15	---	08 57 45	61.4	200.9	0.7		13.7	81	1473	20 53 46
20 55 15	HS0810	08 57 45	61.4	200.7	0.7		13.6	-9	1473	No stop
21 00 15	---	09 02 46	61.2	203.0	0.8		15.1	291	1512	20 55 16
21 00 55	J0813+25	09 03 26	61.0	203.5	0.8		15.4	31	1512	21 00 55
21 02 25	---	09 04 56	60.9	204.1	0.8		15.8	90	1523	21 00 56
21 02 25	HS0810	09 04 56	61.0	203.9	0.8		15.7	-8	1523	No stop
21 07 25	---	09 09 57	60.7	206.2	0.9		17.1	292	1562	21 02 26
21 07 25	J0813+25	09 09 57	60.6	206.3	0.9		17.2	-9	1562	No stop
21 08 55	---	09 11 27	60.5	207.0	1.0		17.6	81	1573	21 07 26
21 08 55	HS0810	09 11 27	60.6	206.8	0.9		17.5	-8	1573	No stop
21 13 55	---	09 16 28	60.2	209.0	1.0		18.9	292	1612	21 08 56
21 14 35	J0813+25	09 17 08	60.1	209.5	1.1		19.1	31	1612	21 14 35
21 16 05	---	09 18 38	60.0	210.1	1.1		19.5	90	1623	21 14 36
21 16 05	HS0810	09 18 38	60.1	209.9	1.1		19.4	-8	1623	No stop
21 21 05	---	09 23 39	59.7	212.1	1.2		20.7	292	1662	21 16 06
21 21 05	J0813+25	09 23 39	59.6	212.2	1.2		20.8	-9	1662	No stop
21 22 35	---	09 25 09	59.5	212.8	1.2		21.2	81	1673	21 21 06
21 22 35	HS0810	09 25 09	59.6	212.7	1.2		21.1	-8	1673	No stop
21 27 35	---	09 30 10	59.2	214.7	1.3		22.3	292	1712	21 22 36
21 28 15	J0813+25	09 30 50	59.0	215.2	1.3		22.6	31	1712	21 28 15
21 29 45	---	09 32 21	58.9	215.8	1.3		22.9	90	1723	21 28 16
21 29 45	HS0810	09 32 21	59.0	215.6	1.3		22.8	-8	1723	No stop
21 34 45	---	09 37 21	58.5	217.6	1.4		24.0	292	1762	21 29 46
21 34 45	J0813+25	09 37 21	58.4	217.8	1.4		24.1	-9	1762	No stop
21 36 15	---	09 38 52	58.3	218.3	1.4		24.4	81	1773	21 34 46
21 36 15	HS0810	09 38 52	58.4	218.2	1.4		24.3	-8	1773	No stop
21 41 15	---	09 43 52	57.9	220.1	1.5		25.4	292	1812	21 36 16
21 41 55	J0813+25	09 44 33	57.8	220.5	1.5		25.7	31	1812	21 41 55
21 43 25	---	09 46 03	57.6	221.1	1.5		26.0	90	1823	21 41 56

Schedule for TORUN (Code Tr) Page 7

VLBI observations of HS0810+2554

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Thu 3 Mar 2016 Day 63 ---										
21 43 25	HS0810	09 46 03	57.7	221.0	1.5		25.9	-8	1823	No stop
21 48 25	---	09 51 04	57.2	222.9	1.6		27.0	292	1862	21 43 26
21 48 25	J0813+25	09 51 04	57.1	223.0	1.6		27.0	-9	1862	No stop
21 49 55	---	09 52 34	57.0	223.5	1.6		27.3	81	1873	21 48 26
21 49 55	HS0810	09 52 34	57.0	223.4	1.6		27.3	-8	1873	No stop
21 54 55	---	09 57 35	56.5	225.2	1.7		28.2	292	1912	21 49 56
21 55 35	J0813+25	09 58 15	56.4	225.6	1.7		28.4	31	1912	21 55 35
21 57 05	---	09 59 45	56.2	226.1	1.8		28.7	90	1923	21 55 36
21 57 05	HS0810	09 59 45	56.3	226.0	1.8		28.7	-8	1923	No stop
22 02 05	---	10 04 46	55.7	227.8	1.8		29.6	292	1962	21 57 06
22 02 05	J0813+25	10 04 46	55.6	227.9	1.8		29.6	-9	1962	No stop
22 03 35	---	10 06 16	55.5	228.4	1.9		29.9	81	1973	22 02 06
22 03 35	HS0810	10 06 16	55.6	228.3	1.9		29.8	-8	1973	No stop
22 08 35	---	10 11 17	55.0	230.0	1.9		30.7	292	2012	22 03 36
22 09 15	J0813+25	10 11 57	54.8	230.3	2.0		30.9	31	2012	22 09 15
22 10 45	---	10 13 27	54.7	230.9	2.0		31.1	90	2023	22 09 16
22 10 45	HS0810	10 13 27	54.7	230.7	2.0		31.1	-8	2023	No stop
22 15 45	---	10 18 28	54.2	232.4	2.1		31.9	292	2062	22 10 46
22 15 45	J0813+25	10 18 28	54.1	232.5	2.1		31.9	-9	2062	No stop
22 17 15	---	10 19 58	53.9	233.0	2.1		32.1	81	2073	22 15 46
22 17 15	HS0810	10 19 58	54.0	232.9	2.1		32.1	-8	2073	No stop
22 22 15	---	10 24 59	53.4	234.5	2.2		32.9	292	2112	22 17 16
22 22 55	J0813+25	10 25 39	53.2	234.8	2.2		33.0	31	2112	22 22 55
22 24 25	---	10 27 10	53.0	235.3	2.2		33.2	90	2123	22 22 56
22 24 25	HS0810	10 27 10	53.1	235.2	2.2		33.2	-8	2123	No stop
22 29 25	---	10 32 10	52.5	236.7	2.3		33.9	292	2162	22 24 26
22 29 25	J0813+25	10 32 10	52.4	236.8	2.3		33.9	-9	2162	No stop
22 30 55	---	10 33 41	52.2	237.3	2.3		34.1	81	2173	22 29 26
22 30 55	HS0810	10 33 41	52.3	237.2	2.3		34.1	-8	2173	No stop
22 35 55	---	10 38 41	51.7	238.7	2.4		34.7	292	2212	22 30 56

Schedule for TORUN (Code Tr) Page 8

VLBI observations of HS0810+2554

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Thu 3 Mar 2016 Day 63 ---										
22 36 35	J0813+25	10 39 22	51.5	239.0	2.4		34.8	31	2212	22 36 35
22 38 05	---	10 40 52	51.3	239.5	2.4		35.0	90	2223	22 36 36
22 38 05	HS0810	10 40 52	51.4	239.4	2.4		35.0	-8	2223	No stop
22 43 05	---	10 45 53	50.7	240.8	2.5		35.6	292	2262	22 38 06
22 43 05	J0813+25	10 45 53	50.6	240.9	2.5		35.6	-9	2262	No stop
22 44 35	---	10 47 23	50.4	241.3	2.6		35.8	81	2273	22 43 06
22 44 35	HS0810	10 47 23	50.5	241.3	2.5		35.8	-8	2273	No stop
22 49 35	---	10 52 24	49.9	242.7	2.6		36.3	292	2312	22 44 36
22 50 15	J0813+25	10 53 04	49.7	243.0	2.7		36.4	31	2312	22 50 15
22 51 45	---	10 54 34	49.5	243.4	2.7		36.5	90	2323	22 50 16
22 51 45	HS0810	10 54 34	49.6	243.3	2.7		36.5	-8	2323	No stop
22 56 45	---	10 59 35	48.9	244.7	2.8		37.0	292	2362	22 51 46
22 56 45	J0813+25	10 59 35	48.8	244.8	2.8		37.1	-9	2362	No stop
22 58 15	---	11 01 05	48.6	245.2	2.8		37.2	81	2373	22 56 46
22 58 15	HS0810	11 01 05	48.7	245.1	2.8		37.2	-9	2373	No stop
23 03 15	---	11 06 06	48.0	246.4	2.9		37.7	291	2412	22 58 16
23 03 55	J0813+25	11 06 46	47.8	246.7	2.9		37.7	31	2412	23 03 55
23 05 25	---	11 08 16	47.6	247.1	2.9		37.9	90	2423	23 03 56
23 05 25	HS0810	11 08 16	47.7	247.0	2.9		37.8	-9	2423	No stop
23 10 25	---	11 13 17	47.0	248.3	3.0		38.3	291	2462	23 05 26
23 10 25	J0813+25	11 13 17	46.9	248.4	3.0		38.3	-9	2462	No stop
23 11 55	---	11 14 47	46.7	248.8	3.0		38.4	81	2473	23 10 26
23 13 45	4C39.25	11 16 38	66.7	243.6	1.8		43.8	21	2473	23 13 45
23 17 45	---	11 20 38	66.1	245.0	1.9		44.4	240	2504	23 13 46
23 20 25	J0813+25	11 23 19	45.5	251.0	3.2		39.0	69	2504	23 20 25
23 21 55	---	11 24 49	45.3	251.3	3.2		39.1	90	2515	23 20 26
23 21 55	HS0810	11 24 49	45.4	251.3	3.2		39.1	-9	2515	No stop
23 26 55	---	11 29 50	44.7	252.5	3.3		39.5	291	2554	23 21 56
23 27 35	J0813+25	11 30 30	44.5	252.7	3.3		39.5	31	2554	23 27 35
23 29 05	---	11 32 00	44.3	253.1	3.3		39.6	90	2565	23 27 36

Schedule for TORUN (Code Tr) Page 9

VLBI observations of HS0810+2554

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Thu 3 Mar 2016 Day 63 ---										
23 29 05	HS0810	11 32 00	44.4	253.0	3.3		39.6	-9	2565	No stop
23 34 05	---	11 37 01	43.6	254.2	3.4		39.9	291	2604	23 29 06
23 34 05	J0813+25	11 37 01	43.5	254.3	3.4		39.9	-9	2604	No stop
23 35 35	---	11 38 31	43.3	254.7	3.4		40.0	81	2615	23 34 06
23 35 35	HS0810	11 38 31	43.4	254.6	3.4		40.0	-9	2615	No stop
23 40 35	---	11 43 32	42.7	255.8	3.5		40.2	291	2654	23 35 36
23 41 15	J0813+25	11 44 12	42.5	256.0	3.5		40.3	31	2654	23 41 15
23 42 45	---	11 45 42	42.3	256.3	3.5		40.3	90	2665	23 41 16
23 42 45	HS0810	11 45 42	42.4	256.3	3.5		40.3	-9	2665	No stop
23 47 45	---	11 50 43	41.6	257.4	3.6		40.6	291	2704	23 42 46
23 47 45	J0813+25	11 50 43	41.5	257.5	3.6		40.6	-9	2704	No stop
23 49 15	---	11 52 13	41.3	257.8	3.6		40.6	81	2715	23 47 46
23 49 15	HS0810	11 52 13	41.4	257.8	3.6		40.6	-9	2715	No stop
23 54 15	---	11 57 14	40.7	258.9	3.7		40.8	291	2754	23 49 16
23 54 55	J0813+25	11 57 54	40.5	259.1	3.7		40.9	31	2754	23 54 55
23 56 25	---	11 59 25	40.3	259.5	3.8		40.9	90	2765	23 54 56
--- Start: Thu 3 Mar 2016 Day 63 -- Stop: Fri 4 Mar 2016 Day 64 ---										
23 56 25	HS0810	11 59 25	40.4	259.4	3.7		40.9	-9	2765	No stop
00 01 25	---	12 04 25	39.6	260.5	3.8		41.1	291	2804	23 56 26
00 01 25	J0813+25	12 04 25	39.5	260.6	3.8		41.1	-9	2804	No stop
00 02 55	---	12 05 56	39.3	260.9	3.9		41.1	81	2815	00 01 26
00 02 55	HS0810	12 05 56	39.4	260.8	3.9		41.1	-9	2815	No stop
00 07 55	---	12 10 57	38.6	261.9	3.9		41.3	291	2854	00 02 56
00 08 35	J0813+25	12 11 37	38.4	262.1	4.0		41.3	31	2854	00 08 35
00 10 05	---	12 13 07	38.2	262.5	4.0		41.3	90	2865	00 08 36
00 10 05	HS0810	12 13 07	38.3	262.4	4.0		41.3	-9	2865	No stop
00 15 05	---	12 18 08	37.6	263.5	4.1		41.5	291	2904	00 10 06
00 15 05	J0813+25	12 18 08	37.5	263.5	4.1		41.4	-9	2904	No stop
00 16 35	---	12 19 38	37.3	263.9	4.1		41.5	81	2915	00 15 06

```
Schedule for TORUN     (Code Tr )                                Page  10
               VLBI observations of HS0810+2554
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Fri   4 Mar 2016   Day  64 ---

00 16 35  HS0810       12 19 38  37.4 263.8  4.1      41.5    -9     2915   No stop
00 21 35  ---          12 24 39  36.6 264.9  4.2      41.6   291     2954   00 16 36

00 22 15  J0813+25     12 25 19  36.4 265.1  4.2      41.6    31     2954   00 22 15
00 23 45  ---          12 26 49  36.2 265.4  4.2      41.6    90     2965   00 22 16

00 23 45  HS0810       12 26 49  36.3 265.3  4.2      41.6    -9     2965   No stop
00 28 45  ---          12 31 50  35.5 266.4  4.3      41.7   291     3004   00 23 46

00 28 45  J0813+25     12 31 50  35.4 266.4  4.3      41.7    -9     3004   No stop
00 30 15  ---          12 33 20  35.2 266.7  4.3      41.7    81     3015   00 28 46



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: sess116.L1024

   Setup group:   10         Station: TORUN            Total bit rate:  1024
   Format: MARK5B            Bits per sample: 2        Sample rate: 32.000
   Number of channels: 16    DBE type: DBBC_DDC        Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00
            2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00
  Net SB=         L         L         U         U         L         L         U         U
                  L         L         U         U         L         L         U         U
  IF SB =         L         L         L         L         L         L         L         L
                  L         L         L         L         L         L         L         L
  Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
                RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
  BBC   =         1         5         1         5         2         6         2         6
                  3         7         3         7         4         8         4         8
  BBC SB=         U         U         L         L         U         U         L         L
                  U         U         L         L         U         U         L         L
  IF    =        A1        B1        A1        B1        A1        B1        A1        B1
                 A1        B1        A1        B1        A1        B1        A1        B1

 The following frequency sets based on these setups were used.

  Frequency Set:   9  Setup file default.  Used with PCAL = off
  LO sum=   1610.49  1610.49  1610.49  1610.49  1642.49  1642.49  1642.49  1642.49
            1674.49  1674.49  1674.49  1674.49  1706.49  1706.49  1706.49  1706.49
  BBC fr=    689.51   689.51   689.51   689.51   657.51   657.51   657.51   657.51
             625.51   625.51   625.51   625.51   593.51   593.51   593.51   593.51
  Bandwd=     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
              16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
   Matching frequency sets:   9

  Track assignments are:
   track1=   2, 10, 18, 26,  4, 12, 20, 28,  6, 14, 22, 30,  8, 16, 24, 32
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* HS0810	08 10 30.440860	* 08 13 31.300000	08 14 30.552335	0.00
	25 54 08.97197	* 25 45 03.20000	25 41 55.33729	0.00
* J0813+25	08 10 02.997914	* 08 13 03.834100	08 14 03.078020	0.00
	25 51 15.12530	* 25 42 11.03200	25 39 03.70019	0.00
* 4C39.25	09 23 55.319179	* 09 27 03.013900	09 28 04.591003	0.00
	39 15 23.56660	* 39 02 20.85200	38 57 58.81278	0.00

eg089dtr

RadioAstron Imaging of high-redshift quasars

PI: *Leonid Gurvits*

```
Address:  Joint Institute for VLBI in Europe

Observing mode: L-band, dual-pol
Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron Imaging of high-redshift quasars
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------
 --- Fri   4 Mar 2016   Day  64 ---
 ---------- L-band VLBI scans. Space segment 01 ----------
 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    632.00   632.00   632.00   632.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

10 00 00  1508+572     22 04 39  36.4 -41.2  6.9      46.5     0        0   10 00 00
10 16 45  ---          22 21 27  34.8 -39.2  7.2      44.1  1005       32   10 00 01

10 17 15  1508+572     22 21 57  34.8 -39.1  7.2      44.1    24       32   10 17 15
10 34 30  ---          22 39 14  33.2 -37.1  7.5      41.6  1035       65   10 17 16

10 35 00  1508+572     22 39 45  33.1 -37.0  7.5      41.5    24       65   10 35 00
10 52 15  ---          22 57 02  31.6 -34.9  7.8      39.1  1035       99   10 35 01

10 52 45  1508+572     22 57 32  31.5 -34.8  7.8      39.0    24       99   10 52 45
11 10 00  ---          23 14 50  30.1 -32.6  8.1      36.5  1035      132   10 52 46
 ---------- L-band VLBI scans. Ground-only segment 01 ----------
11 11 00  1508+572     23 15 50  30.0 -32.5  8.1      36.3    54      132   11 11 00
11 20 30  ---          23 25 22  29.3 -31.3  8.2      34.9   570      150   11 11 01

11 21 00  1508+572     23 25 52  29.2 -31.2  8.3      34.9    24      150   11 21 00
11 30 30  ---          23 35 24  28.5 -30.0  8.4      33.4   570      168   11 21 01

11 31 00  1508+572     23 35 54  28.5 -29.9  8.4      33.4    24      168   11 31 00
11 40 30  ---          23 45 25  27.8 -28.7  8.6      32.0   570      187   11 31 01

11 41 00  1508+572     23 45 55  27.7 -28.6  8.6      31.9    24      187   11 41 00
11 50 30  ---          23 55 27  27.1 -27.4  8.7      30.5   570      205   11 41 01

11 51 00  1508+572     23 55 57  27.0 -27.3  8.8      30.4    24      205   11 51 00
12 00 30  ---          00 05 29  26.4 -26.1  8.9      29.0   570      223   11 51 01

12 01 00  1508+572     00 05 59  26.3 -26.0  8.9      28.9    24      223   12 01 00
12 10 30  ---          00 15 30  25.7 -24.7  9.1      27.4   570      241   12 01 01

12 11 00  1508+572     00 16 00  25.7 -24.7  9.1      27.4    24      241   12 11 00
12 20 30  ---          00 25 32  25.1 -23.4  9.3      25.9   570      260   12 11 01

12 23 30  1849+670     00 28 32  49.3 -36.4  5.7      66.4    75      260   12 23 30
12 33 30  ---          00 38 34  48.4 -35.8  5.8      64.6   600      279   12 23 31
```

Schedule for TORUN (Code Tr) Page 3

RadioAstron Imaging of high-redshift quasars

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 4 Mar 2016 Day 64 ---										
12 35 30	1508+572	00 40 34	24.3	-21.3	9.5		23.6	16	279	12 35 30
12 45 00	---	00 50 06	23.8	-20.0	9.7		22.2	570	297	12 35 31
12 45 30	1508+572	00 50 36	23.7	-19.9	9.7		22.1	24	297	12 45 30
12 55 00	---	01 00 08	23.3	-18.6	9.8		20.6	570	315	12 45 31
12 55 30	1508+572	01 00 38	23.2	-18.6	9.8		20.5	24	315	12 55 30
13 05 00	---	01 10 09	22.8	-17.2	10.0		19.1	570	334	12 55 31
13 05 30	1508+572	01 10 39	22.8	-17.2	10.0		19.0	24	334	13 05 30
13 15 00	---	01 20 11	22.4	-15.8	10.2		17.5	570	352	13 05 31
13 15 30	1508+572	01 20 41	22.3	-15.8	10.2		17.4	24	352	13 15 30
13 23 50	---	01 29 02	22.0	-14.6	10.3		16.1	500	368	13 15 31
---------- L-band VLBI scans. Space segment 02 ----------										
13 25 00	1508+572	01 30 12	22.0	-14.4	10.3		15.9	64	368	13 25 00
13 38 00	---	01 43 15	21.5	-12.6	10.5		13.9	780	393	13 25 01
13 38 30	1508+572	01 43 45	21.5	-12.5	10.6		13.8	24	393	13 38 30
13 51 30	---	01 56 47	21.1	-10.6	10.8		11.7	780	418	13 38 31
13 52 00	1508+572	01 57 17	21.1	-10.6	10.8		11.7	24	418	13 52 00
14 05 00	---	02 10 19	20.8	-8.7	11.0		9.6	780	443	13 52 01
---------- L-band VLBI scans. Ground-only segment 02 ----------										
14 06 00	1508+572	02 11 19	20.7	-8.6	11.0		9.4	54	443	14 06 00
14 15 30	---	02 20 51	20.5	-7.2	11.2		7.9	570	461	14 06 01
14 16 00	1508+572	02 21 21	20.5	-7.1	11.2		7.8	24	461	14 16 00
14 25 30	---	02 30 52	20.4	-5.7	11.3		6.3	570	479	14 16 01
14 26 00	1508+572	02 31 22	20.4	-5.7	11.3		6.2	24	479	14 26 00
14 35 30	---	02 40 54	20.2	-4.3	11.5		4.7	570	498	14 26 01
14 38 30	1849+670	02 43 55	38.7	-25.9	7.9		42.4	97	498	14 38 30
14 48 30	---	02 53 56	38.0	-25.0	8.1		40.7	600	517	14 38 31
14 50 30	1508+572	02 55 56	20.1	-2.1	11.8		2.3	39	517	14 50 30
15 00 00	---	03 05 28	20.1	-0.7	11.9		0.8	570	535	14 50 31
15 00 30	1508+572	03 05 58	20.1	-0.7	11.9		0.7	24	535	15 00 30
15 10 00	---	03 15 30	20.1	0.7	-11.9		-0.8	570	554	15 00 31
15 10 30	1508+572	03 16 00	20.1	0.8	-11.9		-0.9	24	554	15 10 30
15 20 00	---	03 25 31	20.1	2.2	-11.7		-2.4	570	572	15 10 31

Schedule for TORUN (Code Tr) Page 4

RadioAstron Imaging of high-redshift quasars

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 4 Mar 2016 Day 64 ---										
15 20 30	1508+572	03 26 01	20.1	2.3	-11.7		-2.5	24	572	15 20 30
15 30 00	---	03 35 33	20.2	3.6	-11.6		-4.0	570	590	15 20 31
15 30 30	1508+572	03 36 03	20.2	3.7	-11.6		-4.1	24	590	15 30 30
15 43 20	---	03 48 55	20.4	5.6	-11.4		-6.1	770	615	15 30 31
---------- L-band VLBI scans. Space segment 03 ----------										
15 45 00	1508+572	03 50 35	20.4	5.8	-11.3		-6.4	94	615	15 45 00
15 58 00	---	04 03 38	20.6	7.7	-11.1		-8.5	780	640	15 45 01
15 58 30	1508+572	04 04 08	20.6	7.8	-11.1		-8.6	24	640	15 58 30
16 11 30	---	04 17 10	20.9	9.6	-10.9		-10.6	780	665	15 58 31
16 12 00	1508+572	04 17 40	20.9	9.7	-10.9		-10.7	24	665	16 12 00
16 25 00	---	04 30 42	21.3	11.6	-10.7		-12.8	780	690	16 12 01
---------- L-band VLBI scans. Ground-only segment 03 ----------										
16 26 00	1508+572	04 31 42	21.3	11.7	-10.6		-12.9	54	690	16 26 00
16 35 30	---	04 41 14	21.6	13.1	-10.5		-14.4	570	708	16 26 01
16 36 00	1508+572	04 41 44	21.6	13.1	-10.5		-14.5	24	708	16 36 00
16 45 30	---	04 51 15	22.0	14.5	-10.3		-16.0	570	726	16 36 01
16 46 00	1508+572	04 51 45	22.0	14.6	-10.3		-16.1	24	726	16 46 00
16 55 30	---	05 01 17	22.4	15.9	-10.2		-17.6	570	745	16 46 01
16 57 40	1849+670	05 03 27	31.8	-11.8	10.2		18.3	59	745	16 57 40
17 07 40	---	05 13 29	31.5	-10.7	10.4		16.6	600	764	16 57 41
17 12 00	2021+614	05 17 50	30.4	-23.4	8.9		30.1	219	764	17 12 00
17 22 00	---	05 27 51	29.8	-22.2	9.1		28.5	600	783	17 12 01
17 24 00	1508+572	05 29 52	23.7	19.9	-9.7		-22.0	21	783	17 24 00
17 33 30	---	05 39 23	24.2	21.2	-9.5		-23.5	570	801	17 24 01
17 34 00	1508+572	05 39 53	24.2	21.3	-9.5		-23.5	24	801	17 34 00
17 43 30	---	05 49 25	24.8	22.6	-9.4		-25.0	570	820	17 34 01
17 44 00	1508+572	05 49 55	24.8	22.6	-9.3		-25.1	24	820	17 44 00
17 53 30	---	05 59 27	25.4	23.9	-9.2		-26.5	570	838	17 44 01
17 54 00	1508+572	05 59 57	25.4	24.0	-9.2		-26.6	24	838	17 54 00
18 03 30	---	06 09 28	26.0	25.3	-9.0		-28.1	570	856	17 54 01

```
Schedule for TORUN     (Code Tr )                                  Page   5
              RadioAstron Imaging of high-redshift quasars
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Fri   4 Mar 2016   Day  64 ---

18 04 00  1508+572     06 09 58  26.0  25.3 -9.0     -28.1    24      856   18 04 00
18 13 30  ---          06 19 30  26.6  26.6 -8.8     -29.6   570      874   18 04 01

18 14 00  1508+572     06 20 00  26.7  26.7 -8.8     -29.6    24      874   18 14 00
18 19 30  ---          06 25 31  27.1  27.4 -8.7     -30.5   330      885   18 14 01

 ---------- L-band VLBI scans. Space segment 04 ----------

18 20 00  1508+572     06 26 01  27.1  27.5 -8.7     -30.5    24      885   18 20 00
18 34 45  ---          06 40 48  28.1  29.4 -8.5     -32.7   885      913   18 20 01

18 35 15  1508+572     06 41 18  28.2  29.5 -8.5     -32.8    24      913   18 35 15
18 50 00  ---          06 56 06  29.3  31.4 -8.2     -35.0   885      942   18 35 16

 ---------- L-band VLBI scans. Ground-only segment 04 ----------

18 51 00  1508+572     06 57 06  29.4  31.5 -8.2     -35.1    54      942   18 51 00
19 00 30  ---          07 06 38  30.1  32.7 -8.1     -36.5   570      960   18 51 01

19 02 40  1849+670     07 08 48  30.3   2.2-11.7      -3.4    54      960   19 02 40
19 12 40  ---          07 18 50  30.3   3.3-11.5      -5.1   600      979   19 02 41

19 17 00  2021+614     07 23 10  25.4  -7.7 11.0       9.8   222      979   19 17 00
19 27 00  ---          07 33 12  25.2  -6.4 11.2       8.1   600      998   19 17 01

19 29 00  1508+572     07 35 12  32.6  36.3 -7.6     -40.7    20      998   19 29 00
19 39 00  ---          07 45 14  33.5  37.5 -7.4     -42.1   600     1018   19 29 01

19 39 30  1508+572     07 45 44  33.5  37.5 -7.4     -42.2    24     1018   19 39 30
19 49 30  ---          07 55 46  34.5  38.8 -7.2     -43.6   600     1037   19 39 31

19 50 00  1508+572     07 56 16  34.5  38.8 -7.2     -43.7    24     1037   19 50 00
20 00 00  ---          08 06 17  35.5  40.0 -7.1     -45.1   600     1056   19 50 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:   10         Station: TORUN            Total bit rate:   256
   Format: MARK5B            Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type: DBBC_DDC        Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   2300.00   2300.00   2300.00   2300.00
  Net SB=         U         U         L         L
  IF SB =         L         L         L         L
  Pol.  =       RCP       LCP       RCP       LCP
  BBC   =         1         5         1         5
  BBC SB=         L         L         U         U
  IF    =        A1        B1        A1        B1

 The following frequency sets based on these setups were used.

  Frequency Set:   6  Setup file default.  Used with PCAL = 1MHz
  LO sum=   1668.00  1668.00  1668.00  1668.00
  BBC fr=    632.00   632.00   632.00   632.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   6

  Track assignments are:
   track1=   6,  8,  2,  4
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 56.252985       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 29.90431        0.00
                    fake circumpolar target for a TS to look at

* 1508+572          15 08 45.204538   * 15 10 02.922371     15 10 28.389286       0.00
  J1510+5702        57 14 02.08966    * 57 02 43.37583      56 58 52.71241        0.00
                    ./eg089d_sources.radioastron
                    AGN, HIGHz, rfc_2013d Petrov, 2013, unpublished 2400 observations, RA-AO3-04, RA

* 1849+670          18 49 16.505869   * 18 49 16.072282     18 49 14.459139       0.00
  J1849+6705        67 02 07.88049    * 67 05 41.68023      67 06 41.01151        0.00
                    ./eg089d_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 7270 observations, RA-AO3-04, RA-AO2-12

* 2021+614          20 21 13.300234   * 20 22 06.681752     20 22 22.284079       0.00
  J2022+6136        61 27 18.15575    * 61 36 58.80476      61 40 00.37365        0.00
                    ./eg089d_sources.radioastron
                    AGN, CSO, rfc_2013d Petrov, 2013, unpublished 3249 observations, RA-AO3-04, RA-A
```

eg092atr

VHS1256-1257 -EPOCH 1

PI: *Jose C. Guirado*

```
Address:  Dpto. Astronomia, Univ. Valencia

Observing mode: Phase-referencing at 18cm (1024 Mb/s)
Schedule for TORUN     (Code Tr )                                  Page   2
               vhs1256-1257 -Epoch 1
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------
 --- Fri   4 Mar 2016   Day  64 ---
 Next scan frequencies:  1610.49  1610.49  1610.49  1610.49  1642.49  1642.49  1642.49  1642.49
                         1674.49  1674.49  1674.49  1674.49  1706.49  1706.49  1706.49  1706.49
 Next BBC frequencies:    689.51   689.51   689.51   689.51   657.51   657.51   657.51   657.51
                          625.51   625.51   625.51   625.51   593.51   593.51   593.51   593.51
 Next scan bandwidths:     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
                           16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00

21 00 00  4C39.25      09 06 27  75.4 163.1 -0.4     -13.0     0        0   21 00 00
21 04 00  ---          09 10 28  75.6 166.2 -0.3     -10.6   240       31   21 00 01

21 07 00  4C39.25      09 13 28  75.7 168.5 -0.2      -8.9   171       31   21 07 00
21 11 00  ---          09 17 29  75.8 171.6 -0.2      -6.5   240       62   21 07 01

21 14 00  4C39.25      09 20 29  75.8 174.0 -0.1      -4.6   171       62   21 14 00
21 18 00  ---          09 24 30  75.9 177.2 -0.1      -2.2   240       92   21 14 01

21 27 38  J1303-1051   09 34 10  12.0 127.2 -3.5     -29.1   322       92   21 27 38
21 29 18  =1300-105    09 35 50  12.2 127.6 -3.5     -29.0   100      105   21 27 39

21 29 18  VHS1256      09 35 50  11.2 130.2 -3.4     -28.1   -20      105   No stop
21 32 58  ---          09 39 30  11.6 131.0 -3.3     -27.7   200      133   21 29 19

21 32 58  J1254-1317   09 39 30  11.4 131.5 -3.3     -27.5   -11      133   No stop
21 34 38  =1251-130    09 41 11  11.6 131.9 -3.2     -27.4    89      146   21 32 59

21 35 00  J1303-1051   09 41 33  12.8 128.9 -3.4     -28.4     1      146   21 35 00
21 36 40  =1300-105    09 43 13  13.0 129.2 -3.3     -28.3   100      159   21 35 01

21 36 40  VHS1256      09 43 13  12.0 131.8 -3.2     -27.3   -20      159   No stop
21 40 20  ---          09 46 54  12.4 132.7 -3.2     -27.0   200      187   21 36 41

21 40 20  J1254-1317   09 46 54  12.3 133.1 -3.1     -26.8   -11      187   No stop
21 42 00  =1251-130    09 48 34  12.5 133.5 -3.1     -26.6    89      200   21 40 21

21 42 22  J1303-1051   09 48 56  13.7 130.5 -3.3     -27.7     1      200   21 42 22
21 44 02  =1300-105    09 50 36  13.9 130.9 -3.2     -27.5   100      213   21 42 23

21 44 02  VHS1256      09 50 36  12.8 133.5 -3.1     -26.6   -20      213   No stop
21 47 42  ---          09 54 17  13.2 134.3 -3.0     -26.2   200      241   21 44 03

21 47 42  J1254-1317   09 54 17  13.1 134.8 -3.0     -26.0   -11      241   No stop
21 49 22  =1251-130    09 55 57  13.2 135.2 -3.0     -25.8    89      254   21 47 43
```

Schedule for TORUN (Code Tr) Page 3

vhs1256-1257 -Epoch 1

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Fri 4 Mar 2016 Day 64 ---										
21 49 44	J1303-1051	09 56 19	14.5	132.2	-3.1		-27.0	1	254	21 49 44
21 51 24	=1300-105	09 57 59	14.7	132.6	-3.1		-26.8	100	267	21 49 45
21 51 24	VHS1256	09 57 59	13.6	135.1	-3.0		-25.8	-20	267	No stop
21 55 04	---	10 01 40	14.0	136.0	-2.9		-25.4	200	295	21 51 25
21 55 04	J1254-1317	10 01 40	13.8	136.5	-2.9		-25.2	-11	295	No stop
21 56 44	=1251-130	10 03 20	14.0	136.8	-2.9		-25.0	89	308	21 55 05
21 57 06	J1303-1051	10 03 42	15.3	133.9	-3.0		-26.2	1	308	21 57 06
21 58 46	=1300-105	10 05 23	15.5	134.2	-3.0		-26.0	100	321	21 57 07
21 58 46	VHS1256	10 05 23	14.4	136.8	-2.9		-24.9	-20	321	No stop
22 02 26	---	10 09 03	14.7	137.7	-2.8		-24.5	200	349	21 58 47
22 02 26	J1254-1317	10 09 03	14.6	138.1	-2.8		-24.3	-11	349	No stop
22 04 06	=1251-130	10 10 44	14.8	138.5	-2.7		-24.1	89	362	22 02 27
22 04 28	J1303-1051	10 11 06	16.1	135.6	-2.9		-25.4	2	362	22 04 28
22 06 08	=1300-105	10 12 46	16.3	135.9	-2.9		-25.2	100	374	22 04 29
22 06 08	VHS1256	10 12 46	15.1	138.5	-2.7		-24.1	-19	374	No stop
22 09 48	---	10 16 26	15.5	139.4	-2.7		-23.7	201	403	22 06 09
22 09 48	J1254-1317	10 16 26	15.3	139.8	-2.6		-23.5	-11	403	No stop
22 11 28	=1251-130	10 18 07	15.5	140.2	-2.6		-23.3	89	415	22 09 49
22 11 50	J1303-1051	10 18 29	16.9	137.3	-2.8		-24.5	2	415	22 11 50
22 13 30	=1300-105	10 20 09	17.1	137.7	-2.7		-24.3	100	428	22 11 51
22 13 30	VHS1256	10 20 09	15.8	140.2	-2.6		-23.2	-19	428	No stop
22 17 10	---	10 23 50	16.2	141.1	-2.6		-22.8	201	456	22 13 31
22 17 10	J1254-1317	10 23 50	16.0	141.6	-2.5		-22.6	-11	456	No stop
22 18 50	=1251-130	10 25 30	16.2	142.0	-2.5		-22.4	89	469	22 17 11
22 19 12	J1303-1051	10 25 52	17.6	139.0	-2.6		-23.7	2	469	22 19 12
22 20 52	=1300-105	10 27 32	17.8	139.4	-2.6		-23.5	100	482	22 19 13
22 20 52	VHS1256	10 27 32	16.5	141.9	-2.5		-22.3	-19	482	No stop
22 24 32	---	10 31 13	16.9	142.8	-2.4		-21.9	201	510	22 20 53
22 24 32	J1254-1317	10 31 13	16.7	143.3	-2.4		-21.6	-11	510	No stop
22 26 12	=1251-130	10 32 53	16.8	143.7	-2.4		-21.4	89	523	22 24 33
22 26 12	J1303-1051	10 32 53	18.3	140.7	-2.5		-22.8	-20	523	No stop
22 27 52	=1300-105	10 34 33	18.5	141.1	-2.5		-22.6	80	536	22 26 13

Schedule for TORUN (Code Tr) Page 4

vhs1256-1257 -Epoch 1

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 4 Mar 2016 Day 64 ---										
22 27 52	VHS1256	10 34 33	17.2	143.6	-2.4		-21.5	-19	536	No stop
22 31 32	---	10 38 14	17.5	144.5	-2.3		-21.0	201	564	22 27 53
22 31 32	J1254-1317	10 38 14	17.3	145.0	-2.3		-20.8	-11	564	No stop
22 33 12	=1251-130	10 39 54	17.5	145.4	-2.3		-20.5	89	577	22 31 33
22 33 34	J1303-1051	10 40 16	19.0	142.4	-2.4		-21.9	2	577	22 33 34
22 35 14	=1300-105	10 41 57	19.1	142.8	-2.4		-21.7	100	590	22 33 35
22 35 14	VHS1256	10 41 57	17.8	145.4	-2.2		-20.5	-19	590	No stop
22 38 54	---	10 45 37	18.1	146.2	-2.2		-20.0	201	618	22 35 15
22 38 54	J1254-1317	10 45 37	17.9	146.7	-2.2		-19.8	-11	618	No stop
22 40 34	=1251-130	10 47 18	18.1	147.1	-2.1		-19.6	89	631	22 38 55
22 40 34	J1303-1051	10 47 18	19.6	144.1	-2.3		-21.0	-20	631	No stop
22 42 14	=1300-105	10 48 58	19.8	144.5	-2.3		-20.8	80	644	22 40 35
22 42 14	VHS1256	10 48 58	18.4	147.1	-2.1		-19.6	-19	644	No stop
22 45 54	---	10 52 38	18.7	147.9	-2.1		-19.1	201	672	22 42 15
22 45 54	J1254-1317	10 52 38	18.5	148.4	-2.0		-18.9	-11	672	No stop
22 47 34	=1251-130	10 54 19	18.6	148.8	-2.0		-18.6	89	685	22 45 55
22 47 56	J1303-1051	10 54 41	20.3	145.9	-2.2		-20.0	2	685	22 47 56
22 49 36	=1300-105	10 56 21	20.4	146.4	-2.1		-19.8	100	697	22 47 57
22 49 36	VHS1256	10 56 21	19.0	148.9	-2.0		-18.6	-19	697	No stop
22 53 16	---	11 00 02	19.3	149.7	-1.9		-18.1	201	726	22 49 37
22 53 16	J1254-1317	11 00 02	19.1	150.2	-1.9		-17.8	-11	726	No stop
22 54 56	=1251-130	11 01 42	19.2	150.6	-1.9		-17.6	89	738	22 53 17
22 54 56	J1303-1051	11 01 42	20.8	147.7	-2.0		-19.1	-20	738	No stop
22 56 36	=1300-105	11 03 22	21.0	148.1	-2.0		-18.9	80	751	22 54 57
22 56 36	VHS1256	11 03 22	19.5	150.6	-1.9		-17.6	-19	751	No stop
23 00 16	---	11 07 03	19.8	151.5	-1.8		-17.1	201	779	22 56 37
23 00 16	J1254-1317	11 07 03	19.6	152.0	-1.8		-16.9	-11	779	No stop
23 01 56	=1251-130	11 08 43	19.7	152.4	-1.8		-16.6	89	792	23 00 17
23 02 18	J1303-1051	11 09 05	21.4	149.5	-1.9		-18.1	2	792	23 02 18
23 03 58	=1300-105	11 10 45	21.5	149.9	-1.9		-17.8	100	805	23 02 19

Schedule for TORUN (Code Tr) Page 5

vhs1256-1257 -Epoch 1

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Fri 4 Mar 2016 Day 64 ---										
23 03 58	VHS1256	11 10 45	20.1	152.4	-1.8		-16.6	-19	805	No stop
23 07 38	---	11 14 26	20.3	153.3	-1.7		-16.1	201	833	23 03 59
23 07 38	J1254-1317	11 14 26	20.1	153.8	-1.7		-15.8	-11	833	No stop
23 09 18	=1251-130	11 16 06	20.2	154.2	-1.7		-15.6	89	846	23 07 39
23 09 18	J1303-1051	11 16 06	21.9	151.3	-1.8		-17.1	-20	846	No stop
23 10 58	=1300-105	11 17 47	22.1	151.7	-1.8		-16.9	80	859	23 09 19
23 10 58	VHS1256	11 17 47	20.5	154.1	-1.7		-15.6	-19	859	No stop
23 14 38	---	11 21 27	20.8	155.1	-1.6		-15.1	201	887	23 10 59
23 14 38	J1254-1317	11 21 27	20.5	155.5	-1.6		-14.8	-11	887	No stop
23 16 18	=1251-130	11 23 07	20.6	156.0	-1.5		-14.6	89	900	23 14 39
23 16 40	J1303-1051	11 23 29	22.5	153.2	-1.7		-16.0	1	900	23 16 40
23 18 20	=1300-105	11 25 10	22.6	153.6	-1.6		-15.8	100	913	23 16 41
23 18 20	VHS1256	11 25 10	21.0	156.0	-1.5		-14.5	-19	913	No stop
23 22 00	---	11 28 50	21.2	156.9	-1.5		-14.0	201	941	23 18 21
23 22 00	J1254-1317	11 28 50	21.0	157.4	-1.4		-13.7	-11	941	No stop
23 23 40	=1251-130	11 30 31	21.1	157.8	-1.4		-13.5	89	954	23 22 01
23 23 40	J1303-1051	11 30 31	22.9	155.0	-1.6		-15.0	-21	954	No stop
23 25 20	=1300-105	11 32 11	23.0	155.4	-1.5		-14.8	79	967	23 23 41
23 25 20	VHS1256	11 32 11	21.4	157.8	-1.4		-13.5	-20	967	No stop
23 29 00	---	11 35 51	21.6	158.7	-1.4		-12.9	200	995	23 25 21
23 29 00	J1254-1317	11 35 51	21.4	159.2	-1.3		-12.7	-11	995	No stop
23 30 40	=1251-130	11 37 32	21.5	159.6	-1.3		-12.4	89	1008	23 29 01
23 31 02	J1303-1051	11 37 54	23.4	156.9	-1.4		-13.9	1	1008	23 31 02
23 32 42	=1300-105	11 39 34	23.5	157.3	-1.4		-13.7	100	1021	23 31 03
23 32 42	VHS1256	11 39 34	21.8	159.7	-1.3		-12.4	-20	1021	No stop
23 36 22	---	11 43 15	22.0	160.6	-1.2		-11.8	200	1049	23 32 43
23 36 22	J1254-1317	11 43 15	21.7	161.1	-1.2		-11.5	-11	1049	No stop
23 38 02	=1251-130	11 44 55	21.8	161.5	-1.2		-11.3	89	1062	23 36 23
23 38 02	J1303-1051	11 44 55	23.8	158.7	-1.3		-12.8	-21	1062	No stop
23 39 42	=1300-105	11 46 35	23.9	159.1	-1.3		-12.6	79	1074	23 38 03

```
Schedule for TORUN     (Code Tr )                                  Page   6
               vhs1256-1257 -Epoch 1
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Fri   4 Mar 2016   Day  64 ---

23 39 42  VHS1256      11 46 35  22.2 161.5 -1.2     -11.3   -20     1074   No stop
23 43 22  ---          11 50 16  22.3 162.4 -1.1     -10.7   200     1103   23 39 43

23 43 22  J1254-1317   11 50 16  22.1 162.9 -1.1     -10.5   -11     1103   No stop
23 45 02  =1251-130    11 51 56  22.1 163.3 -1.1     -10.2    89     1115   23 43 23

23 45 24  J1303-1051   11 52 18  24.1 160.6 -1.2     -11.7     1     1115   23 45 24
23 47 04  =1300-105    11 53 58  24.2 161.1 -1.2     -11.4   100     1128   23 45 25

23 47 04  VHS1256      11 53 58  22.5 163.4 -1.0     -10.1   -20     1128   No stop
23 50 44  ---          11 57 39  22.6 164.3 -1.0      -9.6   200     1156   23 47 05

23 50 44  J1254-1317   11 57 39  22.4 164.8 -1.0      -9.3   -11     1156   No stop
23 52 24  =1251-130    11 59 19  22.4 165.2 -0.9      -9.1    89     1169   23 50 45

23 52 24  J1303-1051   11 59 19  24.5 162.5 -1.1     -10.6   -22     1169   No stop
23 54 04  =1300-105    12 01 00  24.6 162.9 -1.1     -10.3    78     1182   23 52 25

23 54 04  VHS1256      12 01 00  22.8 165.2 -0.9      -9.1   -20     1182   No stop
23 57 44  ---          12 04 40  22.9 166.2 -0.9      -8.5   200     1210   23 54 05

23 57 44  J1254-1317   12 04 40  22.6 166.6 -0.8      -8.2   -11     1210   No stop
23 59 24  =1251-130    12 06 20  22.7 167.1 -0.8      -7.9    89     1223   23 57 45

 --- Start: Fri   4 Mar 2016   Day  64 -- Stop: Sat   5 Mar 2016   Day  65 ---

23 59 46  J1303-1051   12 06 43  24.8 164.5 -1.0      -9.4     0     1223   23 59 46
00 01 26  =1300-105    12 08 23  24.9 164.9 -0.9      -9.2   100     1236   23 59 47

00 01 26  VHS1256      12 08 23  23.0 167.1 -0.8      -7.9   -21     1236   No stop
00 05 06  ---          12 12 03  23.2 168.1 -0.7      -7.3   199     1264   00 01 27

00 05 06  J1254-1317   12 12 03  22.9 168.6 -0.7      -7.0   -11     1264   No stop
00 06 46  =1251-130    12 13 44  22.9 169.0 -0.7      -6.8    89     1277   00 05 07

00 06 46  J1303-1051   12 13 44  25.1 166.3 -0.8      -8.3   -22     1277   No stop
00 08 26  =1300-105    12 15 24  25.1 166.8 -0.8      -8.0    78     1290   00 06 47

00 08 26  VHS1256      12 15 24  23.3 169.0 -0.7      -6.8   -21     1290   No stop
00 12 06  ---          12 19 05  23.4 170.0 -0.6      -6.2   199     1318   00 08 27

00 12 06  J1254-1317   12 19 05  23.1 170.4 -0.6      -5.9   -11     1318   No stop
00 13 46  =1251-130    12 20 45  23.1 170.8 -0.6      -5.6    89     1331   00 12 07
```

Schedule for TORUN (Code Tr) Page 7

vhs1256-1257 -Epoch 1

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Sat 5 Mar 2016 Day 65 ---										
00 14 08	J1303-1051	12 21 07	25.3	168.3	-0.7		-7.1	0	1331	00 14 08
00 15 48	=1300-105	12 22 47	25.4	168.8	-0.7		-6.8	100	1344	00 14 09
00 15 48	VHS1256	12 22 47	23.5	170.9	-0.6		-5.6	-21	1344	No stop
00 19 28	---	12 26 28	23.5	171.9	-0.5		-5.0	199	1372	00 15 49
00 19 28	J1254-1317	12 26 28	23.2	172.3	-0.5		-4.7	-11	1372	No stop
00 21 08	=1251-130	12 28 08	23.3	172.8	-0.5		-4.4	89	1385	00 19 29
00 21 08	J1303-1051	12 28 08	25.5	170.2	-0.6		-6.0	-22	1385	No stop
00 22 48	=1300-105	12 29 48	25.5	170.7	-0.6		-5.7	78	1397	00 21 09
00 22 48	VHS1256	12 29 48	23.6	172.8	-0.5		-4.4	-21	1397	No stop
00 26 28	---	12 33 29	23.7	173.8	-0.4		-3.8	199	1426	00 22 49
00 26 28	J1254-1317	12 33 29	23.4	174.2	-0.4		-3.6	-11	1426	No stop
00 28 08	=1251-130	12 35 09	23.4	174.6	-0.3		-3.3	89	1438	00 26 29
00 28 30	J1303-1051	12 35 31	25.7	172.2	-0.5		-4.8	0	1438	00 28 30
00 30 10	=1300-105	12 37 12	25.7	172.7	-0.4		-4.5	100	1451	00 28 31
00 30 10	VHS1256	12 37 12	23.7	174.8	-0.3		-3.2	-21	1451	No stop
00 33 50	---	12 40 52	23.8	175.7	-0.3		-2.6	199	1479	00 30 11
00 33 50	J1254-1317	12 40 52	23.5	176.1	-0.2		-2.4	-11	1479	No stop
00 35 30	=1251-130	12 42 32	23.5	176.6	-0.2		-2.1	89	1492	00 33 51
00 35 30	J1303-1051	12 42 32	25.8	174.1	-0.4		-3.6	-23	1492	No stop
00 37 10	=1300-105	12 44 13	25.8	174.6	-0.3		-3.3	77	1505	00 35 31
00 37 10	VHS1256	12 44 13	23.8	176.6	-0.2		-2.1	-21	1505	No stop
00 40 50	---	12 47 53	23.8	177.6	-0.2		-1.5	199	1533	00 37 11
00 40 50	J1254-1317	12 47 53	23.5	178.0	-0.1		-1.2	-12	1533	No stop
00 42 30	=1251-130	12 49 34	23.5	178.5	-0.1		-1.0	88	1546	00 40 51
00 42 52	J1303-1051	12 49 56	25.9	176.1	-0.2		-2.4	-1	1546	00 42 52
00 44 32	=1300-105	12 51 36	25.9	176.6	-0.2		-2.1	99	1559	00 42 53
00 44 32	VHS1256	12 51 36	23.9	178.6	-0.1		-0.9	-22	1559	No stop
00 48 12	---	12 55 16	23.9	179.6	-0.0		-0.3	198	1587	00 44 33
00 48 12	J1254-1317	12 55 16	23.5	180.0	-0.0		-0.0	-12	1587	No stop
00 49 52	=1251-130	12 56 57	23.5	180.4	0.0		0.3	88	1600	00 48 13

Schedule for TORUN (Code Tr) Page 8

vhs1256-1257 -Epoch 1

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sat 5 Mar 2016 Day 65 ---										
00 49 52	J1303-1051	12 56 57	25.9	178.0	-0.1		-1.2	-23	1600	No stop
00 51 32	=1300-105	12 58 37	26.0	178.5	-0.1		-0.9	77	1613	00 49 53
00 51 32	VHS1256	12 58 37	23.9	180.5	0.0		0.3	-22	1613	No stop
00 55 12	---	13 02 18	23.8	181.4	0.1		0.9	198	1641	00 51 33
00 55 12	J1254-1317	13 02 18	23.5	181.8	0.1		1.1	-12	1641	No stop
00 56 52	=1251-130	13 03 58	23.5	182.3	0.1		1.4	88	1654	00 55 13
00 57 14	J1303-1051	13 04 20	26.0	180.1	0.0		0.0	-1	1654	00 57 14
00 58 54	=1300-105	13 06 00	26.0	180.5	0.0		0.3	99	1667	00 57 15
00 58 54	VHS1256	13 06 00	23.8	182.4	0.2		1.5	-22	1667	No stop
01 02 34	---	13 09 41	23.8	183.4	0.2		2.1	198	1695	00 58 55
01 02 34	J1254-1317	13 09 41	23.5	183.8	0.2		2.3	-12	1695	No stop
01 04 14	=1251-130	13 11 21	23.4	184.2	0.3		2.6	88	1708	01 02 35
01 04 14	J1303-1051	13 11 21	25.9	182.0	0.1		1.2	-23	1708	No stop
01 05 54	=1300-105	13 13 01	25.9	182.4	0.1		1.5	77	1721	01 04 15
01 05 54	VHS1256	13 13 01	23.8	184.3	0.3		2.6	-22	1721	No stop
01 09 34	---	13 16 42	23.7	185.3	0.3		3.2	198	1749	01 05 55
01 09 34	J1254-1317	13 16 42	23.4	185.6	0.4		3.5	-12	1749	No stop
01 11 14	=1251-130	13 18 22	23.3	186.1	0.4		3.8	88	1762	01 09 35
01 11 36	J1303-1051	13 18 44	25.9	184.0	0.2		2.4	-1	1762	01 11 36
01 13 16	=1300-105	13 20 25	25.9	184.5	0.3		2.7	99	1774	01 11 37
01 13 16	VHS1256	13 20 25	23.7	186.3	0.4		3.8	-22	1774	No stop
01 16 56	---	13 24 05	23.6	187.2	0.5		4.4	198	1803	01 13 17
01 16 56	J1254-1317	13 24 05	23.2	187.6	0.5		4.7	-12	1803	No stop
01 18 36	=1251-130	13 25 45	23.2	188.0	0.5		5.0	88	1815	01 16 57
01 18 36	J1303-1051	13 25 45	25.8	185.9	0.4		3.6	-24	1815	No stop
01 20 16	=1300-105	13 27 26	25.8	186.4	0.4		3.9	76	1828	01 18 37
01 20 16	VHS1256	13 27 26	23.5	188.1	0.5		5.0	-22	1828	No stop
01 23 56	---	13 31 06	23.5	189.1	0.6		5.6	198	1856	01 20 17
01 23 56	J1254-1317	13 31 06	23.1	189.4	0.6		5.8	-12	1856	No stop
01 25 36	=1251-130	13 32 47	23.0	189.9	0.6		6.1	88	1869	01 23 57

Schedule for TORUN (Code Tr) Page 9

vhs1256-1257 -Epoch 1

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sat 5 Mar 2016 Day 65 ---										
01 25 58	J1303-1051	13 33 09	25.7	187.9	0.5		4.8	-2	1869	01 25 58
01 27 38	=1300-105	13 34 49	25.6	188.4	0.5		5.1	98	1882	01 25 59
01 27 38	VHS1256	13 34 49	23.4	190.1	0.6		6.2	-22	1882	No stop
01 31 18	---	13 38 30	23.3	191.0	0.7		6.8	198	1910	01 27 39
01 31 18	J1254-1317	13 38 30	22.9	191.4	0.7		7.0	-12	1910	No stop
01 32 58	=1251-130	13 40 10	22.8	191.8	0.7		7.3	88	1923	01 31 19
01 32 58	J1303-1051	13 40 10	25.5	189.8	0.6		6.0	-24	1923	No stop
01 34 38	=1300-105	13 41 50	25.5	190.3	0.6		6.3	76	1936	01 32 59
01 34 38	VHS1256	13 41 50	23.2	191.9	0.7		7.3	-23	1936	No stop
01 38 18	---	13 45 31	23.0	192.9	0.8		7.9	197	1964	01 34 39
01 38 18	J1254-1317	13 45 31	22.7	193.2	0.8		8.1	-12	1964	No stop
01 39 58	=1251-130	13 47 11	22.6	193.7	0.9		8.4	88	1977	01 38 19
01 40 20	J1303-1051	13 47 33	25.3	191.8	0.7		7.2	-2	1977	01 40 20
01 42 00	=1300-105	13 49 13	25.2	192.3	0.8		7.5	98	1990	01 40 21
01 42 00	VHS1256	13 49 13	22.9	193.8	0.9		8.5	-23	1990	No stop
01 45 40	---	13 52 54	22.8	194.8	0.9		9.1	197	2018	01 42 01
01 45 40	J1254-1317	13 52 54	22.4	195.1	1.0		9.3	-12	2018	No stop
01 47 20	=1251-130	13 54 34	22.3	195.6	1.0		9.5	88	2031	01 45 41
01 47 20	J1303-1051	13 54 34	25.1	193.7	0.8		8.3	-24	2031	No stop
01 49 00	=1300-105	13 56 14	25.0	194.1	0.9		8.6	76	2044	01 47 21
01 49 00	VHS1256	13 56 14	22.6	195.7	1.0		9.6	-23	2044	No stop
01 52 40	---	13 59 55	22.5	196.6	1.1		10.2	197	2072	01 49 01
01 52 40	J1254-1317	13 59 55	22.1	197.0	1.1		10.4	-12	2072	No stop
01 54 20	=1251-130	14 01 35	22.0	197.4	1.1		10.6	88	2085	01 52 41
01 54 42	J1303-1051	14 01 57	24.8	195.7	1.0		9.5	-2	2085	01 54 42
01 56 22	=1300-105	14 03 38	24.7	196.1	1.0		9.8	98	2097	01 54 43
01 56 22	VHS1256	14 03 38	22.3	197.6	1.1		10.7	-23	2097	No stop
02 00 02	---	14 07 18	22.2	198.5	1.2		11.3	197	2126	01 56 23
02 00 02	J1254-1317	14 07 18	21.8	198.9	1.2		11.5	-12	2126	No stop
02 01 42	=1251-130	14 08 59	21.7	199.3	1.2		11.8	88	2138	02 00 03

```
Schedule for TORUN     (Code Tr )                                  Page  10
               vhs1256-1257 -Epoch 1
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Sat   5 Mar 2016   Day  65 ---

02 01 42  J1303-1051   14 08 59  24.5 197.5  1.1      10.6   -24     2138   No stop
02 03 22  =1300-105    14 10 39  24.4 198.0  1.1      10.9    76     2151   02 01 43

02 03 22  VHS1256      14 10 39  22.0 199.4  1.2      11.8   -23     2151   No stop
02 07 02  ---          14 14 19  21.8 200.4  1.3      12.4   197     2179   02 03 23

02 07 02  J1254-1317   14 14 19  21.4 200.7  1.3      12.6   -12     2179   No stop
02 08 42  =1251-130    14 16 00  21.3 201.1  1.3      12.8    88     2192   02 07 03

02 09 04  J1303-1051   14 16 22  24.1 199.5  1.2      11.8    -2     2192   02 09 04
02 10 44  =1300-105    14 18 02  24.0 199.9  1.2      12.0    98     2205   02 09 05

02 10 44  VHS1256      14 18 02  21.6 201.3  1.4      12.9   -23     2205   No stop
02 14 24  ---          14 21 43  21.4 202.2  1.4      13.5   197     2233   02 10 45

02 14 24  J1254-1317   14 21 43  21.0 202.5  1.4      13.7   -12     2233   No stop
02 16 04  =1251-130    14 23 23  20.9 203.0  1.5      13.9    88     2246   02 14 25

02 16 04  J1303-1051   14 23 23  23.8 201.3  1.3      12.9   -25     2246   No stop
02 17 44  =1300-105    14 25 03  23.7 201.8  1.3      13.1    75     2259   02 16 05

02 17 44  VHS1256      14 25 03  21.2 203.1  1.5      14.0   -23     2259   No stop
02 21 24  ---          14 28 44  21.0 204.0  1.5      14.5   197     2287   02 17 45

02 21 24  J1254-1317   14 28 44  20.6 204.3  1.6      14.7   -12     2287   No stop
02 23 04  =1251-130    14 30 24  20.5 204.7  1.6      15.0    88     2300   02 21 25

02 23 26  J1303-1051   14 30 46  23.3 203.3  1.4      14.0    -3     2300   02 23 26
02 25 06  =1300-105    14 32 26  23.2 203.7  1.5      14.2    97     2313   02 23 27

02 25 06  VHS1256      14 32 26  20.8 205.0  1.6      15.1   -23     2313   No stop
02 28 46  ---          14 36 07  20.5 205.9  1.7      15.6   197     2341   02 25 07

02 28 46  J1254-1317   14 36 07  20.1 206.2  1.7      15.8   -13     2341   No stop
02 30 26  =1251-130    14 37 47  20.0 206.6  1.7      16.0    87     2354   02 28 47

02 30 26  J1303-1051   14 37 47  22.9 205.1  1.6      15.0   -25     2354   No stop
02 32 06  =1300-105    14 39 28  22.8 205.5  1.6      15.3    75     2367   02 30 27

02 32 06  VHS1256      14 39 28  20.3 206.7  1.7      16.1   -23     2367   No stop
02 35 46  ---          14 43 08  20.0 207.6  1.8      16.6   197     2395   02 32 07

02 35 46  J1254-1317   14 43 08  19.6 207.9  1.8      16.8   -13     2395   No stop
02 37 26  =1251-130    14 44 48  19.5 208.3  1.8      17.0    87     2408   02 35 47
```

```
Schedule for TORUN     (Code Tr )                                  Page  11
               vhs1256-1257 -Epoch 1
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Sat   5 Mar 2016   Day  65 ---

02 37 48  J1303-1051   14 45 10  22.4 207.0  1.7      16.1    -3     2408   02 37 48
02 39 28  =1300-105    14 46 51  22.3 207.4  1.7      16.3    97     2421   02 37 49

02 39 28  VHS1256      14 46 51  19.8 208.5  1.8      17.1   -23     2421   No stop
02 43 08  ---          14 50 31  19.5 209.5  1.9      17.6   197     2449   02 39 29

02 43 08  J1254-1317   14 50 31  19.1 209.7  1.9      17.8   -13     2449   No stop
02 44 48  =1251-130    14 52 12  19.0 210.1  1.9      18.0    87     2462   02 43 09

02 44 48  J1303-1051   14 52 12  21.9 208.7  1.8      17.1   -25     2462   No stop
02 46 28  =1300-105    14 53 52  21.8 209.2  1.8      17.3    75     2474   02 44 49

02 46 28  VHS1256      14 53 52  19.3 210.3  1.9      18.1   -23     2474   No stop
02 50 08  ---          14 57 33  19.0 211.2  2.0      18.6   197     2503   02 46 29

02 50 08  J1254-1317   14 57 33  18.6 211.4  2.0      18.8   -13     2503   No stop
02 51 48  =1251-130    14 59 13  18.4 211.8  2.1      19.0    87     2515   02 50 09

02 52 10  J1303-1051   14 59 35  21.4 210.6  1.9      18.1    -3     2515   02 52 10
02 53 50  =1300-105    15 01 15  21.2 211.0  2.0      18.4    97     2528   02 52 11

02 53 50  VHS1256      15 01 15  18.7 212.1  2.1      19.1   -24     2528   No stop
02 57 30  ---          15 04 56  18.4 213.0  2.1      19.6   196     2556   02 53 51

02 57 30  J1254-1317   15 04 56  18.0 213.2  2.2      19.8   -13     2556   No stop
02 59 10  =1251-130    15 06 36  17.8 213.6  2.2      20.0    87     2569   02 57 31

02 59 10  J1303-1051   15 06 36  20.8 212.4  2.0      19.1   -25     2569   No stop
03 00 50  =1300-105    15 08 16  20.7 212.8  2.1      19.3    75     2582   02 59 11

03 00 50  VHS1256      15 08 16  18.1 213.8  2.2      20.0   -24     2582   No stop
03 04 30  ---          15 11 57  17.8 214.7  2.3      20.5   196     2610   03 00 51

03 04 30  J1254-1317   15 11 57  17.4 214.9  2.3      20.7   -13     2610   No stop
03 06 10  =1251-130    15 13 37  17.2 215.3  2.3      20.9    87     2623   03 04 31

03 06 32  J1303-1051   15 13 59  20.2 214.2  2.2      20.1    -3     2623   03 06 32
03 08 12  =1300-105    15 15 39  20.1 214.6  2.2      20.3    97     2636   03 06 33

03 08 12  VHS1256      15 15 39  17.5 215.5  2.3      21.0   -24     2636   No stop
03 11 52  ---          15 19 20  17.2 216.4  2.4      21.5   196     2664   03 08 13

03 11 52  J1254-1317   15 19 20  16.7 216.6  2.4      21.6   -13     2664   No stop
03 13 32  =1251-130    15 21 00  16.6 217.0  2.4      21.8    87     2677   03 11 53
```

Schedule for TORUN (Code Tr) Page 12

vhs1256-1257 -Epoch 1

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Sat 5 Mar 2016 Day 65 ---										
03 13 32	J1303-1051	15 21 00	19.6	215.9	2.3		21.0	-25	2677	No stop
03 15 12	=1300-105	15 22 41	19.5	216.3	2.3		21.2	75	2690	03 13 33
03 15 12	VHS1256	15 22 41	16.9	217.2	2.4		21.9	-24	2690	No stop
03 18 52	---	15 26 21	16.5	218.1	2.5		22.3	196	2718	03 15 13
03 18 52	J1254-1317	15 26 21	16.1	218.3	2.5		22.5	-13	2718	No stop
03 20 32	=1251-130	15 28 02	15.9	218.7	2.5		22.7	87	2731	03 18 53
03 20 54	J1303-1051	15 28 24	18.9	217.7	2.4		22.0	-3	2731	03 20 54
03 22 34	=1300-105	15 30 04	18.8	218.1	2.4		22.2	97	2744	03 20 55
03 22 34	VHS1256	15 30 04	16.2	218.9	2.6		22.8	-24	2744	No stop
03 26 14	---	15 33 44	15.8	219.8	2.6		23.2	196	2772	03 22 35
03 26 14	J1254-1317	15 33 44	15.4	220.0	2.6		23.4	-13	2772	No stop
03 27 54	=1251-130	15 35 25	15.2	220.4	2.7		23.6	87	2785	03 26 15
03 27 54	J1303-1051	15 35 25	18.3	219.4	2.5		22.8	-25	2785	No stop
03 29 34	=1300-105	15 37 05	18.1	219.8	2.5		23.0	75	2797	03 27 55
03 29 34	VHS1256	15 37 05	15.5	220.6	2.7		23.6	-24	2797	No stop
03 33 14	---	15 40 46	15.1	221.4	2.7		24.1	196	2826	03 29 35
03 33 14	J1254-1317	15 40 46	14.7	221.6	2.8		24.2	-13	2826	No stop
03 34 54	=1251-130	15 42 26	14.5	222.0	2.8		24.4	87	2838	03 33 15
03 35 16	J1303-1051	15 42 48	17.6	221.1	2.6		23.7	-3	2838	03 35 16
03 36 56	=1300-105	15 44 28	17.4	221.5	2.7		23.9	97	2851	03 35 17
03 36 56	VHS1256	15 44 28	14.8	222.3	2.8		24.5	-24	2851	No stop
03 40 36	---	15 48 09	14.4	223.1	2.9		24.9	196	2879	03 36 57
03 40 36	J1254-1317	15 48 09	13.9	223.3	2.9		25.1	-13	2879	No stop
03 42 16	=1251-130	15 49 49	13.8	223.7	2.9		25.2	87	2892	03 40 37
03 42 16	J1303-1051	15 49 49	16.9	222.8	2.8		24.5	-25	2892	No stop
03 43 56	=1300-105	15 51 29	16.7	223.1	2.8		24.7	75	2905	03 42 17
03 43 56	VHS1256	15 51 29	14.1	223.9	2.9		25.3	-24	2905	No stop
03 47 36	---	15 55 10	13.7	224.7	3.0		25.7	196	2933	03 43 57
03 47 36	J1254-1317	15 55 10	13.2	224.9	3.0		25.8	-13	2933	No stop
03 49 16	=1251-130	15 56 50	13.0	225.3	3.0		26.0	87	2946	03 47 37

Schedule for TORUN (Code Tr) Page 13

vhs1256-1257 -Epoch 1

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Sat 5 Mar 2016 Day 65 ---										
03 49 38	J1303-1051	15 57 12	16.1	224.5	2.9		25.4	-3	2946	03 49 38
03 51 18	=1300-105	15 58 53	15.9	224.9	2.9		25.6	97	2959	03 49 39
03 51 18	VHS1256	15 58 53	13.3	225.5	3.0		26.1	-24	2959	No stop
03 54 58	---	16 02 33	12.9	226.4	3.1		26.5	196	2987	03 51 19
03 54 58	J1254-1317	16 02 33	12.4	226.6	3.1		26.6	-13	2987	No stop
03 56 38	=1251-130	16 04 13	12.2	226.9	3.1		26.8	87	3000	03 54 59
03 56 38	J1303-1051	16 04 13	15.4	226.1	3.0		26.1	-25	3000	No stop
03 58 18	=1300-105	16 05 54	15.2	226.5	3.0		26.3	75	3013	03 56 39
03 58 18	VHS1256	16 05 54	12.5	227.1	3.1		26.9	-24	3013	No stop
04 01 58	---	16 09 34	12.1	227.9	3.2		27.2	196	3041	03 58 19
04 01 58	J1254-1317	16 09 34	11.6	228.1	3.2		27.4	-13	3041	No stop
04 03 38	=1251-130	16 11 15	11.5	228.5	3.3		27.5	87	3054	04 01 59
04 04 00	J1303-1051	16 11 37	14.5	227.8	3.1		26.9	-4	3054	04 04 00
04 05 40	=1300-105	16 13 17	14.4	228.1	3.2		27.1	96	3067	04 04 01
04 05 40	VHS1256	16 13 17	11.7	228.8	3.3		27.6	-24	3067	No stop
04 09 20	---	16 16 58	11.3	229.6	3.3		28.0	196	3095	04 05 41
04 09 20	J1254-1317	16 16 58	10.8	229.7	3.4		28.1	-13	3095	No stop
04 11 00	=1251-130	16 18 38	10.6	230.1	3.4		28.3	87	3108	04 09 21
04 11 00	J1303-1051	16 18 38	13.8	229.3	3.2		27.6	-26	3108	No stop
04 12 40	=1300-105	16 20 18	13.6	229.7	3.3		27.8	74	3121	04 11 01
04 12 40	VHS1256	16 20 18	10.9	230.3	3.4		28.3	-24	3121	No stop
04 16 20	---	16 23 59	10.5	231.1	3.5		28.7	196	3149	04 12 41
04 16 20	J1254-1317	16 23 59	10.0	231.3	3.5		28.8	-13	3149	No stop
04 18 00	=1251-130	16 25 39	9.8	231.6	3.5		28.9	87	3162	04 16 21
04 18 22	J1303-1051	16 26 01	12.9	231.0	3.4		28.4	-4	3162	04 18 22
04 20 02	=1300-105	16 27 41	12.7	231.4	3.4		28.5	96	3174	04 18 23
04 20 02	VHS1256	16 27 41	10.0	231.9	3.5		29.0	-24	3174	No stop
04 23 42	---	16 31 22	9.6	232.7	3.6		29.4	196	3203	04 20 03
04 23 42	J1254-1317	16 31 22	9.1	232.9	3.6		29.5	-13	3203	No stop
04 25 22	=1251-130	16 33 02	8.9	233.2	3.6		29.6	87	3215	04 23 43

```
Schedule for TORUN     (Code Tr )                                Page  14
               vhs1256-1257 -Epoch 1
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Sat   5 Mar 2016   Day  65 ---

04 25 22  J1303-1051   16 33 02  12.1 232.5  3.5      29.0   -26     3215   No stop
04 27 02  =1300-105    16 34 42  11.9 232.9  3.5      29.2    74     3228   04 25 23

04 27 02  VHS1256      16 34 42   9.2 233.4  3.6      29.7   -24     3228   No stop
04 30 42  ---          16 38 23   8.7 234.2  3.7      30.0   196     3256   04 27 03

04 30 42  J1254-1317   16 38 23   8.3 234.4  3.7      30.1   -13     3256   No stop
04 32 22  =1251-130    16 40 03   8.1 234.7  3.7      30.2    87     3269   04 30 43

04 32 44  J1303-1051   16 40 25  11.2 234.1  3.6      29.7    -4     3269   04 32 44
04 34 24  =1300-105    16 42 06  11.0 234.5  3.6      29.9    96     3282   04 32 45

04 34 24  VHS1256      16 42 06   8.3 235.0  3.8      30.3   -24     3282   No stop
04 38 04  ---          16 45 46   7.8 235.8  3.8      30.6   196     3310   04 34 25

04 38 04  J1254-1317   16 45 46   7.4 235.9  3.8      30.7   -13     3310   No stop
04 39 44  =1251-130    16 47 27   7.2 236.3  3.9      30.9    87     3323   04 38 05

04 39 44  J1303-1051   16 47 27  10.3 235.7  3.7      30.3   -26     3323   No stop
04 41 24  =1300-105    16 49 07  10.1 236.0  3.8      30.5    74     3336   04 39 45

04 41 24  VHS1256      16 49 07   7.4 236.5  3.9      30.9   -24     3336   No stop
04 45 04  ---          16 52 47   7.0 237.2  3.9      31.2   196     3364   04 41 25

04 45 04  J1254-1317   16 52 47   6.5 237.4  4.0      31.3   -13     3364   No stop
04 46 44  =1251-130    16 54 28   6.3 237.7  4.0      31.5    87     3377   04 45 05

04 50 37  1424+366     16 58 22  58.9 252.7  2.5      45.4    22     3377   04 50 37
04 54 37  ---          17 02 22  58.3 253.8  2.6      45.7   240     3408   04 50 38

04 57 37  1424+366     17 05 23  57.9 254.6  2.6      46.0   173     3408   04 57 37
05 01 37  ---          17 09 24  57.3 255.7  2.7      46.2   240     3438   04 57 38



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: sess116.L1024

   Setup group:   10         Station: TORUN            Total bit rate:  1024
   Format: MARK5B            Bits per sample: 2        Sample rate: 32.000
   Number of channels: 16    DBE type: DBBC_DDC        Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00
            2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00
  Net SB=         L         L         U         U         L         L         U         U
                  L         L         U         U         L         L         U         U
  IF SB =         L         L         L         L         L         L         L         L
                  L         L         L         L         L         L         L         L
  Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
                RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
  BBC   =         1         5         1         5         2         6         2         6
                  3         7         3         7         4         8         4         8
  BBC SB=         U         U         L         L         U         U         L         L
                  U         U         L         L         U         U         L         L
  IF    =        A1        B1        A1        B1        A1        B1        A1        B1
                 A1        B1        A1        B1        A1        B1        A1        B1

 The following frequency sets based on these setups were used.

  Frequency Set:   9  Setup file default.  Used with PCAL = off
  LO sum=   1610.49  1610.49  1610.49  1610.49  1642.49  1642.49  1642.49  1642.49
            1674.49  1674.49  1674.49  1674.49  1706.49  1706.49  1706.49  1706.49
  BBC fr=    689.51   689.51   689.51   689.51   657.51   657.51   657.51   657.51
             625.51   625.51   625.51   625.51   593.51   593.51   593.51   593.51
  Bandwd=     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
              16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
   Matching frequency sets:   9

  Track assignments are:
   track1=   2, 10, 18, 26,  4, 12, 20, 28,  6, 14, 22, 30,  8, 16, 24, 32
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)            (mas)

* VHS1256           12 53 24.559862   * 12 56 01.922000     12 56 54.015534       0.00
                   -12 41 10.24138    *-12 57 23.99000     -13 02 41.00646        0.00

* 4C39.25           09 23 55.319215   * 09 27 03.013936     09 28 04.592203       0.30
  J0927+3902        39 15 23.56645    * 39 02 20.85186      38 57 58.97279        0.16
  0923+392          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
  J0927+39          GSFC 2015a astro solution, unpublished 245753 observations.

  1251-130          12 51 54.110022   * 12 54 31.468276     12 55 23.570939       0.20
* J1254-1317       -13 01 00.92342    *-13 17 16.21192     -13 22 33.75431        0.48
                    /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
                    GSFC 2015a astro solution, unpublished    113 observations.

  1300-105          13 00 36.725057   * 13 03 13.867950     13 04 05.832564       0.06
* J1303-1051       -10 35 11.31965    *-10 51 17.12968     -10 56 31.57270        0.13
                    /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
                    GSFC 2015a astro solution, unpublished    247 observations.

* 1424+366          14 24 32.676820   * 14 26 37.087501     14 27 17.795696       0.03
  J1426+3625        36 38 36.02432    * 36 25 09.57362      36 20 40.02490        0.03
                    /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
                    GSFC 2015a astro solution, unpublished   1287 observations.
```

ea057btr

GPS Satellite Observations: Frequency Setup Tests

PI: *James M. Anderson*

```
Address:  Deutsches GeoForschungsZentrum GFZ

Observing mode: Fringe-finder scans on strong sources to test frequency se
Schedule for TORUN     (Code Tr )                                  Page   2
               GPS Satellite Observations: Frequency Setup Tests
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------
 --- Sat   5 Mar 2016   Day  65 ---
 Next scan frequencies:  1591.60  1591.60  1591.60  1591.60  1655.60  1655.60  1655.60  1655.60
 Next BBC frequencies:    708.40   708.40   708.40   708.40   644.40   644.40   644.40   644.40
 Next scan bandwidths:     32.00    32.00    32.00    32.00    32.00    32.00    32.00    32.00

11 00 00  2007+777     23 08 45  60.4 -17.7  3.1     119.1     0        0   11 00 00
11 09 40  ---          23 18 27  59.9 -18.2  3.2     116.4   580       74   11 00 01

11 10 00  2007+777     23 18 47  59.9 -18.2  3.2     116.3    15       74   11 10 00
11 15 10  ---          23 23 58  59.7 -18.4  3.3     114.8   310      114   11 10 01

 Next scan frequencies:  1403.60  1403.60  1403.60  1403.60
 Next BBC frequencies:    696.40   696.40   696.40   696.40
 Next scan bandwidths:     32.00    32.00    32.00    32.00

11 16 00  2007+777     23 24 48  59.6 -18.5  3.3     114.6    45      114   11 16 00
11 21 10  ---          23 29 59  59.4 -18.7  3.4     113.1   310      134   11 16 25

 Next scan frequencies:  1243.60  1243.60  1243.60  1243.60
 Next BBC frequencies:    856.40   856.40   856.40   856.40

11 22 00  2007+777     23 30 49  59.3 -18.7  3.4     112.9    45      134   11 22 00
11 27 10  ---          23 36 00  59.1 -18.9  3.5     111.4   310      154   11 22 01

 Next scan frequencies:  1243.60  1243.60  1243.60  1243.60  1307.60  1307.60  1307.60  1307.60
 Next BBC frequencies:    856.40   856.40   856.40   856.40   792.40   792.40   792.40   792.40
 Next scan bandwidths:     32.00    32.00    32.00    32.00    32.00    32.00    32.00    32.00

11 28 00  2007+777     23 36 50  59.0 -19.0  3.5     111.2    44      154   11 28 00
11 33 10  ---          23 42 01  58.8 -19.1  3.6     109.8   310      194   11 28 25

11 34 00  2007+777     23 42 51  58.7 -19.2  3.6     109.6    44      194   11 34 00
11 39 10  ---          23 48 02  58.5 -19.3  3.7     108.2   310      233   11 34 01

 Next scan frequencies:  1591.60  1591.60  1591.60  1591.60  1655.60  1655.60  1655.60  1655.60
 Next BBC frequencies:    708.40   708.40   708.40   708.40   644.40   644.40   644.40   644.40

11 49 10  3C454.3      23 58 03  51.1 204.6  1.1      15.1   139      233   11 49 10
11 54 20  ---          00 03 14  50.8 206.5  1.1      16.2   310      273   11 49 11

 Next scan frequencies:  1403.60  1403.60  1403.60  1403.60
 Next BBC frequencies:    696.40   696.40   696.40   696.40
 Next scan bandwidths:     32.00    32.00    32.00    32.00

11 55 10  3C454.3      00 04 04  50.7 206.9  1.2      16.4    43      273   11 55 10
12 00 20  ---          00 09 15  50.3 208.7  1.2      17.5   310      293   11 55 35
```

```
Schedule for TORUN     (Code Tr )                                  Page   3
               GPS Satellite Observations: Frequency Setup Tests
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------
 --- Sat   5 Mar 2016   Day  65 ---
 Next scan frequencies:  1243.60  1243.60  1243.60  1243.60
 Next BBC frequencies:    856.40   856.40   856.40   856.40

12 01 10  3C454.3      00 10 05  50.3 209.0  1.3      17.7    43      293   12 01 10
12 06 20  ---          00 15 16  49.9 210.9  1.3      18.7   310      313   12 01 11

 Next scan frequencies:  1243.60  1243.60  1243.60  1243.60  1307.60  1307.60  1307.60  1307.60
 Next BBC frequencies:    856.40   856.40   856.40   856.40   792.40   792.40   792.40   792.40
 Next scan bandwidths:     32.00    32.00    32.00    32.00    32.00    32.00    32.00    32.00

12 07 10  3C454.3      00 16 06  49.8 211.2  1.4      18.9    43      313   12 07 10
12 12 20  ---          00 21 17  49.4 213.0  1.4      19.9   310      353   12 07 35

12 13 10  3C454.3      00 22 07  49.3 213.3  1.5      20.1    44      353   12 13 10
12 18 20  ---          00 27 18  48.9 215.0  1.5      21.0   310      392   12 13 11

 Next scan frequencies:  1591.60  1591.60  1591.60  1591.60  1655.60  1655.60  1655.60  1655.60
 Next BBC frequencies:    708.40   708.40   708.40   708.40   644.40   644.40   644.40   644.40

12 23 49  1948+505     00 32 48  48.2 296.5  4.7      58.1   152      392   12 23 49
12 24 29  ---          00 33 28  48.1 296.5  4.7      58.1    40      397   12 23 50

12 25 50  PRN13        00 34 50  59.0 292.2  3.5      68.7    26      397   12 25 50
12 26 08  ---          00 35 08  59.0 292.3  3.5      68.7    18      400   12 25 51

12 27 31  1954+513     00 36 31  48.9 297.3  4.7      59.2    31      400   12 27 31
12 28 11  ---          00 37 11  48.8 297.3  4.7      59.1    40      405   12 27 32

12 29 40  PRN13        00 38 40  60.8 292.0  3.3      70.8    30      405   12 29 40
12 29 58  ---          00 38 58  60.8 292.0  3.3      70.8    18      407   12 29 41

12 31 17  2023+503     00 40 17  51.9 292.6  4.2      60.7    32      407   12 31 17
12 31 57  ---          00 40 57  51.8 292.7  4.3      60.6    40      412   12 31 18

12 33 16  PRN13        00 42 16  62.4 291.7  3.2      72.7    25      412   12 33 16
12 33 34  ---          00 42 34  62.4 291.7  3.2      72.7    18      415   12 33 17

12 34 56  3C418        00 43 56  53.6 292.7  4.1      62.6    36      415   12 34 56
12 35 36  ---          00 44 37  53.5 292.8  4.1      62.5    40      420   12 34 57

12 43 51  0149+218     00 52 53  57.0 153.7 -1.0     -16.7   200      420   12 43 51
12 44 31  ---          00 53 34  57.1 154.0 -1.0     -16.5    40      425   12 43 52

12 45 34  PRN28        00 54 37  61.4 142.2 -1.3     -24.7    24      425   12 45 34
12 45 52  ---          00 54 55  61.4 142.3 -1.3     -24.7    18      427   12 45 35

12 46 58  0149+218     00 56 01  57.2 155.0 -1.0     -15.9    26      427   12 46 58
12 47 38  ---          00 56 41  57.3 155.3 -0.9     -15.7    40      432   12 46 59

12 48 50  PRN28        00 57 53  62.5 139.8 -1.3     -26.6    25      432   12 48 50
12 49 08  ---          00 58 11  62.5 139.9 -1.3     -26.5    18      435   12 48 51
```

```
Schedule for TORUN     (Code Tr )                                  Page   4
               GPS Satellite Observations: Frequency Setup Tests
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Sat   5 Mar 2016   Day  65 ---

12 50 06  0202+240     00 59 09  58.6 149.7 -1.1     -19.4    24      435   12 50 06
12 50 46  ---          00 59 49  58.6 150.0 -1.1     -19.3    40      440   12 50 07

12 51 50  PRN28        01 00 53  63.5 137.4 -1.4     -28.4    23      440   12 51 50
12 52 08  ---          01 01 11  63.5 137.5 -1.4     -28.3    18      442   12 51 51

12 53 14  0202+240     01 02 18  58.8 151.0 -1.1     -18.6    25      442   12 53 14
12 53 54  ---          01 02 58  58.9 151.3 -1.1     -18.5    40      447   12 53 15

12 55 07  PRN28        01 04 12  64.4 134.5 -1.4     -30.6    24      447   12 55 07
12 55 25  ---          01 04 30  64.5 134.6 -1.4     -30.5    18      449   12 55 08

12 56 17  0204+316     01 05 21  66.0 145.4 -1.1     -23.7    15      449   12 56 17
12 56 57  ---          01 06 01  66.0 145.8 -1.0     -23.5    40      455   12 56 18

12 57 55  PRN28        01 07 00  65.2 131.9 -1.5     -32.6    15      455   12 57 55
12 58 13  ---          01 07 18  65.2 132.0 -1.5     -32.5    18      457   12 57 56

12 59 13  0204+316     01 08 17  66.2 146.9 -1.0     -22.8    15      457   12 59 13
12 59 53  ---          01 08 57  66.3 147.2 -1.0     -22.6    40      462   12 59 14


SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: sess315.L1_1024

   Setup group:    6         Station: TORUN            Total bit rate:  1024
   Format: MARK5B            Bits per sample: 2        Sample rate: 64.000
   Number of channels:  8    DBE type: DBBC_DDC        Speedup factor:   1.00

   Disk used to record data.
```

```
 1st LO=   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00
 Net SB=         L         L         U         U         L         L         U         U
 IF SB =         L         L         L         L         L         L         L         L
 Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
 BBC   =         1         5         1         5         3         7         3         7
 BBC SB=         U         U         L         L         U         U         L         L
 IF    =        A1        B1        A1        B1        A1        B1        A1        B1

The following frequency sets based on these setups were used.

 Frequency Set:   6  Setup file default.  Used with PCAL = off
 LO sum=   1591.60  1591.60  1591.60  1591.60  1655.60  1655.60  1655.60  1655.60
 BBC fr=    708.40   708.40   708.40   708.40   644.40   644.40   644.40   644.40
 Bandwd=     32.00    32.00    32.00    32.00    32.00    32.00    32.00    32.00
  Matching frequency sets:   6

 Track assignments are:
  track1=   2,  6, 10, 14,  4,  8, 12, 16
  barrel=roll_off


======== Setup file: sess315.L3_512

 Setup group:   15         Station: TORUN            Total bit rate:   512
 Format: MARK5B            Bits per sample: 2        Sample rate: 64.000
 Number of channels:  4    DBE type: DBBC_DDC        Speedup factor:   1.00

 Disk used to record data.
```

```
  1st LO=   2100.00   2100.00   2100.00   2100.00
  Net SB=         L         L         U         U
  IF SB =         L         L         L         L
  Pol.  =       RCP       LCP       RCP       LCP
  BBC   =         1         5         1         5
  BBC SB=         U         U         L         L
  IF    =        A1        B1        A1        B1

 The following frequency sets based on these setups were used.

  Frequency Set:  15  Setup file default.  Used with PCAL = off
  LO sum=   1403.60  1403.60  1403.60  1403.60
  BBC fr=    696.40   696.40   696.40   696.40
  Bandwd=     32.00    32.00    32.00    32.00
   Matching frequency sets:  15

  Track assignments are:
   track1=   2,  4,  6,  8
   barrel=roll_off


======== Setup file: sess315.L2_512

  Setup group:   28         Station: TORUN            Total bit rate:   512
  Format: MARK5B            Bits per sample: 2        Sample rate: 64.000
  Number of channels:  4    DBE type: DBBC_DDC        Speedup factor:   1.00

  Disk used to record data.
```

```
  1st LO=   2100.00   2100.00   2100.00   2100.00
  Net SB=         L         L         U         U
  IF SB =         L         L         L         L
  Pol.  =       RCP       LCP       RCP       LCP
  BBC   =         1         5         1         5
  BBC SB=         U         U         L         L
  IF    =        A1        B1        A1        B1

 The following frequency sets based on these setups were used.

  Frequency Set:  24  Setup file default.  Used with PCAL = off
  LO sum=   1243.60  1243.60  1243.60  1243.60
  BBC fr=    856.40   856.40   856.40   856.40
  Bandwd=     32.00    32.00    32.00    32.00
   Matching frequency sets:  24

  Track assignments are:
   track1=   2,  4,  6,  8
   barrel=roll_off


======== Setup file: sess315.L2_1024

  Setup group:   22         Station: TORUN            Total bit rate:  1024
  Format: MARK5B            Bits per sample: 2        Sample rate: 64.000
  Number of channels:  8    DBE type: DBBC_DDC        Speedup factor:   1.00

  Disk used to record data.
```

```
 1st LO=   2100.00   2100.00   2100.00   2100.00   2100.00   2100.00   2100.00   2100.00
 Net SB=         L         L         U         U         L         L         U         U
 IF SB =         L         L         L         L         L         L         L         L
 Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
 BBC   =         1         5         1         5         3         7         3         7
 BBC SB=         U         U         L         L         U         U         L         L
 IF    =        A1        B1        A1        B1        A1        B1        A1        B1

The following frequency sets based on these setups were used.

 Frequency Set:  30  Setup file default.  Used with PCAL = off
 LO sum=   1243.60  1243.60  1243.60  1243.60  1307.60  1307.60  1307.60  1307.60
 BBC fr=    856.40   856.40   856.40   856.40   792.40   792.40   792.40   792.40
 Bandwd=     32.00    32.00    32.00    32.00    32.00    32.00    32.00    32.00
  Matching frequency sets:  30

 Track assignments are:
  track1=   2,  6, 10, 14,  4,  8, 12, 16
  barrel=roll_off


======== Setup file: sess315.L1L2_1024

 Setup group:   37         Station: TORUN            Total bit rate:  1024
 Format: MARK5B            Bits per sample: 2        Sample rate: 64.000
 Number of channels:  8    DBE type: DBBC_DDC        Speedup factor:   1.00

 Disk used to record data.
```

```
  1st LO=   2100.00   2100.00   2100.00   2100.00   2100.00   2100.00   2100.00   2100.00
  Net SB=         L         L         U         U         L         L         U         U
  IF SB =         L         L         L         L         L         L         L         L
  Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
  BBC   =         1         5         1         5         3         7         3         7
  BBC SB=         U         U         L         L         U         U         L         L
  IF    =        A1        B1        A1        B1        A1        B1        A1        B1

 The following frequency sets based on these setups were used.

  Frequency Set:  36  Setup file default.  Used with PCAL = off
  LO sum=   1243.60  1243.60  1243.60  1243.60  1307.60  1307.60  1307.60  1307.60
  BBC fr=    856.40   856.40   856.40   856.40   792.40   792.40   792.40   792.40
  Bandwd=     32.00    32.00    32.00    32.00    32.00    32.00    32.00    32.00
   Matching frequency sets:  36

  Track assignments are:
   track1=   2,  6, 10, 14,  4,  8, 12, 16
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                      (B1950)             (J2000)             (Date)             (mas)

* 0149+218          01 49 31.744134   * 01 52 18.059045     01 53 11.091973       0.02
  J0152+2207        21 52 20.74790    * 22 07 07.69977      22 11 46.51932        0.02
  J0152+22          /dsk1/anderson/astro/GFZ/RefFrame/prog/FORTRAN/sched/11.4_sat/catalogs/sources.gs
                    GSFC 2015a astro solution, unpublished   2091 observations.

* 0202+240          02 02 32.139205   * 02 05 21.322721     02 06 15.349167       0.21
  J0205+2416        24 02 13.83774    * 24 16 32.85052      24 21 02.96036        0.26
                    /dsk1/anderson/astro/GFZ/RefFrame/prog/FORTRAN/sched/11.4_sat/catalogs/sources.gs
                    GSFC 2015a astro solution, unpublished    113 observations.

* 0204+316          02 04 39.613493   * 02 07 34.989619     02 08 31.076152       0.15
  J0207+3152        31 37 52.42715    * 31 52 06.46355      31 56 37.06021        0.26
                    /dsk1/anderson/astro/GFZ/RefFrame/prog/FORTRAN/sched/11.4_sat/catalogs/sources.gs
                    GSFC 2015a astro solution, unpublished    150 observations.

* 1948+505          19 48 22.066052   * 19 49 43.492297     19 50 08.668069       0.29
  J1949+5041        50 33 52.99450    * 50 41 31.97279      50 43 53.50138        0.33
                    /dsk1/anderson/astro/GFZ/RefFrame/prog/FORTRAN/sched/11.4_sat/catalogs/sources.gs
                    GSFC 2015a astro solution, unpublished    146 observations.

* 1954+513          19 54 22.470020   * 19 55 42.738250     19 56 07.501442       0.02
  J1955+5131        51 23 46.42518    * 51 31 48.54619      51 34 17.65127        0.01
  J1955+51          /dsk1/anderson/astro/GFZ/RefFrame/prog/FORTRAN/sched/11.4_sat/catalogs/sources.gs
                    GSFC 2015a astro solution, unpublished   4136 observations.

* 2007+777          20 07 20.430197   * 20 05 30.998526     20 04 51.545050       0.03
  J2005+7752        77 43 58.12302    * 77 52 43.24755      77 55 24.72298        0.01
  J2005+77          /dsk1/anderson/astro/GFZ/RefFrame/prog/FORTRAN/sched/11.4_sat/catalogs/sources.gs
                    GSFC 2015a astro solution, unpublished  15597 observations.

* 2023+503          20 23 56.358433   * 20 25 24.972491     20 25 52.369261       0.60
  J2025+5028        50 18 48.19294    * 50 28 39.53653      50 31 44.81490        0.30
                    /dsk1/anderson/astro/GFZ/RefFrame/prog/FORTRAN/sched/11.4_sat/catalogs/sources.gs
                    GSFC 2015a astro solution, unpublished    121 observations.
```

```
* 3C418            20 37 07.456979   * 20 38 37.034734     20 39 04.694430       0.00
  J2038+5119       51 08 35.76955    * 51 19 12.66258      51 22 32.99214        0.00
  2037+511         /dsk1/anderson/astro/GFZ/RefFrame/prog/FORTRAN/sched/11.4_sat/catalogs/sources.gs
  J2038+51         GSFC 2015a astro solution, unpublished 128197 observations.

* 3C454.3          22 51 29.519738   * 22 53 57.747938     22 54 44.458768       0.67
  J2253+1608       15 52 54.34810    * 16 08 53.56093      16 13 58.86293        0.70
  2251+158         /dsk1/anderson/astro/GFZ/RefFrame/prog/FORTRAN/sched/11.4_sat/catalogs/sources.gs
  J2253+16         GSFC 2015a astro solution, unpublished  40748 observations.

* PRN13            18 08 03.846629   * 18 09 53.229812     18 10 28.040756       0.00
                   33 37 39.06518    * 33 38 18.35654      33 38 24.91426        0.00
                   Satellite. Position is for scan 1, center Earth.
                   Planetary motion used.  Ref. MJD:   57452.4583
                      Rates: RA =  0.14171E+06 s/day   Dec =  0.19145E+07 arcsec/day
                   KERFILE: naif0011.tls
                   SATFILE: gps-ops_20160224.bsp

* PRN28            23 47 57.051845   * 23 50 31.298820     23 51 19.740420       0.00
                  -08 46 07.24122    *-08 29 26.13656     -08 24 11.05459        0.00
                   Satellite. Position is for scan 1, center Earth.
                   Planetary motion used.  Ref. MJD:   57452.4583
                      Rates: RA =  0.97766E+05 s/day   Dec =  0.21749E+07 arcsec/day
                   KERFILE: naif0011.tls
                   SATFILE: gps-ops_20160224.bsp
```

ej016btr

VLBI observations of HS0810+2554

PI: *Neal Jackson*

```
Address:  University of Manchester

Observing mode: MKIV
Schedule for TORUN     (Code Tr )                                   Page   2
               VLBI observations of HS0810+2554
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------
 --- Sat   5 Mar 2016   Day  65 ---
 Next scan frequencies:  1610.49  1610.49  1610.49  1610.49  1642.49  1642.49  1642.49  1642.49
                         1674.49  1674.49  1674.49  1674.49  1706.49  1706.49  1706.49  1706.49
 Next BBC frequencies:    689.51   689.51   689.51   689.51   657.51   657.51   657.51   657.51
                          625.51   625.51   625.51   625.51   593.51   593.51   593.51   593.51
 Next scan bandwidths:     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
                           16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00

17 30 00  J0813+25     05 39 49  50.3 118.4 -2.6     -35.9     0        0   17 30 00
17 34 00  ---          05 43 50  50.8 119.6 -2.5     -35.4   240       31   17 30 01

17 34 00  HS0810       05 43 50  50.8 119.4 -2.5     -35.5    -9       31   No stop
17 39 00  ---          05 48 51  51.5 120.8 -2.4     -34.9   291       69   17 34 01

17 39 40  J0813+25     05 49 31  51.6 121.2 -2.4     -34.7    31       69   17 39 40
17 41 10  ---          05 51 01  51.8 121.7 -2.4     -34.5    90       81   17 39 41

17 41 10  HS0810       05 51 01  51.7 121.5 -2.4     -34.6    -9       81   No stop
17 46 10  ---          05 56 02  52.4 123.0 -2.3     -34.0   291      119   17 41 11

17 46 10  J0813+25     05 56 02  52.4 123.2 -2.3     -33.9    -9      119   No stop
17 47 40  ---          05 57 32  52.6 123.7 -2.3     -33.7    81      131   17 46 11

17 47 40  HS0810       05 57 32  52.6 123.5 -2.3     -33.8    -9      131   No stop
17 52 40  ---          06 02 33  53.2 125.0 -2.2     -33.1   291      169   17 47 41

17 53 20  J0813+25     06 03 13  53.3 125.4 -2.2     -32.9    31      169   17 53 20
17 54 50  ---          06 04 43  53.5 125.9 -2.2     -32.7    90      181   17 53 21

17 54 50  HS0810       06 04 43  53.5 125.7 -2.2     -32.8    -9      181   No stop
17 59 50  ---          06 09 44  54.1 127.3 -2.1     -32.0   291      219   17 54 51

17 59 50  J0813+25     06 09 44  54.1 127.5 -2.1     -31.9    -9      219   No stop
18 01 20  ---          06 11 14  54.3 128.0 -2.0     -31.7    81      231   17 59 51

18 01 20  HS0810       06 11 14  54.2 127.8 -2.1     -31.8    -9      231   No stop
18 06 20  ---          06 16 15  54.8 129.5 -2.0     -31.0   291      269   18 01 21

18 07 00  J0813+25     06 16 55  54.9 129.9 -2.0     -30.7    31      269   18 07 00
18 08 30  ---          06 18 26  55.1 130.4 -1.9     -30.5    90      281   18 07 01

18 08 30  HS0810       06 18 26  55.1 130.2 -1.9     -30.6    -9      281   No stop
18 13 30  ---          06 23 26  55.6 131.9 -1.9     -29.7   291      319   18 08 31
```

Schedule for TORUN (Code Tr) Page 3

VLBI observations of HS0810+2554

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Sat 5 Mar 2016 Day 65 ---										
18 13 30	J0813+25	06 23 26	55.7	132.1	-1.8		-29.6	-9	319	No stop
18 15 00	---	06 24 57	55.8	132.7	-1.8		-29.3	81	331	18 13 31
18 15 00	HS0810	06 24 57	55.8	132.5	-1.8		-29.4	-9	331	No stop
18 20 00	---	06 29 57	56.4	134.2	-1.7		-28.5	291	369	18 15 01
18 20 40	J0813+25	06 30 38	56.4	134.7	-1.7		-28.3	31	369	18 20 40
18 22 10	---	06 32 08	56.6	135.2	-1.7		-28.0	90	381	18 20 41
18 22 10	HS0810	06 32 08	56.6	135.0	-1.7		-28.1	-9	381	No stop
18 27 10	---	06 37 09	57.1	136.8	-1.6		-27.1	291	419	18 22 11
18 27 10	J0813+25	06 37 09	57.1	137.1	-1.6		-27.0	-9	419	No stop
18 28 40	---	06 38 39	57.3	137.6	-1.6		-26.7	81	431	18 27 11
18 30 50	4C39.25	06 40 49	58.3	99.4	-2.8		-49.6	38	431	18 30 50
18 34 50	---	06 44 50	58.9	100.4	-2.7		-49.4	240	462	18 30 51
18 37 20	J0813+25	06 47 20	58.1	140.9	-1.4		-24.8	55	462	18 37 20
18 38 50	---	06 48 51	58.3	141.5	-1.4		-24.5	90	473	18 37 21
18 38 50	HS0810	06 48 51	58.3	141.3	-1.4		-24.6	-9	473	No stop
18 43 50	---	06 53 51	58.7	143.3	-1.3		-23.5	291	512	18 38 51
18 44 30	J0813+25	06 54 31	58.8	143.7	-1.3		-23.2	30	512	18 44 30
18 46 00	---	06 56 02	58.9	144.3	-1.3		-22.9	90	523	18 44 31
18 46 00	HS0810	06 56 02	58.9	144.1	-1.3		-23.0	-9	523	No stop
18 51 00	---	07 01 03	59.3	146.2	-1.2		-21.8	291	562	18 46 01
18 51 00	J0813+25	07 01 03	59.3	146.4	-1.2		-21.6	-9	562	No stop
18 52 30	---	07 02 33	59.5	147.0	-1.2		-21.3	81	573	18 51 01
18 52 30	HS0810	07 02 33	59.5	146.8	-1.2		-21.4	-9	573	No stop
18 57 30	---	07 07 34	59.9	148.9	-1.1		-20.2	291	612	18 52 31
18 58 10	J0813+25	07 08 14	59.9	149.4	-1.1		-19.8	30	612	18 58 10
18 59 40	---	07 09 44	60.0	150.0	-1.1		-19.4	90	623	18 58 11
18 59 40	HS0810	07 09 44	60.0	149.8	-1.1		-19.6	-9	623	No stop
19 04 40	---	07 14 45	60.4	151.9	-1.0		-18.3	291	662	18 59 41
19 04 40	J0813+25	07 14 45	60.4	152.2	-1.0		-18.1	-10	662	No stop
19 06 10	---	07 16 15	60.5	152.8	-1.0		-17.7	80	673	19 04 41
19 06 10	HS0810	07 16 15	60.5	152.6	-1.0		-17.9	-9	673	No stop
19 11 10	---	07 21 16	60.8	154.8	-0.9		-16.5	291	712	19 06 11

Schedule for TORUN (Code Tr) Page 4

VLBI observations of HS0810+2554

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sat 5 Mar 2016 Day 65 ---										
19 11 50	J0813+25	07 21 56	60.9	155.3	-0.9		-16.1	30	712	19 11 50
19 13 20	---	07 23 26	61.0	156.0	-0.8		-15.7	90	723	19 11 51
19 13 20	HS0810	07 23 26	61.0	155.8	-0.9		-15.9	-9	723	No stop
19 18 20	---	07 28 27	61.3	158.0	-0.8		-14.4	291	762	19 13 21
19 18 20	J0813+25	07 28 27	61.3	158.3	-0.8		-14.3	-10	762	No stop
19 19 50	---	07 29 57	61.3	158.9	-0.7		-13.9	80	773	19 18 21
19 19 50	HS0810	07 29 57	61.4	158.7	-0.7		-14.0	-9	773	No stop
19 24 50	---	07 34 58	61.6	161.0	-0.7		-12.5	291	812	19 19 51
19 25 30	J0813+25	07 35 38	61.6	161.6	-0.6		-12.2	30	812	19 25 30
19 27 00	---	07 37 08	61.7	162.2	-0.6		-11.7	90	823	19 25 31
19 27 00	HS0810	07 37 08	61.7	162.0	-0.6		-11.9	-9	823	No stop
19 32 00	---	07 42 09	61.9	164.4	-0.5		-10.3	291	862	19 27 01
19 32 00	J0813+25	07 42 09	61.9	164.6	-0.5		-10.2	-10	862	No stop
19 33 30	---	07 43 40	62.0	165.3	-0.5		-9.7	80	873	19 32 01
19 33 30	HS0810	07 43 40	62.0	165.1	-0.5		-9.9	-9	873	No stop
19 38 30	---	07 48 40	62.2	167.5	-0.4		-8.3	291	912	19 33 31
19 39 10	J0813+25	07 49 20	62.2	168.0	-0.4		-8.0	30	912	19 39 10
19 40 40	---	07 50 51	62.2	168.7	-0.4		-7.5	90	923	19 39 11
19 40 40	HS0810	07 50 51	62.2	168.5	-0.4		-7.6	-9	923	No stop
19 45 40	---	07 55 52	62.4	170.9	-0.3		-6.0	291	962	19 40 41
19 45 40	J0813+25	07 55 52	62.3	171.1	-0.3		-5.9	-10	962	No stop
19 47 10	---	07 57 22	62.4	171.9	-0.3		-5.4	80	973	19 45 41
19 47 10	HS0810	07 57 22	62.4	171.6	-0.3		-5.6	-9	973	No stop
19 52 10	---	08 02 23	62.5	174.1	-0.2		-3.9	291	1012	19 47 11
19 52 50	J0813+25	08 03 03	62.5	174.6	-0.2		-3.6	30	1012	19 52 50
19 54 20	---	08 04 33	62.5	175.4	-0.2		-3.1	90	1023	19 52 51
19 54 20	HS0810	08 04 33	62.5	175.1	-0.2		-3.2	-9	1023	No stop
19 59 20	---	08 09 34	62.6	177.6	-0.1		-1.6	291	1062	19 54 21
19 59 20	J0813+25	08 09 34	62.5	177.8	-0.1		-1.5	-10	1062	No stop
20 00 50	---	08 11 04	62.5	178.5	-0.0		-1.0	80	1073	19 59 21

Schedule for TORUN (Code Tr) Page 5

VLBI observations of HS0810+2554

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Sat 5 Mar 2016 Day 65 ---										
20 00 50	HS0810	08 11 04	62.6	178.3	-0.1		-1.1	-9	1073	No stop
20 05 50	---	08 16 05	62.6	180.8	0.0		0.5	291	1112	20 00 51
20 06 30	J0813+25	08 16 45	62.6	181.3	0.0		0.9	30	1112	20 06 30
20 08 00	---	08 18 15	62.5	182.1	0.1		1.4	90	1123	20 06 31
20 08 00	HS0810	08 18 15	62.6	181.8	0.1		1.2	-9	1123	No stop
20 13 00	---	08 23 16	62.6	184.3	0.1		2.9	291	1162	20 08 01
20 13 00	J0813+25	08 23 16	62.5	184.5	0.2		3.0	-9	1162	No stop
20 14 30	---	08 24 46	62.5	185.2	0.2		3.5	81	1173	20 13 01
20 14 30	HS0810	08 24 46	62.5	185.0	0.2		3.3	-9	1173	No stop
20 19 30	---	08 29 47	62.5	187.5	0.3		5.0	291	1212	20 14 31
20 20 10	J0813+25	08 30 27	62.4	188.0	0.3		5.3	30	1212	20 20 10
20 21 40	---	08 31 57	62.4	188.7	0.3		5.8	90	1223	20 20 11
20 21 40	HS0810	08 31 57	62.4	188.5	0.3		5.7	-9	1223	No stop
20 26 40	---	08 36 58	62.3	190.9	0.4		7.3	291	1262	20 21 41
20 26 40	J0813+25	08 36 58	62.2	191.1	0.4		7.4	-9	1262	No stop
20 28 10	---	08 38 29	62.2	191.9	0.4		7.9	81	1273	20 26 41
20 28 10	HS0810	08 38 29	62.2	191.6	0.4		7.7	-9	1273	No stop
20 33 10	---	08 43 29	62.1	194.0	0.5		9.3	291	1312	20 28 11
20 33 50	J0813+25	08 44 09	62.0	194.6	0.5		9.6	31	1312	20 33 50
20 35 20	---	08 45 40	61.9	195.3	0.5		10.1	90	1323	20 33 51
20 35 20	HS0810	08 45 40	62.0	195.1	0.5		10.0	-9	1323	No stop
20 40 20	---	08 50 41	61.8	197.4	0.6		11.5	291	1362	20 35 21
20 40 20	J0813+25	08 50 41	61.7	197.6	0.6		11.6	-9	1362	No stop
20 41 50	---	08 52 11	61.6	198.3	0.6		12.1	81	1373	20 40 21
20 41 50	HS0810	08 52 11	61.7	198.1	0.6		12.0	-9	1373	No stop
20 46 50	---	08 57 12	61.5	200.4	0.7		13.5	291	1412	20 41 51
20 47 30	J0813+25	08 57 52	61.4	200.9	0.7		13.8	31	1412	20 47 30
20 49 00	---	08 59 22	61.3	201.6	0.8		14.2	90	1423	20 47 31
20 49 00	HS0810	08 59 22	61.3	201.4	0.7		14.1	-9	1423	No stop
20 54 00	---	09 04 23	61.1	203.7	0.8		15.5	291	1462	20 49 01

Schedule for TORUN (Code Tr) Page 6

VLBI observations of HS0810+2554

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sat 5 Mar 2016 Day 65 ---										
20 54 00	J0813+25	09 04 23	61.0	203.9	0.8		15.6	-9	1462	No stop
20 55 30	---	09 05 53	60.9	204.5	0.9		16.1	81	1473	20 54 01
20 55 30	HS0810	09 05 53	61.0	204.4	0.9		16.0	-8	1473	No stop
21 00 30	---	09 10 54	60.6	206.6	0.9		17.4	292	1512	20 55 31
21 01 10	J0813+25	09 11 34	60.5	207.1	1.0		17.6	31	1512	21 01 10
21 02 40	---	09 13 04	60.4	207.7	1.0		18.0	90	1523	21 01 11
21 02 40	HS0810	09 13 04	60.5	207.5	1.0		17.9	-8	1523	No stop
21 07 40	---	09 18 05	60.1	209.7	1.1		19.3	292	1562	21 02 41
21 07 40	J0813+25	09 18 05	60.1	209.9	1.1		19.4	-9	1562	No stop
21 09 10	---	09 19 35	59.9	210.5	1.1		19.8	81	1573	21 07 41
21 09 10	HS0810	09 19 35	60.0	210.3	1.1		19.7	-8	1573	No stop
21 14 10	---	09 24 36	59.6	212.4	1.2		20.9	292	1612	21 09 11
21 14 50	J0813+25	09 25 16	59.5	212.9	1.2		21.2	31	1612	21 14 50
21 16 20	---	09 26 46	59.4	213.5	1.2		21.6	90	1623	21 14 51
21 16 20	HS0810	09 26 46	59.4	213.3	1.2		21.5	-8	1623	No stop
21 21 20	---	09 31 47	59.0	215.4	1.3		22.7	292	1662	21 16 21
21 21 20	J0813+25	09 31 47	58.9	215.5	1.3		22.8	-9	1662	No stop
21 22 50	---	09 33 17	58.8	216.1	1.3		23.1	81	1673	21 21 21
21 22 50	HS0810	09 33 17	58.9	216.0	1.3		23.1	-8	1673	No stop
21 27 50	---	09 38 18	58.4	218.0	1.4		24.2	292	1712	21 22 51
21 28 30	J0813+25	09 38 58	58.3	218.4	1.4		24.4	31	1712	21 28 30
21 30 00	---	09 40 29	58.1	219.0	1.4		24.8	90	1723	21 28 31
21 30 00	HS0810	09 40 29	58.2	218.8	1.4		24.7	-8	1723	No stop
21 35 00	---	09 45 29	57.8	220.8	1.5		25.8	292	1762	21 30 01
21 35 00	J0813+25	09 45 29	57.7	220.9	1.5		25.9	-9	1762	No stop
21 36 30	---	09 47 00	57.5	221.5	1.5		26.2	81	1773	21 35 01
21 36 30	HS0810	09 47 00	57.6	221.3	1.5		26.1	-8	1773	No stop
21 41 30	---	09 52 01	57.1	223.2	1.6		27.1	292	1812	21 36 31
21 42 10	J0813+25	09 52 41	56.9	223.6	1.6		27.3	31	1812	21 42 10
21 43 40	---	09 54 11	56.8	224.1	1.7		27.6	90	1823	21 42 11

Schedule for TORUN (Code Tr) Page 7

VLBI observations of HS0810+2554

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Sat 5 Mar 2016 Day 65 ---										
21 43 40	HS0810	09 54 11	56.9	224.0	1.7		27.6	-8	1823	No stop
21 48 40	---	09 59 12	56.3	225.8	1.7		28.5	292	1862	21 43 41
21 48 40	J0813+25	09 59 12	56.3	225.9	1.8		28.6	-9	1862	No stop
21 50 10	---	10 00 42	56.1	226.5	1.8		28.9	81	1873	21 48 41
21 50 10	HS0810	10 00 42	56.2	226.4	1.8		28.8	-8	1873	No stop
21 55 10	---	10 05 43	55.6	228.1	1.9		29.7	292	1912	21 50 11
21 55 50	J0813+25	10 06 23	55.5	228.5	1.9		29.9	31	1912	21 55 50
21 57 20	---	10 07 53	55.3	229.0	1.9		30.2	90	1923	21 55 51
21 57 20	HS0810	10 07 53	55.4	228.9	1.9		30.1	-8	1923	No stop
22 02 20	---	10 12 54	54.8	230.6	2.0		31.0	292	1962	21 57 21
22 02 20	J0813+25	10 12 54	54.7	230.7	2.0		31.0	-9	1962	No stop
22 03 50	---	10 14 24	54.5	231.2	2.0		31.3	81	1973	22 02 21
22 03 50	HS0810	10 14 24	54.6	231.1	2.0		31.2	-8	1973	No stop
22 08 50	---	10 19 25	54.0	232.7	2.1		32.0	292	2012	22 03 51
22 09 30	J0813+25	10 20 05	53.9	233.0	2.1		32.2	31	2012	22 09 30
22 11 00	---	10 21 35	53.7	233.5	2.1		32.4	90	2023	22 09 31
22 11 00	HS0810	10 21 35	53.8	233.4	2.1		32.3	-8	2023	No stop
22 16 00	---	10 26 36	53.2	235.0	2.2		33.1	292	2062	22 11 01
22 16 00	J0813+25	10 26 36	53.1	235.1	2.2		33.1	-9	2062	No stop
22 17 30	---	10 28 06	52.9	235.6	2.2		33.3	81	2073	22 16 01
22 17 30	HS0810	10 28 06	53.0	235.5	2.2		33.3	-8	2073	No stop
22 22 30	---	10 33 07	52.4	237.0	2.3		34.0	292	2112	22 17 31
22 23 10	J0813+25	10 33 47	52.2	237.3	2.3		34.1	31	2112	22 23 10
22 24 40	---	10 35 18	52.0	237.8	2.4		34.3	90	2123	22 23 11
22 24 40	HS0810	10 35 18	52.1	237.7	2.3		34.3	-8	2123	No stop
22 29 40	---	10 40 18	51.4	239.2	2.4		34.9	292	2162	22 24 41
22 29 40	J0813+25	10 40 18	51.3	239.3	2.4		34.9	-9	2162	No stop
22 31 10	---	10 41 49	51.2	239.7	2.5		35.1	81	2173	22 29 41
22 31 10	HS0810	10 41 49	51.2	239.6	2.5		35.1	-8	2173	No stop
22 36 10	---	10 46 50	50.6	241.1	2.5		35.7	292	2212	22 31 11

Schedule for TORUN (Code Tr) Page 8

VLBI observations of HS0810+2554

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sat 5 Mar 2016 Day 65 ---										
22 36 50	J0813+25	10 47 30	50.4	241.4	2.6		35.8	31	2212	22 36 50
22 38 20	---	10 49 00	50.2	241.8	2.6		36.0	90	2223	22 36 51
22 38 20	HS0810	10 49 00	50.3	241.7	2.6		35.9	-8	2223	No stop
22 43 20	---	10 54 01	49.6	243.1	2.7		36.5	292	2262	22 38 21
22 43 20	J0813+25	10 54 01	49.5	243.2	2.7		36.5	-9	2262	No stop
22 44 50	---	10 55 31	49.3	243.6	2.7		36.6	81	2273	22 43 21
22 44 50	HS0810	10 55 31	49.4	243.6	2.7		36.6	-8	2273	No stop
22 49 50	---	11 00 32	48.8	244.9	2.8		37.1	292	2312	22 44 51
22 50 30	J0813+25	11 01 12	48.6	245.2	2.8		37.2	31	2312	22 50 30
22 52 00	---	11 02 42	48.4	245.6	2.8		37.3	90	2323	22 50 31
22 52 00	HS0810	11 02 42	48.5	245.5	2.8		37.3	-9	2323	No stop
22 57 00	---	11 07 43	47.8	246.9	2.9		37.8	291	2362	22 52 01
22 57 00	J0813+25	11 07 43	47.7	246.9	2.9		37.8	-9	2362	No stop
22 58 30	---	11 09 13	47.5	247.3	2.9		37.9	81	2373	22 57 01
22 58 30	HS0810	11 09 13	47.6	247.3	2.9		37.9	-9	2373	No stop
23 03 30	---	11 14 14	46.9	248.6	3.0		38.3	291	2412	22 58 31
23 04 10	J0813+25	11 14 54	46.7	248.8	3.0		38.4	31	2412	23 04 10
23 05 40	---	11 16 24	46.5	249.2	3.0		38.5	90	2423	23 04 11
23 05 40	HS0810	11 16 24	46.6	249.1	3.0		38.5	-9	2423	No stop
23 10 40	---	11 21 25	45.9	250.4	3.1		38.9	291	2462	23 05 41
23 10 40	J0813+25	11 21 25	45.8	250.5	3.1		38.9	-9	2462	No stop
23 12 10	---	11 22 55	45.5	250.9	3.1		39.0	81	2473	23 10 41
23 14 00	4C39.25	11 24 46	65.6	246.4	1.9		45.1	21	2473	23 14 00
23 18 00	---	11 28 46	65.0	247.8	2.0		45.6	240	2504	23 14 01
23 20 45	J0813+25	11 31 32	44.3	253.0	3.3		39.6	74	2504	23 20 45
23 22 15	---	11 33 02	44.1	253.3	3.3		39.7	90	2515	23 20 46
23 22 15	HS0810	11 33 02	44.2	253.3	3.3		39.7	-9	2515	No stop
23 27 15	---	11 38 03	43.5	254.5	3.4		39.9	291	2554	23 22 16
23 27 50	J0813+25	11 38 38	43.3	254.7	3.4		40.0	26	2554	23 27 50
23 29 20	---	11 40 08	43.1	255.0	3.4		40.1	90	2565	23 27 51

Schedule for TORUN (Code Tr) Page 9

VLBI observations of HS0810+2554

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sat 5 Mar 2016 Day 65 ---										
23 29 20	HS0810	11 40 08	43.2	255.0	3.4		40.1	-9	2565	No stop
23 34 20	---	11 45 09	42.4	256.1	3.5		40.3	291	2604	23 29 21
23 34 20	J0813+25	11 45 09	42.3	256.2	3.5		40.3	-9	2604	No stop
23 35 50	---	11 46 39	42.1	256.6	3.5		40.4	81	2615	23 34 21
23 35 50	HS0810	11 46 39	42.2	256.5	3.5		40.4	-9	2615	No stop
23 40 50	---	11 51 40	41.5	257.7	3.6		40.6	291	2654	23 35 51
23 41 25	J0813+25	11 52 15	41.3	257.8	3.6		40.6	26	2654	23 41 25
23 42 55	---	11 53 46	41.1	258.2	3.7		40.7	90	2665	23 41 26
23 42 55	HS0810	11 53 46	41.2	258.1	3.7		40.7	-9	2665	No stop
23 47 55	---	11 58 46	40.5	259.3	3.7		40.9	291	2704	23 42 56
23 47 55	J0813+25	11 58 46	40.3	259.3	3.7		40.9	-9	2704	No stop
23 49 25	---	12 00 17	40.1	259.7	3.8		40.9	81	2715	23 47 56
23 49 25	HS0810	12 00 17	40.2	259.6	3.8		41.0	-9	2715	No stop
23 54 25	---	12 05 17	39.5	260.7	3.8		41.1	291	2754	23 49 26
23 55 00	J0813+25	12 05 52	39.3	260.9	3.9		41.1	26	2754	23 55 00
23 56 30	---	12 07 23	39.1	261.2	3.9		41.2	90	2765	23 55 01
--- Start: Sat 5 Mar 2016 Day 65 -- Stop: Sun 6 Mar 2016 Day 66 ---										
23 56 30	HS0810	12 07 23	39.2	261.2	3.9		41.2	-9	2765	No stop
00 01 30	---	12 12 24	38.4	262.3	4.0		41.3	291	2804	23 56 31
00 01 30	J0813+25	12 12 24	38.3	262.3	4.0		41.3	-9	2804	No stop
00 03 00	---	12 13 54	38.1	262.6	4.0		41.3	81	2815	00 01 31
00 03 00	HS0810	12 13 54	38.2	262.6	4.0		41.4	-9	2815	No stop
00 08 00	---	12 18 55	37.5	263.6	4.1		41.5	291	2854	00 03 01
00 08 35	J0813+25	12 19 30	37.3	263.8	4.1		41.5	26	2854	00 08 35
00 10 05	---	12 21 00	37.0	264.1	4.1		41.5	90	2865	00 08 36
00 10 05	HS0810	12 21 00	37.2	264.1	4.1		41.5	-9	2865	No stop
00 15 05	---	12 26 01	36.4	265.1	4.2		41.6	291	2904	00 10 06
00 15 05	J0813+25	12 26 01	36.3	265.2	4.2		41.6	-9	2904	No stop
00 16 35	---	12 27 31	36.1	265.5	4.2		41.6	81	2915	00 15 06

```
Schedule for TORUN     (Code Tr )                                Page  10
               VLBI observations of HS0810+2554
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Sun   6 Mar 2016   Day  66 ---

00 16 35  HS0810       12 27 31  36.2 265.5  4.2      41.6    -9     2915   No stop
00 21 35  ---          12 32 32  35.4 266.5  4.3      41.7   291     2954   00 16 36

00 22 10  J0813+25     12 33 07  35.2 266.7  4.3      41.7    26     2954   00 22 10
00 23 40  ---          12 34 37  35.0 267.0  4.3      41.7    90     2965   00 22 11

00 23 40  HS0810       12 34 37  35.1 266.9  4.3      41.7    -9     2965   No stop
00 28 40  ---          12 39 38  34.4 268.0  4.4      41.8   291     3004   00 23 41

00 28 40  J0813+25     12 39 38  34.3 268.0  4.4      41.7    -9     3004   No stop
00 30 10  ---          12 41 08  34.0 268.3  4.5      41.7    81     3015   00 28 41



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: sess116.L1024

   Setup group:   11         Station: TORUN            Total bit rate:  1024
   Format: MARK5B            Bits per sample: 2        Sample rate: 32.000
   Number of channels: 16    DBE type: DBBC_DDC        Speedup factor:   1.00

   Disk used to record data.
```

```
 1st LO=   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00
           2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00
 Net SB=         L         L         U         U         L         L         U         U
                 L         L         U         U         L         L         U         U
 IF SB =         L         L         L         L         L         L         L         L
                 L         L         L         L         L         L         L         L
 Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
               RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
 BBC   =         1         5         1         5         2         6         2         6
                 3         7         3         7         4         8         4         8
 BBC SB=         U         U         L         L         U         U         L         L
                 U         U         L         L         U         U         L         L
 IF    =        A1        B1        A1        B1        A1        B1        A1        B1
                A1        B1        A1        B1        A1        B1        A1        B1

 The following frequency sets based on these setups were used.

 Frequency Set:   9  Setup file default.  Used with PCAL = off
 LO sum=   1610.49  1610.49  1610.49  1610.49  1642.49  1642.49  1642.49  1642.49
           1674.49  1674.49  1674.49  1674.49  1706.49  1706.49  1706.49  1706.49
 BBC fr=    689.51   689.51   689.51   689.51   657.51   657.51   657.51   657.51
            625.51   625.51   625.51   625.51   593.51   593.51   593.51   593.51
 Bandwd=     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
             16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
  Matching frequency sets:   9

 Track assignments are:
  track1=   2, 10, 18, 26,  4, 12, 20, 28,  6, 14, 22, 30,  8, 16, 24, 32
  barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

```
  Source                        Source position (RA/Dec)                        Error
                       (B1950)            (J2000)            (Date)            (mas)

* HS0810            08 10 30.440860   * 08 13 31.300000    08 14 30.540360      0.00
                    25 54 08.97197    * 25 45 03.20000     25 41 55.48006       0.00

* J0813+25          08 10 02.997914   * 08 13 03.834100    08 14 03.065972      0.00
                    25 51 15.12530    * 25 42 11.03200     25 39 03.84240       0.00

* 4C39.25           09 23 55.319179   * 09 27 03.013900    09 28 04.592179      0.00
                    39 15 23.56660    * 39 02 20.85200     38 57 59.10451       0.00
```

rk12qvtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Sun   6 Mar 2016   Day  66 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

03 00 00  1302-102     15 11 23  20.9 213.1  2.1      19.5     0        0   03 00 00
03 14 30  ---          15 25 55  19.7 216.6  2.3      21.4   870       28   03 00 01

03 15 00  1302-102     15 26 25  19.6 216.8  2.3      21.4    24       28   03 15 00
03 29 30  ---          15 40 58  18.3 220.3  2.6      23.3   870       56   03 15 01

03 30 00  1302-102     15 41 28  18.2 220.4  2.6      23.3    24       56   03 30 00
03 44 30  ---          15 56 00  16.7 223.8  2.8      25.0   870       84   03 30 01

03 45 00  1302-102     15 56 30  16.7 223.9  2.8      25.1    24       84   03 45 00
04 00 00  ---          16 11 33  15.1 227.4  3.1      26.7   900      112   03 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    2         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4100.00   4100.00   4100.00   4100.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   1  Setup file default.  Used with PCAL = 1MHz
  LO sum=   4836.00  4836.00  4836.00  4836.00
  BBC fr=    736.00   736.00   736.00   736.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   1

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

```
  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 56.428126       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 30.38896        0.00
                    fake circumpolar target for a TS to look at

* 1302-102          13 02 55.848556   * 13 05 33.015041     13 06 25.000964       0.00
  J1305-1033       -10 17 16.37573    *-10 33 19.42817     -10 38 33.10375        0.00
                    ./rk12qv_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 1014 observations, RA-AO3-04
```

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1302-102           146.5

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12qwtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Sun   6 Mar 2016   Day  66 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

06 00 00  1219+285     18 11 52  23.7 -74.1  5.8      40.9     0        0   06 00 00
06 14 30  ---          18 26 25  21.6 -71.5  6.1      40.2   870       28   06 00 01

06 15 00  1219+285     18 26 55  21.5 -71.4  6.1      40.2    24       28   06 15 00
06 29 30  ---          18 41 27  19.5 -68.7  6.3      39.4   870       56   06 15 01

06 30 00  1219+285     18 41 57  19.4 -68.6  6.3      39.4    24       56   06 30 00
06 44 30  ---          18 56 30  17.4 -66.0  6.6      38.5   870       84   06 30 01

06 45 00  1219+285     18 57 00  17.3 -65.9  6.6      38.4    24       84   06 45 00
07 00 00  ---          19 12 02  15.3 -63.2  6.8      37.4   900      112   06 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    2         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4100.00   4100.00   4100.00   4100.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   2  Setup file default.  Used with PCAL = 1MHz
  LO sum=   4836.00  4836.00  4836.00  4836.00
  BBC fr=    736.00   736.00   736.00   736.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   2

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

```
  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 56.441208       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 30.42603        0.00
                    fake circumpolar target for a TS to look at

* 1219+285          12 19 01.115600   * 12 21 31.690520     12 22 21.265007       0.00
  J1221+2813        28 30 36.52556    * 28 13 58.50011      28 08 26.92302        0.00
                    ./rk12qw_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 880 observations, RA-AO3-04
```

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1219+285           151.4

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

eg078dtr

Ultra Deep EVN Observations of HDF North

PI: *Michael Garrett*

Address: ASTRON

Observing mode:

Schedule for TORUN (Code Tr) Page 2

Ultra Deep EVN Observations of HDF North

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are LO sum (band edge).

SYNC: Time correlator is expected to sync up.

--- Sun 6 Mar 2016 Day 66 ---

Next scan frequencies: 1610.49 1610.49 1610.49 1610.49 1642.49 1642.49 1642.49 1642.49
1674.49 1674.49 1674.49 1674.49 1706.49 1706.49 1706.49 1706.49

Next BBC frequencies: 689.51 689.51 689.51 689.51 657.51 657.51 657.51 657.51
625.51 625.51 625.51 625.51 593.51 593.51 593.51 593.51

Next scan bandwidths: 16.00 16.00 16.00 16.00 16.00 16.00 16.00 16.00
16.00 16.00 16.00 16.00 16.00 16.00 16.00 16.00

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
11 00 00	J1241+602	23 12 42	24.8	-12.0	10.5		14.6	0	0	11 00 00
11 05 00	---	23 17 43	24.6	-11.3	10.6		13.8	300	38	11 00 01
11 05 30	J1241+602	23 18 13	24.6	-11.3	10.6		13.7	24	38	11 05 30
11 07 00	---	23 19 43	24.5	-11.1	10.6		13.4	90	50	11 05 31
11 07 15	J1234+619	23 19 58	25.9	-9.7	10.8		12.4	-4	50	11 07 15
11 08 45	---	23 21 28	25.9	-9.5	10.8		12.1	86	62	11 07 16
11 08 45	P1	23 21 28	26.3	-9.8	10.7		12.7	-12	62	No stop
11 16 10	---	23 28 54	26.1	-8.9	10.8		11.5	433	119	11 08 46
11 16 30	J1234+619	23 29 14	25.7	-8.5	10.9		10.9	8	119	11 16 30
11 18 00	---	23 30 45	25.7	-8.3	10.9		10.6	90	130	11 16 31
11 18 00	P1	23 30 45	26.0	-8.6	10.9		11.2	-12	130	No stop
11 25 30	---	23 38 16	25.9	-7.7	11.0		9.9	438	188	11 18 01
11 25 30	J1234+619	23 38 16	25.5	-7.3	11.1		9.4	-12	188	No stop
11 27 00	---	23 39 46	25.5	-7.2	11.1		9.1	78	199	11 25 31
11 27 00	P1	23 39 46	25.9	-7.5	11.0		9.7	-12	199	No stop
11 33 54	---	23 46 41	25.7	-6.6	11.1		8.5	402	252	11 27 01
11 34 24	J1241+602	23 47 11	23.9	-7.4	11.1		9.0	9	252	11 34 24
11 35 54	---	23 48 42	23.9	-7.2	11.1		8.7	90	264	11 34 25
11 36 09	J1234+619	23 48 57	25.3	-6.0	11.2		7.6	-4	264	11 36 09
11 37 39	---	23 50 27	25.3	-5.8	11.3		7.4	86	276	11 36 10
11 37 39	P2	23 50 27	25.6	-6.0	11.2		7.7	-12	276	No stop
11 45 04	---	23 57 53	25.5	-5.0	11.3		6.5	433	333	11 37 40
11 45 24	J1234+619	23 58 13	25.2	-4.8	11.4		6.1	8	333	11 45 24
11 46 54	---	23 59 43	25.2	-4.6	11.4		5.8	90	344	11 45 25

Schedule for TORUN (Code Tr) Page 3

Ultra Deep EVN Observations of HDF North

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Sun 6 Mar 2016 Day 66 ---										
11 46 54	P2	23 59 43	25.5	-4.8	11.4		6.2	-12	344	No stop
11 54 24	---	00 07 15	25.4	-3.8	11.5		5.0	438	402	11 46 55
11 54 24	J1234+619	00 07 15	25.1	-3.6	11.5		4.6	-12	402	No stop
11 55 54	---	00 08 45	25.1	-3.4	11.6		4.3	78	413	11 54 25
11 55 54	P2	00 08 45	25.4	-3.7	11.5		4.7	-11	413	No stop
12 02 48	---	00 15 40	25.4	-2.8	11.6		3.6	403	466	11 55 55
12 03 18	J1241+602	00 16 10	23.5	-3.5	11.6		4.3	9	466	12 03 18
12 04 48	---	00 17 40	23.5	-3.3	11.6		4.0	90	478	12 03 19
12 05 03	J1234+619	00 17 55	25.0	-2.2	11.7		2.8	-4	478	12 05 03
12 06 33	---	00 19 26	25.0	-2.0	11.7		2.6	86	489	12 05 04
12 06 33	P3	00 19 26	25.2	-2.3	11.7		2.9	-10	489	No stop
12 13 58	---	00 26 52	25.2	-1.3	11.8		1.7	435	547	12 06 34
12 14 18	J1234+619	00 27 12	25.0	-1.0	11.9		1.3	10	547	12 14 18
12 15 48	---	00 28 42	25.0	-0.8	11.9		1.0	90	558	12 14 19
12 15 48	P3	00 28 42	25.2	-1.1	11.9		1.4	-10	558	No stop
12 23 18	---	00 36 13	25.2	-0.1	12.0		0.1	440	616	12 15 49
12 23 18	J1234+619	00 36 13	25.0	0.2	-12.0		-0.2	-10	616	No stop
12 24 48	---	00 37 44	25.0	0.4	-12.0		-0.5	80	627	12 23 19
12 24 48	P3	00 37 44	25.2	0.1	-12.0		-0.1	-10	627	No stop
12 31 42	---	00 44 39	25.2	1.0	-11.9		-1.3	404	680	12 24 49
12 32 12	J1241+602	00 45 09	23.4	0.4	-12.0		-0.5	9	680	12 32 12
12 33 42	---	00 46 39	23.4	0.6	-11.9		-0.7	90	692	12 32 13
12 33 57	J1234+619	00 46 54	25.0	1.6	-11.8		-2.0	-5	692	12 33 57
12 35 27	---	00 48 24	25.0	1.7	-11.8		-2.2	85	703	12 33 58
12 35 27	P4	00 48 24	25.2	1.3	-11.8		-1.7	-11	703	No stop
12 42 52	---	00 55 51	25.2	2.3	-11.7		-2.9	434	761	12 35 28
12 43 12	J1234+619	00 56 11	25.1	2.8	-11.6		-3.5	9	761	12 43 12
12 44 42	---	00 57 41	25.1	3.0	-11.6		-3.8	90	772	12 43 13
12 44 42	P4	00 57 41	25.2	2.5	-11.7		-3.3	-11	772	No stop
12 52 12	---	01 05 12	25.3	3.5	-11.5		-4.5	439	830	12 44 43
12 52 12	J1234+619	01 05 12	25.1	3.9	-11.5		-5.0	-11	830	No stop
12 53 42	---	01 06 42	25.2	4.1	-11.5		-5.3	79	841	12 52 13

Schedule for TORUN (Code Tr) Page 4

Ultra Deep EVN Observations of HDF North

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sun 6 Mar 2016 Day 66 ---										
12 53 42	P4	01 06 42	25.3	3.7-11.5			-4.7	-11	841	No stop
13 00 36	---	01 13 38	25.4	4.6-11.4			-5.9	403	894	12 53 43
13 01 06	J1241+602	01 14 08	23.5	4.3-11.5			-5.2	9	894	13 01 06
13 02 36	---	01 15 38	23.5	4.5-11.4			-5.5	90	906	13 01 07
13 02 51	J1234+619	01 15 53	25.3	5.3-11.3			-6.8	-5	906	13 02 51
13 04 21	---	01 17 23	25.3	5.5-11.3			-7.0	85	917	13 02 52
13 04 21	HDF-N	01 17 23	25.5	5.1-11.3			-6.6	-10	917	No stop
13 11 46	---	01 24 49	25.6	6.1-11.2			-7.8	435	974	13 04 22
13 12 06	J1234+619	01 25 09	25.4	6.5-11.2			-8.3	9	974	13 12 06
13 13 36	---	01 26 40	25.4	6.7-11.1			-8.6	90	986	13 12 07
13 13 36	HDF-N	01 26 40	25.6	6.3-11.2			-8.1	-10	986	No stop
13 21 06	---	01 34 11	25.8	7.3-11.1			-9.4	440	1044	13 13 37
13 21 06	J1234+619	01 34 11	25.6	7.7-11.0			-9.8	-11	1044	No stop
13 22 36	---	01 35 41	25.6	7.9-11.0			-10.0	79	1055	13 21 07
13 22 36	HDF-N	01 35 41	25.8	7.5-11.0			-9.6	-10	1055	No stop
13 29 30	---	01 42 36	25.9	8.4-10.9			-10.8	404	1108	13 22 37
13 31 30	DA193	01 44 37	46.2	81.2 -4.2			-50.6	-41	1108	13 31 30
13 37 30	---	01 50 38	47.1	82.3 -4.1			-50.8	319	1154	13 31 31
13 39 30	J1241+602	01 52 38	24.2	9.5-10.8			-11.5	-40	1154	13 39 30
13 40 30	---	01 53 38	24.2	9.6-10.8			-11.6	20	1162	13 39 31
13 41 00	J1241+602	01 54 08	24.3	9.7-10.8			-11.7	24	1162	13 41 00
13 42 30	---	01 55 38	24.3	9.9-10.8			-12.0	90	1174	13 41 01
13 42 45	J1234+619	01 55 53	26.1	10.5-10.7			-13.4	-5	1174	13 42 45
13 44 15	---	01 57 24	26.1	10.6-10.6			-13.6	85	1185	13 42 46
13 44 15	P1	01 57 24	26.3	10.2-10.7			-13.1	-11	1185	No stop
13 51 40	---	02 04 50	26.5	11.1-10.6			-14.4	434	1242	13 44 16
13 52 00	J1234+619	02 05 10	26.4	11.6-10.5			-14.9	9	1242	13 52 00
13 53 30	---	02 06 40	26.4	11.8-10.5			-15.1	90	1254	13 52 01
13 53 30	P1	02 06 40	26.6	11.3-10.5			-14.7	-11	1254	No stop
14 01 00	---	02 14 11	26.8	12.3-10.4			-15.9	439	1312	13 53 31

Schedule for TORUN (Code Tr) Page 5

Ultra Deep EVN Observations of HDF North

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sun 6 Mar 2016 Day 66 ---										
14 01 00	J1234+619	02 14 11	26.6	12.8	-10.3		-16.4	-11	1312	No stop
14 02 30	---	02 15 42	26.7	13.0	-10.3		-16.6	79	1323	14 01 01
14 02 30	P1	02 15 42	26.9	12.5	-10.4		-16.2	-11	1323	No stop
14 09 24	---	02 22 37	27.1	13.4	-10.3		-17.3	403	1376	14 02 31
14 09 54	J1241+602	02 23 07	25.1	13.5	-10.3		-16.4	9	1376	14 09 54
14 11 24	---	02 24 37	25.2	13.7	-10.3		-16.7	90	1388	14 09 55
14 11 39	J1234+619	02 24 52	27.0	14.1	-10.2		-18.1	-6	1388	14 11 39
14 13 09	---	02 26 22	27.1	14.3	-10.1		-18.4	84	1399	14 11 40
14 13 09	P2	02 26 22	27.3	13.9	-10.2		-18.1	-10	1399	No stop
14 20 34	---	02 33 49	27.6	14.9	-10.1		-19.3	435	1456	14 13 10
14 20 54	J1234+619	02 34 09	27.4	15.3	-10.0		-19.6	9	1456	14 20 54
14 22 24	---	02 35 39	27.4	15.5	-10.0		-19.9	90	1468	14 20 55
14 22 24	P2	02 35 39	27.6	15.1	-10.0		-19.6	-10	1468	No stop
14 29 54	---	02 43 10	27.9	16.0	-9.9		-20.8	440	1526	14 22 25
14 29 54	J1234+619	02 43 10	27.7	16.4	-9.9		-21.1	-11	1526	No stop
14 31 24	---	02 44 40	27.8	16.6	-9.8		-21.4	79	1537	14 29 55
14 31 24	P2	02 44 40	28.0	16.2	-9.9		-21.1	-10	1537	No stop
14 38 18	---	02 51 36	28.3	17.1	-9.8		-22.2	404	1590	14 31 25
14 38 48	J1241+602	02 52 06	26.3	17.3	-9.8		-21.1	9	1590	14 38 48
14 40 18	---	02 53 36	26.4	17.5	-9.8		-21.3	90	1602	14 38 49
14 40 33	J1234+619	02 53 51	28.2	17.7	-9.7		-22.8	-6	1602	14 40 33
14 42 03	---	02 55 21	28.3	17.9	-9.7		-23.1	84	1613	14 40 34
14 42 03	P3	02 55 21	28.3	17.6	-9.7		-22.8	-10	1613	No stop
14 49 28	---	03 02 47	28.7	18.5	-9.6		-24.0	435	1670	14 42 04
14 49 48	J1234+619	03 03 07	28.6	18.9	-9.5		-24.3	10	1670	14 49 48
14 51 18	---	03 04 38	28.7	19.1	-9.5		-24.6	90	1682	14 49 49
14 51 18	P3	03 04 38	28.8	18.7	-9.5		-24.3	-10	1682	No stop
14 58 48	---	03 12 09	29.2	19.6	-9.4		-25.5	440	1739	14 51 19
14 58 48	J1234+619	03 12 09	29.1	20.0	-9.4		-25.8	-10	1739	No stop
15 00 18	---	03 13 39	29.2	20.2	-9.4		-26.0	80	1751	14 58 49

Schedule for TORUN (Code Tr) Page 6

Ultra Deep EVN Observations of HDF North

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sun 6 Mar 2016 Day 66 ---										
15 00 18	P3	03 13 39	29.2	19.8	-9.4		-25.7	-10	1751	No stop
15 07 12	---	03 20 34	29.6	20.6	-9.3		-26.9	404	1804	15 00 19
15 07 42	J1241+602	03 21 04	27.7	21.0	-9.4		-25.7	9	1804	15 07 42
15 09 12	---	03 22 35	27.8	21.2	-9.3		-25.9	90	1816	15 07 43
15 09 27	J1234+619	03 22 50	29.7	21.3	-9.2		-27.5	-6	1816	15 09 27
15 10 57	---	03 24 20	29.7	21.4	-9.2		-27.8	84	1827	15 09 28
15 10 57	P4	03 24 20	29.7	21.0	-9.2		-27.3	-11	1827	No stop
15 18 22	---	03 31 46	30.1	21.9	-9.1		-28.5	434	1884	15 10 58
15 18 42	J1234+619	03 32 06	30.2	22.4	-9.0		-29.0	9	1884	15 18 42
15 20 12	---	03 33 36	30.3	22.6	-9.0		-29.3	90	1896	15 18 43
15 20 12	P4	03 33 36	30.2	22.1	-9.1		-28.8	-11	1896	No stop
15 27 42	---	03 41 08	30.7	23.0	-8.9		-30.0	439	1953	15 20 13
15 27 42	J1234+619	03 41 08	30.7	23.4	-8.9		-30.5	-11	1953	No stop
15 29 12	---	03 42 38	30.8	23.6	-8.9		-30.7	79	1965	15 27 43
15 29 12	P4	03 42 38	30.8	23.1	-8.9		-30.3	-11	1965	No stop
15 36 06	---	03 49 33	31.2	24.0	-8.8		-31.4	403	2018	15 29 13
15 36 36	J1241+602	03 50 03	29.4	24.6	-8.9		-30.2	10	2018	15 36 36
15 38 06	---	03 51 33	29.5	24.8	-8.8		-30.5	90	2030	15 36 37
15 38 21	J1234+619	03 51 48	31.4	24.7	-8.7		-32.2	-6	2030	15 38 21
15 39 51	---	03 53 19	31.5	24.9	-8.7		-32.4	84	2041	15 38 22
15 39 51	HDF-N	03 53 19	31.5	24.4	-8.7		-32.1	-11	2041	No stop
15 47 16	---	04 00 45	32.0	25.3	-8.6		-33.3	434	2098	15 39 52
15 47 36	J1234+619	04 01 05	32.0	25.8	-8.6		-33.7	9	2098	15 47 36
15 49 06	---	04 02 35	32.1	26.0	-8.5		-33.9	90	2110	15 47 37
15 49 06	HDF-N	04 02 35	32.1	25.5	-8.6		-33.6	-11	2110	No stop
15 56 36	---	04 10 06	32.6	26.4	-8.5		-34.8	439	2167	15 49 07
15 56 36	J1234+619	04 10 06	32.6	26.8	-8.4		-35.1	-11	2167	No stop
15 58 06	---	04 11 37	32.7	27.0	-8.4		-35.3	79	2179	15 56 37
15 58 06	HDF-N	04 11 37	32.7	26.5	-8.4		-35.0	-11	2179	No stop
16 05 00	---	04 18 32	33.1	27.3	-8.3		-36.1	403	2232	15 58 07

Schedule for TORUN (Code Tr) Page 7

Ultra Deep EVN Observations of HDF North

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Sun 6 Mar 2016 Day 66 ---										
16 05 30	J1241+602	04 19 02	31.3	28.1	-8.4		-34.8	9	2232	16 05 30
16 07 00	---	04 20 32	31.4	28.3	-8.4		-35.0	90	2244	16 05 31
16 07 15	J1234+619	04 20 47	33.3	28.0	-8.2		-36.8	-6	2244	16 07 15
16 08 45	---	04 22 17	33.4	28.2	-8.2		-37.0	84	2255	16 07 16
16 08 45	P1	04 22 17	33.4	27.6	-8.3		-36.6	-12	2255	No stop
16 16 10	---	04 29 44	33.9	28.5	-8.1		-37.8	433	2312	16 08 46
16 16 30	J1234+619	04 30 04	34.0	29.1	-8.1		-38.3	8	2312	16 16 30
16 18 00	---	04 31 34	34.1	29.2	-8.1		-38.5	90	2324	16 16 31
16 18 00	P1	04 31 34	34.1	28.7	-8.1		-38.1	-12	2324	No stop
16 25 30	---	04 39 05	34.6	29.5	-8.0		-39.3	438	2381	16 18 01
16 25 30	J1234+619	04 39 05	34.6	30.1	-7.9		-39.7	-12	2381	No stop
16 27 00	---	04 40 35	34.7	30.2	-7.9		-39.9	78	2393	16 25 31
16 27 00	P1	04 40 35	34.7	29.7	-8.0		-39.6	-12	2393	No stop
16 33 54	---	04 47 31	35.3	30.4	-7.8		-40.7	402	2446	16 27 01
16 34 24	J1241+602	04 48 01	33.5	31.5	-7.9		-39.2	10	2446	16 34 24
16 35 54	---	04 49 31	33.6	31.7	-7.9		-39.5	90	2458	16 34 25
16 36 09	J1234+619	04 49 46	35.4	31.2	-7.8		-41.4	-6	2458	16 36 09
16 37 39	---	04 51 16	35.6	31.4	-7.7		-41.6	84	2469	16 36 10
16 37 39	P2	04 51 16	35.6	30.9	-7.8		-41.4	-11	2469	No stop
16 45 04	---	04 58 42	36.2	31.7	-7.6		-42.6	434	2526	16 37 40
16 45 24	J1234+619	04 59 02	36.2	32.2	-7.6		-42.8	9	2526	16 45 24
16 46 54	---	05 00 33	36.3	32.4	-7.6		-43.1	90	2538	16 45 25
16 46 54	P2	05 00 33	36.3	31.9	-7.6		-42.9	-11	2538	No stop
16 54 24	---	05 08 04	37.0	32.7	-7.5		-44.1	439	2595	16 46 55
16 54 24	J1234+619	05 08 04	36.9	33.2	-7.4		-44.2	-11	2595	No stop
16 55 54	---	05 09 34	37.0	33.4	-7.4		-44.5	79	2607	16 54 25
16 55 54	P2	05 09 34	37.1	32.9	-7.5		-44.3	-11	2607	No stop
17 02 48	---	05 16 29	37.6	33.6	-7.3		-45.4	403	2660	16 55 55
17 03 18	J1241+602	05 16 59	35.9	34.8	-7.4		-43.7	10	2660	17 03 18
17 04 48	---	05 18 30	36.0	34.9	-7.4		-43.9	90	2672	17 03 19

Schedule for TORUN (Code Tr) Page 8

Ultra Deep EVN Observations of HDF North

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sun 6 Mar 2016 Day 66 ---										
17 05 03	J1234+619	05 18 45	37.8	34.3	-7.3		-45.9	-5	2672	17 05 03
17 06 33	---	05 20 15	37.9	34.5	-7.2		-46.2	85	2683	17 05 04
17 06 33	P3	05 20 15	37.9	34.1	-7.3		-45.9	-10	2683	No stop
17 13 58	---	05 27 41	38.5	34.8	-7.2		-47.1	435	2740	17 06 34
17 14 18	J1234+619	05 28 01	38.6	35.3	-7.1		-47.4	9	2740	17 14 18
17 15 48	---	05 29 31	38.7	35.4	-7.1		-47.6	90	2752	17 14 19
17 15 48	P3	05 29 31	38.7	35.0	-7.1		-47.4	-11	2752	No stop
17 23 18	---	05 37 03	39.3	35.8	-7.0		-48.6	439	2809	17 15 49
17 23 18	J1234+619	05 37 03	39.4	36.2	-7.0		-48.8	-11	2809	No stop
17 24 48	---	05 38 33	39.5	36.3	-6.9		-49.0	79	2821	17 23 19
17 24 48	P3	05 38 33	39.5	35.9	-7.0		-48.8	-11	2821	No stop
17 31 42	---	05 45 28	40.1	36.6	-6.9		-49.9	403	2874	17 24 49
17 32 12	J1241+602	05 45 58	38.5	37.9	-6.9		-48.1	10	2874	17 32 12
17 33 42	---	05 47 28	38.6	38.1	-6.9		-48.3	90	2886	17 32 13
17 33 57	J1234+619	05 47 43	40.3	37.2	-6.8		-50.5	-5	2886	17 33 57
17 35 27	---	05 49 14	40.5	37.4	-6.8		-50.7	85	2897	17 33 58
17 35 27	P4	05 49 14	40.3	36.9	-6.8		-50.3	-11	2897	No stop
17 42 52	---	05 56 40	41.0	37.6	-6.7		-51.5	434	2954	17 35 28
17 43 12	J1234+619	05 57 00	41.2	38.1	-6.6		-51.9	9	2954	17 43 12
17 44 42	---	05 58 30	41.3	38.3	-6.6		-52.2	90	2966	17 43 13
17 44 42	P4	05 58 30	41.2	37.8	-6.7		-51.8	-11	2966	No stop
17 52 12	---	06 06 01	41.9	38.5	-6.5		-53.0	439	3023	17 44 43
17 52 12	J1234+619	06 06 01	42.0	39.0	-6.5		-53.3	-11	3023	No stop
17 53 42	---	06 07 32	42.2	39.2	-6.5		-53.6	79	3035	17 52 13
17 53 42	P4	06 07 32	42.0	38.7	-6.5		-53.2	-11	3035	No stop
18 00 36	---	06 14 27	42.7	39.3	-6.4		-54.3	403	3088	17 53 43
18 01 06	J1241+602	06 14 57	41.2	40.9	-6.5		-52.4	11	3088	18 01 06
18 02 36	---	06 16 27	41.4	41.1	-6.4		-52.7	90	3099	18 01 07
18 02 51	J1234+619	06 16 42	43.1	40.0	-6.3		-55.0	-5	3099	18 02 51
18 04 21	---	06 18 12	43.2	40.2	-6.3		-55.2	85	3111	18 02 52

Schedule for TORUN (Code Tr) Page 9

Ultra Deep EVN Observations of HDF North

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sun 6 Mar 2016 Day 66 ---										
18 04 21	HDF-N	06 18 12	43.1	39.6	-6.3		-55.0	-11	3111	No stop
18 11 46	---	06 25 39	43.8	40.3	-6.2		-56.2	434	3168	18 04 22
18 12 06	J1234+619	06 25 59	44.0	40.9	-6.1		-56.5	9	3168	18 12 06
18 13 36	---	06 27 29	44.1	41.0	-6.1		-56.7	90	3180	18 12 07
18 13 36	HDF-N	06 27 29	44.0	40.5	-6.2		-56.5	-11	3180	No stop
18 21 06	---	06 35 00	44.7	41.1	-6.0		-57.7	439	3237	18 13 37
18 21 06	J1234+619	06 35 00	44.9	41.7	-6.0		-57.9	-11	3237	No stop
18 22 36	---	06 36 30	45.0	41.8	-6.0		-58.1	79	3249	18 21 07
18 22 36	HDF-N	06 36 30	44.9	41.3	-6.0		-57.9	-11	3249	No stop
18 29 30	---	06 43 26	45.6	41.9	-5.9		-59.0	403	3302	18 22 37
18 30 00	J1241+602	06 43 56	44.1	43.7	-6.0		-56.8	11	3302	18 30 00
18 31 30	---	06 45 26	44.3	43.9	-5.9		-57.0	90	3313	18 30 01
18 31 45	J1234+619	06 45 41	45.9	42.6	-5.8		-59.6	-5	3313	18 31 45
18 33 15	---	06 47 11	46.1	42.7	-5.8		-59.8	85	3325	18 31 46
18 33 15	P1	06 47 11	45.9	42.1	-5.8		-59.6	-12	3325	No stop
18 40 40	---	06 54 37	46.7	42.7	-5.7		-60.8	433	3382	18 33 16
18 41 00	J1234+619	06 54 57	46.9	43.4	-5.7		-61.1	8	3382	18 41 00
18 42 30	---	06 56 28	47.0	43.5	-5.6		-61.3	90	3394	18 41 01
18 42 30	P1	06 56 28	46.9	42.9	-5.7		-61.1	-12	3394	No stop
18 50 00	---	07 03 59	47.6	43.5	-5.6		-62.3	438	3451	18 42 31
18 50 00	J1234+619	07 03 59	47.8	44.1	-5.5		-62.5	-12	3451	No stop
18 51 30	---	07 05 29	48.0	44.2	-5.5		-62.8	78	3463	18 50 01
18 51 30	P1	07 05 29	47.8	43.6	-5.5		-62.5	-12	3463	No stop
18 58 24	---	07 12 24	48.5	44.1	-5.4		-63.7	402	3516	18 51 31
18 58 54	J1241+602	07 12 54	47.2	46.4	-5.5		-61.2	12	3516	18 58 54
19 00 24	---	07 14 25	47.4	46.5	-5.5		-61.4	90	3527	18 58 55
19 00 39	J1234+619	07 14 40	48.9	45.0	-5.3		-64.2	-4	3527	19 00 39
19 02 09	---	07 16 10	49.1	45.1	-5.3		-64.5	86	3539	19 00 40
19 02 09	P2	07 16 10	49.0	44.5	-5.3		-64.4	-12	3539	No stop
19 09 34	---	07 23 36	49.8	45.1	-5.2		-65.7	433	3596	19 02 10

Schedule for TORUN (Code Tr) Page 10

Ultra Deep EVN Observations of HDF North

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sun 6 Mar 2016 Day 66 ---										
19 09 54	J1234+619	07 23 56	49.9	45.7	-5.2		-65.7	8	3596	19 09 54
19 11 24	---	07 25 26	50.1	45.8	-5.2		-66.0	90	3608	19 09 55
19 11 24	P2	07 25 26	50.0	45.2	-5.2		-66.0	-12	3608	No stop
19 18 54	---	07 32 58	50.8	45.8	-5.1		-67.2	438	3665	19 11 25
19 18 54	J1234+619	07 32 58	50.9	46.3	-5.0		-67.2	-12	3665	No stop
19 20 24	---	07 34 28	51.1	46.5	-5.0		-67.5	78	3677	19 18 55
19 20 24	P2	07 34 28	51.0	45.9	-5.0		-67.5	-12	3677	No stop
19 27 18	---	07 41 23	51.7	46.3	-4.9		-68.6	402	3730	19 20 25
19 27 48	J1241+602	07 41 53	50.4	48.8	-5.0		-65.7	11	3730	19 27 48
19 29 18	---	07 43 23	50.6	49.0	-5.0		-65.9	90	3741	19 27 49
19 29 33	J1234+619	07 43 38	52.1	47.1	-4.9		-69.0	-4	3741	19 29 33
19 31 03	---	07 45 09	52.2	47.2	-4.8		-69.2	86	3753	19 29 34
19 31 03	P3	07 45 09	52.1	46.8	-4.9		-69.1	-11	3753	No stop
19 38 28	---	07 52 35	52.9	47.3	-4.7		-70.3	434	3810	19 31 04
19 38 48	J1234+619	07 52 55	53.1	47.7	-4.7		-70.5	9	3810	19 38 48
19 40 18	---	07 54 25	53.3	47.8	-4.7		-70.8	90	3822	19 38 49
19 40 18	P3	07 54 25	53.1	47.4	-4.7		-70.7	-11	3822	No stop
19 47 48	---	08 01 56	53.9	47.9	-4.6		-71.9	439	3879	19 40 19
19 47 48	J1234+619	08 01 56	54.1	48.3	-4.6		-72.1	-11	3879	No stop
19 49 18	---	08 03 27	54.3	48.4	-4.5		-72.3	79	3891	19 47 49
19 49 18	P3	08 03 27	54.1	48.0	-4.6		-72.2	-11	3891	No stop
19 56 12	---	08 10 22	54.9	48.4	-4.4		-73.4	403	3944	19 49 19
19 56 42	J1241+602	08 10 52	53.8	51.0	-4.5		-70.2	10	3944	19 56 42
19 58 12	---	08 12 22	53.9	51.1	-4.5		-70.5	90	3955	19 56 43
19 58 27	J1234+619	08 12 37	55.3	48.9	-4.4		-73.9	-3	3955	19 58 27
19 59 57	---	08 14 07	55.5	49.0	-4.3		-74.2	87	3967	19 58 28
19 59 57	P4	08 14 07	55.2	48.5	-4.4		-73.9	-11	3967	No stop
20 07 22	---	08 21 34	56.0	48.9	-4.3		-75.2	434	4024	19 59 58
20 07 42	J1234+619	08 21 54	56.4	49.5	-4.2		-75.5	8	4024	20 07 42
20 09 12	---	08 23 24	56.5	49.5	-4.2		-75.8	90	4035	20 07 43

Schedule for TORUN (Code Tr) Page 11

Ultra Deep EVN Observations of HDF North

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Sun 6 Mar 2016 Day 66 ---										
20 09 12	P4	08 23 24	56.2	49.0	-4.2		-75.5	-11	4035	No stop
20 16 42	---	08 30 55	57.1	49.4	-4.1		-76.8	439	4093	20 09 13
20 16 42	J1234+619	08 30 55	57.4	49.9	-4.1		-77.1	-12	4093	No stop
20 18 12	---	08 32 25	57.6	50.0	-4.0		-77.4	78	4105	20 16 43
20 18 12	P4	08 32 25	57.3	49.5	-4.1		-77.1	-11	4105	No stop
20 25 06	---	08 39 21	58.0	49.8	-4.0		-78.4	403	4158	20 18 13
20 25 36	J1241+602	08 39 51	57.2	52.9	-4.0		-74.9	9	4158	20 25 36
20 27 06	---	08 41 21	57.4	53.0	-4.0		-75.2	90	4169	20 25 37
20 27 21	J1234+619	08 41 36	58.6	50.4	-3.9		-79.1	-4	4169	20 27 21
20 28 51	---	08 43 06	58.8	50.5	-3.9		-79.3	86	4181	20 27 22
20 28 51	HDF-N	08 43 06	58.5	49.9	-3.9		-79.2	-12	4181	No stop
20 36 16	---	08 50 32	59.4	50.2	-3.8		-80.6	433	4238	20 28 52
20 36 36	J1234+619	08 50 52	59.7	50.8	-3.7		-80.8	8	4238	20 36 36
20 38 06	---	08 52 23	59.9	50.8	-3.7		-81.1	90	4249	20 36 37
20 38 06	HDF-N	08 52 23	59.6	50.3	-3.8		-81.0	-12	4249	No stop
20 45 36	---	08 59 54	60.5	50.5	-3.6		-82.4	438	4307	20 38 07
20 45 36	J1234+619	08 59 54	60.8	51.1	-3.6		-82.5	-12	4307	No stop
20 47 06	---	09 01 24	60.9	51.1	-3.6		-82.8	78	4319	20 45 37
20 47 06	HDF-N	09 01 24	60.7	50.6	-3.6		-82.7	-12	4319	No stop
20 54 00	---	09 08 19	61.5	50.8	-3.5		-84.1	402	4372	20 47 07
20 54 30	J1241+602	09 08 49	60.7	54.4	-3.6		-79.9	8	4372	20 54 30
20 56 00	---	09 10 20	60.9	54.5	-3.5		-80.2	90	4383	20 54 31
20 56 15	J1234+619	09 10 35	62.0	51.4	-3.4		-84.6	-6	4383	20 56 15
20 57 45	---	09 12 05	62.2	51.4	-3.4		-84.9	84	4395	20 56 16
20 57 45	P1	09 12 05	61.8	50.7	-3.4		-84.8	-12	4395	No stop
21 05 10	---	09 19 31	62.7	50.9	-3.3		-86.3	433	4452	20 57 46
21 05 30	J1234+619	09 19 51	63.1	51.6	-3.3		-86.5	7	4452	21 05 30
21 07 00	---	09 21 21	63.3	51.6	-3.2		-86.8	90	4463	21 05 31
21 07 00	P1	09 21 21	62.9	50.9	-3.3		-86.7	-13	4463	No stop
21 14 30	---	09 28 53	63.8	51.0	-3.2		-88.3	437	4521	21 07 01

Schedule for TORUN (Code Tr) Page 12

Ultra Deep EVN Observations of HDF North

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Sun 6 Mar 2016 Day 66 ---										
21 14 30	J1234+619	09 28 53	64.2	51.7	-3.1		-88.4	-13	4521	No stop
21 16 00	---	09 30 23	64.3	51.7	-3.1		-88.7	77	4533	21 14 31
21 16 00	P1	09 30 23	64.0	51.0	-3.1		-88.6	-13	4533	No stop
21 23 30	---	09 37 54	64.9	51.0	-3.0		-90.3	437	4590	21 16 01
21 24 00	J1241+602	09 38 24	64.3	55.5	-3.1		-85.5	6	4590	21 24 00
21 25 30	---	09 39 54	64.5	55.5	-3.0		-85.8	90	4602	21 24 01
21 25 45	J1234+619	09 40 10	65.5	51.7	-2.9		-90.8	-7	4602	21 25 45
21 27 15	---	09 41 40	65.7	51.7	-2.9		-91.2	83	4613	21 25 46
21 27 15	P2	09 41 40	65.4	51.0	-2.9		-91.4	-13	4613	No stop
21 34 40	---	09 49 06	66.3	50.9	-2.8		-93.1	432	4670	21 27 16
21 35 00	J1234+619	09 49 26	66.6	51.6	-2.8		-93.0	7	4670	21 35 00
21 36 30	---	09 50 56	66.8	51.6	-2.7		-93.3	90	4682	21 35 01
21 36 30	P2	09 50 56	66.5	50.9	-2.8		-93.5	-13	4682	No stop
21 44 00	---	09 58 28	67.4	50.7	-2.6		-95.3	437	4740	21 36 31
21 44 00	J1234+619	09 58 28	67.6	51.4	-2.6		-95.1	-13	4740	No stop
21 45 30	---	09 59 58	67.8	51.4	-2.6		-95.5	77	4751	21 44 01
21 45 30	P2	09 59 58	67.5	50.6	-2.6		-95.7	-13	4751	No stop
21 53 00	---	10 07 29	68.4	50.4	-2.5		-97.6	437	4809	21 45 31
21 53 30	J1241+602	10 07 59	68.0	55.7	-2.6		-91.7	4	4809	21 53 30
21 55 00	---	10 09 29	68.2	55.7	-2.5		-92.0	90	4821	21 53 31
21 55 15	J1234+619	10 09 44	69.0	51.0	-2.4		-98.0	-9	4821	21 55 15
21 56 45	---	10 11 15	69.1	50.9	-2.4		-98.4	81	4832	21 55 16
21 56 45	P3	10 11 15	68.9	50.5	-2.4		-98.3	-11	4832	No stop
22 04 10	---	10 18 41	69.7	50.1	-2.3		-100.3	434	4889	21 56 46
22 04 30	J1234+619	10 19 01	70.0	50.5	-2.3		-100.5	9	4889	22 04 30
22 06 00	---	10 20 31	70.2	50.4	-2.2		-100.9	90	4901	22 04 31
22 06 00	P3	10 20 31	69.9	50.0	-2.3		-100.8	-11	4901	No stop
22 13 30	---	10 28 02	70.8	49.5	-2.2		-103.0	439	4958	22 06 01
22 13 30	J1234+619	10 28 02	71.1	49.8	-2.1		-103.1	-11	4958	No stop
22 15 00	---	10 29 33	71.3	49.7	-2.1		-103.6	79	4970	22 13 31

Schedule for TORUN (Code Tr) Page 13

Ultra Deep EVN Observations of HDF North

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Sun 6 Mar 2016 Day 66 ---										
22 15 00	P3	10 29 33	71.0	49.3	-2.1		-103.5	-11	4970	No stop
22 22 30	---	10 37 04	71.8	48.7	-2.0		-105.8	439	5028	22 15 01
22 23 00	J1241+602	10 37 34	71.7	54.7	-2.1		-99.0	3	5028	22 23 00
22 24 30	---	10 39 04	71.8	54.6	-2.1		-99.4	90	5039	22 23 01
22 24 45	J1234+619	10 39 19	72.4	48.8	-1.9		-106.7	-12	5039	22 24 45
22 26 15	---	10 40 49	72.5	48.6	-1.9		-107.1	78	5051	22 24 46
22 26 15	P4	10 40 49	72.1	48.4	-2.0		-106.7	-12	5051	No stop
22 33 40	---	10 48 16	73.0	47.5	-1.8		-109.2	433	5108	22 26 16
22 34 00	J1234+619	10 48 36	73.4	47.6	-1.8		-109.8	8	5108	22 34 00
22 35 30	---	10 50 06	73.6	47.4	-1.7		-110.3	90	5119	22 34 01
22 35 30	P4	10 50 06	73.2	47.2	-1.8		-109.8	-12	5119	No stop
22 43 00	---	10 57 37	74.0	46.1	-1.7		-112.5	438	5177	22 35 31
22 43 00	J1234+619	10 57 37	74.4	46.2	-1.6		-113.1	-13	5177	No stop
22 44 30	---	10 59 07	74.6	45.9	-1.6		-113.7	77	5188	22 43 01
22 44 30	P4	10 59 07	74.1	45.8	-1.6		-113.1	-12	5188	No stop
22 52 00	---	11 06 39	74.9	44.5	-1.5		-116.1	438	5246	22 44 31
22 54 00	3C345	11 08 39	34.2	67.5	-5.6		-46.2	-46	5246	22 54 00
23 00 00	---	11 14 40	35.0	68.4	-5.5		-46.6	314	5292	22 54 01

SETUP FILE INFORMATION:
NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

======== Setup file: sess116.L1024

Setup group: 11 Station: TORUN Total bit rate: 1024
Format: MARK5B Bits per sample: 2 Sample rate: 32.000
Number of channels: 16 DBE type: DBBC_DDC Speedup factor: 1.00

Disk used to record data.

```
  1st LO=   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00
            2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00
  Net SB=         L         L         U         U         L         L         U         U
                  L         L         U         U         L         L         U         U
  IF SB =         L         L         L         L         L         L         L         L
                  L         L         L         L         L         L         L         L
  Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
                RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
  BBC   =         1         5         1         5         2         6         2         6
                  3         7         3         7         4         8         4         8
  BBC SB=         U         U         L         L         U         U         L         L
                  U         U         L         L         U         U         L         L
  IF    =        A1        B1        A1        B1        A1        B1        A1        B1
                 A1        B1        A1        B1        A1        B1        A1        B1

 The following frequency sets based on these setups were used.

  Frequency Set:   5  Setup file default.  Used with PCAL = off
  LO sum=   1610.49  1610.49  1610.49  1610.49  1642.49  1642.49  1642.49  1642.49
            1674.49  1674.49  1674.49  1674.49  1706.49  1706.49  1706.49  1706.49
  BBC fr=    689.51   689.51   689.51   689.51   657.51   657.51   657.51   657.51
             625.51   625.51   625.51   625.51   593.51   593.51   593.51   593.51
  Bandwd=     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
              16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
   Matching frequency sets:   5

  Track assignments are:
   track1=   2, 10, 18, 26,  4, 12, 20, 28,  6, 14, 22, 30,  8, 16, 24, 32
   barrel=roll_off


POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                       (B1950)            (J2000)            (Date)            (mas)

* J1241+602         12 39 16.511005   * 12 41 29.590564     12 42 13.668581       0.00
                    60 37 07.62444    * 60 20 41.32233      60 15 13.40467        0.00

* J1234+619         12 31 56.130604   * 12 34 11.741357     12 34 56.693206       0.00
                    62 15 03.88238    * 61 58 32.47807      61 53 03.14352        0.00

* HDF-N             12 34 36.033130   * 12 36 50.000000     12 37 34.423484       0.00
                    62 29 27.67047    * 62 12 58.00000      62 07 29.18220        0.00

* P1                12 35 06.359127   * 12 37 20.000000     12 38 04.319065       0.00
                    62 32 57.32675    * 62 16 28.00000      62 10 59.28564        0.00

* P2                12 34 05.805756   * 12 36 20.000000     12 37 04.499491       0.00
                    62 32 58.00862    * 62 16 28.00000      62 10 59.08685        0.00

* P3                12 34 05.708602   * 12 36 20.000000     12 37 04.527434       0.00
                    62 25 58.00943    * 62 09 28.00000      62 03 59.08027        0.00

* P4                12 35 06.259227   * 12 37 20.000000     12 38 04.347890       0.00
                    62 25 57.32759    * 62 09 28.00000      62 03 59.27915        0.00

  0552+398          05 52 01.407169   * 05 55 30.805611     05 56 38.870588       0.00
  J0555+3948        39 48 21.94581    * 39 48 49.16496      39 48 51.68429        0.00

* 3C345             16 41 17.606228   * 16 42 58.809966     16 43 31.423938       0.76
  J1642+3948        39 54 10.81496    * 39 48 36.99402      39 46 40.58278        0.52
```

gf019btr

High-resolution, multi-frequency mapping of the compact sources in

PI: *D. Fenech*

```
Address:  Department of Physics and Astronomy

Observing mode: Phase-referencing of M82 at 18cm (512 Mb/s)
Schedule for TORUN     (Code Tr )                                    Page   2
               High-resolution, multi-frequency mapping of the compact sources in M82
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source                Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------
 --- Mon   7 Mar 2016   Day  67 ---
 Next scan frequencies:  1634.25  1634.25  1634.25  1634.25  1650.25  1650.25  1650.25  1650.25
                         1666.25  1666.25  1666.25  1666.25  1682.25  1682.25  1682.25  1682.25
 Next BBC frequencies:    665.75   665.75   665.75   665.75   649.75   649.75   649.75   649.75
                          633.75   633.75   633.75   633.75   617.75   617.75   617.75   617.75
 Next scan bandwidths:      8.00     8.00     8.00     8.00     8.00     8.00     8.00     8.00
                            8.00     8.00     8.00     8.00     8.00     8.00     8.00     8.00

00 00 00  J0958+65     12 14 50  69.2 -40.4  2.2     110.2     0        0   00 00 00
00 02 00  ---          12 16 50  69.0 -40.6  2.3     109.6   120        8   00 00 01

00 02 00  M82PTCEN     12 16 50  67.1 -30.8  2.3     118.0   -34        8   No stop
00 06 35  ---          12 21 26  66.7 -31.3  2.4     116.5   241       25   00 02 01

00 07 30  J0958+65     12 22 21  68.5 -41.1  2.4     107.9    20       25   00 07 30
00 10 00  ---          12 24 52  68.2 -41.3  2.4     107.1   150       35   00 07 31

00 10 00  M82PTCEN     12 24 52  66.5 -31.6  2.5     115.4   -34       35   No stop
00 14 35  ---          12 29 27  66.1 -32.0  2.5     114.0   241       53   00 10 01

00 15 30  J0958+65     12 30 22  67.7 -41.8  2.5     105.4    21       53   00 15 30
00 18 00  ---          12 32 53  67.4 -41.9  2.5     104.7   150       62   00 15 31

00 18 00  M82PTCEN     12 32 53  65.8 -32.3  2.6     112.9   -34       62   No stop
00 22 35  ---          12 37 29  65.5 -32.7  2.7     111.5   241       80   00 18 01

00 23 30  J0958+65     12 38 24  66.9 -42.3  2.6     103.1    21       80   00 23 30
00 26 00  ---          12 40 54  66.6 -42.4  2.7     102.4   150       89   00 23 31

00 26 00  M82PTCEN     12 40 54  65.2 -32.9  2.7     110.4   -34       89   No stop
00 30 35  ---          12 45 30  64.8 -33.3  2.8     109.1   241      107   00 26 01

00 31 30  J0958+65     12 46 25  66.0 -42.7  2.8     100.9    21      107   00 31 30
00 34 00  ---          12 48 55  65.8 -42.8  2.8     100.2   150      117   00 31 31

00 34 00  M82PTCEN     12 48 55  64.5 -33.5  2.9     108.1   -34      117   No stop
00 38 35  ---          12 53 31  64.1 -33.8  2.9     106.7   241      134   00 34 01

00 39 30  J0958+65     12 54 26  65.2 -43.1  2.9      98.8    21      134   00 39 30
00 42 00  ---          12 56 57  65.0 -43.2  2.9      98.1   150      144   00 39 31

00 42 00  M82PTCEN     12 56 57  63.9 -34.0  3.0     105.8   -33      144   No stop
00 46 35  ---          13 01 33  63.5 -34.2  3.1     104.5   242      162   00 42 01
```

Schedule for TORUN (Code Tr) Page 3

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 7 Mar 2016 Day 67 ---										
00 47 30	J0958+65	13 02 28	64.4	-43.3	3.0		96.7	22	162	00 47 30
00 50 00	---	13 04 58	64.1	-43.4	3.1		96.1	150	171	00 47 31
00 50 00	M82PTCEN	13 04 58	63.2	-34.4	3.1		103.5	-33	171	No stop
00 54 35	---	13 09 34	62.8	-34.6	3.2		102.3	242	189	00 50 01
00 55 30	J0958+65	13 10 29	63.6	-43.5	3.2		94.7	22	189	00 55 30
00 58 00	---	13 12 59	63.3	-43.6	3.2		94.1	150	198	00 55 31
00 58 00	M82PTCEN	13 12 59	62.5	-34.7	3.3		101.4	-33	198	No stop
01 02 35	---	13 17 35	62.1	-34.8	3.3		100.1	242	216	00 58 01
01 03 30	J0958+65	13 18 30	62.7	-43.6	3.3		92.8	22	216	01 03 30
01 06 00	---	13 21 01	62.5	-43.7	3.3		92.2	150	226	01 03 31
01 06 00	M82PTCEN	13 21 01	61.8	-35.0	3.4		99.2	-32	226	No stop
01 10 35	---	13 25 36	61.4	-35.1	3.5		98.1	243	243	01 06 01
01 11 30	J0958+65	13 26 32	61.9	-43.7	3.4		90.9	23	243	01 11 30
01 14 00	---	13 29 02	61.7	-43.7	3.5		90.3	150	253	01 11 31
01 14 00	M82PTCEN	13 29 02	61.1	-35.2	3.5		97.2	-32	253	No stop
01 18 35	---	13 33 38	60.7	-35.3	3.6		96.0	243	271	01 14 01
01 19 30	J0958+65	13 34 33	61.1	-43.7	3.6		89.1	23	271	01 19 30
01 22 00	---	13 37 03	60.8	-43.7	3.6		88.5	150	280	01 19 31
01 22 00	M82PTCEN	13 37 03	60.4	-35.3	3.7		95.2	-32	280	No stop
01 26 35	---	13 41 39	60.0	-35.4	3.7		94.0	243	298	01 22 01
01 27 30	J0958+65	13 42 34	60.3	-43.6	3.7		87.3	23	298	01 27 30
01 30 00	---	13 45 05	60.0	-43.6	3.8		86.8	150	307	01 27 31
01 30 00	M82PTCEN	13 45 05	59.7	-35.4	3.8		93.2	-31	307	No stop
01 34 35	---	13 49 40	59.3	-35.5	3.9		92.1	244	325	01 30 01
01 35 30	J0958+65	13 50 36	59.4	-43.5	3.8		85.6	24	325	01 35 30
01 38 00	---	13 53 06	59.2	-43.5	3.9		85.0	150	335	01 35 31
01 38 00	M82PTCEN	13 53 06	59.0	-35.5	3.9		91.3	-31	335	No stop
01 42 35	---	13 57 42	58.6	-35.5	4.0		90.2	244	352	01 38 01
01 43 30	J0958+65	13 58 37	58.6	-43.4	4.0		83.9	24	352	01 43 30
01 46 00	---	14 01 07	58.3	-43.3	4.0		83.3	150	362	01 43 31
01 46 00	M82PTCEN	14 01 07	58.3	-35.5	4.1		89.4	-31	362	No stop
01 50 35	---	14 05 43	57.9	-35.5	4.1		88.3	244	379	01 46 01

Schedule for TORUN (Code Tr) Page 4

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 7 Mar 2016 Day 67 ---										
01 51 30	J0958+65	14 06 38	57.8	-43.2	4.1		82.2	24	379	01 51 30
01 54 00	---	14 09 09	57.5	-43.1	4.2		81.7	150	389	01 51 31
01 54 00	M82PTCEN	14 09 09	57.6	-35.4	4.2		87.5	-30	389	No stop
01 58 35	---	14 13 44	57.2	-35.4	4.3		86.5	245	407	01 54 01
01 59 30	J0958+65	14 14 40	56.9	-43.0	4.2		80.6	25	407	01 59 30
02 02 00	---	14 17 10	56.7	-42.9	4.3		80.1	150	416	01 59 31
02 02 00	M82PTCEN	14 17 10	56.9	-35.4	4.3		85.7	-30	416	No stop
02 06 35	---	14 21 46	56.5	-35.3	4.4		84.7	245	434	02 02 01
02 07 30	J0958+65	14 22 41	56.1	-42.7	4.4		79.0	25	434	02 07 30
02 10 00	---	14 25 11	55.9	-42.6	4.4		78.5	150	444	02 07 31
02 10 00	M82PTCEN	14 25 11	56.2	-35.3	4.5		83.9	-30	444	No stop
02 14 35	---	14 29 47	55.8	-35.2	4.5		82.9	245	461	02 10 01
02 15 30	J0958+65	14 30 42	55.3	-42.4	4.5		77.4	25	461	02 15 30
02 18 00	---	14 33 13	55.1	-42.3	4.6		76.9	150	471	02 15 31
02 18 00	M82PTCEN	14 33 13	55.5	-35.1	4.6		82.2	-29	471	No stop
02 22 35	---	14 37 48	55.1	-35.0	4.7		81.2	246	488	02 18 01
02 23 30	J0958+65	14 38 43	54.5	-42.1	4.6		75.9	26	488	02 23 30
02 26 00	---	14 41 14	54.2	-42.0	4.7		75.4	150	498	02 23 31
02 26 00	M82PTCEN	14 41 14	54.8	-34.9	4.7		80.5	-29	498	No stop
02 30 35	---	14 45 50	54.5	-34.8	4.8		79.5	246	516	02 26 01
02 31 30	J0958+65	14 46 45	53.7	-41.7	4.8		74.3	26	516	02 31 30
02 34 00	---	14 49 15	53.4	-41.6	4.8		73.8	150	525	02 31 31
02 34 00	M82PTCEN	14 49 15	54.2	-34.7	4.9		78.8	-29	525	No stop
02 38 35	---	14 53 51	53.8	-34.6	4.9		77.8	246	543	02 34 01
02 39 30	J0958+65	14 54 46	52.9	-41.3	4.9		72.8	26	543	02 39 30
02 42 00	---	14 57 16	52.7	-41.2	5.0		72.3	150	553	02 39 31
02 42 00	M82PTCEN	14 57 16	53.5	-34.5	5.0		77.1	-28	553	No stop
02 46 35	---	15 01 52	53.1	-34.3	5.1		76.1	247	570	02 42 01
02 47 30	J0958+65	15 02 47	52.1	-40.9	5.0		71.3	27	570	02 47 30
02 50 00	---	15 05 18	51.9	-40.7	5.1		70.9	150	580	02 47 31

Schedule for TORUN (Code Tr) Page 5

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

--- Mon 7 Mar 2016 Day 67 ---

Start UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
02 50 00	M82PTCEN	15 05 18	52.8	-34.2	5.1		75.4	-28	580	No stop
02 54 35	---	15 09 54	52.4	-34.0	5.2		74.5	247	597	02 50 01
02 55 30	J0958+65	15 10 49	51.3	-40.4	5.2		69.8	27	597	02 55 30
02 58 00	---	15 13 19	51.1	-40.3	5.2		69.4	150	607	02 55 31
02 58 00	M82PTCEN	15 13 19	52.1	-33.9	5.3		73.8	-28	607	No stop
03 02 35	---	15 17 55	51.7	-33.7	5.3		72.8	247	625	02 58 01
03 03 30	J0958+65	15 18 50	50.5	-40.0	5.3		68.4	27	625	03 03 30
03 06 00	---	15 21 20	50.3	-39.8	5.4		67.9	150	634	03 03 31
03 06 00	M82PTCEN	15 21 20	51.5	-33.5	5.4		72.2	-28	634	No stop
03 10 35	---	15 25 56	51.1	-33.3	5.5		71.2	247	652	03 06 01
03 11 30	J0958+65	15 26 51	49.8	-39.5	5.4		66.9	28	652	03 11 30
03 14 00	---	15 29 22	49.5	-39.3	5.5		66.5	150	662	03 11 31
03 14 00	M82PTCEN	15 29 22	50.8	-33.2	5.5		70.6	-27	662	No stop
03 18 35	---	15 33 57	50.4	-33.0	5.6		69.6	248	679	03 14 01
03 19 30	J0958+65	15 34 53	49.0	-39.0	5.6		65.5	28	679	03 19 30
03 22 00	---	15 37 23	48.8	-38.8	5.6		65.1	150	689	03 19 31
03 22 00	M82PTCEN	15 37 23	50.1	-32.8	5.7		69.0	-27	689	No stop
03 26 35	---	15 41 59	49.8	-32.6	5.7		68.1	248	706	03 22 01
03 27 30	J0958+65	15 42 54	48.3	-38.4	5.7		64.1	28	706	03 27 30
03 30 00	---	15 45 24	48.0	-38.3	5.8		63.6	150	716	03 27 31
03 30 00	M82PTCEN	15 45 24	49.5	-32.4	5.8		67.4	-27	716	No stop
03 34 35	---	15 50 00	49.1	-32.2	5.9		66.5	248	734	03 30 01
03 35 30	J0958+65	15 50 55	47.5	-37.9	5.8		62.7	29	734	03 35 30
03 38 00	---	15 53 26	47.3	-37.7	5.9		62.2	150	743	03 35 31
03 38 00	M82PTCEN	15 53 26	48.8	-32.0	5.9		65.8	-26	743	No stop
03 42 35	---	15 58 01	48.5	-31.7	6.0		64.9	249	761	03 38 01
03 43 30	J0958+65	15 58 57	46.8	-37.3	6.0		61.3	29	761	03 43 30
03 46 00	---	16 01 27	46.6	-37.1	6.0		60.8	150	771	03 43 31
03 46 00	M82PTCEN	16 01 27	48.2	-31.5	6.1		64.3	-26	771	No stop
03 50 35	---	16 06 03	47.9	-31.3	6.1		63.4	249	788	03 46 01

Schedule for TORUN (Code Tr) Page 6

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

--- Mon 7 Mar 2016 Day 67 ---

Start UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
03 51 30	J0958+65	16 06 58	46.1	-36.7	6.1		59.9	29	788	03 51 30
03 54 00	---	16 09 28	45.8	-36.5	6.2		59.4	150	798	03 51 31
03 54 00	M82PTCEN	16 09 28	47.6	-31.1	6.2		62.8	-26	798	No stop
03 58 35	---	16 14 04	47.2	-30.8	6.3		61.9	249	815	03 54 01
03 59 30	J0958+65	16 14 59	45.3	-36.1	6.2		58.5	29	815	03 59 30
04 02 00	---	16 17 30	45.1	-35.9	6.3		58.1	150	825	03 59 31
04 02 00	M82PTCEN	16 17 30	47.0	-30.6	6.3		61.2	-26	825	No stop
04 06 50	---	16 22 20	46.6	-30.3	6.4		60.3	264	844	04 02 01
04 07 30	J0958+65	16 23 01	44.6	-35.5	6.4		57.1	15	844	04 07 30
04 10 00	---	16 25 31	44.4	-35.3	6.4		56.7	150	853	04 07 31
04 10 00	M82PTCEN	16 25 31	46.4	-30.1	6.5		59.7	-25	853	No stop
04 14 50	---	16 30 22	46.0	-29.8	6.6		58.8	265	872	04 10 01
04 15 30	J0958+65	16 31 02	43.9	-34.8	6.5		55.7	15	872	04 15 30
04 18 00	---	16 33 32	43.7	-34.6	6.6		55.3	150	881	04 15 31
04 18 00	M82PTCEN	16 33 32	45.8	-29.6	6.6		58.2	-25	881	No stop
04 22 50	---	16 38 23	45.4	-29.2	6.7		57.3	265	900	04 18 01
04 23 30	J0958+65	16 39 03	43.3	-34.2	6.7		54.4	15	900	04 23 30
04 26 00	---	16 41 34	43.1	-34.0	6.7		53.9	150	910	04 23 31
04 26 00	M82PTCEN	16 41 34	45.2	-29.0	6.7		56.7	-25	910	No stop
04 30 50	---	16 46 24	44.8	-28.7	6.8		55.8	265	928	04 26 01
04 31 30	J0958+65	16 47 04	42.6	-33.5	6.8		53.0	15	928	04 31 30
04 34 00	---	16 49 35	42.4	-33.3	6.8		52.6	150	938	04 31 31
04 34 00	M82PTCEN	16 49 35	44.6	-28.5	6.9		55.2	-25	938	No stop
04 38 50	---	16 54 26	44.3	-28.1	7.0		54.3	265	956	04 34 01
04 39 30	J0958+65	16 55 06	41.9	-32.8	6.9		51.6	16	956	04 39 30
04 42 00	---	16 57 36	41.7	-32.6	7.0		51.2	150	966	04 39 31
04 42 00	M82PTCEN	16 57 36	44.0	-27.9	7.0		53.7	-24	966	No stop
04 46 50	---	17 02 27	43.7	-27.6	7.1		52.8	266	985	04 42 01
04 47 30	J0958+65	17 03 07	41.3	-32.1	7.1		50.3	16	985	04 47 30
04 50 00	---	17 05 38	41.1	-31.9	7.1		49.8	150	994	04 47 31

Schedule for TORUN (Code Tr) Page 7

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 7 Mar 2016 Day 67 ---										
04 50 00	M82PTCEN	17 05 38	43.5	-27.3	7.1		52.3	-24	994	No stop
04 54 50	---	17 10 28	43.1	-27.0	7.2		51.4	266	1013	04 50 01
04 55 30	J0958+65	17 11 08	40.7	-31.4	7.2		48.9	16	1013	04 55 30
04 58 00	---	17 13 39	40.5	-31.2	7.2		48.5	150	1022	04 55 31
04 58 00	M82PTCEN	17 13 39	42.9	-26.7	7.3		50.8	-24	1022	No stop
05 02 50	---	17 18 30	42.6	-26.4	7.4		49.9	266	1041	04 58 01
05 03 30	J0958+65	17 19 10	40.0	-30.7	7.3		47.6	16	1041	05 03 30
05 06 00	---	17 21 40	39.8	-30.4	7.4		47.1	150	1051	05 03 31
05 06 00	M82PTCEN	17 21 40	42.4	-26.1	7.4		49.3	-24	1051	No stop
05 10 50	---	17 26 31	42.1	-25.7	7.5		48.4	266	1069	05 06 01
05 11 30	J0958+65	17 27 11	39.4	-29.9	7.5		46.2	16	1069	05 11 30
05 14 00	---	17 29 41	39.2	-29.7	7.5		45.8	150	1079	05 11 31
05 14 00	M82PTCEN	17 29 41	41.9	-25.5	7.5		47.9	-24	1079	No stop
05 18 50	---	17 34 32	41.5	-25.1	7.6		47.0	266	1097	05 14 01
05 19 30	J0958+65	17 35 12	38.8	-29.2	7.6		44.9	16	1097	05 19 30
05 22 00	---	17 37 43	38.7	-28.9	7.6		44.4	150	1107	05 19 31
05 22 00	M82PTCEN	17 37 43	41.3	-24.9	7.7		46.4	-24	1107	No stop
05 26 50	---	17 42 34	41.0	-24.5	7.8		45.5	266	1126	05 22 01
05 27 30	J0958+65	17 43 14	38.3	-28.4	7.7		43.5	16	1126	05 27 30
05 30 00	---	17 45 44	38.1	-28.2	7.8		43.1	150	1135	05 27 31
05 30 00	M82PTCEN	17 45 44	40.8	-24.2	7.8		45.0	-24	1135	No stop
05 34 50	---	17 50 35	40.6	-23.8	7.9		44.1	266	1154	05 30 01
05 35 30	J0958+65	17 51 15	37.7	-27.6	7.9		42.2	15	1154	05 35 30
05 38 00	---	17 53 45	37.5	-27.4	7.9		41.7	150	1163	05 35 31
05 38 00	M82PTCEN	17 53 45	40.4	-23.5	7.9		43.5	-24	1163	No stop
05 42 50	---	17 58 36	40.1	-23.1	8.0		42.6	266	1182	05 38 01
05 43 30	J0958+65	17 59 16	37.1	-26.8	8.0		40.8	15	1182	05 43 30
05 46 00	---	18 01 47	37.0	-26.6	8.0		40.4	150	1192	05 43 31
05 46 00	M82PTCEN	18 01 47	39.9	-22.9	8.1		42.1	-25	1192	No stop
05 50 50	---	18 06 38	39.6	-22.5	8.2		41.2	265	1210	05 46 01

Schedule for TORUN (Code Tr) Page 8

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	 AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 7 Mar 2016 Day 67 ---										
05 51 30	J0958+65	18 07 18	36.6	-26.1	8.1		39.5	15	1210	05 51 30
05 54 00	---	18 09 48	36.4	-25.8	8.2		39.0	150	1220	05 51 31
05 54 00	M82PTCEN	18 09 48	39.4	-22.2	8.2		40.6	-25	1220	No stop
06 00 50	---	18 16 39	39.0	-21.6	8.3		39.4	385	1246	05 54 01
06 01 30	J0958+65	18 17 19	36.0	-25.0	8.3		37.8	15	1246	06 01 30
06 04 00	---	18 19 50	35.8	-24.8	8.3		37.4	150	1256	06 01 31
06 08 00	J0927+39	18 23 50	10.3	-34.7	8.9		26.1	131	1256	06 08 00
06 14 00	---	18 29 51	9.8	-33.6	9.0		25.3	360	1279	06 08 01
06 18 00	J0958+65	18 33 52	34.9	-23.3	8.6		35.0	131	1279	06 18 00
06 20 00	---	18 35 52	34.8	-23.1	8.6		34.7	120	1287	06 18 01
06 20 00	M82PTCEN	18 35 52	38.0	-19.9	8.6		35.9	-26	1287	No stop
06 24 50	---	18 40 43	37.8	-19.5	8.7		35.1	264	1305	06 20 01
06 25 30	J0958+65	18 41 23	34.5	-22.6	8.7		33.7	14	1305	06 25 30
06 28 00	---	18 43 54	34.3	-22.3	8.7		33.3	150	1315	06 25 31
06 28 00	M82PTCEN	18 43 54	37.6	-19.2	8.8		34.5	-26	1315	No stop
06 32 50	---	18 48 44	37.4	-18.7	8.9		33.6	264	1333	06 28 01
06 33 30	J0958+65	18 49 25	34.0	-21.7	8.8		32.4	14	1333	06 33 30
06 36 00	---	18 51 55	33.9	-21.5	8.9		32.0	150	1343	06 33 31
06 36 00	M82PTCEN	18 51 55	37.2	-18.5	8.9		33.1	-26	1343	No stop
06 40 50	---	18 56 46	37.0	-18.0	9.0		32.2	264	1362	06 36 01
06 41 30	J0958+65	18 57 26	33.6	-20.9	9.0		31.0	13	1362	06 41 30
06 44 00	---	18 59 56	33.5	-20.6	9.0		30.6	150	1371	06 41 31
06 44 00	M82PTCEN	18 59 56	36.9	-17.7	9.0		31.6	-27	1371	No stop
06 48 50	---	19 04 47	36.6	-17.3	9.1		30.8	263	1390	06 44 01
06 49 30	J0958+65	19 05 27	33.2	-20.0	9.1		29.7	13	1390	06 49 30
06 52 00	---	19 07 58	33.1	-19.7	9.1		29.3	150	1399	06 49 31
06 52 00	M82PTCEN	19 07 58	36.5	-17.0	9.2		30.2	-27	1399	No stop
06 56 50	---	19 12 48	36.3	-16.5	9.3		29.3	263	1418	06 52 01
06 57 30	J0958+65	19 13 28	32.8	-19.1	9.2		28.3	13	1418	06 57 30
07 00 00	---	19 15 59	32.7	-18.9	9.3		27.9	150	1428	06 57 31

Schedule for TORUN (Code Tr) Page 9

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 7 Mar 2016 Day 67 ---										
07 00 00	M82PTCEN	19 15 59	36.1	-16.2	9.3		28.8	-27	1428	No stop
07 04 50	---	19 20 50	35.9	-15.8	9.4		27.9	263	1446	07 00 01
07 05 30	J0958+65	19 21 30	32.4	-18.3	9.4		27.0	13	1446	07 05 30
07 08 00	---	19 24 00	32.3	-18.0	9.4		26.6	150	1456	07 05 31
07 08 00	M82PTCEN	19 24 00	35.8	-15.5	9.4		27.3	-27	1456	No stop
07 12 50	---	19 28 51	35.6	-15.0	9.5		26.5	263	1474	07 08 01
07 13 30	J0958+65	19 29 31	32.0	-17.4	9.5		25.6	13	1474	07 13 30
07 16 00	---	19 32 01	31.9	-17.1	9.5		25.2	150	1484	07 13 31
07 16 00	M82PTCEN	19 32 01	35.5	-14.7	9.6		25.9	-27	1484	No stop
07 20 50	---	19 36 52	35.3	-14.2	9.7		25.0	263	1503	07 16 01
07 21 30	J0958+65	19 37 32	31.7	-16.5	9.6		24.3	12	1503	07 21 30
07 24 00	---	19 40 03	31.6	-16.2	9.7		23.8	150	1512	07 21 31
07 24 00	M82PTCEN	19 40 03	35.2	-13.9	9.7		24.5	-28	1512	No stop
07 28 50	---	19 44 54	35.0	-13.4	9.8		23.6	262	1531	07 24 01
07 29 30	J0958+65	19 45 34	31.3	-15.6	9.8		22.9	12	1531	07 29 30
07 32 00	---	19 48 04	31.2	-15.3	9.8		22.5	150	1540	07 29 31
07 32 00	M82PTCEN	19 48 04	34.9	-13.1	9.8		23.0	-28	1540	No stop
07 36 50	---	19 52 55	34.8	-12.7	9.9		22.2	262	1559	07 32 01
07 37 30	J0958+65	19 53 35	31.0	-14.7	9.9		21.6	12	1559	07 37 30
07 40 00	---	19 56 05	30.9	-14.4	9.9		21.1	150	1569	07 37 31
07 40 00	M82PTCEN	19 56 05	34.7	-12.3	10.0		21.6	-28	1569	No stop
07 44 50	---	20 00 56	34.5	-11.9	10.1		20.7	262	1587	07 40 01
07 45 30	J0958+65	20 01 36	30.7	-13.8	10.0		20.2	12	1587	07 45 30
07 48 00	---	20 04 07	30.6	-13.5	10.1		19.8	150	1597	07 45 31
07 48 00	M82PTCEN	20 04 07	34.4	-11.5	10.1		20.2	-28	1597	No stop
07 52 50	---	20 08 58	34.3	-11.1	10.2		19.3	262	1615	07 48 01
07 53 30	J0958+65	20 09 38	30.4	-12.9	10.2		18.8	12	1615	07 53 30
07 56 00	---	20 12 08	30.4	-12.6	10.2		18.4	150	1625	07 53 31
07 56 00	M82PTCEN	20 12 08	34.2	-10.7	10.2		18.7	-28	1625	No stop
08 00 50	---	20 16 59	34.0	-10.3	10.3		17.9	262	1644	07 56 01

Schedule for TORUN (Code Tr) Page 10

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

--- Mon 7 Mar 2016 Day 67 ---

Start UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
08 01 30	J0958+65	20 17 39	30.2	-12.0	10.3		17.5	12	1644	08 01 30
08 04 00	---	20 20 09	30.1	-11.7	10.3		17.0	150	1653	08 01 31
08 04 00	M82PTCEN	20 20 09	34.0	-9.9	10.4		17.3	-28	1653	No stop
08 08 50	---	20 25 00	33.8	-9.5	10.5		16.4	262	1672	08 04 01
08 09 30	J0958+65	20 25 40	29.9	-11.0	10.4		16.1	12	1672	08 09 30
08 12 00	---	20 28 11	29.9	-10.8	10.5		15.7	150	1681	08 09 31
08 12 00	M82PTCEN	20 28 11	33.8	-9.1	10.5		15.9	-28	1681	No stop
08 16 50	---	20 33 01	33.7	-8.6	10.6		15.0	262	1700	08 12 01
08 17 30	J0958+65	20 33 42	29.7	-10.1	10.6		14.7	11	1700	08 17 30
08 20 00	---	20 36 12	29.7	-9.8	10.6		14.3	150	1710	08 17 31
08 20 00	M82PTCEN	20 36 12	33.6	-8.3	10.6		14.5	-29	1710	No stop
08 24 50	---	20 41 03	33.5	-7.8	10.7		13.6	261	1728	08 20 01
08 25 30	J0958+65	20 41 43	29.5	-9.2	10.7		13.4	11	1728	08 25 30
08 28 00	---	20 44 13	29.5	-8.9	10.7		12.9	150	1738	08 25 31
08 28 00	M82PTCEN	20 44 13	33.4	-7.5	10.8		13.0	-29	1738	No stop
08 32 40	---	20 48 54	33.3	-7.0	10.9		12.2	251	1756	08 28 01
08 33 30	J0958+65	20 49 44	29.3	-8.3	10.8		12.0	21	1756	08 33 30
08 36 00	---	20 52 15	29.3	-8.0	10.9		11.6	150	1765	08 33 31
08 36 00	M82PTCEN	20 52 15	33.3	-6.7	10.9		11.6	-29	1765	No stop
08 40 40	---	20 56 55	33.2	-6.2	11.0		10.8	251	1783	08 36 01
08 41 30	J0958+65	20 57 46	29.2	-7.3	11.0		10.6	21	1783	08 41 30
08 44 00	---	21 00 16	29.1	-7.0	11.0		10.2	150	1793	08 41 31
08 44 00	M82PTCEN	21 00 16	33.1	-5.9	11.1		10.2	-29	1793	No stop
08 48 40	---	21 04 57	33.1	-5.4	11.1		9.3	251	1811	08 44 01
08 49 30	J0958+65	21 05 47	29.0	-6.4	11.1		9.3	21	1811	08 49 30
08 52 00	---	21 08 17	29.0	-6.1	11.1		8.8	150	1821	08 49 31
08 52 00	M82PTCEN	21 08 17	33.0	-5.1	11.2		8.7	-29	1821	No stop
08 56 40	---	21 12 58	33.0	-4.6	11.3		7.9	251	1838	08 52 01
08 57 30	J0958+65	21 13 48	28.9	-5.5	11.2		7.9	21	1838	08 57 30
09 00 00	---	21 16 19	28.9	-5.2	11.3		7.5	150	1848	08 57 31

Schedule for TORUN (Code Tr) Page 11

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 7 Mar 2016 Day 67 ---										
09 00 00	M82PTCEN	21 16 19	32.9	-4.2	11.3		7.3	-29	1848	No stop
09 04 40	---	21 20 59	32.9	-3.7	11.4		6.5	251	1866	09 00 01
09 05 30	J0958+65	21 21 49	28.8	-4.5	11.4		6.5	21	1866	09 05 30
09 08 00	---	21 24 20	28.8	-4.2	11.4		6.1	150	1876	09 05 31
09 08 00	M82PTCEN	21 24 20	32.8	-3.4	11.5		5.9	-29	1876	No stop
09 12 40	---	21 29 01	32.8	-2.9	11.5		5.0	251	1894	09 08 01
09 13 30	J0958+65	21 29 51	28.7	-3.6	11.5		5.2	21	1894	09 13 30
09 16 00	---	21 32 21	28.7	-3.3	11.5		4.7	150	1903	09 13 31
09 16 00	M82PTCEN	21 32 21	32.8	-2.6	11.6		4.4	-29	1903	No stop
09 20 40	---	21 37 02	32.8	-2.1	11.7		3.6	251	1921	09 16 01
09 21 30	J0958+65	21 37 52	28.7	-2.6	11.6		3.8	21	1921	09 21 30
09 24 00	---	21 40 23	28.6	-2.3	11.7		3.4	150	1931	09 21 31
09 24 00	M82PTCEN	21 40 23	32.7	-1.7	11.7		3.0	-29	1931	No stop
09 28 40	---	21 45 03	32.7	-1.3	11.8		2.2	251	1949	09 24 01
09 29 30	J0958+65	21 45 53	28.6	-1.7	11.8		2.4	21	1949	09 29 30
09 32 00	---	21 48 24	28.6	-1.4	11.8		2.0	150	1958	09 29 31
09 32 00	M82PTCEN	21 48 24	32.7	-0.9	11.9		1.6	-29	1958	No stop
09 36 40	---	21 53 05	32.7	-0.4	11.9		0.7	251	1976	09 32 01
09 37 30	J0958+65	21 53 55	28.6	-0.7	11.9		1.0	21	1976	09 37 30
09 40 00	---	21 56 25	28.6	-0.4	11.9		0.6	150	1986	09 37 31
09 40 00	M82PTCEN	21 56 25	32.7	-0.1	12.0		0.1	-29	1986	No stop
09 44 40	---	22 01 06	32.7	0.4	-11.9		-0.7	251	2004	09 40 01
09 45 30	J0958+65	22 01 56	28.6	0.2	-12.0		-0.3	21	2004	09 45 30
09 48 00	---	22 04 26	28.6	0.5	-11.9		-0.8	150	2013	09 45 31
09 48 00	M82PTCEN	22 04 26	32.7	0.7	-11.9		-1.3	-29	2013	No stop
09 52 40	---	22 09 07	32.7	1.2	-11.8		-2.1	251	2031	09 48 01
09 53 30	J0958+65	22 09 57	28.6	1.2	-11.8		-1.7	21	2031	09 53 30
09 56 00	---	22 12 28	28.6	1.5	-11.8		-2.1	150	2041	09 53 31
09 56 00	M82PTCEN	22 12 28	32.7	1.6	-11.7		-2.7	-29	2041	No stop
10 00 40	---	22 17 09	32.8	2.1	-11.7		-3.6	251	2059	09 56 01

Schedule for TORUN (Code Tr) Page 12

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

--- Mon 7 Mar 2016 Day 67 ---

Start UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
10 01 30	J0958+65	22 17 59	28.6	2.1-11.7			-3.1	21	2059	10 01 30
10 04 00	---	22 20 29	28.6	2.4-11.7			-3.5	150	2069	10 01 31
10 04 00	M82PTCEN	22 20 29	32.8	2.4-11.6			-4.1	-29	2069	No stop
10 08 40	---	22 25 10	32.8	2.9-11.5			-5.0	251	2087	10 04 01
10 09 30	J0958+65	22 26 00	28.7	3.1-11.6			-4.4	21	2087	10 09 30
10 12 00	---	22 28 30	28.7	3.4-11.5			-4.9	150	2096	10 09 31
10 12 00	M82PTCEN	22 28 30	32.8	3.2-11.5			-5.6	-29	2096	No stop
10 16 40	---	22 33 11	32.9	3.7-11.4			-6.4	251	2114	10 12 01
10 17 30	J0958+65	22 34 01	28.8	4.0-11.4			-5.8	21	2114	10 17 30
10 20 00	---	22 36 32	28.8	4.3-11.4			-6.2	150	2124	10 17 31
10 20 00	M82PTCEN	22 36 32	32.9	4.1-11.3			-7.0	-29	2124	No stop
10 24 40	---	22 41 12	33.0	4.5-11.3			-7.8	251	2142	10 20 01
10 25 30	J0958+65	22 42 03	28.9	5.0-11.3			-7.2	21	2142	10 25 30
10 28 00	---	22 44 33	28.9	5.2-11.3			-7.6	150	2151	10 25 31
10 28 00	M82PTCEN	22 44 33	33.0	4.9-11.2			-8.4	-29	2151	No stop
10 32 40	---	22 49 14	33.1	5.4-11.1			-9.3	251	2169	10 28 01
10 33 30	J0958+65	22 50 04	29.0	5.9-11.2			-8.5	21	2169	10 33 30
10 36 00	---	22 52 34	29.0	6.2-11.1			-9.0	150	2179	10 33 31
10 36 00	M82PTCEN	22 52 34	33.1	5.7-11.1			-9.9	-29	2179	No stop
10 40 40	---	22 57 15	33.2	6.2-11.0			-10.7	251	2197	10 36 01
10 41 30	J0958+65	22 58 05	29.1	6.8-11.0			-9.9	21	2197	10 41 30
10 44 00	---	23 00 36	29.1	7.1-11.0			-10.3	150	2206	10 41 31
10 44 00	M82PTCEN	23 00 36	33.2	6.5-10.9			-11.3	-29	2206	No stop
10 48 40	---	23 05 16	33.3	7.0-10.9			-12.1	251	2224	10 44 01
10 49 30	J0958+65	23 06 07	29.3	7.8-10.9			-11.3	21	2224	10 49 30
10 52 00	---	23 08 37	29.3	8.1-10.9			-11.7	150	2234	10 49 31
10 52 00	M82PTCEN	23 08 37	33.4	7.4-10.8			-12.7	-29	2234	No stop
10 56 40	---	23 13 18	33.5	7.8-10.7			-13.6	251	2252	10 52 01
10 57 30	J0958+65	23 14 08	29.4	8.7-10.8			-12.7	21	2252	10 57 30
11 00 00	---	23 16 38	29.5	9.0-10.7			-13.1	150	2262	10 57 31

Schedule for TORUN (Code Tr) Page 13

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 7 Mar 2016 Day 67 ---										
11 00 00	M82PTCEN	23 16 38	33.5	8.2-10.7			-14.2	-29	2262	No stop
11 04 40	---	23 21 19	33.7	8.6-10.6			-15.0	251	2279	11 00 01
11 05 30	J0958+65	23 22 09	29.6	9.6-10.6			-14.0	21	2279	11 05 30
11 08 00	---	23 24 40	29.7	9.9-10.6			-14.4	150	2289	11 05 31
11 08 00	M82PTCEN	23 24 40	33.7	9.0-10.5			-15.6	-29	2289	No stop
11 12 40	---	23 29 20	33.8	9.4-10.5			-16.4	251	2307	11 08 01
11 13 30	J0958+65	23 30 11	29.8	10.6-10.5			-15.4	21	2307	11 13 30
11 16 00	---	23 32 41	29.9	10.8-10.5			-15.8	150	2317	11 13 31
11 16 00	M82PTCEN	23 32 41	33.9	9.8-10.4			-17.0	-29	2317	No stop
11 20 40	---	23 37 22	34.0	10.3-10.3			-17.9	251	2335	11 16 01
11 21 30	J0958+65	23 38 12	30.1	11.5-10.4			-16.7	21	2335	11 21 30
11 24 00	---	23 40 42	30.1	11.8-10.3			-17.2	150	2344	11 21 31
11 24 00	M82PTCEN	23 40 42	34.1	10.6-10.3			-18.5	-29	2344	No stop
11 28 40	---	23 45 23	34.3	11.1-10.2			-19.3	251	2362	11 24 01
11 29 30	J0958+65	23 46 13	30.3	12.4-10.2			-18.1	21	2362	11 29 30
11 32 00	---	23 48 44	30.4	12.7-10.2			-18.5	150	2372	11 29 31
11 32 00	M82PTCEN	23 48 44	34.4	11.4-10.1			-19.9	-29	2372	No stop
11 36 40	---	23 53 24	34.5	11.9-10.1			-20.7	251	2390	11 32 01
11 37 30	J0958+65	23 54 14	30.6	13.3-10.1			-19.5	21	2390	11 37 30
11 40 00	---	23 56 45	30.7	13.6-10.1			-19.9	150	2399	11 37 31
11 40 00	M82PTCEN	23 56 45	34.6	12.2-10.0			-21.3	-29	2399	No stop
11 46 40	---	00 03 26	34.8	12.8 -9.9			-22.5	371	2425	11 40 01
11 47 30	J0958+65	00 04 16	30.9	14.5 -9.9			-21.2	21	2425	11 47 30
11 50 00	---	00 06 47	31.0	14.7 -9.9			-21.6	150	2435	11 47 31
11 56 00	3C84	00 12 47	56.8	91.0 -3.1			-53.4	194	2435	11 56 00
12 04 00	---	00 20 49	58.0	92.7 -3.0			-53.3	480	2465	11 56 01
12 10 00	J0958+65	00 26 50	31.9	17.0 -9.6			-25.0	193	2465	12 10 00
12 12 00	---	00 28 50	31.9	17.2 -9.5			-25.3	120	2473	12 10 01
12 12 00	M82PTCEN	00 28 50	35.8	15.3 -9.5			-27.0	-28	2473	No stop
12 16 40	---	00 33 31	35.9	15.7 -9.4			-27.9	252	2491	12 12 01

Schedule for TORUN (Code Tr) Page 14

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

--- Mon 7 Mar 2016 Day 67 ---

Start UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
12 17 30	J0958+65	00 34 21	32.2	17.8	-9.4		-26.3	22	2491	12 17 30
12 20 00	---	00 36 51	32.3	18.1	-9.4		-26.7	150	2501	12 17 31
12 20 00	M82PTCEN	00 36 51	36.1	16.1	-9.3		-28.5	-28	2501	No stop
12 24 40	---	00 41 32	36.3	16.5	-9.3		-29.3	252	2519	12 20 01
12 25 30	J0958+65	00 42 22	32.6	18.7	-9.3		-27.6	22	2519	12 25 30
12 28 00	---	00 44 53	32.7	19.0	-9.3		-28.0	150	2528	12 25 31
12 28 00	M82PTCEN	00 44 53	36.4	16.8	-9.2		-29.9	-28	2528	No stop
12 32 40	---	00 49 34	36.6	17.3	-9.1		-30.7	252	2546	12 28 01
12 33 30	J0958+65	00 50 24	33.0	19.6	-9.2		-29.0	22	2546	12 33 30
12 36 00	---	00 52 54	33.1	19.8	-9.1		-29.4	150	2556	12 33 31
12 36 00	M82PTCEN	00 52 54	36.8	17.6	-9.1		-31.3	-28	2556	No stop
12 40 40	---	00 57 35	37.0	18.0	-9.0		-32.2	252	2574	12 36 01
12 41 30	J0958+65	00 58 25	33.4	20.4	-9.0		-30.3	22	2574	12 41 30
12 44 00	---	01 00 55	33.5	20.7	-9.0		-30.7	150	2583	12 41 31
12 44 00	M82PTCEN	01 00 55	37.2	18.3	-8.9		-32.8	-28	2583	No stop
12 48 40	---	01 05 36	37.4	18.7	-8.9		-33.6	252	2601	12 44 01
12 49 30	J0958+65	01 06 26	33.8	21.3	-8.9		-31.7	23	2601	12 49 30
12 52 00	---	01 08 57	33.9	21.5	-8.9		-32.1	150	2611	12 49 31
12 52 00	M82PTCEN	01 08 57	37.5	19.0	-8.8		-34.2	-27	2611	No stop
12 56 40	---	01 13 37	37.8	19.5	-8.7		-35.0	253	2629	12 52 01
12 57 30	J0958+65	01 14 28	34.3	22.1	-8.8		-33.0	23	2629	12 57 30
13 00 00	---	01 16 58	34.4	22.4	-8.7		-33.4	150	2638	12 57 31
13 00 00	M82PTCEN	01 16 58	37.9	19.8	-8.7		-35.6	-27	2638	No stop
13 04 40	---	01 21 39	38.2	20.2	-8.6		-36.5	253	2656	13 00 01
13 05 30	J0958+65	01 22 29	34.7	23.0	-8.6		-34.4	23	2656	13 05 30
13 08 00	---	01 24 59	34.9	23.2	-8.6		-34.8	150	2666	13 05 31
13 08 00	M82PTCEN	01 24 59	38.4	20.5	-8.5		-37.1	-27	2666	No stop
13 12 40	---	01 29 40	38.6	20.9	-8.5		-37.9	253	2684	13 08 01
13 13 30	J0958+65	01 30 30	35.2	23.8	-8.5		-35.7	23	2684	13 13 30
13 16 00	---	01 33 01	35.3	24.0	-8.5		-36.1	150	2694	13 13 31

Schedule for TORUN (Code Tr) Page 15

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 7 Mar 2016 Day 67 ---										
13 16 00	M82PTCEN	01 33 01	38.8	21.2	-8.4		-38.5	-27	2694	No stop
13 20 40	---	01 37 41	39.0	21.6	-8.3		-39.4	253	2712	13 16 01
13 21 30	J0958+65	01 38 32	35.7	24.6	-8.4		-37.1	23	2712	13 21 30
13 24 00	---	01 41 02	35.8	24.9	-8.3		-37.5	150	2721	13 21 31
13 24 00	M82PTCEN	01 41 02	39.2	21.9	-8.3		-40.0	-27	2721	No stop
13 28 40	---	01 45 43	39.5	22.3	-8.2		-40.8	253	2739	13 24 01
13 29 30	J0958+65	01 46 33	36.2	25.4	-8.2		-38.4	24	2739	13 29 30
13 32 00	---	01 49 03	36.4	25.7	-8.2		-38.8	150	2749	13 29 31
13 32 00	M82PTCEN	01 49 03	39.7	22.6	-8.1		-41.4	-26	2749	No stop
13 36 40	---	01 53 44	39.9	23.0	-8.1		-42.2	254	2767	13 32 01
13 37 30	J0958+65	01 54 34	36.7	26.2	-8.1		-39.8	24	2767	13 37 30
13 40 00	---	01 57 05	36.9	26.5	-8.0		-40.2	150	2776	13 37 31
13 40 00	M82PTCEN	01 57 05	40.1	23.2	-8.0		-42.8	-26	2776	No stop
13 44 40	---	02 01 45	40.4	23.6	-7.9		-43.7	254	2794	13 40 01
13 45 30	J0958+65	02 02 35	37.3	27.0	-8.0		-41.1	24	2794	13 45 30
13 48 00	---	02 05 06	37.4	27.3	-7.9		-41.5	150	2804	13 45 31
13 48 00	M82PTCEN	02 05 06	40.6	23.9	-7.9		-44.3	-26	2804	No stop
13 52 40	---	02 09 47	40.9	24.3	-7.8		-45.1	254	2822	13 48 01
13 53 30	J0958+65	02 10 37	37.8	27.8	-7.8		-42.5	24	2822	13 53 30
13 56 00	---	02 13 07	38.0	28.0	-7.8		-42.9	150	2831	13 53 31
13 56 00	M82PTCEN	02 13 07	41.1	24.6	-7.7		-45.7	-26	2831	No stop
14 00 40	---	02 17 48	41.4	24.9	-7.7		-46.6	254	2849	13 56 01
14 01 30	J0958+65	02 18 38	38.4	28.6	-7.7		-43.8	25	2849	14 01 30
14 04 00	---	02 21 09	38.6	28.8	-7.6		-44.2	150	2859	14 01 31
14 04 00	M82PTCEN	02 21 09	41.6	25.2	-7.6		-47.2	-25	2859	No stop
14 08 40	---	02 25 49	41.9	25.6	-7.5		-48.1	255	2877	14 04 01
14 09 30	J0958+65	02 26 39	39.0	29.3	-7.6		-45.2	25	2877	14 09 30
14 12 00	---	02 29 10	39.1	29.6	-7.5		-45.6	150	2887	14 09 31
14 12 00	M82PTCEN	02 29 10	42.1	25.8	-7.5		-48.7	-25	2887	No stop
14 16 40	---	02 33 51	42.5	26.2	-7.4		-49.5	255	2904	14 12 01

Schedule for TORUN (Code Tr) Page 16

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

--- Mon 7 Mar 2016 Day 67 ---

Start UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
14 17 30	J0958+65	02 34 41	39.6	30.1	-7.4		-46.5	25	2904	14 17 30
14 20 00	---	02 37 11	39.7	30.3	-7.4		-46.9	150	2914	14 17 31
14 20 00	M82PTCEN	02 37 11	42.7	26.5	-7.3		-50.1	-25	2914	No stop
14 24 40	---	02 41 52	43.0	26.8	-7.3		-51.0	255	2932	14 20 01
14 25 30	J0958+65	02 42 42	40.2	30.8	-7.3		-47.9	25	2932	14 25 30
14 28 00	---	02 45 12	40.4	31.0	-7.2		-48.3	150	2942	14 25 31
14 28 00	M82PTCEN	02 45 12	43.2	27.1	-7.2		-51.6	-25	2942	No stop
14 32 40	---	02 49 53	43.5	27.4	-7.1		-52.5	255	2960	14 28 01
14 33 30	J0958+65	02 50 43	40.8	31.5	-7.2		-49.2	26	2960	14 33 30
14 36 00	---	02 53 14	41.0	31.8	-7.1		-49.6	150	2969	14 33 31
14 36 00	M82PTCEN	02 53 14	43.8	27.6	-7.1		-53.1	-24	2969	No stop
14 40 40	---	02 57 55	44.1	28.0	-7.0		-53.9	256	2987	14 36 01
14 41 30	J0958+65	02 58 45	41.4	32.3	-7.0		-50.6	26	2987	14 41 30
14 44 00	---	03 01 15	41.6	32.5	-7.0		-51.0	150	2997	14 41 31
14 44 00	M82PTCEN	03 01 15	44.3	28.2	-6.9		-54.6	-24	2997	No stop
14 48 40	---	03 05 56	44.7	28.5	-6.9		-55.4	256	3015	14 44 01
14 49 30	J0958+65	03 06 46	42.1	33.0	-6.9		-51.9	26	3015	14 49 30
14 52 00	---	03 09 16	42.3	33.2	-6.8		-52.4	150	3024	14 49 31
14 52 00	M82PTCEN	03 09 16	44.9	28.8	-6.8		-56.0	-24	3024	No stop
14 56 40	---	03 13 57	45.3	29.1	-6.7		-56.9	256	3042	14 52 01
14 57 30	J0958+65	03 14 47	42.7	33.6	-6.8		-53.3	26	3042	14 57 30
15 00 00	---	03 17 18	42.9	33.8	-6.7		-53.7	150	3052	14 57 31
15 00 00	M82PTCEN	03 17 18	45.5	29.3	-6.7		-57.5	-24	3052	No stop
15 04 40	---	03 21 58	45.8	29.6	-6.6		-58.4	256	3070	15 00 01
15 05 30	J0958+65	03 22 49	43.4	34.3	-6.6		-54.7	26	3070	15 05 30
15 08 00	---	03 25 19	43.6	34.5	-6.6		-55.1	150	3079	15 05 31
15 08 00	M82PTCEN	03 25 19	46.1	29.8	-6.5		-59.0	-24	3079	No stop
15 12 40	---	03 30 00	46.4	30.1	-6.5		-59.9	256	3097	15 08 01
15 13 30	J0958+65	03 30 50	44.1	35.0	-6.5		-56.0	25	3097	15 13 30
15 16 00	---	03 33 20	44.3	35.2	-6.4		-56.5	150	3107	15 13 31

Schedule for TORUN (Code Tr) Page 17

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 7 Mar 2016 Day 67 ---										
15 16 00	M82PTCEN	03 33 20	46.7	30.4	-6.4		-60.5	-25	3107	No stop
15 20 40	---	03 38 01	47.1	30.6	-6.3		-61.4	255	3125	15 16 01
15 21 30	J0958+65	03 38 51	44.8	35.6	-6.4		-57.4	25	3125	15 21 30
15 24 00	---	03 41 22	45.0	35.8	-6.3		-57.8	150	3135	15 21 31
15 24 00	M82PTCEN	03 41 22	47.3	30.9	-6.3		-62.1	-25	3135	No stop
15 28 40	---	03 46 02	47.7	31.1	-6.2		-63.0	255	3153	15 24 01
15 29 30	J0958+65	03 46 53	45.5	36.2	-6.2		-58.8	25	3153	15 29 30
15 32 00	---	03 49 23	45.7	36.4	-6.2		-59.2	150	3162	15 29 31
15 32 00	M82PTCEN	03 49 23	47.9	31.3	-6.1		-63.6	-25	3162	No stop
15 36 40	---	03 54 04	48.3	31.6	-6.1		-64.5	255	3180	15 32 01
15 37 30	J0958+65	03 54 54	46.2	36.8	-6.1		-60.2	25	3180	15 37 30
15 40 00	---	03 57 24	46.4	37.0	-6.0		-60.6	150	3190	15 37 31
15 40 00	M82PTCEN	03 57 24	48.6	31.8	-6.0		-65.1	-25	3190	No stop
15 44 40	---	04 02 05	48.9	32.0	-5.9		-66.0	255	3208	15 40 01
15 45 30	J0958+65	04 02 55	46.9	37.4	-6.0		-61.6	24	3208	15 45 30
15 48 00	---	04 05 26	47.2	37.6	-5.9		-62.0	150	3217	15 45 31
15 48 00	M82PTCEN	04 05 26	49.2	32.2	-5.9		-66.7	-26	3217	No stop
15 52 40	---	04 10 06	49.6	32.5	-5.8		-67.6	254	3235	15 48 01
15 53 30	J0958+65	04 10 57	47.7	38.0	-5.8		-63.0	24	3235	15 53 30
15 56 00	---	04 13 27	47.9	38.2	-5.8		-63.4	150	3245	15 53 31
15 56 00	M82PTCEN	04 13 27	49.8	32.6	-5.7		-68.3	-26	3245	No stop
16 00 40	---	04 18 08	50.2	32.9	-5.7		-69.2	254	3263	15 56 01
16 01 30	J0958+65	04 18 58	48.4	38.5	-5.7		-64.4	24	3263	16 01 30
16 04 00	---	04 21 28	48.7	38.7	-5.6		-64.8	150	3272	16 01 31
16 04 00	M82PTCEN	04 21 28	50.5	33.0	-5.6		-69.8	-26	3272	No stop
16 08 40	---	04 26 09	50.9	33.2	-5.5		-70.8	254	3290	16 04 01
16 09 30	J0958+65	04 26 59	49.2	39.1	-5.6		-65.8	23	3290	16 09 30
16 12 00	---	04 29 30	49.4	39.2	-5.5		-66.3	150	3300	16 09 31
16 12 00	M82PTCEN	04 29 30	51.2	33.4	-5.5		-71.4	-27	3300	No stop
16 16 40	---	04 34 10	51.5	33.6	-5.4		-72.4	253	3318	16 12 01

Schedule for TORUN (Code Tr) Page 18

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

--- Mon 7 Mar 2016 Day 67 ---

Start UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
16 17 30	J0958+65	04 35 00	49.9	39.6	-5.4		-67.3	23	3318	16 17 30
16 20 00	---	04 37 31	50.2	39.7	-5.4		-67.7	150	3328	16 17 31
16 20 00	M82PTCEN	04 37 31	51.8	33.7	-5.3		-73.0	-27	3328	No stop
16 24 40	---	04 42 12	52.2	33.9	-5.3		-74.0	253	3346	16 20 01
16 25 30	J0958+65	04 43 02	50.7	40.1	-5.3		-68.7	23	3346	16 25 30
16 28 00	---	04 45 32	51.0	40.2	-5.2		-69.2	150	3355	16 25 31
16 28 00	M82PTCEN	04 45 32	52.5	34.0	-5.2		-74.7	-27	3355	No stop
16 32 50	---	04 50 23	52.9	34.2	-5.1		-75.7	263	3374	16 28 01
16 33 30	J0958+65	04 51 03	51.5	40.5	-5.1		-70.2	12	3374	16 33 30
16 36 00	---	04 53 33	51.7	40.7	-5.1		-70.6	150	3383	16 33 31
16 36 00	M82PTCEN	04 53 33	53.2	34.3	-5.1		-76.3	-28	3383	No stop
16 40 50	---	04 58 24	53.6	34.5	-5.0		-77.3	262	3402	16 36 01
16 41 30	J0958+65	04 59 04	52.3	41.0	-5.0		-71.7	12	3402	16 41 30
16 44 00	---	05 01 35	52.5	41.1	-5.0		-72.1	150	3412	16 41 31
16 44 00	M82PTCEN	05 01 35	53.9	34.6	-4.9		-78.0	-28	3412	No stop
16 50 50	---	05 08 26	54.4	34.8	-4.8		-79.4	382	3438	16 44 01
16 51 30	J0958+65	05 09 06	53.3	41.5	-4.8		-73.5	12	3438	16 51 30
16 54 00	---	05 11 36	53.5	41.6	-4.8		-74.0	150	3447	16 51 31
16 57 00	J0927+39	05 14 37	45.4	81.9	-4.2		-49.9	85	3447	16 57 00
17 03 00	---	05 20 38	46.3	83.0	-4.1		-50.0	360	3471	16 57 01
17 06 00	J0958+65	05 23 38	54.7	42.2	-4.6		-76.3	83	3471	17 06 00
17 09 00	---	05 26 39	55.0	42.3	-4.6		-76.9	180	3482	17 06 01
17 21 40	3C84	05 39 21	64.2	257.5	2.3		51.6	318	3482	17 21 40
17 29 40	---	05 47 23	63.0	259.6	2.4		52.1	480	3513	17 21 41
17 37 40	J0958+65	05 55 24	58.0	403.3	-4.1		-82.6	178	3513	17 37 40
17 40 40	---	05 58 24	58.3	403.3	-4.0		-83.2	180	3524	17 37 41
17 40 40	M82PTCEN	05 58 24	58.8	395.5	-4.0		-90.6	-31	3524	No stop
17 45 10	---	06 02 55	59.2	395.5	-3.9		-91.6	239	3542	17 40 41
17 46 10	J0958+65	06 03 55	58.8	403.4	-3.9		-84.4	29	3542	17 46 10
17 48 40	---	06 06 26	59.1	403.5	-3.9		-84.9	150	3551	17 46 11

Schedule for TORUN (Code Tr) Page 19

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 7 Mar 2016 Day 67 ---										
17 48 40	M82PTCEN	06 06 26	59.5	395.4	-3.8		-92.5	-31	3551	No stop
17 53 10	---	06 10 56	59.9	395.4	-3.8		-93.6	239	3569	17 48 41
17 54 10	J0958+65	06 11 57	59.7	403.6	-3.8		-86.1	29	3569	17 54 10
17 56 40	---	06 14 27	59.9	403.6	-3.8		-86.6	150	3578	17 54 11
17 56 40	M82PTCEN	06 14 27	60.2	395.4	-3.7		-94.4	-32	3578	No stop
18 01 10	---	06 18 58	60.6	395.3	-3.6		-95.6	238	3596	17 56 41
18 02 10	J0958+65	06 19 58	60.5	403.7	-3.7		-87.8	28	3596	18 02 10
18 04 40	---	06 22 28	60.8	403.7	-3.6		-88.4	150	3605	18 02 11
18 04 40	M82PTCEN	06 22 28	60.9	395.2	-3.6		-96.4	-32	3605	No stop
18 09 10	---	06 26 59	61.3	395.1	-3.5		-97.6	238	3622	18 04 41
18 10 10	J0958+65	06 27 59	61.3	403.7	-3.5		-89.6	28	3622	18 10 10
18 12 40	---	06 30 30	61.6	403.7	-3.5		-90.2	150	3632	18 10 11
18 12 40	M82PTCEN	06 30 30	61.6	395.0	-3.4		-98.5	-32	3632	No stop
18 17 10	---	06 35 00	61.9	394.9	-3.4		-99.7	238	3649	18 12 41
18 18 10	J0958+65	06 36 00	62.2	403.7	-3.4		-91.5	27	3649	18 18 10
18 20 40	---	06 38 31	62.4	403.7	-3.4		-92.1	150	3659	18 18 11
18 20 40	M82PTCEN	06 38 31	62.2	394.8	-3.3		-100.6	-33	3659	No stop
18 25 10	---	06 43 02	62.6	394.6	-3.2		-101.8	237	3676	18 20 41
18 26 10	J0958+65	06 44 02	63.0	403.6	-3.3		-93.4	27	3676	18 26 10
18 28 40	---	06 46 32	63.3	403.6	-3.2		-94.0	150	3686	18 26 11
18 28 40	M82PTCEN	06 46 32	62.9	394.5	-3.2		-102.7	-33	3686	No stop
18 33 10	---	06 51 03	63.3	394.3	-3.1		-104.0	237	3703	18 28 41
18 34 10	J0958+65	06 52 03	63.8	403.5	-3.1		-95.3	27	3703	18 34 10
18 36 40	---	06 54 34	64.1	403.4	-3.1		-95.9	150	3713	18 34 11
18 36 40	M82PTCEN	06 54 34	63.6	394.1	-3.0		-104.9	-34	3713	No stop
18 41 10	---	06 59 04	64.0	393.9	-3.0		-106.2	236	3730	18 36 41
18 42 10	J0958+65	07 00 04	64.7	403.3	-3.0		-97.3	26	3730	18 42 10
18 44 40	---	07 02 35	64.9	403.2	-3.0		-98.0	150	3740	18 42 11
18 44 40	M82PTCEN	07 02 35	64.3	393.7	-2.9		-107.2	-34	3740	No stop
18 49 10	---	07 07 06	64.7	393.4	-2.8		-108.5	236	3757	18 44 41

Schedule for TORUN (Code Tr) Page 20

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 7 Mar 2016 Day 67 ---										
18 50 10	J0958+65	07 08 06	65.5	403.0	-2.9		-99.4	26	3757	18 50 10
18 52 40	---	07 10 36	65.7	402.9	-2.8		-100.1	150	3767	18 50 11
18 52 40	M82PTCEN	07 10 36	64.9	393.2	-2.8		-109.6	-34	3767	No stop
18 57 10	---	07 15 07	65.3	392.8	-2.7		-110.9	236	3784	18 52 41
18 58 10	J0958+65	07 16 07	66.3	402.6	-2.7		-101.6	25	3784	18 58 10
19 00 40	---	07 18 37	66.6	402.5	-2.7		-102.3	150	3794	18 58 11
19 00 40	M82PTCEN	07 18 37	65.6	392.6	-2.6		-112.0	-35	3794	No stop
19 05 10	---	07 23 08	66.0	392.2	-2.6		-113.4	235	3811	19 00 41
19 06 10	J0958+65	07 24 08	67.1	402.1	-2.6		-103.8	25	3811	19 06 10
19 08 40	---	07 26 39	67.4	402.0	-2.6		-104.6	150	3821	19 06 11
19 08 40	M82PTCEN	07 26 39	66.2	391.9	-2.5		-114.5	-35	3821	No stop
19 13 10	---	07 31 10	66.6	391.5	-2.4		-115.9	235	3838	19 08 41
19 14 10	J0958+65	07 32 10	67.9	401.6	-2.5		-106.2	25	3838	19 14 10
19 16 40	---	07 34 40	68.2	401.4	-2.4		-106.9	150	3847	19 14 11
19 16 40	M82PTCEN	07 34 40	66.9	391.1	-2.4		-117.1	-36	3847	No stop
19 21 10	---	07 39 11	67.2	390.7	-2.3		-118.5	234	3865	19 16 41
19 22 10	J0958+65	07 40 11	68.7	400.9	-2.3		-108.6	24	3865	19 22 10
19 24 40	---	07 42 41	69.0	400.7	-2.3		-109.4	150	3874	19 22 11
19 24 40	M82PTCEN	07 42 41	67.5	390.3	-2.2		-119.7	-36	3874	No stop
19 29 10	---	07 47 12	67.8	389.7	-2.2		-121.3	234	3892	19 24 41
19 30 10	J0958+65	07 48 12	69.5	400.1	-2.2		-111.2	24	3892	19 30 10
19 32 40	---	07 50 43	69.7	399.8	-2.2		-112.0	150	3901	19 30 11
19 32 40	M82PTCEN	07 50 43	68.1	389.3	-2.1		-122.5	-36	3901	No stop
19 37 10	---	07 55 13	68.4	388.7	-2.0		-124.1	234	3919	19 32 41
19 38 10	J0958+65	07 56 14	70.3	399.2	-2.1		-113.9	24	3919	19 38 10
19 40 40	---	07 58 44	70.5	398.9	-2.0		-114.8	150	3928	19 38 11
19 40 40	M82PTCEN	07 58 44	68.7	388.3	-2.0		-125.4	-36	3928	No stop
19 45 10	---	08 03 15	69.0	387.6	-1.9		-127.0	234	3946	19 40 41
19 46 10	J0958+65	08 04 15	71.0	398.1	-1.9		-116.7	24	3946	19 46 10
19 48 40	---	08 06 45	71.2	397.7	-1.9		-117.6	150	3955	19 46 11

Schedule for TORUN (Code Tr) Page 21

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 7 Mar 2016 Day 67 ---										
19 48 40	M82PTCEN	08 06 45	69.2	387.1	-1.8		-128.3	-36	3955	No stop
19 53 10	---	08 11 16	69.5	386.4	-1.8		-130.0	234	3972	19 48 41
19 54 10	J0958+65	08 12 16	71.7	396.9	-1.8		-119.7	24	3972	19 54 10
19 56 40	---	08 14 47	72.0	396.5	-1.8		-120.7	150	3982	19 54 11
19 56 40	M82PTCEN	08 14 47	69.8	385.8	-1.7		-131.4	-36	3982	No stop
20 01 10	---	08 19 17	70.0	385.0	-1.6		-133.2	234	3999	19 56 41
20 02 10	J0958+65	08 20 18	72.5	395.5	-1.7		-122.9	24	3999	20 02 10
20 04 40	---	08 22 48	72.7	395.0	-1.6		-123.9	150	4009	20 02 11
20 04 40	M82PTCEN	08 22 48	70.3	384.4	-1.6		-134.6	-36	4009	No stop
20 09 10	---	08 27 19	70.5	383.6	-1.5		-136.4	234	4026	20 04 41
20 10 10	J0958+65	08 28 19	73.1	393.9	-1.5		-126.2	24	4026	20 10 10
20 12 40	---	08 30 49	73.3	393.3	-1.5		-127.3	150	4036	20 10 11
20 12 40	M82PTCEN	08 30 49	70.8	382.9	-1.4		-137.9	-36	4036	No stop
20 17 10	---	08 35 20	71.0	382.0	-1.4		-139.8	234	4053	20 12 41
20 18 10	J0958+65	08 36 20	73.8	392.1	-1.4		-129.8	25	4053	20 18 10
20 20 40	---	08 38 51	74.0	391.5	-1.4		-130.9	150	4063	20 18 11
20 20 40	M82PTCEN	08 38 51	71.2	381.3	-1.3		-141.3	-36	4063	No stop
20 25 10	---	08 43 21	71.4	380.3	-1.2		-143.3	234	4080	20 20 41
20 26 10	J0958+65	08 44 22	74.4	390.1	-1.3		-133.5	25	4080	20 26 10
20 28 40	---	08 46 52	74.6	389.4	-1.2		-134.8	150	4090	20 26 11
20 28 40	M82PTCEN	08 46 52	71.6	379.5	-1.2		-144.9	-35	4090	No stop
20 33 10	---	08 51 23	71.8	378.5	-1.1		-146.9	235	4107	20 28 41
20 34 10	J0958+65	08 52 23	75.0	387.8	-1.1		-137.5	26	4107	20 34 10
20 36 40	---	08 54 53	75.2	387.1	-1.1		-138.8	150	4117	20 34 11
20 36 40	M82PTCEN	08 54 53	72.0	377.6	-1.0		-148.5	-34	4117	No stop
20 41 10	---	08 59 24	72.2	376.5	-1.0		-150.6	236	4134	20 36 41
20 42 10	J0958+65	09 00 24	75.5	385.3	-1.0		-141.8	27	4134	20 42 10
20 44 40	---	09 02 55	75.7	384.5	-1.0		-143.2	150	4144	20 42 11
20 44 40	M82PTCEN	09 02 55	72.4	375.7	-0.9		-152.3	-33	4144	No stop
20 49 10	---	09 07 25	72.5	374.5	-0.8		-154.5	237	4161	20 44 41

Schedule for TORUN (Code Tr) Page 22

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 7 Mar 2016 Day 67 ---										
20 50 10	J0958+65	09 08 25	76.0	382.6	-0.9		-146.3	28	4161	20 50 10
20 52 40	---	09 10 56	76.2	381.7	-0.8		-147.7	150	4171	20 50 11
20 52 40	M82PTCEN	09 10 56	72.7	373.6	-0.8		-156.2	-31	4171	No stop
20 57 00	---	09 15 17	72.8	372.4	-0.7		-158.3	229	4187	20 52 41
20 58 00	J0958+65	09 16 17	76.5	379.6	-0.7		-150.9	30	4187	20 58 00
21 00 30	---	09 18 47	76.6	378.7	-0.7		-152.4	150	4197	20 58 01
21 00 30	M82PTCEN	09 18 47	72.9	371.4	-0.6		-160.1	-30	4197	No stop
21 04 50	---	09 23 08	73.0	370.2	-0.6		-162.2	230	4213	21 00 31
21 05 50	J0958+65	09 24 08	76.8	376.5	-0.6		-155.7	32	4213	21 05 50
21 08 20	---	09 26 38	76.9	375.4	-0.6		-157.3	150	4223	21 05 51
21 08 20	M82PTCEN	09 26 38	73.1	369.2	-0.5		-164.0	-28	4223	No stop
21 12 40	---	09 30 59	73.2	367.9	-0.4		-166.3	232	4240	21 08 21
21 13 40	J0958+65	09 31 59	77.1	373.1	-0.5		-160.8	32	4240	21 13 40
21 16 10	---	09 34 30	77.2	372.0	-0.4		-162.4	150	4249	21 13 41
21 16 10	M82PTCEN	09 34 30	73.3	366.9	-0.4		-168.1	-29	4249	No stop
21 20 30	---	09 38 50	73.4	365.6	-0.3		-170.3	231	4266	21 16 11
21 21 30	J0958+65	09 39 51	77.4	369.6	-0.3		-166.0	31	4266	21 21 30
21 24 00	---	09 42 21	77.4	368.4	-0.3		-167.7	150	4276	21 21 31
21 24 00	M82PTCEN	09 42 21	73.4	364.5	-0.2		-172.2	-29	4276	No stop
21 28 20	---	09 46 42	73.4	363.2	-0.2		-174.4	231	4292	21 24 01
21 29 20	J0958+65	09 47 42	77.5	365.9	-0.2		-171.4	31	4292	21 29 20
21 31 50	---	09 50 12	77.5	364.7	-0.2		-173.1	150	4302	21 29 21
21 31 50	M82PTCEN	09 50 12	73.5	362.1	-0.1		-176.3	-29	4302	No stop
21 36 10	---	09 54 33	73.5	360.8	-0.0		-178.6	231	4319	21 31 51
21 37 10	J0958+65	09 55 33	77.6	362.2	-0.1		-176.9	31	4319	21 37 10
21 39 40	---	09 58 04	77.6	361.0	-0.0		-178.6	150	4328	21 37 11
21 39 40	M82PTCEN	09 58 04	73.5	359.7	0.0		179.6	-29	4328	No stop
21 44 00	---	10 02 24	73.5	358.4	0.1		177.3	231	4345	21 39 41
21 45 00	J0958+65	10 03 24	77.6	358.4	0.1		177.6	31	4345	21 45 00
21 47 30	---	10 05 55	77.6	357.2	0.1		175.9	150	4354	21 45 01

Schedule for TORUN (Code Tr) Page 23

High-resolution, multi-frequency mapping of the compact sources in M82

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

--- Mon 7 Mar 2016 Day 67 ---

Start UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
21 47 30	M82PTCEN	10 05 55	73.5	357.3	0.1		175.4	-29	4354	No stop
21 51 50	---	10 10 16	73.4	356.0	0.2		173.1	231	4371	21 47 31
21 52 50	J0958+65	10 11 16	77.5	354.6	0.2		172.2	31	4371	21 52 50
21 55 20	---	10 13 46	77.5	353.4	0.2		170.4	150	4381	21 52 51
21 55 20	M82PTCEN	10 13 46	73.4	355.0	0.3		171.3	-29	4381	No stop
21 59 40	---	10 18 07	73.3	353.7	0.3		169.0	231	4397	21 55 21
22 00 40	J0958+65	10 19 07	77.4	350.9	0.3		166.8	31	4397	22 00 40
22 03 10	---	10 21 37	77.3	349.8	0.4		165.1	150	4407	22 00 41
22 03 10	M82PTCEN	10 21 37	73.3	352.6	0.4		167.2	-29	4407	No stop
22 07 30	---	10 25 58	73.2	351.3	0.5		165.0	231	4424	22 03 11
22 08 30	J0958+65	10 26 58	77.2	347.4	0.4		161.5	31	4424	22 08 30
22 11 00	---	10 29 29	77.1	346.3	0.5		159.9	150	4433	22 08 31
22 11 00	M82PTCEN	10 29 29	73.1	350.3	0.5		163.2	-29	4433	No stop
22 15 20	---	10 33 49	73.0	349.1	0.6		161.0	231	4450	22 11 01
22 16 20	J0958+65	10 34 50	76.9	344.0	0.6		156.5	31	4450	22 16 20
22 18 50	---	10 37 20	76.8	342.9	0.6		154.9	150	4460	22 16 21
22 18 50	M82PTCEN	10 37 20	72.9	348.1	0.7		159.2	-29	4460	No stop
22 23 10	---	10 41 41	72.7	346.9	0.7		157.1	231	4476	22 18 51
22 24 10	J0958+65	10 42 41	76.5	340.8	0.7		151.6	32	4476	22 24 10
22 26 40	---	10 45 11	76.4	339.8	0.8		150.1	150	4486	22 24 11
22 26 40	M82PTCEN	10 45 11	72.6	346.0	0.8		155.3	-28	4486	No stop
22 30 50	---	10 49 22	72.4	344.9	0.9		153.3	222	4502	22 26 41
22 31 40	J0958+65	10 50 12	76.1	338.0	0.8		147.1	21	4502	22 31 40
22 33 40	---	10 52 12	76.0	337.2	0.9		145.9	120	4510	22 31 41
22 33 40	M82PTCEN	10 52 12	72.3	344.2	0.9		152.0	-29	4510	No stop
22 37 50	---	10 56 23	72.1	343.1	1.0		150.0	221	4526	22 33 41
22 38 40	J0958+65	10 57 13	75.7	335.5	1.0		143.1	20	4526	22 38 40
22 40 40	---	10 59 14	75.6	334.8	1.0		142.0	120	4533	22 38 41
22 40 40	M82PTCEN	10 59 14	72.0	342.4	1.0		148.7	-30	4533	No stop
22 47 10	---	11 05 45	71.7	340.9	1.1		145.7	360	4558	22 40 41

```
Schedule for TORUN     (Code Tr )                                  Page  24
              High-resolution, multi-frequency mapping of the compact sources in M82
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Mon   7 Mar 2016   Day  67 ---

22 48 10  J0958+65     11 06 45  75.1 332.5  1.1     138.0    28     4558   22 48 10
22 50 40  ---          11 09 15  74.9 331.7  1.2     136.8   150     4568   22 48 11

22 58 40  3C84         11 17 17  18.2 316.5  7.9      33.5   255     4568   22 58 40
23 06 40  ---          11 25 18  17.4 317.8  8.1      32.6   480     4599   22 58 41

23 14 40  J0958+65     11 33 19  73.0 325.8  1.6     125.6   256     4599   23 14 40
23 16 40  ---          11 35 20  72.8 325.4  1.6     124.7   120     4606   23 14 41

23 32 03  J0927+39     11 50 45  61.9 254.3  2.4      48.0   758     4606   23 32 03
23 38 03  ---          11 56 46  61.0 255.9  2.5      48.5   360     4629   23 32 04

23 46 03  J0958+65     12 04 47  70.2 320.7  2.1     113.6   334     4629   23 46 03
23 49 03  ---          12 07 48  69.9 320.3  2.1     112.5   180     4641   23 46 04

23 49 03  M82PTCEN     12 07 48  67.8 330.2  2.2     121.1   -35     4641   No stop
23 56 53  ---          12 15 39  67.2 329.3  2.3     118.4   435     4671   23 49 04

23 57 43  J0958+65     12 16 29  69.0 319.4  2.3     109.7    15     4671   23 57 43
23 59 58  ---          12 18 45  68.8 319.2  2.3     109.0   135     4680   23 57 44



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: sess116.L512glob

   Setup group:   20         Station: TORUN            Total bit rate:   512
   Format: MARK5B            Bits per sample: 2        Sample rate: 16.000
   Number of channels: 16    DBE type: DBBC_DDC        Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00
            2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00
  Net SB=         L         L         U         U         L         L         U         U
                  L         L         U         U         L         L         U         U
  IF SB =         L         L         L         L         L         L         L         L
                  L         L         L         L         L         L         L         L
  Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
                RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
  BBC   =         1         5         1         5         2         6         2         6
                  3         7         3         7         4         8         4         8
  BBC SB=         U         U         L         L         U         U         L         L
                  U         U         L         L         U         U         L         L
  IF    =        A1        B1        A1        B1        A1        B1        A1        B1
                 A1        B1        A1        B1        A1        B1        A1        B1

 The following frequency sets based on these setups were used.

  Frequency Set:   6  Setup file default.  Used with PCAL = off
  LO sum=   1634.25  1634.25  1634.25  1634.25  1650.25  1650.25  1650.25  1650.25
            1666.25  1666.25  1666.25  1666.25  1682.25  1682.25  1682.25  1682.25
  BBC fr=    665.75   665.75   665.75   665.75   649.75   649.75   649.75   649.75
             633.75   633.75   633.75   633.75   617.75   617.75   617.75   617.75
  Bandwd=      8.00     8.00     8.00     8.00     8.00     8.00     8.00     8.00
               8.00     8.00     8.00     8.00     8.00     8.00     8.00     8.00
   Matching frequency sets:   6

  Track assignments are:
   track1=   2, 10, 18, 26,  4, 12, 20, 28,  6, 14, 22, 30,  8, 16, 24, 32
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                       (B1950)            (J2000)            (Date)            (mas)

* M82PTCEN          09 51 42.970082   * 09 55 51.700000     09 57 13.357469       0.00
                    69 55 00.43524    * 69 40 46.70000      69 36 06.47889        0.00

* 3C84              03 16 29.567263   * 03 19 48.160094     03 20 52.097105       1.30
  J0319+4130        41 19 51.91701    * 41 30 42.10413      41 34 08.62570        2.69
  0316+413          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
  J0319+41          GSFC 2015a astro solution, unpublished  10208 observations.

  4C39.25           09 23 55.319215   * 09 27 03.013936     09 28 04.588754       0.30
  J0927+3902        39 15 23.56645    * 39 02 20.85186      38 57 59.32276        0.16
  0923+392          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
* J0927+39          GSFC 2015a astro solution, unpublished 245753 observations.

  0954+658          09 54 57.847923   * 09 58 47.245104     10 00 02.566321       0.02
  J0958+6533        65 48 15.53888    * 65 33 54.81807      65 29 11.75369        0.01
* J0958+65          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
                    GSFC 2015a astro solution, unpublished  13811 observations.
```

eg078etr

Ultra Deep EVN Observations of HDF North

PI: *Michael Garrett*

```
Address:  ASTRON

Observing mode:
Schedule for TORUN     (Code Tr )                                   Page   2
               Ultra Deep EVN Observations of HDF North
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------
 --- Tue   8 Mar 2016   Day  68 ---
 Next scan frequencies:  1610.49  1610.49  1610.49  1610.49  1642.49  1642.49  1642.49  1642.49
                         1674.49  1674.49  1674.49  1674.49  1706.49  1706.49  1706.49  1706.49
 Next BBC frequencies:    689.51   689.51   689.51   689.51   657.51   657.51   657.51   657.51
                          625.51   625.51   625.51   625.51   593.51   593.51   593.51   593.51
 Next scan bandwidths:     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
                           16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00

01 00 00  J1241+602    13 18 56  81.3 -31.4  0.6     140.9     0        0   01 00 00
01 05 00  ---          13 23 57  80.9 -34.4  0.7     136.9   300       38   01 00 01

01 05 30  J1241+602    13 24 27  80.8 -34.7  0.7     136.5    23       38   01 05 30
01 07 00  ---          13 25 57  80.7 -35.5  0.7     135.3    90       50   01 05 31

01 07 15  J1234+619    13 26 12  78.9 -32.8  0.9     136.3    -6       50   01 07 15
01 08 45  ---          13 27 43  78.8 -33.5  0.9     135.4    84       62   01 07 16

01 08 45  P1           13 27 43  78.8 -31.0  0.8     138.4   -19       62   No stop
01 16 10  ---          13 35 09  78.2 -34.2  1.0     133.7   426      119   01 08 46

01 16 30  J1234+619    13 35 29  78.1 -36.6  1.0     130.6     1      119   01 16 30
01 18 00  ---          13 36 59  77.9 -37.1  1.0     129.7    90      130   01 16 31

01 18 00  P1           13 36 59  78.0 -34.9  1.0     132.6   -18      130   No stop
01 25 30  ---          13 44 30  77.4 -37.5  1.1     128.3   432      188   01 18 01

01 25 30  J1234+619    13 44 30  77.2 -39.6  1.2     125.6   -18      188   No stop
01 27 00  ---          13 46 01  77.1 -40.1  1.2     124.8    72      199   01 25 31

01 27 00  P1           13 46 01  77.2 -38.0  1.1     127.5   -18      199   No stop
01 33 54  ---          13 52 56  76.6 -40.1  1.2     124.0   396      252   01 27 01

01 34 24  J1241+602    13 53 26  77.9 -46.6  1.2     118.5     2      252   01 34 24
01 35 54  ---          13 54 56  77.8 -47.0  1.2     117.8    90      264   01 34 25

01 36 09  J1234+619    13 55 11  76.2 -42.6  1.3     120.4    -9      264   01 36 09
01 37 39  ---          13 56 41  76.0 -43.0  1.4     119.7    81      276   01 36 10

01 37 39  P2           13 56 41  76.1 -41.4  1.3     121.7   -16      276   No stop
01 45 04  ---          14 04 08  75.3 -43.2  1.5     118.3   429      333   01 37 40

01 45 24  J1234+619    14 04 28  75.2 -44.7  1.5     116.3     4      333   01 45 24
01 46 54  ---          14 05 58  75.1 -45.0  1.5     115.7    90      344   01 45 25
```

Schedule for TORUN (Code Tr) Page 3

Ultra Deep EVN Observations of HDF North

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 8 Mar 2016 Day 68 ---										
01 46 54	P2	14 05 58	75.2	-43.5	1.5		117.6	-16	344	No stop
01 54 24	---	14 13 29	74.4	-45.0	1.6		114.5	434	402	01 46 55
01 54 24	J1234+619	14 13 29	74.3	-46.4	1.6		112.7	-16	402	No stop
01 55 54	---	14 14 59	74.1	-46.6	1.7		112.1	74	413	01 54 25
01 55 54	P2	14 14 59	74.2	-45.3	1.6		113.9	-15	413	No stop
02 02 48	---	14 21 55	73.5	-46.4	1.7		111.3	399	466	01 55 55
02 03 18	J1241+602	14 22 25	74.6	-52.4	1.7		106.6	3	466	02 03 18
02 04 48	---	14 23 55	74.4	-52.6	1.7		106.0	90	478	02 03 19
02 05 03	J1234+619	14 24 10	73.1	-48.0	1.8		108.8	-9	478	02 05 03
02 06 33	---	14 25 40	72.9	-48.2	1.8		108.3	81	489	02 05 04
02 06 33	P3	14 25 40	73.1	-47.3	1.8		109.6	-13	489	No stop
02 13 58	---	14 33 06	72.3	-48.2	1.9		107.1	432	547	02 06 34
02 14 18	J1234+619	14 33 26	72.0	-49.1	2.0		105.7	7	547	02 14 18
02 15 48	---	14 34 57	71.9	-49.2	2.0		105.2	90	558	02 14 19
02 15 48	P3	14 34 57	72.1	-48.4	2.0		106.5	-13	558	No stop
02 23 18	---	14 42 28	71.2	-49.2	2.1		104.1	437	616	02 15 49
02 23 18	J1234+619	14 42 28	71.0	-49.9	2.1		102.9	-13	616	No stop
02 24 48	---	14 43 58	70.8	-50.0	2.2		102.5	77	627	02 23 19
02 24 48	P3	14 43 58	71.0	-49.3	2.1		103.6	-13	627	No stop
02 31 42	---	14 50 53	70.2	-49.8	2.2		101.6	401	680	02 24 49
02 32 12	J1241+602	14 51 23	71.1	-54.9	2.2		97.8	5	680	02 32 12
02 33 42	---	14 52 54	70.9	-55.0	2.2		97.4	90	692	02 32 13
02 33 57	J1234+619	14 53 09	69.8	-50.6	2.3		99.9	-9	692	02 33 57
02 35 27	---	14 54 39	69.6	-50.7	2.3		99.5	81	703	02 33 58
02 35 27	P4	14 54 39	69.9	-50.0	2.3		100.8	-12	703	No stop
02 42 52	---	15 02 05	69.1	-50.4	2.4		98.8	433	761	02 35 28
02 43 12	J1234+619	15 02 25	68.7	-51.1	2.5		97.4	8	761	02 43 12
02 44 42	---	15 03 55	68.5	-51.2	2.5		97.0	90	772	02 43 13
02 44 42	P4	15 03 55	68.9	-50.5	2.4		98.3	-12	772	No stop
02 52 12	---	15 11 27	68.0	-50.8	2.6		96.4	438	830	02 44 43
02 52 12	J1234+619	15 11 27	67.6	-51.4	2.6		95.1	-12	830	No stop
02 53 42	---	15 12 57	67.5	-51.5	2.6		94.8	78	841	02 52 13

Schedule for TORUN (Code Tr) Page 4

Ultra Deep EVN Observations of HDF North

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 8 Mar 2016 Day 68 ---										
02 53 42	P4	15 12 57	67.8	-50.9	2.6		96.0	-12	841	No stop
03 00 36	---	15 19 52	67.0	-51.1	2.7		94.3	402	894	02 53 43
03 01 06	J1241+602	15 20 22	67.5	-55.7	2.6		90.8	6	894	03 01 06
03 02 36	---	15 21 52	67.3	-55.7	2.7		90.5	90	906	03 01 07
03 02 51	J1234+619	15 22 07	66.4	-51.6	2.8		92.6	-8	906	03 02 51
03 04 21	---	15 23 38	66.2	-51.6	2.8		92.2	82	917	03 02 52
03 04 21	HDF-N	15 23 38	66.5	-51.0	2.8		93.4	-12	917	No stop
03 11 46	---	15 31 04	65.6	-51.1	2.9		91.7	433	974	03 04 22
03 12 06	J1234+619	15 31 24	65.3	-51.7	2.9		90.5	8	974	03 12 06
03 13 36	---	15 32 54	65.1	-51.7	3.0		90.1	90	986	03 12 07
03 13 36	HDF-N	15 32 54	65.4	-51.1	2.9		91.2	-12	986	No stop
03 21 06	---	15 40 25	64.5	-51.1	3.0		89.6	438	1044	03 13 37
03 21 06	J1234+619	15 40 25	64.2	-51.7	3.1		88.5	-12	1044	No stop
03 22 36	---	15 41 56	64.1	-51.7	3.1		88.2	78	1055	03 21 07
03 22 36	HDF-N	15 41 56	64.4	-51.1	3.1		89.2	-12	1055	No stop
03 29 30	---	15 48 51	63.6	-51.1	3.2		87.8	402	1108	03 22 37
03 30 00	J1241+602	15 49 21	63.9	-55.4	3.1		84.8	6	1108	03 30 00
03 31 30	---	15 50 51	63.7	-55.3	3.1		84.5	90	1120	03 30 01
03 31 45	J1234+619	15 51 06	63.0	-51.5	3.3		86.3	-7	1120	03 31 45
03 33 15	---	15 52 36	62.8	-51.5	3.3		86.0	83	1131	03 31 46
03 33 15	P1	15 52 36	63.2	-50.9	3.2		87.2	-12	1131	No stop
03 40 40	---	16 00 03	62.3	-50.8	3.4		85.6	433	1188	03 33 16
03 41 00	J1234+619	16 00 23	61.9	-51.4	3.4		84.4	8	1188	03 41 00
03 42 30	---	16 01 53	61.7	-51.3	3.4		84.1	90	1200	03 41 01
03 42 30	P1	16 01 53	62.1	-50.8	3.4		85.3	-12	1200	No stop
03 50 00	---	16 09 24	61.2	-50.6	3.5		83.8	438	1258	03 42 31
03 50 00	J1234+619	16 09 24	60.8	-51.1	3.6		82.6	-12	1258	No stop
03 51 30	---	16 10 54	60.7	-51.1	3.6		82.3	78	1269	03 50 01
03 51 30	P1	16 10 54	61.1	-50.5	3.5		83.5	-12	1269	No stop
03 58 24	---	16 17 50	60.3	-50.3	3.7		82.1	402	1322	03 51 31

Schedule for TORUN (Code Tr) Page 5

Ultra Deep EVN Observations of HDF North

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 8 Mar 2016 Day 68 ---										
03 58 54	J1241+602	16 18 20	60.4	-54.3	3.6		79.5	7	1322	03 58 54
04 00 24	---	16 19 50	60.2	-54.3	3.6		79.2	90	1334	03 58 55
04 00 39	J1234+619	16 20 05	59.6	-50.7	3.8		80.6	-7	1334	04 00 39
04 02 09	---	16 21 35	59.4	-50.7	3.8		80.3	83	1345	04 00 40
04 02 09	P2	16 21 35	59.7	-50.2	3.7		81.2	-11	1345	No stop
04 09 34	---	16 29 01	58.8	-49.9	3.9		79.8	434	1402	04 02 10
04 09 54	J1234+619	16 29 21	58.5	-50.4	3.9		78.9	9	1402	04 09 54
04 11 24	---	16 30 52	58.3	-50.3	3.9		78.6	90	1414	04 09 55
04 11 24	P2	16 30 52	58.6	-49.8	3.9		79.5	-11	1414	No stop
04 18 54	---	16 38 23	57.8	-49.5	4.0		78.1	439	1472	04 11 25
04 18 54	J1234+619	16 38 23	57.5	-49.9	4.1		77.2	-12	1472	No stop
04 20 24	---	16 39 53	57.3	-49.9	4.1		77.0	78	1483	04 18 55
04 20 24	P2	16 39 53	57.6	-49.4	4.0		77.8	-11	1483	No stop
04 27 18	---	16 46 48	56.8	-49.1	4.2		76.5	403	1536	04 20 25
04 27 48	J1241+602	16 47 18	56.9	-52.8	4.1		74.5	8	1536	04 27 48
04 29 18	---	16 48 49	56.7	-52.7	4.1		74.2	90	1548	04 27 49
04 29 33	J1234+619	16 49 04	56.2	-49.4	4.2		75.3	-6	1548	04 29 33
04 31 03	---	16 50 34	56.1	-49.3	4.3		75.1	84	1559	04 29 34
04 31 03	P3	16 50 34	56.4	-49.1	4.2		75.7	-11	1559	No stop
04 38 28	---	16 58 00	55.5	-48.7	4.3		74.4	434	1616	04 31 04
04 38 48	J1234+619	16 58 20	55.2	-48.9	4.4		73.7	9	1616	04 38 48
04 40 18	---	16 59 50	55.0	-48.8	4.4		73.4	90	1628	04 38 49
04 40 18	P3	16 59 50	55.3	-48.6	4.4		74.1	-11	1628	No stop
04 47 48	---	17 07 22	54.5	-48.2	4.5		72.8	439	1686	04 40 19
04 47 48	J1234+619	17 07 22	54.2	-48.3	4.5		72.2	-11	1686	No stop
04 49 18	---	17 08 52	54.0	-48.2	4.6		71.9	79	1697	04 47 49
04 49 18	P3	17 08 52	54.3	-48.1	4.5		72.5	-11	1697	No stop
04 56 12	---	17 15 47	53.5	-47.6	4.6		71.3	403	1750	04 49 19

Schedule for TORUN (Code Tr) Page 6

Ultra Deep EVN Observations of HDF North

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 8 Mar 2016 Day 68 ---										
04 56 42	J1241+602	17 16 17	53.5	-50.8	4.6		69.8	9	1750	04 56 42
04 58 12	---	17 17 47	53.3	-50.7	4.6		69.5	90	1762	04 56 43
04 58 27	J1234+619	17 18 02	53.0	-47.7	4.7		70.4	-6	1762	04 58 27
04 59 57	---	17 19 33	52.8	-47.6	4.7		70.1	84	1773	04 58 28
04 59 57	P4	17 19 33	53.2	-47.5	4.7		70.9	-12	1773	No stop
05 07 22	---	17 26 59	52.4	-47.0	4.8		69.6	433	1830	04 59 58
05 07 42	J1234+619	17 27 19	52.0	-47.0	4.9		68.8	7	1830	05 07 42
05 09 12	---	17 28 49	51.8	-46.9	4.9		68.6	90	1842	05 07 43
05 09 12	P4	17 28 49	52.2	-46.9	4.8		69.3	-12	1842	No stop
05 16 42	---	17 36 20	51.4	-46.3	5.0		68.0	438	1900	05 09 13
05 16 42	J1234+619	17 36 20	51.0	-46.4	5.0		67.3	-13	1900	No stop
05 18 12	---	17 37 51	50.8	-46.3	5.0		67.1	77	1911	05 16 43
05 18 12	P4	17 37 51	51.2	-46.2	5.0		67.8	-12	1911	No stop
05 25 06	---	17 44 46	50.5	-45.7	5.1		66.6	402	1964	05 18 13
05 25 36	J1241+602	17 45 16	50.1	-48.6	5.1		65.2	10	1964	05 25 36
05 27 06	---	17 46 46	50.0	-48.5	5.1		65.0	90	1976	05 25 37
05 27 21	J1234+619	17 47 01	49.8	-45.6	5.2		65.6	-5	1976	05 27 21
05 28 51	---	17 48 31	49.7	-45.5	5.2		65.3	85	1987	05 27 22
05 28 51	HDF-N	17 48 31	50.0	-45.3	5.2		66.0	-12	1987	No stop
05 36 16	---	17 55 58	49.2	-44.8	5.3		64.8	433	2044	05 28 52
05 36 36	J1234+619	17 56 18	48.8	-44.9	5.4		64.1	8	2044	05 36 36
05 38 06	---	17 57 48	48.7	-44.8	5.4		63.8	90	2056	05 36 37
05 38 06	HDF-N	17 57 48	49.1	-44.6	5.3		64.5	-12	2056	No stop
05 45 36	---	18 05 19	48.3	-44.1	5.5		63.3	438	2114	05 38 07
05 45 36	J1234+619	18 05 19	47.9	-44.2	5.5		62.6	-12	2114	No stop
05 47 06	---	18 06 49	47.7	-44.0	5.5		62.4	78	2125	05 45 37
05 47 06	HDF-N	18 06 49	48.1	-43.9	5.5		63.0	-12	2125	No stop
05 54 00	---	18 13 45	47.4	-43.4	5.6		61.9	402	2178	05 47 07
05 54 30	J1241+602	18 14 15	46.9	-46.2	5.5		60.8	10	2178	05 54 30
05 56 00	---	18 15 45	46.8	-46.0	5.6		60.6	90	2190	05 54 31
05 56 15	J1234+619	18 16 00	46.8	-43.3	5.7		60.9	-5	2190	05 56 15
05 57 45	---	18 17 30	46.6	-43.2	5.7		60.7	85	2201	05 56 16

Schedule for TORUN (Code Tr) Page 7

Ultra Deep EVN Observations of HDF North

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 8 Mar 2016 Day 68 ---										
05 57 45	P1	18 17 30	47.1	-43.0	5.7		61.4	-13	2201	No stop
06 05 10	---	18 24 56	46.3	-42.4	5.8		60.2	432	2258	05 57 46
06 05 30	J1234+619	18 25 16	45.8	-42.5	5.8		59.4	7	2258	06 05 30
06 07 00	---	18 26 47	45.7	-42.4	5.9		59.2	90	2270	06 05 31
06 07 00	P1	18 26 47	46.1	-42.3	5.8		59.9	-13	2270	No stop
06 14 30	---	18 34 18	45.4	-41.6	5.9		58.7	437	2328	06 07 01
06 14 30	J1234+619	18 34 18	44.9	-41.7	6.0		58.0	-13	2328	No stop
06 16 00	---	18 35 48	44.8	-41.6	6.0		57.8	77	2339	06 14 31
06 16 00	P1	18 35 48	45.2	-41.5	6.0		58.5	-13	2339	No stop
06 22 54	---	18 42 43	44.6	-40.9	6.1		57.4	401	2392	06 16 01
06 23 24	J1241+602	18 43 13	43.9	-43.5	6.0		56.4	11	2392	06 23 24
06 24 54	---	18 44 44	43.7	-43.3	6.0		56.2	90	2404	06 23 25
06 25 09	J1234+619	18 44 59	43.9	-40.8	6.2		56.3	-4	2404	06 25 09
06 26 39	---	18 46 29	43.7	-40.6	6.2		56.1	86	2415	06 25 10
06 26 39	P2	18 46 29	44.1	-40.5	6.2		56.6	-12	2415	No stop
06 34 04	---	18 53 55	43.4	-39.8	6.3		55.5	433	2472	06 26 40
06 34 24	J1234+619	18 54 15	43.0	-39.9	6.3		54.8	8	2472	06 34 24
06 35 54	---	18 55 45	42.8	-39.8	6.3		54.6	90	2484	06 34 25
06 35 54	P2	18 55 45	43.2	-39.6	6.3		55.2	-12	2484	No stop
06 43 24	---	19 03 17	42.5	-38.9	6.4		54.0	438	2542	06 35 55
06 43 24	J1234+619	19 03 17	42.1	-39.1	6.5		53.4	-12	2542	No stop
06 44 54	---	19 04 47	42.0	-38.9	6.5		53.2	78	2553	06 43 25
06 44 54	P2	19 04 47	42.3	-38.8	6.5		53.7	-12	2553	No stop
06 51 48	---	19 11 42	41.7	-38.2	6.6		52.6	402	2606	06 44 55
06 52 18	J1241+602	19 12 12	41.0	-40.6	6.5		52.0	11	2606	06 52 18
06 53 48	---	19 13 42	40.8	-40.5	6.5		51.8	90	2618	06 52 19
06 54 03	J1234+619	19 13 57	41.1	-38.0	6.7		51.7	-4	2618	06 54 03
06 55 33	---	19 15 28	41.0	-37.9	6.7		51.5	86	2629	06 54 04
06 55 33	P3	19 15 28	41.3	-37.9	6.6		52.0	-11	2629	No stop
07 02 58	---	19 22 54	40.6	-37.2	6.8		50.8	434	2686	06 55 34

Schedule for TORUN (Code Tr) Page 8

Ultra Deep EVN Observations of HDF North

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT / Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early / Dwell	Disk GBytes	TPStart SYNC
--- Tue 8 Mar 2016 Day 68 ---										
07 03 18	J1234+619	19 23 14	40.2	-37.1	6.8		50.3	8	2686	07 03 18
07 04 48	---	19 24 44	40.1	-37.0	6.8		50.1	90	2698	07 03 19
07 04 48	P3	19 24 44	40.4	-37.0	6.8		50.5	-11	2698	No stop
07 12 18	---	19 32 15	39.7	-36.3	6.9		49.3	439	2756	07 04 49
07 12 18	J1234+619	19 32 15	39.4	-36.2	7.0		48.9	-12	2756	No stop
07 13 48	---	19 33 46	39.3	-36.1	7.0		48.6	78	2767	07 12 19
07 13 48	P3	19 33 46	39.6	-36.1	6.9		49.1	-11	2767	No stop
07 20 42	---	19 40 41	39.0	-35.4	7.1		48.0	403	2820	07 13 49
07 21 12	J1241+602	19 41 11	38.2	-37.6	7.0		47.6	12	2820	07 21 12
07 22 42	---	19 42 41	38.1	-37.5	7.0		47.4	90	2832	07 21 13
07 22 57	J1234+619	19 42 56	38.5	-35.2	7.1		47.2	-4	2832	07 22 57
07 24 27	---	19 44 26	38.4	-35.0	7.2		47.0	86	2843	07 22 58
07 24 27	P4	19 44 26	38.8	-35.2	7.1		47.6	-12	2843	No stop
07 31 52	---	19 51 53	38.1	-34.4	7.2		46.4	433	2900	07 24 28
07 32 12	J1234+619	19 52 13	37.7	-34.2	7.3		45.8	8	2900	07 32 12
07 33 42	---	19 53 43	37.6	-34.0	7.3		45.5	90	2912	07 32 13
07 33 42	P4	19 53 43	38.0	-34.2	7.3		46.1	-12	2912	No stop
07 41 12	---	20 01 14	37.3	-33.4	7.4		44.9	438	2969	07 33 43
07 41 12	J1234+619	20 01 14	37.0	-33.3	7.4		44.3	-12	2969	No stop
07 42 42	---	20 02 44	36.8	-33.1	7.5		44.1	78	2981	07 41 13
07 42 42	P4	20 02 44	37.2	-33.3	7.4		44.7	-12	2981	No stop
07 49 36	---	20 09 40	36.7	-32.5	7.5		43.6	402	3034	07 42 43
07 50 06	J1241+602	20 10 10	35.6	-34.5	7.5		43.3	12	3034	07 50 06
07 51 36	---	20 11 40	35.5	-34.3	7.5		43.0	90	3046	07 50 07
07 51 51	J1234+619	20 11 55	36.1	-32.1	7.6		42.7	-3	3046	07 51 51
07 53 21	---	20 13 25	36.0	-32.0	7.6		42.4	87	3057	07 51 52
07 53 21	HDF-N	20 13 25	36.4	-32.0	7.6		43.0	-12	3057	No stop
08 00 46	---	20 20 51	35.8	-31.2	7.7		41.8	433	3114	07 53 22
08 01 06	J1234+619	20 21 11	35.4	-31.1	7.8		41.2	8	3114	08 01 06
08 02 36	---	20 22 42	35.2	-31.0	7.8		41.0	90	3126	08 01 07

Schedule for TORUN (Code Tr) Page 9

Ultra Deep EVN Observations of HDF North

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 8 Mar 2016 Day 68 ---										
08 02 36	HDF-N	20 22 42	35.6	-31.0	7.8		41.5	-12	3126	No stop
08 10 06	---	20 30 13	35.1	-30.2	7.9		40.3	438	3183	08 02 37
08 10 06	J1234+619	20 30 13	34.7	-30.1	7.9		39.8	-12	3183	No stop
08 11 36	---	20 31 43	34.6	-30.0	7.9		39.5	78	3195	08 10 07
08 11 36	HDF-N	20 31 43	34.9	-30.1	7.9		40.1	-12	3195	No stop
08 18 30	---	20 38 38	34.4	-29.3	8.0		39.0	402	3248	08 11 37
08 19 00	J1241+602	20 39 08	33.3	-31.2	7.9		38.8	13	3248	08 19 00
08 20 30	---	20 40 39	33.2	-31.0	8.0		38.6	90	3260	08 19 01
08 20 45	J1234+619	20 40 54	33.9	-29.0	8.1		38.1	-3	3260	08 20 45
08 22 15	---	20 42 24	33.8	-28.8	8.1		37.8	87	3271	08 20 46
08 22 15	P1	20 42 24	34.2	-28.9	8.1		38.5	-13	3271	No stop
08 29 40	---	20 49 50	33.7	-28.1	8.2		37.3	432	3328	08 22 16
08 30 00	J1234+619	20 50 10	33.2	-27.9	8.3		36.6	7	3328	08 30 00
08 31 30	---	20 51 40	33.1	-27.7	8.3		36.4	90	3340	08 30 01
08 31 30	P1	20 51 40	33.6	-27.9	8.2		37.0	-13	3340	No stop
08 39 00	---	20 59 12	33.1	-27.0	8.4		35.8	437	3397	08 31 31
08 39 00	J1234+619	20 59 12	32.6	-26.9	8.4		35.2	-13	3397	No stop
08 40 30	---	21 00 42	32.5	-26.7	8.4		34.9	77	3409	08 39 01
08 40 30	P1	21 00 42	32.9	-26.9	8.4		35.6	-13	3409	No stop
08 47 24	---	21 07 37	32.5	-26.1	8.5		34.4	401	3462	08 40 31
08 47 54	J1241+602	21 08 07	31.1	-27.8	8.4		34.3	12	3462	08 47 54
08 49 24	---	21 09 37	31.0	-27.6	8.5		34.1	90	3474	08 47 55
08 49 39	J1234+619	21 09 52	31.9	-25.7	8.6		33.5	-2	3474	08 49 39
08 51 09	---	21 11 23	31.8	-25.5	8.6		33.2	88	3485	08 49 40
08 51 09	P2	21 11 23	32.2	-25.5	8.6		33.7	-12	3485	No stop
08 58 34	---	21 18 49	31.7	-24.7	8.7		32.5	433	3542	08 51 10
08 58 54	J1234+619	21 19 09	31.3	-24.6	8.7		32.0	8	3542	08 58 54
09 00 24	---	21 20 39	31.2	-24.4	8.8		31.8	90	3554	08 58 55
09 00 24	P2	21 20 39	31.6	-24.5	8.7		32.2	-12	3554	No stop
09 07 54	---	21 28 10	31.1	-23.6	8.9		31.0	438	3611	09 00 25

Schedule for TORUN (Code Tr) Page 10

Ultra Deep EVN Observations of HDF North

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 8 Mar 2016 Day 68 ---										
09 07 54	J1234+619	21 28 10	30.7	-23.5	8.9		30.6	-12	3611	No stop
09 09 24	---	21 29 41	30.7	-23.3	8.9		30.3	78	3623	09 07 55
09 09 24	P2	21 29 41	31.0	-23.4	8.9		30.7	-12	3623	No stop
09 16 18	---	21 36 36	30.6	-22.6	9.0		29.6	402	3676	09 09 25
09 16 48	J1241+602	21 37 06	29.2	-24.3	8.9		29.8	11	3676	09 16 48
09 18 18	---	21 38 36	29.1	-24.1	8.9		29.6	90	3688	09 16 49
09 18 33	J1234+619	21 38 51	30.1	-22.2	9.1		28.8	-2	3688	09 18 33
09 20 03	---	21 40 21	30.0	-22.1	9.1		28.6	88	3699	09 18 34
09 20 03	P3	21 40 21	30.3	-22.2	9.1		29.0	-11	3699	No stop
09 27 28	---	21 47 48	29.9	-21.3	9.2		27.8	434	3756	09 20 04
09 27 48	J1234+619	21 48 08	29.6	-21.1	9.2		27.4	9	3756	09 27 48
09 29 18	---	21 49 38	29.5	-21.0	9.2		27.1	90	3768	09 27 49
09 29 18	P3	21 49 38	29.8	-21.1	9.2		27.5	-11	3768	No stop
09 36 48	---	21 57 09	29.4	-20.2	9.3		26.3	439	3825	09 29 19
09 36 48	J1234+619	21 57 09	29.1	-20.0	9.4		25.9	-11	3825	No stop
09 38 18	---	21 58 39	29.1	-19.9	9.4		25.7	79	3837	09 36 49
09 38 18	P3	21 58 39	29.3	-20.0	9.4		26.0	-11	3837	No stop
09 45 12	---	22 05 35	29.0	-19.2	9.5		24.9	403	3890	09 38 19
09 45 42	J1241+602	22 06 05	27.6	-20.6	9.4		25.3	11	3890	09 45 42
09 47 12	---	22 07 35	27.5	-20.5	9.4		25.0	90	3902	09 45 43
09 47 27	J1234+619	22 07 50	28.6	-18.7	9.5		24.2	-2	3902	09 47 27
09 48 57	---	22 09 20	28.5	-18.6	9.6		23.9	88	3913	09 47 28
09 48 57	P4	22 09 20	28.8	-18.9	9.5		24.5	-11	3913	No stop
09 56 22	---	22 16 46	28.5	-17.9	9.6		23.3	434	3970	09 48 58
09 56 42	J1234+619	22 17 06	28.2	-17.6	9.7		22.7	9	3970	09 56 42
09 58 12	---	22 18 37	28.1	-17.4	9.7		22.4	90	3982	09 56 43
09 58 12	P4	22 18 37	28.4	-17.7	9.7		23.0	-11	3982	No stop
10 05 42	---	22 26 08	28.1	-16.8	9.8		21.7	439	4039	09 58 13
10 05 42	J1234+619	22 26 08	27.8	-16.5	9.9		21.2	-11	4039	No stop
10 07 12	---	22 27 38	27.7	-16.3	9.9		21.0	79	4051	10 05 43

Schedule for TORUN (Code Tr) Page 11

Ultra Deep EVN Observations of HDF North

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 8 Mar 2016 Day 68 ---										
10 07 12	P4	22 27 38	28.0	-16.6	9.8		21.5	-11	4051	No stop
10 14 06	---	22 34 33	27.7	-15.8	9.9		20.4	403	4104	10 07 13
10 14 36	J1241+602	22 35 03	26.2	-16.9	9.9		20.6	11	4104	10 14 36
10 16 06	---	22 36 34	26.1	-16.7	9.9		20.4	90	4115	10 14 37
10 16 21	J1234+619	22 36 49	27.3	-15.2	10.0		19.5	-3	4115	10 16 21
10 17 51	---	22 38 19	27.3	-15.0	10.1		19.2	87	4127	10 16 22
10 17 51	HDF-N	22 38 19	27.6	-15.2	10.0		19.7	-12	4127	No stop
10 25 16	---	22 45 45	27.3	-14.3	10.1		18.5	433	4184	10 17 52
10 25 36	J1234+619	22 46 05	27.0	-14.0	10.2		17.9	8	4184	10 25 36
10 27 06	---	22 47 35	26.9	-13.8	10.2		17.7	90	4196	10 25 37
10 27 06	HDF-N	22 47 35	27.2	-14.1	10.2		18.2	-12	4196	No stop
10 34 36	---	22 55 07	27.0	-13.1	10.3		16.9	438	4253	10 27 07
10 34 36	J1234+619	22 55 07	26.7	-12.9	10.3		16.5	-12	4253	No stop
10 36 06	---	22 56 37	26.6	-12.7	10.4		16.2	78	4265	10 34 37
10 36 06	HDF-N	22 56 37	26.9	-12.9	10.3		16.7	-11	4265	No stop
10 43 00	---	23 03 32	26.7	-12.1	10.4		15.6	403	4318	10 36 07
10 45 00	3C345	23 05 32	27.9	-59.9	6.4		42.5	9	4318	10 45 00
10 51 00	---	23 11 33	27.1	-59.0	6.5		42.0	360	4364	10 45 01
10 53 00	J1241+602	23 13 34	24.7	-11.9	10.5		14.4	11	4364	10 53 00
10 54 00	---	23 14 34	24.7	-11.8	10.5		14.3	60	4372	10 53 01
10 54 30	J1241+602	23 15 04	24.7	-11.7	10.5		14.2	24	4372	10 54 30
10 56 00	---	23 16 34	24.6	-11.5	10.6		14.0	90	4383	10 54 31
10 56 15	J1234+619	23 16 49	26.0	-10.1	10.7		12.9	-4	4383	10 56 15
10 57 45	---	23 18 19	26.0	-9.9	10.7		12.7	86	4395	10 56 16
10 57 45	P1	23 18 19	26.3	-10.2	10.7		13.2	-12	4395	No stop
11 05 10	---	23 25 46	26.2	-9.3	10.8		12.0	433	4452	10 57 46
11 05 30	J1234+619	23 26 06	25.8	-8.9	10.9		11.4	8	4452	11 05 30
11 07 00	---	23 27 36	25.7	-8.7	10.9		11.1	90	4463	11 05 31
11 07 00	P1	23 27 36	26.1	-9.1	10.8		11.7	-12	4463	No stop
11 14 30	---	23 35 07	25.9	-8.1	11.0		10.4	438	4521	11 07 01

Schedule for TORUN (Code Tr) Page 12

Ultra Deep EVN Observations of HDF North

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 8 Mar 2016 Day 68 ---										
11 14 30	J1234+619	23 35 07	25.6	-7.7	11.0		9.9	-12	4521	No stop
11 16 00	---	23 36 37	25.6	-7.6	11.0		9.6	78	4533	11 14 31
11 16 00	P1	23 36 37	25.9	-7.9	11.0		10.2	-12	4533	No stop
11 23 30	---	23 44 09	25.8	-6.9	11.1		8.9	438	4590	11 16 01
11 24 00	J1241+602	23 44 39	23.9	-7.8	11.0		9.4	9	4590	11 24 00
11 25 30	---	23 46 09	23.9	-7.6	11.1		9.2	90	4602	11 24 01
11 25 45	J1234+619	23 46 24	25.4	-6.3	11.2		8.0	-4	4602	11 25 45
11 27 15	---	23 47 54	25.4	-6.1	11.2		7.8	86	4613	11 25 46
11 27 15	P2	23 47 54	25.7	-6.3	11.2		8.2	-12	4613	No stop
11 34 40	---	23 55 21	25.6	-5.4	11.3		6.9	433	4671	11 27 16
11 35 00	J1234+619	23 55 41	25.2	-5.1	11.3		6.5	8	4671	11 35 00
11 36 30	---	23 57 11	25.2	-4.9	11.4		6.3	90	4682	11 35 01
11 36 30	P2	23 57 11	25.5	-5.1	11.3		6.6	-12	4682	No stop
11 44 00	---	00 04 42	25.5	-4.2	11.5		5.4	438	4740	11 36 31
11 44 00	J1234+619	00 04 42	25.1	-3.9	11.5		5.0	-12	4740	No stop
11 45 30	---	00 06 12	25.1	-3.7	11.5		4.8	78	4751	11 44 01
11 45 30	P2	00 06 12	25.4	-4.0	11.5		5.1	-12	4751	No stop
11 53 00	---	00 13 44	25.4	-3.0	11.6		3.9	438	4809	11 45 31
11 53 30	J1241+602	00 14 14	23.5	-3.8	11.5		4.6	9	4809	11 53 30
11 55 00	---	00 15 44	23.5	-3.6	11.6		4.3	90	4821	11 53 31
11 55 15	J1234+619	00 15 59	25.0	-2.5	11.7		3.1	-4	4821	11 55 15
11 56 45	---	00 17 29	25.0	-2.3	11.7		2.9	86	4832	11 55 16
11 56 45	P3	00 17 29	25.2	-2.5	11.7		3.2	-10	4832	No stop
12 04 10	---	00 24 55	25.2	-1.6	11.8		2.0	435	4889	11 56 46
12 04 30	J1234+619	00 25 15	25.0	-1.3	11.8		1.6	10	4889	12 04 30
12 06 00	---	00 26 46	25.0	-1.1	11.9		1.4	90	4901	12 04 31
12 06 00	P3	00 26 46	25.2	-1.3	11.8		1.7	-10	4901	No stop
12 13 30	---	00 34 17	25.2	-0.4	12.0		0.5	440	4958	12 06 01
12 13 30	J1234+619	00 34 17	25.0	-0.1	12.0		0.1	-10	4958	No stop
12 15 00	---	00 35 47	25.0	0.1	-12.0		-0.1	80	4970	12 13 31

```
Schedule for TORUN     (Code Tr )                                  Page  13
               Ultra Deep EVN Observations of HDF North
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------
 --- Tue   8 Mar 2016   Day  68 ---
12 15 00  P3           00 35 47  25.2  -0.2 12.0       0.2   -10     4970   No stop
12 22 30  ---          00 43 18  25.2   0.8-11.9      -1.0   440     5028   12 15 01

12 23 00  J1241+602    00 43 48  23.3   0.2-12.0      -0.3     9     5028   12 23 00
12 24 30  ---          00 45 19  23.4   0.4-11.9      -0.5    90     5039   12 23 01

12 24 45  J1234+619    00 45 34  25.0   1.4-11.8      -1.8    -5     5039   12 24 45
12 26 15  ---          00 47 04  25.0   1.6-11.8      -2.0    85     5051   12 24 46

12 26 15  P4           00 47 04  25.2   1.2-11.9      -1.5   -11     5051   No stop
12 33 40  ---          00 54 30  25.2   2.1-11.7      -2.7   434     5108   12 26 16

12 34 00  J1234+619    00 54 50  25.0   2.6-11.7      -3.3     9     5108   12 34 00
12 35 30  ---          00 56 21  25.1   2.8-11.6      -3.5    90     5119   12 34 01

12 35 30  P4           00 56 21  25.2   2.4-11.7      -3.0   -11     5119   No stop
12 43 00  ---          01 03 52  25.3   3.3-11.6      -4.3   439     5177   12 35 31

12 43 00  J1234+619    01 03 52  25.1   3.8-11.5      -4.8   -11     5177   No stop
12 44 30  ---          01 05 22  25.1   4.0-11.5      -5.0    79     5188   12 43 01

12 44 30  P4           01 05 22  25.3   3.5-11.5      -4.5   -11     5188   No stop
12 52 00  ---          01 12 53  25.4   4.5-11.4      -5.8   439     5246   12 44 31

12 54 00  DA193        01 14 54  41.8  76.1 -4.7     -49.4   -38     5246   12 54 00
13 00 00  ---          01 20 55  42.7  77.1 -4.6     -49.7   322     5292   12 54 01


SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

 ======== Setup file: sess116.L1024

   Setup group:   10         Station: TORUN            Total bit rate:  1024
   Format: MARK5B            Bits per sample: 2        Sample rate: 32.000
   Number of channels: 16    DBE type: DBBC_DDC        Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00
            2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00
  Net SB=         L         L         U         U         L         L         U         U
                  L         L         U         U         L         L         U         U
  IF SB =         L         L         L         L         L         L         L         L
                  L         L         L         L         L         L         L         L
  Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
                RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
  BBC   =         1         5         1         5         2         6         2         6
                  3         7         3         7         4         8         4         8
  BBC SB=         U         U         L         L         U         U         L         L
                  U         U         L         L         U         U         L         L
  IF    =        A1        B1        A1        B1        A1        B1        A1        B1
                 A1        B1        A1        B1        A1        B1        A1        B1

 The following frequency sets based on these setups were used.

  Frequency Set:   6  Setup file default.  Used with PCAL = off
  LO sum=   1610.49  1610.49  1610.49  1610.49  1642.49  1642.49  1642.49  1642.49
            1674.49  1674.49  1674.49  1674.49  1706.49  1706.49  1706.49  1706.49
  BBC fr=    689.51   689.51   689.51   689.51   657.51   657.51   657.51   657.51
             625.51   625.51   625.51   625.51   593.51   593.51   593.51   593.51
  Bandwd=     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
              16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
   Matching frequency sets:   6

  Track assignments are:
   track1=   2, 10, 18, 26,  4, 12, 20, 28,  6, 14, 22, 30,  8, 16, 24, 32
   barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)            (mas)

* J1241+602          12 39 16.511005   * 12 41 29.590564     12 42 13.712773       0.00
                     60 37 07.62444    * 60 20 41.32233      60 15 13.77536        0.00

* J1234+619          12 31 56.130604   * 12 34 11.741357     12 34 56.737357       0.00
                     62 15 03.88238    * 61 58 32.47807      61 53 03.53075        0.00

* HDF-N              12 34 36.033130   * 12 36 50.000000     12 37 34.468733       0.00
                     62 29 27.67047    * 62 12 58.00000      62 07 29.56780        0.00

* P1                 12 35 06.359127   * 12 37 20.000000     12 38 04.364542       0.00
                     62 32 57.32675    * 62 16 28.00000      62 10 59.67099        0.00

* P2                 12 34 05.805756   * 12 36 20.000000     12 37 04.544670       0.00
                     62 32 58.00862    * 62 16 28.00000      62 10 59.47330        0.00

* P3                 12 34 05.708602   * 12 36 20.000000     12 37 04.572457       0.00
                     62 25 58.00943    * 62 09 28.00000      62 03 59.46613        0.00

* P4                 12 35 06.259227   * 12 37 20.000000     12 38 04.393209       0.00
                     62 25 57.32759    * 62 09 28.00000      62 03 59.66390        0.00

  0552+398           05 52 01.407169   * 05 55 30.805611     05 56 38.831694       0.00
  J0555+3948         39 48 21.94581    * 39 48 49.16496      39 48 51.79419        0.00

* 3C345              16 41 17.606228   * 16 42 58.809966     16 43 31.478778       0.76
  J1642+3948         39 54 10.81496    * 39 48 36.99402      39 46 40.49985        0.52
```

ey024btr

EVN observations of J1114+3241 with powerful outflow

PI: *Jun Yang*

```
Address:  Onsala Space Observatory

Observing mode: 1024-16-2
Schedule for TORUN     (Code Tr )                                    Page   2
               EVN observations of J1114+3241 with powerful outflow
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------
 --- Tue   8 Mar 2016   Day  68 ---
 ---------- Fringe finder, about 1 Jy at 18cm ----------

 Next scan frequencies:  1610.49  1610.49  1610.49  1610.49  1642.49  1642.49  1642.49  1642.49
                         1674.49  1674.49  1674.49  1674.49  1706.49  1706.49  1706.49  1706.49
 Next BBC frequencies:    689.51   689.51   689.51   689.51   657.51   657.51   657.51   657.51
                          625.51   625.51   625.51   625.51   593.51   593.51   593.51   593.51
 Next scan bandwidths:     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
                           16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00

19 00 00  1123+264     07 21 54  37.7  95.9 -4.1     -41.7     0        0   19 00 00
19 06 00  ---          07 27 55  38.6  97.2 -4.0     -41.5   360       46   19 00 01

19 07 40  J1114+3241   07 29 35  45.2  93.9 -3.8     -45.3    62       46   19 07 40
19 19 40  ---          07 41 37  47.0  96.5 -3.6     -45.1   720      138   19 07 41

19 20 00  J1114+3241   07 41 57  47.1  96.6 -3.6     -45.1    14      138   19 20 00
19 32 00  ---          07 53 59  48.9  99.3 -3.4     -44.7   720      231   19 20 01

19 32 20  J1114+3241   07 54 19  48.9  99.3 -3.4     -44.7    14      231   19 32 20
19 44 20  ---          08 06 21  50.7 102.2 -3.2     -44.2   720      323   19 32 21

19 44 40  J1114+3241   08 06 41  50.8 102.2 -3.1     -44.2    14      323   19 44 40
19 56 40  ---          08 18 43  52.5 105.2 -2.9     -43.5   720      415   19 44 41

19 58 20  1123+264     08 20 23  46.2 109.4 -3.1     -39.1    62      415   19 58 20
20 04 20  ---          08 26 24  47.1 110.9 -3.0     -38.6   360      462   19 58 21

20 06 00  J1114+3241   08 28 05  53.9 107.6 -2.8     -42.8    61      462   20 06 00
20 18 00  ---          08 40 07  55.6 110.8 -2.6     -41.8   720      554   20 06 01

20 18 20  J1114+3241   08 40 27  55.6 110.9 -2.6     -41.7    14      554   20 18 20
20 30 20  ---          08 52 29  57.3 114.4 -2.4     -40.5   720      646   20 18 21

20 30 40  J1114+3241   08 52 49  57.3 114.5 -2.4     -40.4    14      646   20 30 40
20 42 40  ---          09 04 51  58.9 118.2 -2.2     -38.9   720      738   20 30 41

20 43 00  J1114+3241   09 05 11  59.0 118.3 -2.2     -38.9    14      738   20 43 00
20 55 00  ---          09 17 13  60.5 122.2 -2.0     -37.1   720      831   20 43 01

20 56 40  1123+264     09 18 53  54.0 126.0 -2.1     -32.8    61      831   20 56 40
21 02 40  ---          09 24 54  54.7 127.9 -2.0     -31.8   360      877   20 56 41
```

Schedule for TORUN (Code Tr) Page 3

EVN observations of J1114+3241 with powerful outflow

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Tue 8 Mar 2016 Day 68 ---										
21 04 20	J1114+3241	09 26 34	61.7	125.5	-1.8		-35.5	60	877	21 04 20
21 16 20	---	09 38 36	63.1	130.1	-1.6		-33.1	720	969	21 04 21
21 16 40	J1114+3241	09 38 56	63.2	130.2	-1.6		-33.0	14	969	21 16 40
21 28 40	---	09 50 58	64.5	135.1	-1.4		-30.2	720	1062	21 16 41
21 29 00	J1114+3241	09 51 18	64.5	135.2	-1.4		-30.1	14	1062	21 29 00
21 41 00	---	10 03 20	65.8	140.5	-1.2		-26.9	720	1154	21 29 01
21 41 20	J1114+3241	10 03 40	65.8	140.7	-1.2		-26.9	14	1154	21 41 20
21 53 20	---	10 15 42	66.9	146.4	-1.0		-23.2	720	1246	21 41 21
21 55 00	1123+264	10 17 22	60.0	147.6	-1.2		-21.0	60	1246	21 55 00
22 01 00	---	10 23 23	60.5	150.1	-1.1		-19.5	360	1292	21 55 01
22 02 40	J1114+3241	10 25 04	67.6	151.1	-0.8		-20.1	60	1292	22 02 40
22 14 40	---	10 37 06	68.4	157.6	-0.6		-15.8	720	1385	22 02 41
22 15 00	J1114+3241	10 37 26	68.4	157.7	-0.6		-15.7	13	1385	22 15 00
22 27 00	---	10 49 28	69.0	164.5	-0.4		-11.0	720	1477	22 15 01
22 27 20	J1114+3241	10 49 48	69.0	164.7	-0.4		-10.8	13	1477	22 27 20
22 39 20	---	11 01 50	69.4	171.8	-0.2		-5.8	720	1569	22 27 21
22 39 40	J1114+3241	11 02 10	69.4	172.0	-0.2		-5.7	13	1569	22 39 40
22 51 40	---	11 14 12	69.5	179.2	-0.0		-0.6	720	1662	22 39 41
22 53 20	1123+264	11 15 52	62.9	174.6	-0.2		-3.6	61	1662	22 53 20
22 59 20	---	11 21 53	63.0	177.6	-0.1		-1.6	360	1708	22 53 21

SETUP FILE INFORMATION:
NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

======== Setup file: sess116.L1024

Setup group: 11 Station: TORUN Total bit rate: 1024
Format: MARK5B Bits per sample: 2 Sample rate: 32.000
Number of channels: 16 DBE type: DBBC_DDC Speedup factor: 1.00

Disk used to record data.

```
  1st LO=   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00
            2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00
  Net SB=         L         L         U         U         L         L         U         U
                  L         L         U         U         L         L         U         U
  IF SB =         L         L         L         L         L         L         L         L
                  L         L         L         L         L         L         L         L
  Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
                RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
  BBC   =         1         5         1         5         2         6         2         6
                  3         7         3         7         4         8         4         8
  BBC SB=         U         U         L         L         U         U         L         L
                  U         U         L         L         U         U         L         L
  IF    =        A1        B1        A1        B1        A1        B1        A1        B1
                 A1        B1        A1        B1        A1        B1        A1        B1

 The following frequency sets based on these setups were used.

  Frequency Set:   8  Setup file default.  Used with PCAL = off
  LO sum=   1610.49  1610.49  1610.49  1610.49  1642.49  1642.49  1642.49  1642.49
            1674.49  1674.49  1674.49  1674.49  1706.49  1706.49  1706.49  1706.49
  BBC fr=    689.51   689.51   689.51   689.51   657.51   657.51   657.51   657.51
             625.51   625.51   625.51   625.51   593.51   593.51   593.51   593.51
  Bandwd=     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
              16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
   Matching frequency sets:   8

  Track assignments are:
   track1=   2, 10, 18, 26,  4, 12, 20, 28,  6, 14, 22, 30,  8, 16, 24, 32
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                       (B1950)            (J2000)            (Date)            (mas)

* J1114+3241        11 11 56.411122   * 11 14 38.889200     11 15 32.383237       0.00
                    32 57 54.66281    * 32 41 33.46500      32 36 07.20417        0.00
                    ~100mJy source, position from RFC_2016A, error ~6 mas

* 1123+264          11 23 14.869300   * 11 25 53.711921     11 26 46.047941       0.01
  J1125+2610        26 26 49.99110    * 26 10 19.97870      26 04 50.64095        0.01
  J1125+26          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
                    GSFC 2015a astro solution, unpublished   5105 observations.
```

em119ctr

Heart of a spiral DRAGN

PI: *Minnie Mao*

```
Address:  JIVE

Observing mode:
Schedule for TORUN     (Code Tr )                                  Page   2
               Heart of a spiral DRAGN
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source                Start / Stop                  Early    Disk   TPStart
Stop UT                   LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------
 --- Wed   9 Mar 2016   Day  69 ---
 Next scan frequencies:  1610.49  1610.49  1610.49  1610.49  1642.49  1642.49  1642.49  1642.49
                         1674.49  1674.49  1674.49  1674.49  1706.49  1706.49  1706.49  1706.49
 Next BBC frequencies:    689.51   689.51   689.51   689.51   657.51   657.51   657.51   657.51
                          625.51   625.51   625.51   625.51   593.51   593.51   593.51   593.51
 Next scan bandwidths:     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
                           16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00

00 00 00  OQ208        12 22 43  58.6 131.6 -1.8     -30.7     0        0   00 00 00
00 06 00  ---          12 28 44  59.3 133.8 -1.7     -29.5   360       46   00 00 01

00 07 30  J1649+2635   12 30 14  35.8  92.4 -4.3     -42.1   -12       46   00 07 30
00 11 00  ---          12 33 45  36.3  93.1 -4.3     -42.1   198       73   00 07 31

00 12 00  J1642+2523   12 34 45  36.6  95.8 -4.1     -41.4    41       73   00 12 00
00 13 30  =1640+254    12 36 15  36.8  96.1 -4.1     -41.4    90       85   00 12 01

00 13 30  J1649+2635   12 36 15  36.7  93.7 -4.2     -42.1   -19       85   No stop
00 17 00  ---          12 39 46  37.2  94.4 -4.2     -42.0   191      112   00 13 31

00 17 00  J1642+2523   12 39 46  37.3  96.8 -4.1     -41.3   -19      112   No stop
00 18 30  =1640+254    12 41 16  37.6  97.1 -4.0     -41.2    71      123   00 17 01

00 18 30  J1649+2635   12 41 16  37.4  94.7 -4.1     -42.0   -19      123   No stop
00 22 00  ---          12 44 47  38.0  95.4 -4.1     -41.9   191      150   00 18 31

00 23 00  J1642+2523   12 45 47  38.2  98.1 -4.0     -41.1    41      150   00 23 00
00 24 30  =1640+254    12 47 17  38.4  98.4 -3.9     -41.1    90      162   00 23 01

00 24 30  J1649+2635   12 47 17  38.3  96.0 -4.0     -41.9   -19      162   No stop
00 28 00  ---          12 50 48  38.9  96.7 -4.0     -41.8   191      188   00 24 31

00 28 00  J1642+2523   12 50 48  39.0  99.2 -3.9     -41.0   -19      188   No stop
00 29 30  =1640+254    12 52 18  39.2  99.5 -3.9     -40.9    71      200   00 28 01

00 29 30  J1649+2635   12 52 18  39.1  97.0 -4.0     -41.8   -19      200   No stop
00 33 00  ---          12 55 48  39.6  97.8 -3.9     -41.7   191      227   00 29 31

00 34 00  J1642+2523   12 56 49  39.9 100.5 -3.8     -40.8    41      227   00 34 00
00 35 30  =1640+254    12 58 19  40.1 100.9 -3.8     -40.7    90      238   00 34 01

00 35 30  J1649+2635   12 58 19  40.0  98.4 -3.9     -41.6   -19      238   No stop
00 39 00  ---          13 01 49  40.5  99.1 -3.8     -41.5   191      265   00 35 31
```

Schedule for TORUN (Code Tr) Page 3

Heart of a spiral DRAGN

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 9 Mar 2016 Day 69 ---										
00 39 00	J1642+2523	13 01 49	40.6	101.7	-3.7		-40.6	-19	265	No stop
00 40 30	=1640+254	13 03 20	40.8	102.0	-3.7		-40.5	71	277	00 39 01
00 40 30	J1649+2635	13 03 20	40.7	99.5	-3.8		-41.5	-19	277	No stop
00 44 00	---	13 06 50	41.3	100.2	-3.7		-41.3	191	304	00 40 31
00 45 00	J1642+2523	13 07 50	41.5	103.0	-3.6		-40.3	41	304	00 45 00
00 46 30	=1640+254	13 09 21	41.7	103.4	-3.6		-40.3	90	315	00 45 01
00 46 30	J1649+2635	13 09 21	41.6	100.8	-3.7		-41.3	-19	315	No stop
00 50 00	---	13 12 51	42.1	101.6	-3.6		-41.1	191	342	00 46 31
00 50 00	J1642+2523	13 12 51	42.2	104.2	-3.5		-40.1	-20	342	No stop
00 51 30	=1640+254	13 14 21	42.4	104.5	-3.5		-40.0	70	354	00 50 01
00 51 30	J1649+2635	13 14 21	42.4	101.9	-3.6		-41.1	-19	354	No stop
00 55 00	---	13 17 52	42.9	102.7	-3.5		-40.9	191	381	00 51 31
00 56 00	J1642+2523	13 18 52	43.1	105.6	-3.4		-39.8	40	381	00 56 00
00 57 30	=1640+254	13 20 22	43.3	106.0	-3.4		-39.7	90	392	00 56 01
00 57 30	J1649+2635	13 20 22	43.2	103.3	-3.5		-40.8	-19	392	No stop
01 01 00	---	13 23 53	43.8	104.1	-3.4		-40.6	191	419	00 57 31
01 01 00	J1642+2523	13 23 53	43.8	106.8	-3.3		-39.5	-20	419	No stop
01 02 30	=1640+254	13 25 23	44.0	107.2	-3.3		-39.4	70	431	01 01 01
01 02 30	J1649+2635	13 25 23	44.0	104.5	-3.4		-40.5	-19	431	No stop
01 06 00	---	13 28 54	44.5	105.3	-3.4		-40.3	191	458	01 02 31
01 07 00	J1642+2523	13 29 54	44.7	108.3	-3.2		-39.1	40	458	01 07 00
01 08 30	=1640+254	13 31 24	44.9	108.6	-3.2		-39.0	90	469	01 07 01
01 08 30	J1649+2635	13 31 24	44.8	105.9	-3.3		-40.2	-20	469	No stop
01 12 00	---	13 34 55	45.3	106.8	-3.3		-40.0	190	496	01 08 31
01 12 00	J1642+2523	13 34 55	45.4	109.5	-3.1		-38.8	-20	496	No stop
01 13 30	=1640+254	13 36 25	45.6	109.9	-3.1		-38.7	70	508	01 12 01
01 13 30	J1649+2635	13 36 25	45.6	107.1	-3.2		-39.9	-20	508	No stop
01 17 00	---	13 39 56	46.1	108.0	-3.2		-39.7	190	535	01 13 31
01 18 00	J1642+2523	13 40 56	46.2	111.0	-3.0		-38.3	40	535	01 18 00
01 19 30	=1640+254	13 42 26	46.4	111.4	-3.0		-38.2	90	546	01 18 01
01 19 30	J1649+2635	13 42 26	46.4	108.6	-3.1		-39.5	-20	546	No stop
01 23 00	---	13 45 57	46.9	109.5	-3.1		-39.3	190	573	01 19 31

Schedule for TORUN (Code Tr) Page 4

Heart of a spiral DRAGN

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 9 Mar 2016 Day 69 ---										
01 23 00	J1642+2523	13 45 57	46.9	112.3	-3.0		-37.9	-20	573	No stop
01 24 30	=1640+254	13 47 27	47.1	112.7	-2.9		-37.8	70	585	01 23 01
01 24 30	J1649+2635	13 47 27	47.1	109.9	-3.0		-39.1	-20	585	No stop
01 28 00	---	13 50 57	47.6	110.8	-3.0		-38.9	190	612	01 24 31
01 29 00	J1642+2523	13 51 58	47.8	113.9	-2.9		-37.4	40	612	01 29 00
01 30 30	=1640+254	13 53 28	48.0	114.3	-2.8		-37.3	90	623	01 29 01
01 30 30	J1649+2635	13 53 28	48.0	111.5	-2.9		-38.7	-20	623	No stop
01 34 00	---	13 56 58	48.5	112.4	-2.9		-38.4	190	650	01 30 31
01 34 00	J1642+2523	13 56 58	48.4	115.3	-2.8		-36.9	-20	650	No stop
01 35 30	=1640+254	13 58 29	48.6	115.7	-2.7		-36.8	70	662	01 34 01
01 35 30	J1649+2635	13 58 29	48.7	112.8	-2.9		-38.2	-20	662	No stop
01 39 00	---	14 01 59	49.2	113.7	-2.8		-37.9	190	688	01 35 31
01 40 00	J1642+2523	14 02 59	49.3	116.9	-2.7		-36.3	39	688	01 40 00
01 41 30	=1640+254	14 04 30	49.5	117.4	-2.6		-36.2	90	700	01 40 01
01 41 30	J1649+2635	14 04 30	49.5	114.4	-2.8		-37.7	-20	700	No stop
01 45 00	---	14 08 00	50.0	115.4	-2.7		-37.3	190	727	01 41 31
01 45 00	J1642+2523	14 08 00	49.9	118.4	-2.6		-35.8	-21	727	No stop
01 46 30	=1640+254	14 09 30	50.1	118.8	-2.6		-35.6	69	738	01 45 01
01 46 30	NRAO512	14 09 30	61.1	102.1	-2.5		-49.8	-56	738	No stop
01 52 00	---	14 15 01	61.9	103.6	-2.4		-49.4	274	781	01 46 31
01 53 00	J1642+2523	14 16 02	51.0	120.7	-2.5		-34.9	5	781	01 53 00
01 54 30	=1640+254	14 17 32	51.2	121.1	-2.4		-34.7	90	792	01 53 01
01 54 30	J1649+2635	14 17 32	51.3	118.0	-2.5		-36.3	-20	792	No stop
01 58 00	---	14 21 02	51.7	119.1	-2.5		-35.9	190	819	01 54 31
01 58 00	J1642+2523	14 21 02	51.6	122.2	-2.4		-34.2	-21	819	No stop
01 59 30	=1640+254	14 22 33	51.8	122.6	-2.3		-34.0	69	831	01 58 01
01 59 30	J1649+2635	14 22 33	51.9	119.5	-2.5		-35.8	-21	831	No stop
02 03 00	---	14 26 03	52.4	120.5	-2.4		-35.3	189	858	01 59 31
02 04 00	J1642+2523	14 27 03	52.4	124.0	-2.3		-33.4	39	858	02 04 00
02 05 30	=1640+254	14 28 34	52.6	124.5	-2.2		-33.2	90	869	02 04 01

Schedule for TORUN (Code Tr) Page 5

Heart of a spiral DRAGN

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 9 Mar 2016 Day 69 ---										
02 05 30	J1649+2635	14 28 34	52.7	121.3	-2.4		-35.0	-21	869	No stop
02 09 00	---	14 32 04	53.1	122.4	-2.3		-34.5	189	896	02 05 31
02 09 00	J1642+2523	14 32 04	53.0	125.6	-2.2		-32.7	-21	896	No stop
02 10 30	=1640+254	14 33 34	53.2	126.0	-2.2		-32.5	69	908	02 09 01
02 10 30	J1649+2635	14 33 34	53.3	122.8	-2.3		-34.3	-21	908	No stop
02 14 00	---	14 37 05	53.8	123.9	-2.2		-33.9	189	935	02 10 31
02 15 00	J1642+2523	14 38 05	53.7	127.5	-2.1		-31.8	39	935	02 15 00
02 16 30	=1640+254	14 39 35	53.9	128.0	-2.1		-31.6	90	946	02 15 01
02 16 30	J1649+2635	14 39 35	54.1	124.7	-2.2		-33.5	-21	946	No stop
02 20 00	---	14 43 06	54.5	125.8	-2.1		-33.0	189	973	02 16 31
02 20 00	J1642+2523	14 43 06	54.3	129.1	-2.0		-31.0	-21	973	No stop
02 21 30	=1640+254	14 44 36	54.5	129.6	-2.0		-30.8	69	985	02 20 01
02 21 30	J1649+2635	14 44 36	54.7	126.3	-2.1		-32.7	-21	985	No stop
02 25 00	---	14 48 07	55.1	127.5	-2.0		-32.2	189	1012	02 21 31
02 26 00	J1642+2523	14 49 07	55.0	131.2	-1.9		-30.0	38	1012	02 26 00
02 27 30	=1640+254	14 50 37	55.2	131.7	-1.9		-29.8	90	1023	02 26 01
02 27 30	J1649+2635	14 50 37	55.4	128.3	-2.0		-31.8	-21	1023	No stop
02 31 00	---	14 54 08	55.8	129.5	-1.9		-31.2	189	1050	02 27 31
02 31 00	J1642+2523	14 54 08	55.5	132.9	-1.8		-29.1	-22	1050	No stop
02 32 30	=1640+254	14 55 38	55.7	133.4	-1.8		-28.9	68	1062	02 31 01
02 32 30	J1649+2635	14 55 38	56.0	130.0	-1.9		-30.9	-21	1062	No stop
02 36 00	---	14 59 09	56.4	131.2	-1.8		-30.3	189	1088	02 32 31
02 36 00	J1642+2523	14 59 09	56.1	134.7	-1.7		-28.2	-22	1088	No stop
02 37 30	=1640+254	15 00 39	56.3	135.2	-1.7		-27.9	68	1100	02 36 01
02 38 30	J1649+2635	15 01 39	56.7	132.1	-1.8		-29.9	39	1100	02 38 30
02 42 00	---	15 05 10	57.1	133.4	-1.7		-29.2	210	1127	02 38 31
02 42 00	J1642+2523	15 05 10	56.7	136.8	-1.6		-27.0	-22	1127	No stop
02 43 30	=1640+254	15 06 40	56.9	137.4	-1.6		-26.7	68	1138	02 42 01
02 43 30	J1649+2635	15 06 40	57.2	133.9	-1.7		-28.9	-21	1138	No stop
02 47 00	---	15 10 10	57.6	135.2	-1.7		-28.2	189	1165	02 43 31

Schedule for TORUN (Code Tr) Page 6

Heart of a spiral DRAGN

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 9 Mar 2016 Day 69 ---										
02 47 00	J1642+2523	15 10 10	57.2	138.7	-1.6		-26.0	-22	1165	No stop
02 48 30	=1640+254	15 11 41	57.4	139.3	-1.5		-25.7	68	1177	02 47 01
02 48 30	J1649+2635	15 11 41	57.8	135.7	-1.6		-27.9	-22	1177	No stop
02 52 00	---	15 15 11	58.1	137.0	-1.6		-27.2	188	1204	02 48 31
02 52 00	J1642+2523	15 15 11	57.7	140.6	-1.5		-25.0	-22	1204	No stop
02 53 30	=1640+254	15 16 41	57.9	141.2	-1.4		-24.6	68	1215	02 52 01
02 54 30	J1649+2635	15 17 42	58.4	138.0	-1.5		-26.7	38	1215	02 54 30
02 58 00	---	15 21 12	58.7	139.3	-1.5		-25.9	210	1242	02 54 31
02 58 00	J1642+2523	15 21 12	58.3	142.9	-1.4		-23.6	-22	1242	No stop
02 59 30	=1640+254	15 22 42	58.4	143.5	-1.3		-23.3	68	1254	02 58 01
02 59 30	J1649+2635	15 22 42	58.9	139.9	-1.5		-25.6	-22	1254	No stop
03 03 00	---	15 26 13	59.2	141.3	-1.4		-24.8	188	1281	02 59 31
03 03 00	J1642+2523	15 26 13	58.7	144.9	-1.3		-22.4	-22	1281	No stop
03 04 30	=1640+254	15 27 43	58.8	145.5	-1.3		-22.1	68	1292	03 03 01
03 04 30	J1649+2635	15 27 43	59.4	141.9	-1.4		-24.5	-22	1292	No stop
03 08 00	---	15 31 14	59.7	143.3	-1.3		-23.6	188	1319	03 04 31
03 08 00	J1642+2523	15 31 14	59.1	147.0	-1.2		-21.2	-22	1319	No stop
03 09 30	=1640+254	15 32 44	59.3	147.6	-1.2		-20.9	68	1331	03 08 01
03 10 30	J1649+2635	15 33 44	59.9	144.3	-1.3		-23.0	38	1331	03 10 30
03 14 00	---	15 37 15	60.2	145.8	-1.2		-22.2	210	1358	03 10 31
03 14 00	J1642+2523	15 37 15	59.6	149.5	-1.1		-19.7	-22	1358	No stop
03 15 30	=1640+254	15 38 45	59.7	150.1	-1.1		-19.3	68	1369	03 14 01
03 15 30	J1649+2635	15 38 45	60.3	146.4	-1.2		-21.8	-22	1369	No stop
03 19 00	---	15 42 16	60.6	147.9	-1.1		-20.9	188	1396	03 15 31
03 19 00	J1642+2523	15 42 16	60.0	151.6	-1.0		-18.4	-22	1396	No stop
03 20 30	=1640+254	15 43 46	60.1	152.2	-1.0		-18.0	68	1408	03 19 01
03 20 30	J1649+2635	15 43 46	60.7	148.5	-1.1		-20.5	-22	1408	No stop
03 24 00	---	15 47 16	61.0	150.1	-1.0		-19.6	188	1435	03 20 31
03 24 00	J1642+2523	15 47 16	60.3	153.8	-0.9		-17.1	-22	1435	No stop
03 25 30	=1640+254	15 48 47	60.4	154.4	-0.9		-16.7	68	1446	03 24 01

Schedule for TORUN (Code Tr) Page 7

Heart of a spiral DRAGN

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 9 Mar 2016 Day 69 ---										
03 26 30	J1649+2635	15 49 47	61.2	151.2	-1.0		-18.9	38	1446	03 26 30
03 30 00	---	15 53 17	61.4	152.7	-0.9		-17.9	210	1473	03 26 31
03 30 00	J1642+2523	15 53 17	60.7	156.4	-0.8		-15.4	-23	1473	No stop
03 31 30	=1640+254	15 54 48	60.8	157.1	-0.8		-15.0	67	1485	03 30 01
03 31 30	J1649+2635	15 54 48	61.5	153.4	-0.9		-17.5	-22	1485	No stop
03 35 00	---	15 58 18	61.8	155.0	-0.9		-16.5	188	1512	03 31 31
03 35 00	J1642+2523	15 58 18	61.0	158.7	-0.8		-14.0	-23	1512	No stop
03 36 30	=1640+254	15 59 49	61.1	159.3	-0.7		-13.6	67	1523	03 35 01
03 36 30	J1649+2635	15 59 49	61.9	155.6	-0.8		-16.1	-22	1523	No stop
03 40 00	---	16 03 19	62.1	157.2	-0.8		-15.0	188	1550	03 36 31
03 40 00	J1642+2523	16 03 19	61.3	160.9	-0.7		-12.5	-22	1550	No stop
03 41 30	=1640+254	16 04 49	61.3	161.6	-0.6		-12.1	68	1562	03 40 01
03 42 30	J1649+2635	16 05 50	62.2	158.4	-0.7		-14.3	38	1562	03 42 30
03 46 00	---	16 09 20	62.4	160.1	-0.7		-13.2	210	1588	03 42 31
03 46 00	J1642+2523	16 09 20	61.5	163.7	-0.6		-10.7	-22	1588	No stop
03 47 30	=1640+254	16 10 50	61.6	164.4	-0.5		-10.3	68	1600	03 46 01
03 47 30	J1649+2635	16 10 50	62.5	160.8	-0.7		-12.8	-22	1600	No stop
03 51 00	---	16 14 21	62.6	162.4	-0.6		-11.7	188	1627	03 47 31
03 51 00	J1642+2523	16 14 21	61.7	166.1	-0.5		-9.2	-22	1627	No stop
03 52 30	=1640+254	16 15 51	61.8	166.8	-0.5		-8.7	68	1638	03 51 01
03 52 30	J1649+2635	16 15 51	62.7	163.1	-0.6		-11.2	-22	1638	No stop
03 56 00	---	16 19 22	62.8	164.8	-0.5		-10.1	188	1665	03 52 31
03 56 00	J1642+2523	16 19 22	61.9	168.4	-0.4		-7.7	-22	1665	No stop
03 57 30	=1640+254	16 20 52	61.9	169.2	-0.4		-7.2	68	1677	03 56 01
03 58 30	J1649+2635	16 21 52	62.9	166.0	-0.5		-9.3	38	1677	03 58 30
04 02 00	---	16 25 23	63.1	167.7	-0.4		-8.2	210	1704	03 58 31
04 02 00	J1642+2523	16 25 23	62.1	171.3	-0.3		-5.8	-22	1704	No stop
04 03 30	=1640+254	16 26 53	62.1	172.0	-0.3		-5.3	68	1715	04 02 01
04 03 30	J1649+2635	16 26 53	63.1	168.5	-0.4		-7.7	-22	1715	No stop
04 07 00	---	16 30 24	63.2	170.2	-0.3		-6.6	188	1742	04 03 31

Schedule for TORUN (Code Tr) Page 8

Heart of a spiral DRAGN

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 9 Mar 2016 Day 69 ---										
04 07 00	J1642+2523	16 30 24	62.2	173.7	-0.2		-4.2	-22	1742	No stop
04 08 30	=1640+254	16 31 54	62.2	174.5	-0.2		-3.7	68	1754	04 07 01
04 08 30	J1649+2635	16 31 54	63.2	171.0	-0.3		-6.1	-21	1754	No stop
04 12 00	---	16 35 24	63.3	172.7	-0.2		-4.9	189	1781	04 08 31
04 12 00	J1642+2523	16 35 24	62.2	176.2	-0.1		-2.6	-22	1781	No stop
04 13 30	=1640+254	16 36 55	62.2	176.9	-0.1		-2.1	68	1792	04 12 01
04 14 30	J1649+2635	16 37 55	63.4	173.9	-0.2		-4.1	39	1792	04 14 30
04 18 00	---	16 41 25	63.4	175.7	-0.1		-2.9	210	1819	04 14 31
04 18 00	J1642+2523	16 41 25	62.3	179.1	-0.0		-0.6	-22	1819	No stop
04 19 30	=1640+254	16 42 56	62.3	179.8	-0.0		-0.1	68	1831	04 18 01
04 19 30	J1649+2635	16 42 56	63.4	176.4	-0.1		-2.4	-21	1831	No stop
04 23 00	---	16 46 26	63.5	178.2	-0.1		-1.2	189	1858	04 19 31
04 23 00	J1642+2523	16 46 26	62.3	181.5	0.1		1.0	-22	1858	No stop
04 24 30	=1640+254	16 47 56	62.2	182.2	0.1		1.5	68	1869	04 23 01
04 24 30	J1649+2635	16 47 56	63.5	178.9	-0.0		-0.7	-21	1869	No stop
04 28 00	---	16 51 27	63.5	180.7	0.0		0.5	189	1896	04 24 31
04 28 00	J1642+2523	16 51 27	62.2	183.9	0.1		2.6	-21	1896	No stop
04 29 30	=1640+254	16 52 57	62.2	184.7	0.2		3.1	69	1908	04 28 01
04 30 30	J1649+2635	16 53 57	63.4	182.0	0.1		1.3	39	1908	04 30 30
04 34 00	---	16 57 28	63.4	183.7	0.1		2.5	210	1935	04 30 31
04 34 00	J1642+2523	16 57 28	62.1	186.8	0.2		4.5	-21	1935	No stop
04 35 30	=1640+254	16 58 58	62.1	187.6	0.3		5.0	69	1946	04 34 01
04 35 30	J1649+2635	16 58 58	63.4	184.5	0.1		3.0	-20	1946	No stop
04 39 00	---	17 02 29	63.4	186.2	0.2		4.2	190	1973	04 35 31
04 39 00	J1642+2523	17 02 29	62.0	189.2	0.3		6.1	-21	1973	No stop
04 40 30	=1640+254	17 03 59	62.0	190.0	0.3		6.6	69	1985	04 39 01
04 40 30	J1649+2635	17 03 59	63.3	187.0	0.2		4.7	-20	1985	No stop
04 44 00	---	17 07 30	63.3	188.7	0.3		5.8	190	2012	04 40 31
04 44 00	J1642+2523	17 07 30	61.9	191.6	0.4		7.7	-21	2012	No stop
04 45 30	=1640+254	17 09 00	61.8	192.4	0.4		8.2	69	2023	04 44 01

```
Schedule for TORUN     (Code Tr )                                Page   9
               Heart of a spiral DRAGN
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Wed   9 Mar 2016   Day  69 ---

04 46 30  J1649+2635   17 10 00  63.2 189.9  0.3       6.6    40     2023   04 46 30
04 50 00  ---          17 13 31  63.1 191.7  0.4       7.8   210     2050   04 46 31

04 50 00  J1642+2523   17 13 31  61.7 194.5  0.5       9.6   -20     2050   No stop
04 51 30  =1640+254    17 15 01  61.6 195.2  0.5      10.0    70     2062   04 50 01

04 51 30  J1649+2635   17 15 01  63.1 192.4  0.4       8.3   -20     2062   No stop
04 55 00  ---          17 18 31  62.9 194.1  0.5       9.4   190     2088   04 51 31

04 55 00  J1642+2523   17 18 31  61.5 196.8  0.6      11.1   -20     2088   No stop
04 56 30  =1640+254    17 20 02  61.4 197.5  0.6      11.5    70     2100   04 55 01

04 56 30  J1649+2635   17 20 02  62.9 194.8  0.5       9.9   -19     2100   No stop
05 00 00  ---          17 23 32  62.7 196.5  0.6      11.0   191     2127   04 56 31



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: sess116.L1024

   Setup group:    9         Station: TORUN            Total bit rate:  1024
   Format: MARK5B            Bits per sample: 2        Sample rate: 32.000
   Number of channels: 16    DBE type: DBBC_DDC        Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00
            2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00
  Net SB=         L         L         U         U         L         L         U         U
                  L         L         U         U         L         L         U         U
  IF SB =         L         L         L         L         L         L         L         L
                  L         L         L         L         L         L         L         L
  Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
                RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
  BBC   =         1         5         1         5         2         6         2         6
                  3         7         3         7         4         8         4         8
  BBC SB=         U         U         L         L         U         U         L         L
                  U         U         L         L         U         U         L         L
  IF    =        A1        B1        A1        B1        A1        B1        A1        B1
                 A1        B1        A1        B1        A1        B1        A1        B1

 The following frequency sets based on these setups were used.

  Frequency Set:   6  Setup file default.  Used with PCAL = off
  LO sum=   1610.49  1610.49  1610.49  1610.49  1642.49  1642.49  1642.49  1642.49
            1674.49  1674.49  1674.49  1674.49  1706.49  1706.49  1706.49  1706.49
  BBC fr=    689.51   689.51   689.51   689.51   657.51   657.51   657.51   657.51
             625.51   625.51   625.51   625.51   593.51   593.51   593.51   593.51
  Bandwd=     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
              16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
   Matching frequency sets:   6

  Track assignments are:
   track1=   2, 10, 18, 26,  4, 12, 20, 28,  6, 14, 22, 30,  8, 16, 24, 32
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)            (mas)

* J1649+2635        16 47 22.095000   * 16 49 24.010000     16 50 03.403266       0.00
                    26 40 10.51727    * 26 35 02.54000      26 33 17.38707        0.00

* OQ208             14 04 45.615156   * 14 07 00.394414     14 07 44.649281       0.24
  J1407+2827        28 41 29.23518    * 28 27 14.69022      28 22 30.83678        0.34
  1404+286          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
  J1407+28          GSFC 2015a astro solution, unpublished  67871 observations.

* NRAO512           16 38 48.169688   * 16 40 29.632773     16 41 02.429249       0.00
  J1640+3946        39 52 30.08667    * 39 46 46.02848      39 44 46.18896        0.00
  1638+398          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
  J1640+39          GSFC 2015a astro solution, unpublished 110323 observations.

  1640+254          16 40 36.555189   * 16 42 40.411831     16 43 20.469596       0.07
* J1642+2523        25 28 43.57721    * 25 23 07.68216      25 21 13.74965        0.13
                    /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
                    GSFC 2015a astro solution, unpublished    163 observations.
```

rk12qytr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Wed   9 Mar 2016   Day  69 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

07 00 00  1442+101     19 23 52  20.2 259.4  4.6      36.8     0        0   07 00 00
07 14 30  ---          19 38 24  18.0 262.4  4.9      37.2   870       28   07 00 01

07 15 00  1442+101     19 38 54  18.0 262.5  4.9      37.2    24       28   07 15 00
07 29 30  ---          19 53 27  15.8 265.5  5.1      37.4   870       56   07 15 01

07 30 00  1442+101     19 53 57  15.7 265.6  5.1      37.4    24       56   07 30 00
07 44 30  ---          20 08 29  13.5 268.5  5.4      37.5   870       84   07 30 01

07 45 00  1442+101     20 08 59  13.5 268.6  5.4      37.5    24       84   07 45 00
08 00 00  ---          20 24 02  11.2 271.6  5.6      37.5   900      112   07 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    6         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
 1st LO=   2400.00   2400.00   2400.00   2400.00
 Net SB=         L         L         U         U
 IF SB =         L         L         L         L
 Pol.  =       RCP       LCP       RCP       LCP
 BBC   =         1         2         1         2
 BBC SB=         U         U         L         L
 IF    =         C         A         C         A

The following frequency sets based on these setups were used.

 Frequency Set:   6  Setup file default.  Used with PCAL = 1MHz
 LO sum=   1668.00  1668.00  1668.00  1668.00
 BBC fr=    732.00   732.00   732.00   732.00
 Bandwd=     16.00    16.00    16.00    16.00
  Matching frequency sets:   6

 Track assignments are:
  track1=   2, 18,  3, 19
  barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 56.714313       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 31.41590        0.00
                    fake circumpolar target for a TS to look at

* 1442+101          14 42 50.483804   * 14 45 16.465253     14 46 04.297216       0.00
  J1445+0958        10 11 12.14439    * 09 58 36.07265      09 54 28.47813        0.00
  OQ172             ./rk12qy_sources.radioastron
                    AGN, HIGHz, rfc_2013d Petrov, 2013, unpublished 1336 observations, RA-AO3-04, RA


EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1442+101           128.7

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12ratr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                   Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Wed   9 Mar 2016   Day  69 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

14 00 00  1726+455     02 25 01  16.0 -31.5  9.0      26.6     0        0   14 00 00
14 14 30  ---          02 39 33  14.9 -29.1  9.2      24.6   870       28   14 00 01

14 15 00  1726+455     02 40 03  14.9 -29.0  9.2      24.6    24       28   14 15 00
14 29 30  ---          02 54 36  13.9 -26.6  9.4      22.6   870       56   14 15 01

14 30 00  1726+455     02 55 06  13.9 -26.5  9.5      22.5    24       56   14 30 00
14 44 30  ---          03 09 38  12.9 -24.1  9.7      20.5   870       84   14 30 01

14 45 00  1726+455     03 10 08  12.9 -24.0  9.7      20.4    24       84   14 45 00
15 00 00  ---          03 25 11  12.0 -21.5 10.0      18.3   900      112   14 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    4         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   2400.00   2400.00   2400.00   2400.00
  Net SB=         L         L         U         U
  IF SB =         L         L         L         L
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         U         U         L         L
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   4  Setup file default.  Used with PCAL = 1MHz
  LO sum=   1668.00  1668.00  1668.00  1668.00
  BBC fr=    732.00   732.00   732.00   732.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   4

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off



 POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA           11 57 21.769299   * 12 00 00.000000     12 00 56.732710       0.00
                   85 16 41.77889    * 85 00 00.00000      84 54 31.52206        0.00
                   fake circumpolar target for a TS to look at

* 1726+455         17 26 01.198749   * 17 27 27.650803     17 27 55.345684       0.00
  J1727+4530       45 33 04.55106    * 45 30 39.73121      45 29 43.60058        0.00
                   ./rk12ra_sources.radioastron
                   AGN, rfc_2013d Petrov, 2013, unpublished 62139 observations, RA-AO3-04


EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1726+455            91.8

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12rbtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/K-band, dual-pol

Schedule for TORUN     (Code Tr )                                   Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Wed   9 Mar 2016   Day  69 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

22 00 00  1124-186     10 26 20  16.6 164.8 -1.0      -9.6     0        0   22 00 00
22 14 30  ---          10 40 52  17.1 168.4 -0.8      -7.4   870       28   22 00 01

22 15 00  1124-186     10 41 22  17.2 168.5 -0.8      -7.3    24       28   22 15 00
22 29 30  ---          10 55 55  17.5 172.1 -0.5      -5.0   870       56   22 15 01

22 30 00  1124-186     10 56 25  17.5 172.2 -0.5      -4.9    24       56   22 30 00
22 44 30  ---          11 10 57  17.8 175.8 -0.3      -2.7   870       84   22 30 01

22 45 00  1124-186     11 11 27  17.8 175.9 -0.3      -2.6    24       84   22 45 00
23 00 00  ---          11 26 30  17.9 179.6 -0.0      -0.2   900      112   22 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    3         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4100.00   4100.00   4100.00   4100.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   1  Setup file default.  Used with PCAL = 1MHz
  LO sum=   4836.00  4836.00  4836.00  4836.00
  BBC fr=    736.00   736.00   736.00   736.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   1

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off



 POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                       (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 56.750631       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 31.63986        0.00
                    fake circumpolar target for a TS to look at

* 1124-186          11 24 34.018124   * 11 27 04.392449     11 27 54.531179       0.00
  J1127-1857       -18 40 46.35977    *-18 57 17.44185     -19 02 46.21148        0.00
                    ./rk12rb_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 41937 observations, RA-AO3-04, RA-AO2-1



EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1124-186           156.9

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

em119dtr

Heart of a spiral DRAGN

PI: *Minnie Mao*

```
Address:  JIVE

Observing mode:
Schedule for TORUN     (Code Tr )                                  Page   2
               Heart of a spiral DRAGN
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source                Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------
 --- Thu  10 Mar 2016   Day  70 ---
 Next scan frequencies:  1610.49  1610.49  1610.49  1610.49  1642.49  1642.49  1642.49  1642.49
                         1674.49  1674.49  1674.49  1674.49  1706.49  1706.49  1706.49  1706.49
 Next BBC frequencies:    689.51   689.51   689.51   689.51   657.51   657.51   657.51   657.51
                          625.51   625.51   625.51   625.51   593.51   593.51   593.51   593.51
 Next scan bandwidths:     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
                           16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00

00 00 00  OQ208        12 26 40  59.1 133.0 -1.7     -29.9     0        0   00 00 00
00 06 00  ---          12 32 41  59.7 135.3 -1.6     -28.7   360       46   00 00 01

00 07 30  J1649+2635   12 34 11  36.4  93.2 -4.3     -42.1   -11       46   00 07 30
00 11 00  ---          12 37 41  36.9  94.0 -4.2     -42.0   199       73   00 07 31

00 12 00  J1642+2523   12 38 42  37.2  96.6 -4.1     -41.3    41       73   00 12 00
00 13 30  =1640+254    12 40 12  37.4  96.9 -4.1     -41.3    90       85   00 12 01

00 13 30  J1649+2635   12 40 12  37.3  94.5 -4.2     -42.0   -19       85   No stop
00 17 00  ---          12 43 42  37.8  95.2 -4.1     -42.0   191      112   00 13 31

00 17 00  J1642+2523   12 43 42  37.9  97.7 -4.0     -41.2   -19      112   No stop
00 18 30  =1640+254    12 45 13  38.1  98.0 -4.0     -41.2    71      123   00 17 01

00 18 30  J1649+2635   12 45 13  38.0  95.5 -4.1     -41.9   -19      123   No stop
00 22 00  ---          12 48 43  38.6  96.3 -4.0     -41.9   191      150   00 18 31

00 23 00  J1642+2523   12 49 43  38.8  99.0 -3.9     -41.0    41      150   00 23 00
00 24 30  =1640+254    12 51 14  39.0  99.3 -3.9     -41.0    90      162   00 23 01

00 24 30  J1649+2635   12 51 14  38.9  96.8 -4.0     -41.8   -19      162   No stop
00 28 00  ---          12 54 44  39.5  97.6 -3.9     -41.7   191      188   00 24 31

00 28 00  J1642+2523   12 54 44  39.6 100.1 -3.8     -40.9   -19      188   No stop
00 29 30  =1640+254    12 56 14  39.8 100.4 -3.8     -40.8    71      200   00 28 01

00 29 30  J1649+2635   12 56 14  39.7  97.9 -3.9     -41.7   -19      200   No stop
00 33 00  ---          12 59 45  40.2  98.7 -3.8     -41.6   191      227   00 29 31

00 34 00  J1642+2523   13 00 45  40.4 101.4 -3.7     -40.6    41      227   00 34 00
00 35 30  =1640+254    13 02 15  40.7 101.8 -3.7     -40.6    90      238   00 34 01

00 35 30  J1649+2635   13 02 15  40.6  99.2 -3.8     -41.5   -19      238   No stop
00 39 00  ---          13 05 46  41.1 100.0 -3.7     -41.4   191      265   00 35 31
```

Schedule for TORUN (Code Tr) Page 3

Heart of a spiral DRAGN

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Thu	10 Mar 2016	Day 70 ---								
00 39 00	J1642+2523	13 05 46	41.2	102.6	-3.6		-40.4	-19	265	No stop
00 40 30	=1640+254	13 07 16	41.4	102.9	-3.6		-40.4	71	277	00 39 01
00 40 30	J1649+2635	13 07 16	41.3	100.3	-3.7		-41.3	-19	277	No stop
00 44 00	---	13 10 47	41.8	101.1	-3.7		-41.2	191	304	00 40 31
00 45 00	J1642+2523	13 11 47	42.1	103.9	-3.5		-40.2	40	304	00 45 00
00 46 30	=1640+254	13 13 17	42.3	104.3	-3.5		-40.1	90	315	00 45 01
00 46 30	J1649+2635	13 13 17	42.2	101.7	-3.6		-41.1	-19	315	No stop
00 50 00	---	13 16 48	42.7	102.5	-3.6		-41.0	191	342	00 46 31
00 50 00	J1642+2523	13 16 48	42.8	105.1	-3.4		-39.9	-20	342	No stop
00 51 30	=1640+254	13 18 18	43.0	105.5	-3.4		-39.8	70	354	00 50 01
00 51 30	J1649+2635	13 18 18	42.9	102.8	-3.5		-40.9	-19	354	No stop
00 55 00	---	13 21 49	43.4	103.6	-3.5		-40.7	191	381	00 51 31
00 56 00	J1642+2523	13 22 49	43.7	106.5	-3.3		-39.6	40	381	00 56 00
00 57 30	=1640+254	13 24 19	43.9	106.9	-3.3		-39.5	90	392	00 56 01
00 57 30	J1649+2635	13 24 19	43.8	104.2	-3.4		-40.6	-19	392	No stop
01 01 00	---	13 27 50	44.3	105.1	-3.4		-40.4	191	419	00 57 31
01 01 00	J1642+2523	13 27 50	44.4	107.8	-3.3		-39.3	-20	419	No stop
01 02 30	=1640+254	13 29 20	44.6	108.1	-3.2		-39.2	70	431	01 01 01
01 02 30	J1649+2635	13 29 20	44.5	105.4	-3.3		-40.3	-20	431	No stop
01 06 00	---	13 32 50	45.0	106.3	-3.3		-40.1	190	458	01 02 31
01 07 00	J1642+2523	13 33 51	45.2	109.3	-3.2		-38.9	40	458	01 07 00
01 08 30	=1640+254	13 35 21	45.4	109.6	-3.1		-38.7	90	469	01 07 01
01 08 30	J1649+2635	13 35 21	45.4	106.9	-3.2		-40.0	-20	469	No stop
01 12 00	---	13 38 51	45.9	107.7	-3.2		-39.7	190	496	01 08 31
01 12 00	J1642+2523	13 38 51	45.9	110.5	-3.1		-38.5	-20	496	No stop
01 13 30	=1640+254	13 40 22	46.1	110.9	-3.0		-38.4	70	508	01 12 01
01 13 30	J1649+2635	13 40 22	46.1	108.1	-3.2		-39.6	-20	508	No stop
01 17 00	---	13 43 52	46.6	109.0	-3.1		-39.4	190	535	01 13 31
01 18 00	J1642+2523	13 44 52	46.8	112.1	-3.0		-38.0	40	535	01 18 00
01 19 30	=1640+254	13 46 23	47.0	112.5	-2.9		-37.9	90	546	01 18 01
01 19 30	J1649+2635	13 46 23	47.0	109.6	-3.1		-39.2	-20	546	No stop
01 23 00	---	13 49 53	47.5	110.5	-3.0		-39.0	190	573	01 19 31

Schedule for TORUN (Code Tr) Page 4

Heart of a spiral DRAGN

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Thu 10 Mar 2016 Day 70 ---										
01 23 00	J1642+2523	13 49 53	47.5	113.4	-2.9		-37.6	-20	573	No stop
01 24 30	=1640+254	13 51 23	47.7	113.8	-2.9		-37.5	70	585	01 23 01
01 24 30	J1649+2635	13 51 23	47.7	110.9	-3.0		-38.8	-20	585	No stop
01 28 00	---	13 54 54	48.2	111.8	-2.9		-38.5	190	612	01 24 31
01 29 00	J1642+2523	13 55 54	48.3	115.0	-2.8		-37.0	40	612	01 29 00
01 30 30	=1640+254	13 57 24	48.5	115.4	-2.8		-36.9	90	623	01 29 01
01 30 30	J1649+2635	13 57 24	48.5	112.5	-2.9		-38.3	-20	623	No stop
01 34 00	---	14 00 55	49.0	113.4	-2.8		-38.0	190	650	01 30 31
01 34 00	J1642+2523	14 00 55	49.0	116.4	-2.7		-36.5	-21	650	No stop
01 35 30	=1640+254	14 02 25	49.2	116.8	-2.7		-36.4	69	662	01 34 01
01 35 30	J1649+2635	14 02 25	49.2	113.8	-2.8		-37.9	-20	662	No stop
01 39 00	---	14 05 56	49.7	114.8	-2.7		-37.6	190	688	01 35 31
01 40 00	J1642+2523	14 06 56	49.8	118.0	-2.6		-35.9	39	688	01 40 00
01 41 30	=1640+254	14 08 26	50.0	118.5	-2.6		-35.7	90	700	01 40 01
01 41 30	J1649+2635	14 08 26	50.0	115.5	-2.7		-37.3	-20	700	No stop
01 45 00	---	14 11 57	50.5	116.5	-2.6		-36.9	190	727	01 41 31
01 45 00	J1642+2523	14 11 57	50.4	119.5	-2.5		-35.3	-21	727	No stop
01 46 30	=1640+254	14 13 27	50.6	119.9	-2.5		-35.2	69	738	01 45 01
01 46 30	NRAO512	14 13 27	61.7	103.1	-2.5		-49.5	-56	738	No stop
01 52 00	---	14 18 58	62.5	104.6	-2.4		-49.1	274	781	01 46 31
01 53 00	J1642+2523	14 19 58	51.5	121.8	-2.4		-34.4	5	781	01 53 00
01 54 30	=1640+254	14 21 28	51.7	122.3	-2.4		-34.2	90	792	01 53 01
01 54 30	J1649+2635	14 21 28	51.8	119.2	-2.5		-35.9	-21	792	No stop
01 58 00	---	14 24 59	52.2	120.2	-2.4		-35.5	189	819	01 54 31
01 58 00	J1642+2523	14 24 59	52.1	123.4	-2.3		-33.7	-21	819	No stop
01 59 30	=1640+254	14 26 29	52.3	123.8	-2.3		-33.5	69	831	01 58 01
01 59 30	J1649+2635	14 26 29	52.4	120.7	-2.4		-35.3	-21	831	No stop
02 03 00	---	14 30 00	52.9	121.7	-2.3		-34.8	189	858	01 59 31
02 04 00	J1642+2523	14 31 00	52.9	125.2	-2.2		-32.9	39	858	02 04 00
02 05 30	=1640+254	14 32 30	53.0	125.7	-2.2		-32.7	90	869	02 04 01

Schedule for TORUN (Code Tr) Page 5

Heart of a spiral DRAGN

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Thu 10 Mar 2016 Day 70 ---										
02 05 30	J1649+2635	14 32 30	53.2	122.5	-2.3		-34.5	-21	869	No stop
02 09 00	---	14 36 01	53.6	123.6	-2.2		-34.0	189	896	02 05 31
02 09 00	J1642+2523	14 36 01	53.5	126.8	-2.1		-32.1	-21	896	No stop
02 10 30	=1640+254	14 37 31	53.6	127.3	-2.1		-31.9	69	908	02 09 01
02 10 30	J1649+2635	14 37 31	53.8	124.1	-2.2		-33.8	-21	908	No stop
02 14 00	---	14 41 02	54.3	125.2	-2.2		-33.3	189	935	02 10 31
02 15 00	J1642+2523	14 42 02	54.2	128.8	-2.0		-31.2	39	935	02 15 00
02 16 30	=1640+254	14 43 32	54.3	129.3	-2.0		-31.0	90	946	02 15 01
02 16 30	J1649+2635	14 43 32	54.6	126.0	-2.1		-32.9	-21	946	No stop
02 20 00	---	14 47 03	55.0	127.1	-2.1		-32.4	189	973	02 16 31
02 20 00	J1642+2523	14 47 03	54.8	130.5	-1.9		-30.4	-22	973	No stop
02 21 30	=1640+254	14 48 33	54.9	131.0	-1.9		-30.1	68	985	02 20 01
02 21 30	J1649+2635	14 48 33	55.2	127.6	-2.0		-32.1	-21	985	No stop
02 25 00	---	14 52 03	55.6	128.8	-2.0		-31.5	189	1012	02 21 31
02 26 00	J1642+2523	14 53 04	55.4	132.5	-1.8		-29.3	38	1012	02 26 00
02 27 30	=1640+254	14 54 34	55.6	133.0	-1.8		-29.1	90	1023	02 26 01
02 27 30	J1649+2635	14 54 34	55.9	129.6	-1.9		-31.1	-21	1023	No stop
02 31 00	---	14 58 04	56.3	130.9	-1.9		-30.5	189	1050	02 27 31
02 31 00	J1642+2523	14 58 04	56.0	134.3	-1.8		-28.4	-22	1050	No stop
02 32 30	=1640+254	14 59 35	56.1	134.8	-1.7		-28.1	68	1062	02 31 01
02 32 30	J1649+2635	14 59 35	56.5	131.4	-1.8		-30.2	-21	1062	No stop
02 36 00	---	15 03 05	56.8	132.6	-1.8		-29.6	189	1088	02 32 31
02 36 00	J1642+2523	15 03 05	56.5	136.1	-1.7		-27.5	-22	1088	No stop
02 37 30	=1640+254	15 04 35	56.7	136.6	-1.6		-27.2	68	1100	02 36 01
02 38 30	J1649+2635	15 05 36	57.1	133.5	-1.7		-29.1	39	1100	02 38 30
02 42 00	---	15 09 06	57.5	134.8	-1.7		-28.5	210	1127	02 38 31
02 42 00	J1642+2523	15 09 06	57.1	138.3	-1.6		-26.2	-22	1127	No stop
02 43 30	=1640+254	15 10 36	57.3	138.9	-1.5		-25.9	68	1138	02 42 01
02 43 30	J1649+2635	15 10 36	57.7	135.3	-1.7		-28.2	-22	1138	No stop
02 47 00	---	15 14 07	58.0	136.6	-1.6		-27.4	188	1165	02 43 31

```
Schedule for TORUN     (Code Tr )                                  Page   6
               Heart of a spiral DRAGN
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Thu  10 Mar 2016   Day  70 ---

02 47 00  J1642+2523   15 14 07  57.6 140.2 -1.5     -25.2   -22     1165   No stop
02 48 30  =1640+254    15 15 37  57.8 140.8 -1.5     -24.9    68     1177   02 47 01

02 48 30  J1649+2635   15 15 37  58.2 137.2 -1.6     -27.1   -22     1177   No stop
02 52 00  ---          15 19 08  58.5 138.5 -1.5     -26.4   188     1204   02 48 31

02 52 00  J1642+2523   15 19 08  58.1 142.1 -1.4     -24.1   -22     1204   No stop
02 53 30  =1640+254    15 20 38  58.2 142.7 -1.4     -23.7    68     1215   02 52 01

02 54 30  J1649+2635   15 21 38  58.8 139.5 -1.5     -25.8    38     1215   02 54 30
02 58 00  ---          15 25 09  59.1 140.9 -1.4     -25.1   210     1242   02 54 31

02 58 00  J1642+2523   15 25 09  58.6 144.5 -1.3     -22.7   -22     1242   No stop
02 59 30  =1640+254    15 26 39  58.8 145.1 -1.3     -22.3    68     1254   02 58 01

02 59 30  J1649+2635   15 26 39  59.3 141.5 -1.4     -24.7   -22     1254   No stop
03 03 00  ---          15 30 10  59.6 142.9 -1.3     -23.9   188     1281   02 59 31

03 03 00  J1642+2523   15 30 10  59.1 146.5 -1.2     -21.5   -22     1281   No stop
03 04 30  =1640+254    15 31 40  59.2 147.1 -1.2     -21.1    68     1292   03 03 01

03 04 30  J1649+2635   15 31 40  59.7 143.5 -1.3     -23.5   -22     1292   No stop
03 08 00  ---          15 35 10  60.0 144.9 -1.2     -22.7   188     1319   03 04 31

03 08 00  J1642+2523   15 35 10  59.5 148.6 -1.1     -20.3   -22     1319   No stop
03 09 30  =1640+254    15 36 41  59.6 149.2 -1.1     -19.9    68     1331   03 08 01

03 10 30  J1649+2635   15 37 41  60.2 146.0 -1.2     -22.1    38     1331   03 10 30
03 14 00  ---          15 41 11  60.5 147.4 -1.1     -21.2   210     1358   03 10 31

03 14 00  J1642+2523   15 41 11  59.9 151.1 -1.0     -18.7   -22     1358   No stop
03 15 30  =1640+254    15 42 42  60.0 151.8 -1.0     -18.3    68     1369   03 14 01

03 15 30  J1649+2635   15 42 42  60.6 148.1 -1.1     -20.8   -22     1369   No stop
03 19 00  ---          15 46 12  60.9 149.6 -1.1     -19.9   188     1396   03 15 31

03 19 00  J1642+2523   15 46 12  60.3 153.3 -1.0     -17.4   -22     1396   No stop
03 20 30  =1640+254    15 47 42  60.4 153.9 -0.9     -17.0    68     1408   03 19 01

03 20 30  J1649+2635   15 47 42  61.0 150.2 -1.0     -19.5   -22     1408   No stop
03 24 00  ---          15 51 13  61.3 151.8 -1.0     -18.5   188     1435   03 20 31

03 24 00  J1642+2523   15 51 13  60.6 155.5 -0.9     -16.0   -23     1435   No stop
03 25 30  =1640+254    15 52 43  60.7 156.2 -0.8     -15.6    67     1446   03 24 01
```

Schedule for TORUN (Code Tr) Page 7

Heart of a spiral DRAGN

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Thu 10 Mar 2016 Day 70 ---										
03 26 30	J1649+2635	15 53 43	61.5	152.9	-0.9		-17.8	38	1446	03 26 30
03 30 00	---	15 57 14	61.7	154.5	-0.9		-16.8	210	1473	03 26 31
03 30 00	J1642+2523	15 57 14	60.9	158.2	-0.8		-14.3	-23	1473	No stop
03 31 30	=1640+254	15 58 44	61.0	158.9	-0.7		-13.9	67	1485	03 30 01
03 31 30	J1649+2635	15 58 44	61.8	155.2	-0.9		-16.4	-22	1485	No stop
03 35 00	---	16 02 15	62.0	156.8	-0.8		-15.4	188	1512	03 31 31
03 35 00	J1642+2523	16 02 15	61.2	160.5	-0.7		-12.8	-22	1512	No stop
03 36 30	=1640+254	16 03 45	61.3	161.1	-0.7		-12.4	68	1523	03 35 01
03 36 30	J1649+2635	16 03 45	62.1	157.4	-0.8		-14.9	-22	1523	No stop
03 40 00	---	16 07 16	62.3	159.1	-0.7		-13.9	188	1550	03 36 31
03 40 00	J1642+2523	16 07 16	61.4	162.8	-0.6		-11.4	-22	1550	No stop
03 41 30	=1640+254	16 08 46	61.5	163.5	-0.6		-10.9	68	1562	03 40 01
03 42 30	J1649+2635	16 09 46	62.4	160.3	-0.7		-13.1	38	1562	03 42 30
03 46 00	---	16 13 17	62.6	161.9	-0.6		-12.0	210	1588	03 42 31
03 46 00	J1642+2523	16 13 17	61.7	165.6	-0.5		-9.5	-22	1588	No stop
03 47 30	=1640+254	16 14 47	61.7	166.3	-0.5		-9.1	68	1600	03 46 01
03 47 30	J1649+2635	16 14 47	62.7	162.6	-0.6		-11.6	-22	1600	No stop
03 51 00	---	16 18 17	62.8	164.3	-0.5		-10.5	188	1627	03 47 31
03 51 00	J1642+2523	16 18 17	61.9	167.9	-0.4		-8.0	-22	1627	No stop
03 52 30	=1640+254	16 19 48	61.9	168.6	-0.4		-7.5	68	1638	03 51 01
03 52 30	J1649+2635	16 19 48	62.9	165.0	-0.5		-10.0	-22	1638	No stop
03 56 00	---	16 23 18	63.0	166.7	-0.4		-8.9	188	1665	03 52 31
03 56 00	J1642+2523	16 23 18	62.0	170.3	-0.3		-6.4	-22	1665	No stop
03 57 30	=1640+254	16 24 49	62.0	171.0	-0.3		-5.9	68	1677	03 56 01
03 58 30	J1649+2635	16 25 49	63.1	168.0	-0.4		-8.0	38	1677	03 58 30
04 02 00	---	16 29 19	63.2	169.7	-0.3		-6.9	210	1704	03 58 31
04 02 00	J1642+2523	16 29 19	62.1	173.2	-0.2		-4.5	-22	1704	No stop
04 03 30	=1640+254	16 30 50	62.2	173.9	-0.2		-4.0	68	1715	04 02 01
04 03 30	J1649+2635	16 30 50	63.2	170.4	-0.3		-6.4	-21	1715	No stop
04 07 00	---	16 34 20	63.3	172.2	-0.3		-5.3	189	1742	04 03 31

Schedule for TORUN (Code Tr) Page 8

Heart of a spiral DRAGN

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Thu 10 Mar 2016 Day 70 ---										
04 07 00	J1642+2523	16 34 20	62.2	175.6	-0.2		-2.9	-22	1742	No stop
04 08 30	=1640+254	16 35 50	62.2	176.4	-0.1		-2.4	68	1754	04 07 01
04 08 30	J1649+2635	16 35 50	63.3	172.9	-0.2		-4.8	-21	1754	No stop
04 12 00	---	16 39 21	63.4	174.6	-0.2		-3.6	189	1781	04 08 31
04 12 00	J1642+2523	16 39 21	62.2	178.1	-0.1		-1.3	-22	1781	No stop
04 13 30	=1640+254	16 40 51	62.3	178.8	-0.0		-0.8	68	1792	04 12 01
04 14 30	J1649+2635	16 41 51	63.4	175.9	-0.1		-2.8	39	1792	04 14 30
04 18 00	---	16 45 22	63.4	177.7	-0.1		-1.6	210	1819	04 14 31
04 18 00	J1642+2523	16 45 22	62.3	181.0	0.0		0.7	-22	1819	No stop
04 19 30	=1640+254	16 46 52	62.3	181.7	0.1		1.1	68	1831	04 18 01
04 19 30	J1649+2635	16 46 52	63.5	178.4	-0.1		-1.1	-21	1831	No stop
04 23 00	---	16 50 23	63.5	180.2	0.0		0.1	189	1858	04 19 31
04 23 00	J1642+2523	16 50 23	62.2	183.4	0.1		2.3	-21	1858	No stop
04 24 30	=1640+254	16 51 53	62.2	184.1	0.1		2.8	69	1869	04 23 01
04 24 30	J1649+2635	16 51 53	63.5	180.9	0.0		0.6	-21	1869	No stop
04 28 00	---	16 55 24	63.4	182.7	0.1		1.8	189	1896	04 24 31
04 28 00	J1642+2523	16 55 24	62.2	185.8	0.2		3.9	-21	1896	No stop
04 29 30	=1640+254	16 56 54	62.1	186.6	0.2		4.4	69	1908	04 28 01
04 30 30	J1649+2635	16 57 54	63.4	183.9	0.1		2.6	39	1908	04 30 30
04 34 00	---	17 01 25	63.4	185.7	0.2		3.8	210	1935	04 30 31
04 34 00	J1642+2523	17 01 25	62.1	188.7	0.3		5.8	-21	1935	No stop
04 35 30	=1640+254	17 02 55	62.0	189.5	0.3		6.3	69	1946	04 34 01
04 35 30	J1649+2635	17 02 55	63.4	186.4	0.2		4.3	-20	1946	No stop
04 39 00	---	17 06 25	63.3	188.2	0.3		5.5	190	1973	04 35 31
04 39 00	J1642+2523	17 06 25	61.9	191.1	0.4		7.4	-21	1973	No stop
04 40 30	=1640+254	17 07 56	61.9	191.8	0.4		7.8	69	1985	04 39 01
04 40 30	J1649+2635	17 07 56	63.3	188.9	0.3		6.0	-20	1985	No stop
04 44 00	---	17 11 26	63.2	190.6	0.4		7.1	190	2012	04 40 31
04 44 00	J1642+2523	17 11 26	61.8	193.5	0.5		8.9	-20	2012	No stop
04 45 30	=1640+254	17 12 56	61.7	194.2	0.5		9.4	70	2023	04 44 01

```
Schedule for TORUN     (Code Tr )                                  Page   9
               Heart of a spiral DRAGN
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Thu  10 Mar 2016   Day  70 ---

04 46 30  J1649+2635   17 13 57  63.1 191.9  0.4       7.9    40     2023   04 46 30
04 50 00  ---          17 17 27  63.0 193.6  0.5       9.1   210     2050   04 46 31

04 50 00  J1642+2523   17 17 27  61.5 196.3  0.6      10.8   -20     2050   No stop
04 51 30  =1640+254    17 18 57  61.5 197.0  0.6      11.2    70     2062   04 50 01

04 51 30  J1649+2635   17 18 57  62.9 194.3  0.5       9.5   -19     2062   No stop
04 55 00  ---          17 22 28  62.8 196.0  0.5      10.7   191     2088   04 51 31

04 55 00  J1642+2523   17 22 28  61.3 198.6  0.7      12.3   -20     2088   No stop
04 56 30  =1640+254    17 23 58  61.2 199.3  0.7      12.7    70     2100   04 55 01

04 56 30  J1649+2635   17 23 58  62.7 196.7  0.6      11.1   -19     2100   No stop
05 00 00  ---          17 27 29  62.6 198.4  0.6      12.2   191     2127   04 56 31



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: sess116.L1024

   Setup group:    9         Station: TORUN            Total bit rate:  1024
   Format: MARK5B            Bits per sample: 2        Sample rate: 32.000
   Number of channels: 16    DBE type: DBBC_DDC        Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00
            2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00   2300.00
  Net SB=         L         L         U         U         L         L         U         U
                  L         L         U         U         L         L         U         U
  IF SB =         L         L         L         L         L         L         L         L
                  L         L         L         L         L         L         L         L
  Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
                RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
  BBC   =         1         5         1         5         2         6         2         6
                  3         7         3         7         4         8         4         8
  BBC SB=         U         U         L         L         U         U         L         L
                  U         U         L         L         U         U         L         L
  IF    =        A1        B1        A1        B1        A1        B1        A1        B1
                 A1        B1        A1        B1        A1        B1        A1        B1

 The following frequency sets based on these setups were used.

  Frequency Set:   6  Setup file default.  Used with PCAL = off
  LO sum=   1610.49  1610.49  1610.49  1610.49  1642.49  1642.49  1642.49  1642.49
            1674.49  1674.49  1674.49  1674.49  1706.49  1706.49  1706.49  1706.49
  BBC fr=    689.51   689.51   689.51   689.51   657.51   657.51   657.51   657.51
             625.51   625.51   625.51   625.51   593.51   593.51   593.51   593.51
  Bandwd=     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
              16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
   Matching frequency sets:   6

  Track assignments are:
   track1=   2, 10, 18, 26,  4, 12, 20, 28,  6, 14, 22, 30,  8, 16, 24, 32
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)            (mas)

* J1649+2635        16 47 22.095000   * 16 49 24.010000     16 50 03.429629       0.00
                    26 40 10.51727    * 26 35 02.54000      26 33 17.36898        0.00

* OQ208             14 04 45.615156   * 14 07 00.394414     14 07 44.667558       0.24
  J1407+2827        28 41 29.23518    * 28 27 14.69022      28 22 30.93359        0.34
  1404+286          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
  J1407+28          GSFC 2015a astro solution, unpublished  67871 observations.

* NRAO512           16 38 48.169688   * 16 40 29.632773     16 41 02.459953       0.00
  J1640+3946        39 52 30.08667    * 39 46 46.02848      39 44 46.19269        0.00
  1638+398          /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
  J1640+39          GSFC 2015a astro solution, unpublished 110323 observations.

  1640+254          16 40 36.555189   * 16 42 40.411831     16 43 20.495576       0.07
* J1642+2523        25 28 43.57721    * 25 23 07.68216      25 21 13.73509        0.13
                    /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc
                    GSFC 2015a astro solution, unpublished    163 observations.
```

rk12rctr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                   Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Thu  10 Mar 2016   Day  70 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

08 00 00  1538+149     20 27 58  22.8 264.3  4.8      38.2     0        0   08 00 00
08 14 30  ---          20 42 31  20.6 267.3  5.0      38.3   870       28   08 00 01

08 15 00  1538+149     20 43 01  20.5 267.4  5.0      38.3    24       28   08 15 00
08 29 30  ---          20 57 33  18.3 270.3  5.3      38.4   870       56   08 15 01

08 30 00  1538+149     20 58 03  18.2 270.4  5.3      38.4    24       56   08 30 00
08 44 30  ---          21 12 36  16.1 273.3  5.5      38.3   870       84   08 30 01

08 45 00  1538+149     21 13 06  16.0 273.4  5.5      38.3    24       84   08 45 00
09 00 00  ---          21 28 08  13.7 276.4  5.8      38.1   900      112   08 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    2         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4100.00   4100.00   4100.00   4100.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   3  Setup file default.  Used with PCAL = 1MHz
  LO sum=   4836.00  4836.00  4836.00  4836.00
  BBC fr=    736.00   736.00   736.00   736.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   3

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

```
  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 56.769531       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 31.78723        0.00
                    fake circumpolar target for a TS to look at

* 1538+149          15 38 30.232265   * 15 40 49.491516     15 41 34.897496       0.00
  J1540+1447        14 57 21.79415    * 14 47 45.88462      14 44 36.44649        0.00
                    ./rk12rc_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 1559 observations, RA-AO3-04
```

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1538+149           115.7

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12rdtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: L-band, dual-pol

Schedule for TORUN     (Code Tr )                                   Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Thu  10 Mar 2016   Day  70 ---

 ---------- L-band VLBI scans ----------

 Next scan frequencies:  1668.00  1668.00  1668.00  1668.00
 Next BBC frequencies:    732.00   732.00   732.00   732.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

22 00 00  1253-055     10 30 16  23.4 139.6 -2.4     -23.0     0        0   22 00 00
22 14 30  ---          10 44 49  24.8 143.3 -2.2     -21.1   870       28   22 00 01

22 15 00  1253-055     10 45 19  24.8 143.4 -2.2     -21.1    24       28   22 15 00
22 29 30  ---          10 59 51  26.0 147.2 -2.0     -19.1   870       56   22 15 01

22 30 00  1253-055     11 00 21  26.1 147.3 -1.9     -19.0    24       56   22 30 00
22 44 30  ---          11 14 54  27.2 151.2 -1.7     -16.9   870       84   22 30 01

22 45 00  1253-055     11 15 24  27.2 151.3 -1.7     -16.8    24       84   22 45 00
23 00 00  ---          11 30 26  28.2 155.4 -1.4     -14.6   900      112   22 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra18cm2.set

   Setup group:    3         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   2400.00   2400.00   2400.00   2400.00
  Net SB=         L         L         U         U
  IF SB =         L         L         L         L
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         U         U         L         L
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   4  Setup file default.  Used with PCAL = 1MHz
  LO sum=   1668.00  1668.00  1668.00  1668.00
  BBC fr=    732.00   732.00   732.00   732.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   4

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off



 POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 56.789872       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 31.99221        0.00
                    fake circumpolar target for a TS to look at

* 1253-055          12 53 35.831289   * 12 56 11.166557     12 57 02.570286       0.00
  J1256-0547       -05 31 07.99603    *-05 47 21.52489     -05 52 40.44494        0.00
  3C279             ./rk12rd_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 7924 observations, RA-AO3-04, RA-AO3-05



EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1253-055           155.4

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12retr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                  Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Fri  11 Mar 2016   Day  71 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

14 00 00  1726+455     02 32 54  15.4 -30.2  9.1      25.5     0        0   14 00 00
14 14 30  ---          02 47 26  14.4 -27.8  9.3      23.5   870       28   14 00 01

14 15 00  1726+455     02 47 57  14.3 -27.7  9.3      23.5    24       28   14 15 00
14 29 30  ---          03 02 29  13.4 -25.3  9.6      21.5   870       56   14 15 01

14 30 00  1726+455     03 02 59  13.3 -25.2  9.6      21.4    24       56   14 30 00
14 44 30  ---          03 17 31  12.5 -22.8  9.8      19.3   870       84   14 30 01

14 45 00  1726+455     03 18 01  12.4 -22.7  9.8      19.3    24       84   14 45 00
15 00 00  ---          03 33 04  11.6 -20.1 10.1      17.1   900      112   14 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    3         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4100.00   4100.00   4100.00   4100.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   4  Setup file default.  Used with PCAL = 1MHz
  LO sum=   4836.00  4836.00  4836.00  4836.00
  BBC fr=    736.00   736.00   736.00   736.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   4

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

```
  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 56.805707       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 32.22210        0.00
                    fake circumpolar target for a TS to look at

* 1726+455          17 26 01.198749   * 17 27 27.650803     17 27 55.413835       0.00
  J1727+4530        45 33 04.55106    * 45 30 39.73121      45 29 43.57563        0.00
                    ./rk12re_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 62139 observations, RA-AO3-04
```

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1726+455            92.5

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12rftr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                   Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Fri  11 Mar 2016   Day  71 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

22 00 00  1124-186     10 34 13  16.9 166.7 -0.9      -8.4     0        0   22 00 00
22 14 30  ---          10 48 45  17.4 170.3 -0.7      -6.1   870       28   22 00 01

22 15 00  1124-186     10 49 15  17.4 170.4 -0.6      -6.1    24       28   22 15 00
22 29 30  ---          11 03 48  17.7 174.0 -0.4      -3.8   870       56   22 15 01

22 30 00  1124-186     11 04 18  17.7 174.1 -0.4      -3.7    24       56   22 30 00
22 44 30  ---          11 18 50  17.8 177.7 -0.2      -1.4   870       84   22 30 01

22 45 00  1124-186     11 19 20  17.8 177.9 -0.1      -1.4    24       84   22 45 00
23 00 00  ---          11 34 23  17.8 181.6  0.1       1.0   900      112   22 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    3         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
 1st LO=   4100.00   4100.00   4100.00   4100.00
 Net SB=         L         L         U         U
 IF SB =         U         U         U         U
 Pol.  =       RCP       LCP       RCP       LCP
 BBC   =         1         2         1         2
 BBC SB=         L         L         U         U
 IF    =         C         A         C         A

The following frequency sets based on these setups were used.

 Frequency Set:   3  Setup file default.  Used with PCAL = 1MHz
 LO sum=   4836.00  4836.00  4836.00  4836.00
 BBC fr=    736.00   736.00   736.00   736.00
 Bandwd=     16.00    16.00    16.00    16.00
  Matching frequency sets:   3

 Track assignments are:
  track1=   2, 18,  3, 19
  barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 56.811337       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 32.33454        0.00
                    fake circumpolar target for a TS to look at

* 1124-186          11 24 34.018124   * 11 27 04.392449     11 27 54.533166       0.00
  J1127-1857       -18 40 46.35977    *-18 57 17.44185     -19 02 46.49937        0.00
                    ./rk12rf_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 41937 observations, RA-AO3-04, RA-AO2-1


EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1124-186           157.7

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12rgtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Sat  12 Mar 2016   Day  72 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

03 00 00  1302-102     15 35 02  18.8 218.8  2.5      22.5     0        0   03 00 00
03 14 30  ---          15 49 35  17.4 222.3  2.7      24.3   870       28   03 00 01

03 15 00  1302-102     15 50 05  17.4 222.4  2.7      24.3    24       28   03 15 00
03 29 30  ---          16 04 37  15.8 225.8  3.0      26.0   870       56   03 15 01

03 30 00  1302-102     16 05 07  15.8 225.9  3.0      26.0    24       56   03 30 00
03 44 30  ---          16 19 40  14.2 229.2  3.2      27.5   870       84   03 30 01

03 45 00  1302-102     16 20 10  14.1 229.3  3.2      27.6    24       84   03 45 00
04 00 00  ---          16 35 12  12.4 232.7  3.5      29.1   900      112   03 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    2         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
 1st LO=   4100.00   4100.00   4100.00   4100.00
 Net SB=         L         L         U         U
 IF SB =         U         U         U         U
 Pol.  =       RCP       LCP       RCP       LCP
 BBC   =         1         2         1         2
 BBC SB=         L         L         U         U
 IF    =         C         A         C         A

The following frequency sets based on these setups were used.

 Frequency Set:   3  Setup file default.  Used with PCAL = 1MHz
 LO sum=   4836.00  4836.00  4836.00  4836.00
 BBC fr=    736.00   736.00   736.00   736.00
 Bandwd=     16.00    16.00    16.00    16.00
  Matching frequency sets:   3

 Track assignments are:
  track1=   2, 18,  3, 19
  barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 56.814147       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 32.40051        0.00
                    fake circumpolar target for a TS to look at

* 1302-102          13 02 55.848556   * 13 05 33.015041     13 06 25.076991       0.00
  J1305-1033       -10 17 16.37573    *-10 33 19.42817     -10 38 33.72397        0.00
                    ./rk12rg_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 1014 observations, RA-AO3-04


EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1302-102           152.4

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12rhtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                   Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Sat  12 Mar 2016   Day  72 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

08 00 00  1548+056     20 35 51  15.6 257.9  4.7      36.1     0        0   08 00 00
08 14 30  ---          20 50 24  13.4 261.0  5.0      36.6   870       28   08 00 01

08 15 00  1548+056     20 50 54  13.4 261.1  5.0      36.6    24       28   08 15 00
08 29 30  ---          21 05 26  11.2 264.0  5.2      36.9   870       56   08 15 01

08 30 00  1548+056     21 05 56  11.1 264.1  5.2      36.9    24       56   08 30 00
08 44 30  ---          21 20 29   9.0 267.1  5.5      37.0   870       84   08 30 01

08 45 00  1548+056     21 20 59   8.9 267.2  5.5      37.0    24       84   08 45 00
09 00 00  ---          21 36 01   6.6 270.2  5.7      37.1   900      112   08 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    2         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4100.00   4100.00   4100.00   4100.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   3  Setup file default.  Used with PCAL = 1MHz
  LO sum=   4836.00  4836.00  4836.00  4836.00
  BBC fr=    736.00   736.00   736.00   736.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   3

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off



 POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                        Source position (RA/Dec)                        Error
                       (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 56.816883       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 32.47233        0.00
                    fake circumpolar target for a TS to look at

* 1548+056          15 48 06.931010   * 15 50 35.269243     15 51 23.655824       0.00
  J1550+0527        05 36 11.23071    * 05 27 10.44825      05 24 15.29615        0.00
                    ./rk12rh_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 8410 observations, RA-AO3-04, RA-AO2-12



EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1548+056           115.2

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12ritr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                   Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Sat  12 Mar 2016   Day  72 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

13 00 00  1739+522     01 36 41  27.0 -37.0  7.9      36.1     0        0   13 00 00
13 14 30  ---          01 51 13  25.7 -35.0  8.2      34.2   870       28   13 00 01

13 15 00  1739+522     01 51 43  25.7 -34.9  8.2      34.1    24       28   13 15 00
13 29 30  ---          02 06 16  24.4 -32.9  8.4      32.1   870       56   13 15 01

13 30 00  1739+522     02 06 46  24.4 -32.8  8.4      32.0    24       56   13 30 00
13 44 30  ---          02 21 18  23.2 -30.7  8.7      30.0   870       84   13 30 01

13 45 00  1739+522     02 21 48  23.2 -30.6  8.7      29.9    24       84   13 45 00
14 00 00  ---          02 36 51  22.1 -28.4  8.9      27.8   900      112   13 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    2         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
 1st LO=   4100.00   4100.00   4100.00   4100.00
 Net SB=         L         L         U         U
 IF SB =         U         U         U         U
 Pol.  =       RCP       LCP       RCP       LCP
 BBC   =         1         2         1         2
 BBC SB=         L         L         U         U
 IF    =         C         A         C         A

The following frequency sets based on these setups were used.

 Frequency Set:   3  Setup file default.  Used with PCAL = 1MHz
 LO sum=   4836.00  4836.00  4836.00  4836.00
 BBC fr=    736.00   736.00   736.00   736.00
 Bandwd=     16.00    16.00    16.00    16.00
  Matching frequency sets:   3

 Track assignments are:
  track1=   2, 18,  3, 19
  barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 56.819224       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 32.54000        0.00
                    fake circumpolar target for a TS to look at

* 1739+522          17 39 29.003549   * 17 40 36.977846     17 40 58.703741       0.00
  J1740+5211        52 13 10.43839    * 52 11 43.40733      52 11 05.01342        0.00
                    ./rk12ri_sources.radioastron
                    AGN, MASIV, rfc_2013d Petrov, 2013, unpublished 209348 observations, RA-AO3-04,


EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1739+522            91.0

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12rjtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Sat  12 Mar 2016   Day  72 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

22 00 00  1213-172     10 38 09  16.2 155.6 -1.6     -15.1     0        0   22 00 00
22 14 30  ---          10 52 42  17.0 159.1 -1.4     -13.0   870       28   22 00 01

22 15 00  1213-172     10 53 12  17.0 159.2 -1.4     -12.9    24       28   22 15 00
22 29 30  ---          11 07 44  17.7 162.8 -1.1     -10.8   870       56   22 15 01

22 30 00  1213-172     11 08 14  17.8 162.9 -1.1     -10.7    24       56   22 30 00
22 44 30  ---          11 22 47  18.3 166.5 -0.9      -8.5   870       84   22 30 01

22 45 00  1213-172     11 23 17  18.3 166.6 -0.9      -8.4    24       84   22 45 00
23 00 00  ---          11 38 19  18.8 170.4 -0.6      -6.1   900      112   22 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    3         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4100.00   4100.00   4100.00   4100.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   4  Setup file default.  Used with PCAL = 1MHz
  LO sum=   4836.00  4836.00  4836.00  4836.00
  BBC fr=    736.00   736.00   736.00   736.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   4

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

```
  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 56.823043       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 32.65974        0.00
                    fake circumpolar target for a TS to look at

* 1213-172          12 13 11.668008   * 12 15 46.751763     12 16 38.371069       0.00
  J1215-1731       -17 15 05.20080    *-17 31 45.40317     -17 37 14.10154        0.00
                    ./rk12rj_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 2101 observations, RA-AO3-04, RA-AO2-12
```

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1213-172           156.9

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12rktr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/K-band, dual-pol

Schedule for TORUN     (Code Tr )                                  Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Sun  13 Mar 2016   Day  73 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

04 00 00  1726+455     16 39 09  79.0 128.9 -0.8     -41.8     0        0   04 00 00
04 14 30  ---          16 53 41  80.6 140.4 -0.6     -33.1   870       28   04 00 01

04 15 00  1726+455     16 54 11  80.6 140.8 -0.6     -32.8    22       28   04 15 00
04 29 30  ---          17 08 43  81.8 155.8 -0.3     -20.6   870       56   04 15 01

04 30 00  1726+455     17 09 14  81.8 156.3 -0.3     -20.1    22       56   04 30 00
04 44 30  ---          17 23 46  82.4 174.5 -0.1      -4.7   870       84   04 30 01

04 45 00  1726+455     17 24 16  82.4 175.2 -0.1      -4.1    21       84   04 45 00
05 00 00  ---          17 39 18  82.2 194.8  0.2      12.7   900      112   04 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    1         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
 1st LO=   4100.00   4100.00   4100.00   4100.00
 Net SB=         L         L         U         U
 IF SB =         U         U         U         U
 Pol.  =       RCP       LCP       RCP       LCP
 BBC   =         1         2         1         2
 BBC SB=         L         L         U         U
 IF    =         C         A         C         A

The following frequency sets based on these setups were used.

 Frequency Set:   3  Setup file default.  Used with PCAL = 1MHz
 LO sum=   4836.00  4836.00  4836.00  4836.00
 BBC fr=    736.00   736.00   736.00   736.00
 Bandwd=     16.00    16.00    16.00    16.00
  Matching frequency sets:   3

 Track assignments are:
  track1=   2, 18,  3, 19
  barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 56.825392       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 32.73496        0.00
                    fake circumpolar target for a TS to look at

* 1726+455          17 26 01.198749   * 17 27 27.650803     17 27 55.470434       0.00
  J1727+4530        45 33 04.55106    * 45 30 39.73121      45 29 43.60871        0.00
                    ./rk12rk_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 62139 observations, RA-AO3-04


EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1726+455            93.1

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12rltr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: K-band, dual-pol

Schedule for TORUN     (Code Tr )                                   Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Sun  13 Mar 2016   Day  73 ---

 ---------- K-band VLBI scans ----------

 Next scan frequencies:  22236.00  22236.00  22236.00  22236.00
 Next BBC frequencies:     736.00    736.00    736.00    736.00
 Next scan bandwidths:      16.00     16.00     16.00     16.00

11 00 00  1641+399     23 40 18  23.5 -54.3  6.9      39.4     0        0   11 00 00
11 14 30  ---          23 54 50  21.7 -52.0  7.2      38.0   870       28   11 00 01

11 15 00  1641+399     23 55 20  21.7 -51.9  7.2      37.9    24       28   11 15 00
11 29 30  ---          00 09 52  20.0 -49.5  7.4      36.5   870       56   11 15 01

11 30 00  1641+399     00 10 23  19.9 -49.4  7.4      36.4    24       56   11 30 00
11 44 30  ---          00 24 55  18.3 -47.0  7.7      34.9   870       84   11 30 01

11 45 00  1641+399     00 25 25  18.2 -46.9  7.7      34.8    24       84   11 45 00
12 00 00  ---          00 40 27  16.6 -44.4  7.9      33.2   900      112   11 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra1cm2.set
   Matching groups in ./rk12rl_freq.dat:
     tr1cm

   Setup group:    1         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=  21500.00  21500.00  21500.00  21500.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   3  Setup file default.  Used with PCAL = 1MHz
  LO sum=   22236.00  22236.00  22236.00  22236.00
  BBC fr=     736.00    736.00    736.00    736.00
  Bandwd=      16.00     16.00     16.00     16.00
   Matching frequency sets:   3

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

```
  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 56.828435       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 32.82809        0.00
                    fake circumpolar target for a TS to look at

* 1641+399          16 41 17.606226   * 16 42 58.809963     16 43 31.650097       0.00
  J1642+3948        39 54 10.81479    * 39 48 36.99385      39 46 40.63822        0.00
  3C345             ./rk12rl_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 51938 observations, RA-AO3-04, RA-AO3-0
```

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1641+399           101.7

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12rmtr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                   Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Mon  14 Mar 2016   Day  74 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

04 00 00  1302-102     16 43 05  11.4 234.4  3.6      29.8     0        0   04 00 00
04 14 30  ---          16 57 38   9.6 237.5  3.9      31.0   870       28   04 00 01

04 15 00  1302-102     16 58 08   9.5 237.6  3.9      31.1    24       28   04 15 00
04 29 30  ---          17 12 40   7.7 240.7  4.1      32.2   870       56   04 15 01

04 30 00  1302-102     17 13 10   7.6 240.8  4.1      32.2    24       56   04 30 00
04 44 30  ---          17 27 42   5.7 243.8  4.4      33.3   870       84   04 30 01

04 45 00  1302-102     17 28 13   5.6 243.9  4.4      33.3    24       84   04 45 00
05 00 00  ---          17 43 15   3.5 247.0  4.6      34.2   900      112   04 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    2         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
 1st LO=   4100.00   4100.00   4100.00   4100.00
 Net SB=         L         L         U         U
 IF SB =         U         U         U         U
 Pol.  =       RCP       LCP       RCP       LCP
 BBC   =         1         2         1         2
 BBC SB=         L         L         U         U
 IF    =         C         A         C         A

The following frequency sets based on these setups were used.

 Frequency Set:   2  Setup file default.  Used with PCAL = 1MHz
 LO sum=   4836.00  4836.00  4836.00  4836.00
 BBC fr=    736.00   736.00   736.00   736.00
 Bandwd=     16.00    16.00    16.00    16.00
  Matching frequency sets:   2

 Track assignments are:
  track1=   2, 18,  3, 19
  barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

  Source                          Source position (RA/Dec)                        Error
                       (B1950)             (J2000)             (Date)             (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 56.836957       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 33.04096        0.00
                    fake circumpolar target for a TS to look at

* 1302-102          13 02 55.848556   * 13 05 33.015041     13 06 25.110073       0.00
  J1305-1033       -10 17 16.37573    *-10 33 19.42817     -10 38 33.94264        0.00
                    ./rk12rm_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 1014 observations, RA-AO3-04


EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1302-102           154.5

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12rntr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                   Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Mon  14 Mar 2016   Day  74 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

10 00 00  1739+522     22 44 04  46.2 -59.2  5.1      57.3     0        0   10 00 00
10 14 30  ---          22 58 37  44.4 -57.5  5.3      55.7   870       28   10 00 01

10 15 00  1739+522     22 59 07  44.3 -57.4  5.3      55.6    24       28   10 15 00
10 29 30  ---          23 13 39  42.5 -55.6  5.5      54.0   870       56   10 15 01

10 30 00  1739+522     23 14 09  42.4 -55.6  5.6      53.9    24       56   10 30 00
10 44 30  ---          23 28 42  40.6 -53.8  5.8      52.2   870       84   10 30 01

10 45 00  1739+522     23 29 12  40.6 -53.7  5.8      52.2    24       84   10 45 00
11 00 00  ---          23 44 14  38.8 -51.9  6.1      50.4   900      112   10 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    1         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4100.00   4100.00   4100.00   4100.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   2  Setup file default.  Used with PCAL = 1MHz
  LO sum=   4836.00  4836.00  4836.00  4836.00
  BBC fr=    736.00   736.00   736.00   736.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   2

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

```
  Source                        Source position (RA/Dec)                        Error
                       (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 56.840692       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 33.11448        0.00
                    fake circumpolar target for a TS to look at

* 1739+522          17 39 29.003549   * 17 40 36.977846     17 40 58.782047       0.00
  J1740+5211        52 13 10.43839    * 52 11 43.40733      52 11 05.03764        0.00
                    ./rk12rn_sources.radioastron
                    AGN, MASIV, rfc_2013d Petrov, 2013, unpublished 209348 observations, RA-AO3-04,
```

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1739+522            91.5

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12rotr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                   Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Mon  14 Mar 2016   Day  74 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

18 00 00  1726+455     06 45 23  10.0  13.7-10.7     -11.7     0        0   18 00 00
18 14 30  ---          06 59 56  10.5  16.2-10.5     -13.8   870       28   18 00 01

18 15 00  1726+455     07 00 26  10.6  16.3-10.5     -13.9    24       28   18 15 00
18 29 30  ---          07 14 58  11.2  18.8-10.2     -16.0   870       56   18 15 01

18 30 00  1726+455     07 15 28  11.2  18.9-10.2     -16.1    24       56   18 30 00
18 44 30  ---          07 30 00  12.0  21.3-10.0     -18.2   870       84   18 30 01

18 45 00  1726+455     07 30 31  12.0  21.4-10.0     -18.2    24       84   18 45 00
19 00 00  ---          07 45 33  12.9  24.0 -9.7     -20.4   900      112   18 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    2         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4100.00   4100.00   4100.00   4100.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   3  Setup file default.  Used with PCAL = 1MHz
  LO sum=   4836.00  4836.00  4836.00  4836.00
  BBC fr=    736.00   736.00   736.00   736.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   3

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

```
  Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 56.846236       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 33.20856        0.00
                    fake circumpolar target for a TS to look at

* 1726+455          17 26 01.198749   * 17 27 27.650803     17 27 55.531067       0.00
  J1727+4530        45 33 04.55106    * 45 30 39.73121      45 29 43.64346        0.00
                    ./rk12ro_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 62139 observations, RA-AO3-04
```

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1726+455            93.7

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk12rptr

RadioAstron AGN Survey

PI: *Yuri Kovalev*


```
Address:  ASC Lebedev          Profsoyuznaya 84/32          117997 Moscow, Russia
Phone:    +7-495-3332512                EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378                Phone during observation: +7-903-6614865
```


```
Observing mode: C/L-band, dual-pol

Schedule for TORUN     (Code Tr )                                    Page   2
               RadioAstron AGN Survey
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Mon  14 Mar 2016   Day  74 ---

 ---------- C-band VLBI scans ----------

 Next scan frequencies:  4836.00  4836.00  4836.00  4836.00
 Next BBC frequencies:    736.00   736.00   736.00   736.00
 Next scan bandwidths:     16.00    16.00    16.00    16.00

23 00 00  1256-220     11 46 12  12.8 162.6 -1.2     -11.2     0        0   23 00 00
23 14 30  ---          12 00 45  13.4 166.0 -1.0      -9.1   870       28   23 00 01

23 15 00  1256-220     12 01 15  13.4 166.1 -1.0      -9.0    24       28   23 15 00
23 29 30  ---          12 15 47  13.9 169.5 -0.7      -6.8   870       56   23 15 01

23 30 00  1256-220     12 16 17  13.9 169.6 -0.7      -6.7    24       56   23 30 00
23 44 30  ---          12 30 50  14.2 173.1 -0.5      -4.5   870       84   23 30 01

23 45 00  1256-220     12 31 20  14.2 173.2 -0.5      -4.4    24       84   23 45 00
23 59 59  ---          12 46 22  14.4 176.8 -0.2      -2.1   899      112   23 45 01



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: ra6cm2.set

   Setup group:    2         Station: TORUN            Total bit rate:   256
   Format: MKIV1:4           Bits per sample: 2        Sample rate: 32.000
   Number of channels:  4    DBE type:                 Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=   4100.00   4100.00   4100.00   4100.00
  Net SB=         L         L         U         U
  IF SB =         U         U         U         U
  Pol.  =      RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2
  BBC SB=         L         L         U         U
  IF    =        C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   2  Setup file default.  Used with PCAL = 1MHz
  LO sum=   4836.00  4836.00  4836.00  4836.00
  BBC fr=    736.00   736.00   736.00   736.00
  Bandwd=     16.00    16.00    16.00    16.00
   Matching frequency sets:   2

  Track assignments are:
   track1=   2, 18,  3, 19
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

```
  Source                        Source position (RA/Dec)                        Error
                       (B1950)            (J2000)            (Date)            (mas)

* FAKERA            11 57 21.769299   * 12 00 00.000000     12 00 56.850473       0.00
                    85 16 41.77889    * 85 00 00.00000      84 54 33.27163        0.00
                    fake circumpolar target for a TS to look at

* 1256-220          12 56 13.938610   * 12 58 54.478780     12 59 47.932452       0.00
  J1258-2219       -22 03 20.34433    *-22 19 31.12561     -22 24 46.76336        0.00
                    ./rk12rp_sources.radioastron
                    AGN, rfc_2013d Petrov, 2013, unpublished 413 observations, RA-AO3-04, RA-AO2-12
```

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1256-220           148.9

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

eg091atr

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025
PI: *Ghirlanda,Ghirlanda,Gawronski,Giroletti/Garrett*

```
Observing mode: realtime e-vlbi
Schedule for TORUN     (Code Tr )                                    Page   2
               e-EVN: eg091a,rg007b,eg082h,rg008a/rp025
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------
 --- Tue  15 Mar 2016   Day  75 ---
 Next scan frequencies:  4942.49  4942.49  4942.49  4942.49  4974.49  4974.49  4974.49  4974.49
                         5006.49  5006.49  5006.49  5006.49  5038.49  5038.49  5038.49  5038.49
 Next BBC frequencies:    742.49   742.49   742.49   742.49   774.49   774.49   774.49   774.49
                          806.49   806.49   806.49   806.49   838.49   838.49   838.49   838.49
 Next scan bandwidths:     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
                           16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00

09 00 00  0123+257     21 47 51  41.4 101.4 -3.7     -40.9     0        0   09 00 00
09 15 00  ---          22 02 53  43.6 104.9 -3.4     -40.2   900      115   09 00 01

09 15 40  0123+257     22 03 34  43.7 105.1 -3.4     -40.2    34      115   09 15 40
09 30 00  ---          22 17 56  45.8 108.6 -3.2     -39.3   860      226   09 15 41

09 30 40  0123+257     22 18 36  45.9 108.7 -3.1     -39.3    34      226   09 30 40
09 45 00  ---          22 32 58  47.9 112.4 -2.9     -38.2   860      336   09 30 41

09 45 40  0123+257     22 33 39  48.0 112.6 -2.9     -38.1    34      336   09 45 40
10 00 00  ---          22 48 01  49.9 116.5 -2.7     -36.7   860      446   09 45 41

10 02 00  0234+285     22 50 01  42.1  96.9 -3.8     -42.9    65      446   10 02 00
10 15 00  ---          23 03 03  44.1  99.8 -3.6     -42.5   780      546   10 02 01

10 15 40  0234+285     23 03 43  44.2  99.9 -3.6     -42.5    34      546   10 15 40
10 30 00  ---          23 18 06  46.3 103.3 -3.3     -41.9   860      656   10 15 41

10 30 40  0234+285     23 18 46  46.4 103.4 -3.3     -41.8    34      656   10 30 40
10 45 00  ---          23 33 08  48.5 106.9 -3.1     -41.0   860      767   10 30 41

10 45 40  0234+285     23 33 48  48.6 107.1 -3.1     -41.0    34      767   10 45 40
11 00 00  ---          23 48 11  50.6 110.8 -2.8     -39.9   860      877   10 45 41

11 00 40  0234+285     23 48 51  50.7 110.9 -2.8     -39.8    34      877   11 00 40
11 15 00  ---          00 03 13  52.7 114.9 -2.6     -38.5   860      987   11 00 41

11 15 40  0234+285     00 03 53  52.8 115.1 -2.6     -38.4    34      987   11 15 40
11 30 00  ---          00 18 16  54.7 119.3 -2.3     -36.7   860     1097   11 15 41

11 30 40  0234+285     00 18 56  54.8 119.5 -2.3     -36.6    34     1097   11 30 40
11 45 00  ---          00 33 18  56.6 124.0 -2.1     -34.6   860     1208   11 30 41

11 45 40  0234+285     00 33 58  56.7 124.2 -2.1     -34.5    34     1208   11 45 40
12 00 00  ---          00 48 21  58.4 129.2 -1.8     -32.1   860     1318   11 45 41

12 00 40  0234+285     00 49 01  58.5 129.4 -1.8     -32.0    34     1318   12 00 40
12 15 00  ---          01 03 23  60.1 134.7 -1.6     -29.2   860     1428   12 00 41
```

Schedule for TORUN (Code Tr) Page 3

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 15 Mar 2016 Day 75 ---										
12 15 40	0234+285	01 04 03	60.2	135.0	-1.6		-29.0	33	1428	12 15 40
12 30 00	---	01 18 26	61.6	140.7	-1.3		-25.7	860	1538	12 15 41
12 30 40	0234+285	01 19 06	61.7	141.0	-1.3		-25.6	33	1538	12 30 40
12 45 00	---	01 33 28	63.0	147.2	-1.1		-21.8	860	1649	12 30 41
12 45 40	0234+285	01 34 08	63.0	147.5	-1.1		-21.6	33	1649	12 45 40
13 00 00	---	01 48 30	64.1	154.1	-0.8		-17.4	860	1759	12 45 41
13 03 00	0528+134	01 51 31	31.4	110.9	-3.7		-35.2	43	1759	13 03 00
13 15 00	---	02 03 33	33.1	113.7	-3.5		-34.4	720	1851	13 03 01
13 15 40	0528+134	02 04 13	33.2	113.9	-3.5		-34.4	34	1851	13 15 40
13 25 00	---	02 13 35	34.5	116.2	-3.3		-33.7	560	1923	13 15 41
13 27 00	J0514-0733	02 15 35	18.5	132.4	-3.0		-26.6	46	1923	13 27 00
13 28 00	---	02 16 35	18.6	132.7	-3.0		-26.4	60	1931	13 27 01
13 28 00	160131A	02 16 35	19.2	132.9	-2.9		-26.3	-14	1931	No stop
13 31 30	---	02 20 06	19.6	133.7	-2.9		-25.9	196	1958	13 28 01
13 31 30	J0514-0733	02 20 06	19.0	133.5	-2.9		-26.1	-14	1958	No stop
13 33 00	---	02 21 36	19.1	133.9	-2.9		-25.9	76	1969	13 31 31
13 33 00	160131A	02 21 36	19.8	134.0	-2.9		-25.8	-14	1969	No stop
13 36 30	---	02 25 06	20.1	134.9	-2.8		-25.4	196	1996	13 33 01
13 37 10	J0514-0733	02 25 47	19.6	134.8	-2.8		-25.4	26	1996	13 37 10
13 38 40	---	02 27 17	19.7	135.2	-2.8		-25.3	90	2008	13 37 11
13 38 40	160131A	02 27 17	20.4	135.4	-2.8		-25.1	-14	2008	No stop
13 42 10	---	02 30 47	20.7	136.2	-2.7		-24.7	196	2035	13 38 41
13 42 10	J0514-0733	02 30 47	20.1	136.0	-2.7		-24.9	-14	2035	No stop
13 43 40	---	02 32 18	20.2	136.4	-2.7		-24.7	76	2046	13 42 11
13 43 40	160131A	02 32 18	20.9	136.6	-2.7		-24.6	-14	2046	No stop
13 47 10	---	02 35 48	21.3	137.5	-2.6		-24.1	196	2073	13 43 41
13 47 10	J0514-0733	02 35 48	20.6	137.2	-2.7		-24.3	-14	2073	No stop
13 48 40	---	02 37 18	20.8	137.6	-2.6		-24.1	76	2085	13 47 11
13 49 20	J0517-0520	02 37 59	22.5	136.1	-2.7		-24.7	20	2085	13 49 20
13 50 20	=0515-053	02 38 59	22.6	136.3	-2.7		-24.6	60	2092	13 49 21

Schedule for TORUN (Code Tr) Page 4

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 15 Mar 2016 Day 75 ---										
13 50 20	J0514-0733	02 38 59	20.9	138.0	-2.6		-23.9	-20	2092	No stop
13 51 50	---	02 40 29	21.1	138.4	-2.6		-23.7	70	2104	13 50 21
13 51 50	160131A	02 40 29	21.7	138.6	-2.5		-23.6	-14	2104	No stop
13 55 20	---	02 44 00	22.1	139.5	-2.5		-23.2	196	2131	13 51 51
13 55 20	J0514-0733	02 44 00	21.4	139.2	-2.5		-23.3	-14	2131	No stop
13 56 50	---	02 45 30	21.6	139.6	-2.5		-23.1	76	2142	13 55 21
13 56 50	160131A	02 45 30	22.2	139.8	-2.5		-23.0	-14	2142	No stop
14 00 20	---	02 49 00	22.6	140.7	-2.4		-22.5	196	2169	13 56 51
14 01 00	J0514-0733	02 49 40	22.0	140.6	-2.4		-22.6	26	2169	14 01 00
14 02 30	---	02 51 11	22.1	141.0	-2.4		-22.4	90	2181	14 01 01
14 02 30	160131A	02 51 11	22.8	141.2	-2.4		-22.3	-14	2181	No stop
14 06 00	---	02 54 41	23.1	142.1	-2.3		-21.8	196	2208	14 02 31
14 06 00	J0514-0733	02 54 41	22.4	141.9	-2.3		-22.0	-14	2208	No stop
14 07 30	---	02 56 12	22.6	142.2	-2.3		-21.8	76	2219	14 06 01
14 07 30	160131A	02 56 12	23.2	142.5	-2.3		-21.6	-14	2219	No stop
14 11 00	---	02 59 42	23.5	143.4	-2.2		-21.2	196	2246	14 07 31
14 11 00	J0514-0733	02 59 42	22.9	143.1	-2.3		-21.3	-14	2246	No stop
14 12 30	---	03 01 12	23.0	143.5	-2.2		-21.1	76	2258	14 11 01
14 13 10	J0517-0520	03 01 52	24.9	142.0	-2.3		-21.8	19	2258	14 13 10
14 14 10	=0515-053	03 02 53	25.0	142.3	-2.3		-21.7	60	2265	14 13 11
14 14 10	J0514-0733	03 02 53	23.2	143.9	-2.2		-20.9	-20	2265	No stop
14 15 40	---	03 04 23	23.3	144.3	-2.2		-20.7	70	2277	14 14 11
14 15 40	160131A	03 04 23	24.0	144.6	-2.2		-20.5	-14	2277	No stop
14 19 10	---	03 07 53	24.3	145.5	-2.1		-20.1	196	2304	14 15 41
14 19 10	J0514-0733	03 07 53	23.6	145.2	-2.1		-20.2	-14	2304	No stop
14 20 40	---	03 09 24	23.8	145.6	-2.1		-20.0	76	2315	14 19 11
14 20 40	160131A	03 09 24	24.4	145.8	-2.1		-19.9	-14	2315	No stop
14 24 10	---	03 12 54	24.7	146.7	-2.0		-19.4	196	2342	14 20 41
14 24 50	J0514-0733	03 13 34	24.1	146.6	-2.0		-19.5	26	2342	14 24 50
14 26 20	---	03 15 05	24.2	147.0	-2.0		-19.3	90	2354	14 24 51

Schedule for TORUN (Code Tr) Page 5

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 15 Mar 2016 Day 75 ---										
14 26 20	160131A	03 15 05	24.9	147.3	-2.0		-19.1	-14	2354	No stop
14 29 50	---	03 18 35	25.1	148.2	-1.9		-18.6	196	2381	14 26 21
14 29 50	J0514-0733	03 18 35	24.5	147.9	-1.9		-18.8	-14	2381	No stop
14 31 20	---	03 20 05	24.6	148.3	-1.9		-18.6	76	2392	14 29 51
14 31 20	160131A	03 20 05	25.3	148.6	-1.9		-18.4	-14	2392	No stop
14 34 50	---	03 23 36	25.5	149.5	-1.8		-17.9	196	2419	14 31 21
14 34 50	J0514-0733	03 23 36	24.9	149.2	-1.9		-18.1	-14	2419	No stop
14 36 20	---	03 25 06	25.0	149.6	-1.8		-17.8	76	2431	14 34 51
14 37 00	J0517-0520	03 25 46	26.9	148.2	-1.9		-18.5	19	2431	14 37 00
14 38 00	=0515-053	03 26 47	27.0	148.5	-1.9		-18.4	60	2438	14 37 01
14 38 00	J0514-0733	03 26 47	25.1	150.0	-1.8		-17.6	-21	2438	No stop
14 39 30	---	03 28 17	25.3	150.4	-1.8		-17.4	69	2450	14 38 01
14 39 30	160131A	03 28 17	25.9	150.8	-1.8		-17.2	-14	2450	No stop
14 43 00	---	03 31 47	26.1	151.7	-1.7		-16.7	196	2477	14 39 31
14 43 00	J0514-0733	03 31 47	25.5	151.4	-1.7		-16.9	-14	2477	No stop
14 44 30	---	03 33 18	25.6	151.8	-1.7		-16.7	76	2488	14 43 01
14 44 30	160131A	03 33 18	26.2	152.1	-1.7		-16.5	-14	2488	No stop
14 48 00	---	03 36 48	26.5	153.0	-1.6		-15.9	196	2515	14 44 31
14 48 40	J0514-0733	03 37 28	25.9	152.9	-1.6		-16.0	26	2515	14 48 40
14 50 10	---	03 38 59	26.0	153.3	-1.6		-15.8	90	2527	14 48 41
14 50 10	160131A	03 38 59	26.6	153.6	-1.6		-15.6	-14	2527	No stop
14 53 40	---	03 42 29	26.9	154.5	-1.5		-15.1	196	2554	14 50 11
14 53 40	J0514-0733	03 42 29	26.2	154.2	-1.5		-15.3	-14	2554	No stop
14 55 10	---	03 43 59	26.3	154.6	-1.5		-15.1	76	2565	14 53 41
14 55 10	160131A	03 43 59	26.9	154.9	-1.5		-14.9	-14	2565	No stop
14 58 40	---	03 47 30	27.2	155.9	-1.4		-14.3	196	2592	14 55 11
14 58 40	J0514-0733	03 47 30	26.6	155.5	-1.5		-14.5	-14	2592	No stop
15 00 10	---	03 49 00	26.7	155.9	-1.4		-14.3	76	2604	14 58 41
15 00 50	J0517-0520	03 49 40	28.6	154.7	-1.5		-14.9	19	2604	15 00 50
15 01 50	=0515-053	03 50 40	28.7	155.0	-1.5		-14.8	60	2612	15 00 51

Schedule for TORUN (Code Tr) Page 6

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 15 Mar 2016 Day 75 ---										
15 01 50	J0514-0733	03 50 40	26.8	156.4	-1.4		-14.0	-21	2612	No stop
15 03 20	---	03 52 11	26.8	156.8	-1.4		-13.8	69	2623	15 01 51
15 03 20	160131A	03 52 11	27.4	157.1	-1.4		-13.6	-14	2623	No stop
15 06 50	---	03 55 41	27.6	158.1	-1.3		-13.0	196	2650	15 03 21
15 06 50	J0514-0733	03 55 41	27.1	157.7	-1.3		-13.3	-14	2650	No stop
15 08 20	---	03 57 12	27.1	158.1	-1.3		-13.0	76	2662	15 06 51
15 08 20	160131A	03 57 12	27.7	158.5	-1.3		-12.8	-14	2662	No stop
15 11 50	---	04 00 42	27.9	159.5	-1.2		-12.2	196	2688	15 08 21
15 12 30	J0514-0733	04 01 22	27.4	159.3	-1.2		-12.4	26	2688	15 12 30
15 14 00	---	04 02 52	27.4	159.7	-1.2		-12.1	90	2700	15 12 31
15 14 00	160131A	04 02 52	28.0	160.1	-1.2		-11.9	-14	2700	No stop
15 17 30	---	04 06 23	28.2	161.0	-1.1		-11.3	196	2727	15 14 01
15 17 30	J0514-0733	04 06 23	27.6	160.7	-1.1		-11.6	-14	2727	No stop
15 19 00	---	04 07 53	27.7	161.1	-1.1		-11.3	76	2738	15 17 31
15 19 00	160131A	04 07 53	28.3	161.5	-1.1		-11.1	-14	2738	No stop
15 22 30	---	04 11 24	28.4	162.4	-1.0		-10.5	196	2765	15 19 01
15 22 30	J0514-0733	04 11 24	27.9	162.0	-1.1		-10.8	-14	2765	No stop
15 24 00	---	04 12 54	27.9	162.4	-1.0		-10.5	76	2777	15 22 31
15 24 40	J0517-0520	04 13 34	30.0	161.3	-1.1		-11.1	19	2777	15 24 40
15 25 40	=0515-053	04 14 34	30.0	161.6	-1.1		-11.0	60	2785	15 24 41
15 25 40	J0514-0733	04 14 34	28.0	162.9	-1.0		-10.3	-21	2785	No stop
15 27 10	---	04 16 05	28.1	163.3	-1.0		-10.0	69	2796	15 25 41
15 27 10	160131A	04 16 05	28.6	163.7	-1.0		-9.8	-14	2796	No stop
15 30 40	---	04 19 35	28.8	164.7	-0.9		-9.2	196	2823	15 27 11
15 30 40	J0514-0733	04 19 35	28.2	164.3	-0.9		-9.4	-14	2823	No stop
15 32 10	---	04 21 05	28.3	164.7	-0.9		-9.2	76	2835	15 30 41
15 32 10	160131A	04 21 05	28.8	165.1	-0.9		-8.9	-14	2835	No stop
15 35 40	---	04 24 36	29.0	166.1	-0.8		-8.4	196	2862	15 32 11
15 36 20	J0514-0733	04 25 16	28.4	165.9	-0.8		-8.5	26	2862	15 36 20
15 37 50	---	04 26 46	28.5	166.3	-0.8		-8.2	90	2873	15 36 21

```
Schedule for TORUN     (Code Tr )                                  Page   7
               e-EVN: eg091a,rg007b,eg082h,rg008a/rp025
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Tue  15 Mar 2016   Day  75 ---

15 37 50  160131A      04 26 46  29.1 166.7 -0.8      -8.0   -14     2873   No stop
15 41 20  ---          04 30 17  29.2 167.7 -0.7      -7.4   196     2900   15 37 51

15 41 20  J0514-0733   04 30 17  28.6 167.3 -0.7      -7.7   -14     2900   No stop
15 42 50  ---          04 31 47  28.7 167.7 -0.7      -7.4    76     2912   15 41 21

15 42 50  160131A      04 31 47  29.2 168.1 -0.7      -7.1   -14     2912   No stop
15 46 20  ---          04 35 18  29.3 169.1 -0.6      -6.6   196     2938   15 42 51

15 46 20  J0514-0733   04 35 18  28.8 168.7 -0.7      -6.8   -14     2938   No stop
15 47 50  ---          04 36 48  28.8 169.1 -0.6      -6.6    76     2950   15 46 21

15 48 30  J0517-0520   04 37 28  30.9 168.1 -0.7      -7.1    18     2950   15 48 30
15 49 30  =0515-053    04 38 28  31.0 168.4 -0.7      -6.9    60     2958   15 48 31

15 49 30  J0514-0733   04 38 28  28.9 169.6 -0.6      -6.3   -22     2958   No stop
15 51 00  ---          04 39 59  28.9 170.0 -0.6      -6.0    68     2969   15 49 31

15 51 00  160131A      04 39 59  29.4 170.5 -0.6      -5.8   -14     2969   No stop
15 54 30  ---          04 43 29  29.5 171.4 -0.5      -5.2   196     2996   15 51 01

15 54 30  J0514-0733   04 43 29  29.0 171.0 -0.5      -5.4   -13     2996   No stop
15 56 00  ---          04 44 59  29.0 171.4 -0.5      -5.2    77     3008   15 54 31

15 56 00  160131A      04 44 59  29.6 171.9 -0.5      -4.9   -14     3008   No stop
15 59 30  ---          04 48 30  29.6 172.9 -0.4      -4.3   196     3035   15 56 01

16 00 10  J0514-0733   04 49 10  29.1 172.6 -0.4      -4.5    27     3035   16 00 10
16 01 40  ---          04 50 40  29.1 173.0 -0.4      -4.2    90     3046   16 00 11

16 01 40  160131A      04 50 40  29.7 173.5 -0.4      -3.9   -13     3046   No stop
16 05 10  ---          04 54 11  29.7 174.5 -0.3      -3.3   197     3073   16 01 41

16 05 10  J0514-0733   04 54 11  29.2 174.0 -0.4      -3.6   -13     3073   No stop
16 06 40  ---          04 55 41  29.2 174.4 -0.3      -3.4    77     3085   16 05 11

16 06 40  160131A      04 55 41  29.7 174.9 -0.3      -3.1   -13     3085   No stop
16 10 10  ---          04 59 12  29.8 175.9 -0.2      -2.5   197     3112   16 06 41

16 10 10  J0514-0733   04 59 12  29.3 175.4 -0.3      -2.8   -13     3112   No stop
16 11 40  ---          05 00 42  29.3 175.9 -0.2      -2.5    77     3123   16 10 11

16 12 20  J0517-0520   05 01 22  31.5 175.1 -0.3      -3.0    18     3123   16 12 20
16 13 20  =0515-053    05 02 22  31.5 175.4 -0.3      -2.8    60     3131   16 12 21
```

Schedule for TORUN (Code Tr) Page 8

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 15 Mar 2016 Day 75 ---										
16 13 20	J0514-0733	05 02 22	29.3	176.3	-0.2		-2.2	-22	3131	No stop
16 14 50	---	05 03 52	29.3	176.8	-0.2		-2.0	68	3142	16 13 21
16 14 50	160131A	05 03 52	29.8	177.3	-0.2		-1.7	-13	3142	No stop
16 18 20	---	05 07 23	29.9	178.3	-0.1		-1.1	197	3169	16 14 51
16 18 20	J0514-0733	05 07 23	29.3	177.8	-0.1		-1.4	-13	3169	No stop
16 19 50	---	05 08 53	29.3	178.2	-0.1		-1.1	77	3181	16 18 21
16 19 50	160131A	05 08 53	29.9	178.7	-0.1		-0.8	-13	3181	No stop
16 23 20	---	05 12 24	29.9	179.7	-0.0		-0.2	197	3208	16 19 51
16 24 00	J0514-0733	05 13 04	29.4	179.4	-0.0		-0.4	27	3208	16 24 00
16 25 30	---	05 14 34	29.4	179.8	-0.0		-0.1	90	3219	16 24 01
16 25 30	160131A	05 14 34	29.9	180.3	0.0		0.2	-13	3219	No stop
16 29 00	---	05 18 05	29.9	181.3	0.1		0.8	197	3246	16 25 31
16 29 00	J0514-0733	05 18 05	29.4	180.8	0.0		0.5	-13	3246	No stop
16 30 30	---	05 19 35	29.4	181.2	0.1		0.7	77	3258	16 29 01
16 30 30	160131A	05 19 35	29.9	181.8	0.1		1.1	-13	3258	No stop
16 34 00	---	05 23 06	29.8	182.8	0.2		1.7	197	3285	16 30 31
16 34 00	J0514-0733	05 23 06	29.3	182.2	0.1		1.3	-13	3285	No stop
16 35 30	---	05 24 36	29.3	182.7	0.2		1.6	77	3296	16 34 01
16 36 10	J0517-0520	05 25 16	31.6	182.0	0.1		1.2	18	3296	16 36 10
16 37 10	=0515-053	05 26 16	31.5	182.3	0.1		1.4	60	3304	16 36 11
16 37 10	J0514-0733	05 26 16	29.3	183.1	0.2		1.9	-22	3304	No stop
16 38 40	---	05 27 46	29.3	183.6	0.2		2.2	68	3315	16 37 11
16 38 40	160131A	05 27 46	29.8	184.1	0.2		2.5	-13	3315	No stop
16 42 10	---	05 31 17	29.7	185.1	0.3		3.1	197	3342	16 38 41
16 42 10	J0514-0733	05 31 17	29.3	184.6	0.3		2.8	-13	3342	No stop
16 43 40	---	05 32 47	29.2	185.0	0.3		3.0	77	3354	16 42 11
16 43 40	160131A	05 32 47	29.7	185.5	0.3		3.3	-13	3354	No stop
16 47 10	---	05 36 18	29.7	186.5	0.4		3.9	197	3381	16 43 41
16 47 50	J0514-0733	05 36 58	29.2	186.2	0.4		3.7	27	3381	16 47 50
16 49 20	---	05 38 28	29.2	186.6	0.4		4.0	90	3392	16 47 51

```
Schedule for TORUN     (Code Tr )                                  Page   9
               e-EVN: eg091a,rg007b,eg082h,rg008a/rp025
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Tue  15 Mar 2016   Day  75 ---

16 49 20  160131A      05 38 28  29.6 187.1  0.4       4.3   -13     3392   No stop
16 52 50  ---          05 41 59  29.6 188.1  0.5       4.9   197     3419   16 49 21

16 52 50  J0514-0733   05 41 59  29.1 187.6  0.4       4.6   -13     3419   No stop
16 54 20  ---          05 43 29  29.1 188.0  0.5       4.8    77     3431   16 52 51

16 54 20  160131A      05 43 29  29.5 188.6  0.5       5.2   -13     3431   No stop
16 57 50  ---          05 47 00  29.4 189.6  0.6       5.8   197     3458   16 54 21

16 57 50  J0514-0733   05 47 00  29.0 189.0  0.5       5.4   -13     3458   No stop
16 59 20  ---          05 48 30  29.0 189.4  0.6       5.7    77     3469   16 57 51

17 00 00  J0517-0520   05 49 10  31.2 189.0  0.5       5.4    18     3469   17 00 00
17 01 00  =0515-053    05 50 10  31.2 189.3  0.5       5.6    60     3477   17 00 01

17 01 00  J0514-0733   05 50 10  28.9 189.9  0.6       6.0   -22     3477   No stop
17 02 30  ---          05 51 40  28.9 190.3  0.6       6.2    68     3488   17 01 01

17 02 30  160131A      05 51 40  29.3 190.9  0.6       6.6   -13     3488   No stop
17 06 00  ---          05 55 11  29.2 191.9  0.7       7.2   197     3515   17 02 31

17 06 00  J0514-0733   05 55 11  28.8 191.3  0.7       6.8   -13     3515   No stop
17 07 30  ---          05 56 41  28.7 191.7  0.7       7.1    77     3527   17 06 01

17 07 30  160131A      05 56 41  29.2 192.3  0.7       7.4   -13     3527   No stop
17 11 00  ---          06 00 12  29.1 193.3  0.8       8.0   197     3554   17 07 31

17 11 40  J0514-0733   06 00 52  28.6 192.9  0.8       7.8    27     3554   17 11 40
17 13 10  ---          06 02 22  28.5 193.3  0.8       8.0    90     3565   17 11 41

17 13 10  160131A      06 02 22  29.0 193.9  0.8       8.4   -13     3565   No stop
17 16 40  ---          06 05 53  28.8 194.9  0.9       8.9   197     3592   17 13 11

17 16 40  J0514-0733   06 05 53  28.4 194.3  0.8       8.6   -13     3592   No stop
17 18 10  ---          06 07 23  28.4 194.7  0.9       8.8    77     3604   17 16 41

17 18 10  160131A      06 07 23  28.8 195.3  0.9       9.2   -13     3604   No stop
17 21 40  ---          06 10 53  28.6 196.3  1.0       9.8   197     3631   17 18 11

17 21 40  J0514-0733   06 10 53  28.2 195.7  0.9       9.4   -13     3631   No stop
17 23 10  ---          06 12 24  28.2 196.1  1.0       9.7    77     3642   17 21 41

17 23 50  J0517-0520   06 13 04  30.4 195.9  0.9       9.5    18     3642   17 23 50
17 24 50  =0515-053    06 14 04  30.4 196.2  0.9       9.7    60     3650   17 23 51
```

Schedule for TORUN (Code Tr) Page 10

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 15 Mar 2016 Day 75 ---										
17 24 50	J0514-0733	06 14 04	28.1	196.6	1.0		9.9	-23	3650	No stop
17 26 20	---	06 15 34	28.0	197.0	1.0		10.2	67	3662	17 24 51
17 26 20	160131A	06 15 34	28.4	197.6	1.0		10.5	-12	3662	No stop
17 29 50	---	06 19 05	28.3	198.6	1.1		11.1	198	3688	17 26 21
17 29 50	J0514-0733	06 19 05	27.9	198.0	1.1		10.8	-12	3688	No stop
17 31 20	---	06 20 35	27.8	198.4	1.1		11.0	78	3700	17 29 51
17 31 20	160131A	06 20 35	28.2	199.0	1.1		11.3	-12	3700	No stop
17 34 50	---	06 24 06	28.0	199.9	1.2		11.9	198	3727	17 31 21
17 35 30	J0514-0733	06 24 46	27.6	199.5	1.2		11.7	28	3727	17 35 30
17 37 00	---	06 26 16	27.5	199.9	1.2		11.9	90	3738	17 35 31
17 37 00	160131A	06 26 16	27.9	200.5	1.2		12.3	-12	3738	No stop
17 40 30	---	06 29 47	27.7	201.5	1.3		12.8	198	3765	17 37 01
17 40 30	J0514-0733	06 29 47	27.3	200.9	1.2		12.5	-12	3765	No stop
17 42 00	---	06 31 17	27.3	201.3	1.3		12.7	78	3777	17 40 31
17 42 00	160131A	06 31 17	27.6	201.9	1.3		13.0	-12	3777	No stop
17 45 30	---	06 34 47	27.4	202.9	1.4		13.6	198	3804	17 42 01
17 45 30	J0514-0733	06 34 47	27.1	202.2	1.3		13.3	-12	3804	No stop
17 47 00	---	06 36 18	27.0	202.7	1.4		13.5	78	3815	17 45 31
17 47 40	J0517-0520	06 36 58	29.3	202.6	1.3		13.4	17	3815	17 47 40
17 48 40	=0515-053	06 37 58	29.2	202.9	1.3		13.6	60	3823	17 47 41
17 48 40	J0514-0733	06 37 58	26.9	203.1	1.4		13.7	-23	3823	No stop
17 50 10	---	06 39 28	26.8	203.5	1.4		14.0	67	3835	17 48 41
17 50 10	160131A	06 39 28	27.2	204.1	1.4		14.3	-12	3835	No stop
17 53 40	---	06 42 59	26.9	205.1	1.5		14.9	198	3862	17 50 11
17 53 40	J0514-0733	06 42 59	26.6	204.5	1.5		14.5	-12	3862	No stop
17 55 10	---	06 44 29	26.5	204.9	1.5		14.8	78	3873	17 53 41
17 55 10	160131A	06 44 29	26.8	205.5	1.5		15.1	-12	3873	No stop
17 58 40	---	06 48 00	26.6	206.4	1.6		15.6	198	3900	17 55 11
17 59 20	J0514-0733	06 48 40	26.2	206.0	1.6		15.4	28	3900	17 59 20
18 00 50	---	06 50 10	26.1	206.4	1.6		15.6	90	3912	17 59 21

Schedule for TORUN (Code Tr) Page 11

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 15 Mar 2016 Day 75 ---										
18 00 50	160131A	06 50 10	26.5	207.0	1.6		15.9	-12	3912	No stop
18 04 20	---	06 53 40	26.2	207.9	1.7		16.5	198	3938	18 00 51
18 04 20	J0514-0733	06 53 40	25.9	207.3	1.6		16.1	-12	3938	No stop
18 05 50	---	06 55 11	25.8	207.7	1.7		16.4	78	3950	18 04 21
18 05 50	160131A	06 55 11	26.1	208.3	1.7		16.7	-12	3950	No stop
18 09 20	---	06 58 41	25.9	209.3	1.8		17.2	198	3977	18 05 51
18 09 20	J0514-0733	06 58 41	25.5	208.6	1.7		16.9	-12	3977	No stop
18 10 50	---	07 00 12	25.4	209.0	1.7		17.1	78	3988	18 09 21
18 11 30	J0517-0520	07 00 52	27.7	209.1	1.7		17.1	17	3988	18 11 30
18 12 30	=0515-053	07 01 52	27.6	209.4	1.7		17.2	60	3996	18 11 31
18 12 30	J0514-0733	07 01 52	25.3	209.5	1.8		17.3	-23	3996	No stop
18 14 00	---	07 03 22	25.2	209.9	1.8		17.5	67	4008	18 12 31
18 14 00	160131A	07 03 22	25.5	210.5	1.8		17.9	-12	4008	No stop
18 17 30	---	07 06 53	25.2	211.4	1.9		18.4	198	4035	18 14 01
18 17 30	J0514-0733	07 06 53	24.9	210.8	1.9		18.0	-12	4035	No stop
18 19 00	---	07 08 23	24.8	211.2	1.9		18.3	78	4046	18 17 31
18 19 00	160131A	07 08 23	25.1	211.8	1.9		18.6	-12	4046	No stop
18 22 30	---	07 11 53	24.8	212.7	2.0		19.1	198	4073	18 19 01
18 23 10	J0514-0733	07 12 34	24.5	212.2	2.0		18.8	28	4073	18 23 10
18 24 40	---	07 14 04	24.3	212.6	2.0		19.1	90	4085	18 23 11
18 24 40	160131A	07 14 04	24.7	213.3	2.0		19.4	-12	4085	No stop
18 28 10	---	07 17 34	24.4	214.2	2.1		19.9	198	4112	18 24 41
18 28 10	J0514-0733	07 17 34	24.1	213.5	2.0		19.5	-12	4112	No stop
18 29 40	---	07 19 05	23.9	213.9	2.1		19.7	78	4123	18 28 11
18 29 40	160131A	07 19 05	24.2	214.6	2.1		20.1	-12	4123	No stop
18 33 10	---	07 22 35	23.9	215.5	2.2		20.5	198	4150	18 29 41
18 33 10	J0514-0733	07 22 35	23.6	214.8	2.1		20.2	-12	4150	No stop
18 34 40	---	07 24 05	23.5	215.2	2.1		20.4	78	4162	18 33 11
18 35 20	J0517-0520	07 24 46	25.8	215.4	2.1		20.5	17	4162	18 35 20
18 36 20	=0515-053	07 25 46	25.7	215.7	2.1		20.6	60	4169	18 35 21

Schedule for TORUN (Code Tr) Page 12

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 15 Mar 2016 Day 75 ---										
18 36 20	J0514-0733	07 25 46	23.4	215.6	2.2		20.6	-23	4169	No stop
18 37 50	---	07 27 16	23.2	216.0	2.2		20.8	67	4181	18 36 21
18 37 50	160131A	07 27 16	23.5	216.6	2.2		21.2	-12	4181	No stop
18 41 20	---	07 30 47	23.2	217.5	2.3		21.6	198	4208	18 37 51
18 41 20	J0514-0733	07 30 47	22.9	216.9	2.3		21.3	-12	4208	No stop
18 42 50	---	07 32 17	22.8	217.2	2.3		21.5	78	4219	18 41 21
18 42 50	160131A	07 32 17	23.1	217.9	2.3		21.8	-12	4219	No stop
18 46 20	---	07 35 47	22.8	218.8	2.4		22.3	198	4246	18 42 51
18 47 00	J0514-0733	07 36 27	22.4	218.3	2.4		22.0	28	4246	18 47 00
18 48 30	---	07 37 58	22.2	218.7	2.4		22.2	90	4258	18 47 01
18 48 30	160131A	07 37 58	22.5	219.3	2.4		22.5	-12	4258	No stop
18 52 00	---	07 41 28	22.2	220.2	2.5		23.0	198	4285	18 48 31
18 52 00	J0514-0733	07 41 28	21.9	219.5	2.4		22.7	-12	4285	No stop
18 53 30	---	07 42 59	21.8	219.9	2.5		22.9	78	4296	18 52 01
18 53 30	160131A	07 42 59	22.1	220.6	2.5		23.2	-12	4296	No stop
18 57 00	---	07 46 29	21.7	221.4	2.6		23.6	198	4323	18 53 31
18 57 00	J0514-0733	07 46 29	21.4	220.8	2.5		23.3	-12	4323	No stop
18 58 30	---	07 47 59	21.3	221.1	2.5		23.5	78	4335	18 57 01
18 59 10	J0517-0520	07 48 39	23.5	221.5	2.5		23.6	18	4335	18 59 10
19 00 10	=0515-053	07 49 40	23.4	221.8	2.5		23.7	60	4342	18 59 11
19 00 10	J0514-0733	07 49 40	21.1	221.5	2.6		23.7	-23	4342	No stop
19 01 40	---	07 51 10	21.0	221.9	2.6		23.9	67	4354	19 00 11
19 01 40	160131A	07 51 10	21.2	222.6	2.6		24.2	-12	4354	No stop
19 05 10	---	07 54 40	20.9	223.4	2.7		24.6	198	4381	19 01 41
19 05 10	J0514-0733	07 54 40	20.6	222.7	2.7		24.3	-12	4381	No stop
19 06 40	---	07 56 11	20.5	223.1	2.7		24.5	78	4392	19 05 11
19 06 40	160131A	07 56 11	20.7	223.8	2.7		24.7	-12	4392	No stop
19 10 10	---	07 59 41	20.4	224.6	2.8		25.1	198	4419	19 06 41
19 10 50	J0514-0733	08 00 21	20.0	224.1	2.8		24.9	28	4419	19 10 50
19 12 20	---	08 01 52	19.9	224.5	2.8		25.1	90	4431	19 10 51

Schedule for TORUN (Code Tr) Page 13

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 15 Mar 2016 Day 75 ---										
19 12 20	160131A	08 01 52	20.1	225.1	2.8		25.4	-12	4431	No stop
19 15 50	---	08 05 22	19.8	226.0	2.9		25.8	198	4458	19 12 21
19 15 50	J0514-0733	08 05 22	19.5	225.3	2.8		25.5	-12	4458	No stop
19 17 20	---	08 06 52	19.3	225.7	2.9		25.7	78	4469	19 15 51
19 17 20	160131A	08 06 52	19.6	226.3	2.9		25.9	-12	4469	No stop
19 20 50	---	08 10 23	19.2	227.2	2.9		26.3	198	4496	19 17 21
19 20 50	J0514-0733	08 10 23	19.0	226.5	2.9		26.1	-12	4496	No stop
19 22 20	---	08 11 53	18.8	226.8	2.9		26.2	78	4508	19 20 51
19 23 00	J0517-0520	08 12 33	21.0	227.3	2.9		26.3	18	4508	19 23 00
19 24 00	=0515-053	08 13 34	20.9	227.6	2.9		26.4	60	4515	19 23 01
19 24 00	J0514-0733	08 13 34	18.6	227.2	3.0		26.4	-23	4515	No stop
19 25 30	---	08 15 04	18.4	227.6	3.0		26.6	67	4527	19 24 01
19 27 30	0528+134	08 17 04	38.7	235.4	2.8		30.5	30	4527	19 27 30
19 30 30	---	08 20 05	38.4	236.2	2.8		30.9	180	4550	19 27 31
19 41 30	J1746+6226	08 31 06	30.0	380.6	-9.3		-27.2	358	4550	19 41 30
19 44 30	=1745+624	08 34 07	30.1	381.0	-9.2		-27.7	180	4573	19 41 31
19 45 30	J1806+6141	08 35 07	28.5	379.0	-9.5		-24.4	40	4573	19 45 30
19 48 30	=1805+616	08 38 08	28.6	379.4	-9.5		-24.9	180	4596	19 45 31
19 48 30	J1815+6127	08 38 08	28.0	378.4	-9.6		-23.3	-14	4596	No stop
19 52 10	=1815+614	08 41 48	28.2	378.8	-9.6		-23.9	206	4624	19 48 31
19 52 40	J1806+6141	08 42 18	28.8	379.9	-9.4		-25.5	15	4624	19 52 40
19 53 30	=1805+616	08 43 08	28.9	380.0	-9.4		-25.7	50	4631	19 52 41
19 53 30	151027A	08 43 08	28.4	379.7	-9.4		-25.0	-13	4631	No stop
19 57 20	---	08 46 59	28.6	380.2	-9.4		-25.6	217	4660	19 53 31
19 57 20	J1806+6141	08 46 59	29.1	380.5	-9.3		-26.3	-13	4660	No stop
19 58 30	=1805+616	08 48 09	29.2	380.6	-9.3		-26.5	57	4669	19 57 21
19 58 30	151027A	08 48 09	28.7	380.3	-9.4		-25.8	-13	4669	No stop
20 02 10	---	08 51 50	28.9	380.8	-9.3		-26.4	207	4697	19 58 31
20 02 40	J1806+6141	08 52 20	29.4	381.1	-9.2		-27.1	17	4697	20 02 40
20 03 30	=1805+616	08 53 10	29.4	381.2	-9.2		-27.3	50	4704	20 02 41

Schedule for TORUN (Code Tr) Page 14

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 15 Mar 2016 Day 75 ---										
20 03 30	151027A	08 53 10	28.9	381.0	-9.3		-26.6	-13	4704	No stop
20 07 20	---	08 57 01	29.1	381.4	-9.2		-27.2	217	4733	20 03 31
20 07 20	J1806+6141	08 57 01	29.6	381.7	-9.2		-27.9	-13	4733	No stop
20 08 30	=1805+616	08 58 11	29.7	381.8	-9.1		-28.1	57	4742	20 07 21
20 08 30	151027A	08 58 11	29.2	381.6	-9.2		-27.4	-13	4742	No stop
20 12 10	---	09 01 51	29.4	382.0	-9.1		-28.0	207	4770	20 08 31
20 12 40	J1806+6141	09 02 22	29.9	382.3	-9.1		-28.8	17	4770	20 12 40
20 13 30	=1805+616	09 03 12	30.0	382.4	-9.1		-28.9	50	4777	20 12 41
20 13 30	151027A	09 03 12	29.5	382.2	-9.1		-28.2	-13	4777	No stop
20 17 20	---	09 07 02	29.7	382.6	-9.1		-28.8	217	4806	20 13 31
20 17 20	J1806+6141	09 07 02	30.2	382.9	-9.0		-29.5	-13	4806	No stop
20 18 30	=1805+616	09 08 12	30.3	383.0	-9.0		-29.7	57	4815	20 17 21
20 18 30	151027A	09 08 12	29.8	382.8	-9.0		-29.0	-13	4815	No stop
20 22 10	---	09 11 53	30.0	383.2	-9.0		-29.6	207	4844	20 18 31
20 22 40	J1806+6141	09 12 23	30.5	383.5	-8.9		-30.4	17	4844	20 22 40
20 23 30	=1805+616	09 13 13	30.6	383.6	-8.9		-30.5	50	4850	20 22 41
20 23 30	151027A	09 13 13	30.1	383.4	-8.9		-29.8	-13	4850	No stop
20 27 20	---	09 17 04	30.3	383.8	-8.9		-30.4	217	4879	20 23 31
20 27 20	J1806+6141	09 17 04	30.8	384.1	-8.8		-31.1	-13	4879	No stop
20 28 30	=1805+616	09 18 14	30.9	384.2	-8.8		-31.3	57	4888	20 27 21
20 28 30	151027A	09 18 14	30.4	384.0	-8.9		-30.6	-13	4888	No stop
20 32 10	---	09 21 55	30.6	384.4	-8.8		-31.2	207	4917	20 28 31
20 32 40	J1806+6141	09 22 25	31.1	384.7	-8.7		-32.0	17	4917	20 32 40
20 33 30	=1805+616	09 23 15	31.2	384.8	-8.7		-32.1	50	4923	20 32 41
20 33 30	151027A	09 23 15	30.7	384.6	-8.8		-31.4	-13	4923	No stop
20 37 20	---	09 27 06	30.9	385.0	-8.7		-32.0	217	4953	20 33 31
20 37 20	J1806+6141	09 27 06	31.4	385.3	-8.7		-32.7	-13	4953	No stop
20 38 30	=1805+616	09 28 16	31.5	385.4	-8.6		-32.9	57	4962	20 37 21
20 38 30	151027A	09 28 16	31.0	385.2	-8.7		-32.2	-13	4962	No stop
20 42 10	---	09 31 56	31.2	385.6	-8.6		-32.8	207	4990	20 38 31

Schedule for TORUN (Code Tr) Page 15

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 15 Mar 2016 Day 75 ---										
20 42 40	J1806+6141	09 32 26	31.8	385.9	-8.6		-33.6	17	4990	20 42 40
20 43 30	=1805+616	09 33 17	31.8	386.0	-8.6		-33.7	50	4996	20 42 41
20 43 30	J1815+6127	09 33 17	31.0	385.0	-8.7		-32.1	-15	4996	No stop
20 47 10	=1815+614	09 36 57	31.3	385.5	-8.6		-32.7	205	5024	20 43 31
20 47 40	J1806+6141	09 37 27	32.1	386.5	-8.5		-34.4	15	5024	20 47 40
20 48 30	=1805+616	09 38 17	32.2	386.6	-8.5		-34.5	50	5031	20 47 41
20 48 30	151027A	09 38 17	31.6	386.4	-8.5		-33.8	-13	5031	No stop
20 52 20	---	09 42 08	31.9	386.8	-8.5		-34.4	217	5060	20 48 31
20 52 20	J1806+6141	09 42 08	32.4	387.0	-8.4		-35.1	-13	5060	No stop
20 53 30	=1805+616	09 43 18	32.5	387.1	-8.4		-35.3	57	5069	20 52 21
20 53 30	151027A	09 43 18	32.0	386.9	-8.4		-34.6	-13	5069	No stop
20 57 10	---	09 46 59	32.2	387.4	-8.4		-35.2	207	5097	20 53 31
20 57 40	J1806+6141	09 47 29	32.8	387.6	-8.3		-35.9	17	5097	20 57 40
20 58 30	=1805+616	09 48 19	32.9	387.7	-8.3		-36.1	50	5104	20 57 41
20 58 30	151027A	09 48 19	32.3	387.5	-8.4		-35.4	-13	5104	No stop
21 02 20	---	09 52 10	32.6	388.0	-8.3		-36.0	217	5133	20 58 31
21 02 20	J1806+6141	09 52 10	33.1	388.2	-8.2		-36.7	-13	5133	No stop
21 03 30	=1805+616	09 53 20	33.2	388.3	-8.2		-36.9	57	5142	21 02 21
21 03 30	151027A	09 53 20	32.7	388.1	-8.3		-36.2	-13	5142	No stop
21 07 10	---	09 57 00	32.9	388.5	-8.2		-36.7	207	5170	21 03 31
21 07 40	J1806+6141	09 57 31	33.5	388.8	-8.1		-37.5	17	5170	21 07 40
21 08 30	=1805+616	09 58 21	33.6	388.9	-8.1		-37.7	50	5177	21 07 41
21 08 30	151027A	09 58 21	33.0	388.7	-8.2		-37.0	-13	5177	No stop
21 12 20	---	10 02 11	33.3	389.1	-8.1		-37.6	217	5206	21 08 31
21 12 20	J1806+6141	10 02 11	33.8	389.3	-8.1		-38.3	-13	5206	No stop
21 13 30	=1805+616	10 03 22	33.9	389.4	-8.1		-38.4	57	5215	21 12 21
21 13 30	151027A	10 03 22	33.4	389.3	-8.1		-37.7	-13	5215	No stop
21 17 10	---	10 07 02	33.7	389.7	-8.1		-38.3	207	5244	21 13 31
21 17 40	J1806+6141	10 07 32	34.2	389.9	-8.0		-39.1	17	5244	21 17 40
21 18 30	=1805+616	10 08 22	34.3	390.0	-8.0		-39.2	50	5250	21 17 41

Schedule for TORUN (Code Tr) Page 16

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 15 Mar 2016 Day 75 ---										
21 18 30	151027A	10 08 22	33.8	389.8	-8.0		-38.5	-13	5250	No stop
21 22 20	---	10 12 13	34.1	390.3	-8.0		-39.1	217	5279	21 18 31
21 22 20	J1806+6141	10 12 13	34.6	390.4	-7.9		-39.8	-14	5279	No stop
21 23 30	=1805+616	10 13 23	34.7	390.5	-7.9		-40.0	56	5288	21 22 21
21 23 30	151027A	10 13 23	34.2	390.4	-7.9		-39.3	-13	5288	No stop
21 27 10	---	10 17 04	34.4	390.8	-7.9		-39.9	207	5317	21 23 31
21 27 40	J1806+6141	10 17 34	35.0	391.0	-7.8		-40.7	16	5317	21 27 40
21 28 30	=1805+616	10 18 24	35.1	391.1	-7.8		-40.8	50	5323	21 27 41
21 28 30	151027A	10 18 24	34.5	390.9	-7.9		-40.1	-13	5323	No stop
21 32 20	---	10 22 15	34.8	391.4	-7.8		-40.7	217	5353	21 28 31
21 32 20	J1806+6141	10 22 15	35.4	391.5	-7.7		-41.4	-14	5353	No stop
21 33 30	=1805+616	10 23 25	35.5	391.6	-7.7		-41.6	56	5362	21 32 21
21 33 30	151027A	10 23 25	34.9	391.5	-7.8		-40.9	-13	5362	No stop
21 37 10	---	10 27 05	35.2	391.9	-7.7		-41.5	207	5390	21 33 31
21 37 40	J1806+6141	10 27 35	35.8	392.1	-7.6		-42.3	16	5390	21 37 40
21 38 30	=1805+616	10 28 26	35.9	392.2	-7.6		-42.4	50	5396	21 37 41
21 38 30	J1815+6127	10 28 26	35.0	391.3	-7.8		-40.8	-16	5396	No stop
21 42 10	=1815+614	10 32 06	35.2	391.8	-7.7		-41.4	204	5424	21 38 31
21 42 40	J1806+6141	10 32 36	36.2	392.6	-7.6		-43.0	14	5424	21 42 40
21 43 30	=1805+616	10 33 26	36.3	392.7	-7.6		-43.2	50	5431	21 42 41
21 43 30	151027A	10 33 26	35.7	392.6	-7.6		-42.4	-13	5431	No stop
21 47 20	---	10 37 17	36.0	393.0	-7.5		-43.0	217	5460	21 43 31
21 47 20	J1806+6141	10 37 17	36.6	393.1	-7.5		-43.8	-14	5460	No stop
21 48 30	=1805+616	10 38 27	36.7	393.2	-7.5		-44.0	56	5469	21 47 21
21 48 30	151027A	10 38 27	36.1	393.1	-7.5		-43.2	-13	5469	No stop
21 52 10	---	10 42 08	36.4	393.5	-7.5		-43.8	207	5497	21 48 31
21 52 40	J1806+6141	10 42 38	37.0	393.7	-7.4		-44.6	16	5497	21 52 40
21 53 30	=1805+616	10 43 28	37.1	393.8	-7.4		-44.7	50	5504	21 52 41
21 53 30	151027A	10 43 28	36.5	393.7	-7.4		-44.0	-13	5504	No stop
21 57 20	---	10 47 19	36.9	394.1	-7.4		-44.6	217	5533	21 53 31

Schedule for TORUN (Code Tr) Page 17

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 15 Mar 2016 Day 75 ---										
21 57 20	J1806+6141	10 47 19	37.4	394.2	-7.3		-45.3	-14	5533	No stop
21 58 30	=1805+616	10 48 29	37.5	394.3	-7.3		-45.5	56	5542	21 57 21
21 58 30	151027A	10 48 29	37.0	394.2	-7.4		-44.8	-13	5542	No stop
22 02 10	---	10 52 10	37.3	394.6	-7.3		-45.4	207	5570	21 58 31
22 02 40	J1806+6141	10 52 40	37.9	394.7	-7.2		-46.2	16	5570	22 02 40
22 03 30	=1805+616	10 53 30	37.9	394.8	-7.2		-46.3	50	5577	22 02 41
22 03 30	151027A	10 53 30	37.4	394.8	-7.3		-45.6	-13	5577	No stop
22 07 20	---	10 57 20	37.7	395.2	-7.2		-46.2	217	5606	22 03 31
22 07 20	J1806+6141	10 57 20	38.3	395.2	-7.2		-46.9	-14	5606	No stop
22 08 30	=1805+616	10 58 31	38.4	395.3	-7.1		-47.1	56	5615	22 07 21
22 08 30	151027A	10 58 31	37.8	395.3	-7.2		-46.3	-13	5615	No stop
22 12 10	---	11 02 11	38.1	395.7	-7.1		-46.9	207	5644	22 08 31
22 12 40	J1806+6141	11 02 41	38.7	395.8	-7.1		-47.7	16	5644	22 12 40
22 13 30	=1805+616	11 03 31	38.8	395.9	-7.0		-47.9	50	5650	22 12 41
22 13 30	151027A	11 03 31	38.3	395.8	-7.1		-47.1	-13	5650	No stop
22 17 20	---	11 07 22	38.6	396.2	-7.0		-47.7	217	5679	22 13 31
22 17 20	J1806+6141	11 07 22	39.1	396.3	-7.0		-48.5	-14	5679	No stop
22 18 30	=1805+616	11 08 32	39.3	396.4	-7.0		-48.7	56	5688	22 17 21
22 18 30	151027A	11 08 32	38.7	396.3	-7.0		-47.9	-13	5688	No stop
22 22 10	---	11 12 13	39.0	396.7	-7.0		-48.5	207	5717	22 18 31
22 22 40	J1806+6141	11 12 43	39.6	396.8	-6.9		-49.3	16	5717	22 22 40
22 23 30	=1805+616	11 13 33	39.7	396.9	-6.9		-49.4	50	5723	22 22 41
22 23 30	151027A	11 13 33	39.2	396.8	-6.9		-48.7	-13	5723	No stop
22 27 20	---	11 17 24	39.5	397.2	-6.9		-49.3	217	5753	22 23 31
22 27 20	J1806+6141	11 17 24	40.0	397.3	-6.8		-50.0	-14	5753	No stop
22 28 30	=1805+616	11 18 34	40.2	397.4	-6.8		-50.2	56	5762	22 27 21
22 28 30	151027A	11 18 34	39.6	397.3	-6.9		-49.4	-13	5762	No stop
22 32 10	---	11 22 14	39.9	397.7	-6.8		-50.0	207	5790	22 28 31
22 32 40	J1806+6141	11 22 45	40.5	397.8	-6.7		-50.9	16	5790	22 32 40
22 33 30	=1805+616	11 23 35	40.6	397.9	-6.7		-51.0	50	5796	22 32 41

Schedule for TORUN (Code Tr) Page 18

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 15 Mar 2016 Day 75 ---										
22 33 30	J1815+6127	11 23 35	39.6	397.2	-6.9		-49.4	-16	5796	No stop
22 37 10	=1815+614	11 27 15	40.0	397.5	-6.8		-50.0	204	5824	22 33 31
22 37 40	J1806+6141	11 27 45	41.0	398.3	-6.6		-51.7	13	5824	22 37 40
22 38 30	=1805+616	11 28 35	41.1	398.4	-6.6		-51.8	50	5831	22 37 41
22 39 30	J1746+6226	11 29 36	43.5	399.5	-6.3		-55.7	37	5831	22 39 30
22 42 30	=1745+624	11 32 36	43.8	399.8	-6.2		-56.2	180	5854	22 39 31
22 43 30	J1806+6141	11 33 36	41.5	398.8	-6.5		-52.6	37	5854	22 43 30
22 44 30	=1805+616	11 34 36	41.6	398.9	-6.5		-52.7	60	5862	22 43 31
22 44 30	151027A	11 34 36	41.1	398.9	-6.6		-51.9	-13	5862	No stop
22 48 20	---	11 38 27	41.5	399.3	-6.5		-52.5	217	5891	22 44 31
22 48 20	J1806+6141	11 38 27	42.0	399.3	-6.5		-53.3	-14	5891	No stop
22 49 30	=1805+616	11 39 37	42.1	399.4	-6.4		-53.5	56	5900	22 48 21
22 49 30	151027A	11 39 37	41.6	399.4	-6.5		-52.7	-13	5900	No stop
22 53 10	---	11 43 18	41.9	399.8	-6.4		-53.3	207	5928	22 49 31
22 53 40	J1806+6141	11 43 48	42.5	399.8	-6.4		-54.2	16	5928	22 53 40
22 54 30	=1805+616	11 44 38	42.6	399.9	-6.4		-54.3	50	5935	22 53 41
22 54 30	151027A	11 44 38	42.1	399.9	-6.4		-53.5	-13	5935	No stop
22 58 20	---	11 48 29	42.4	400.3	-6.4		-54.1	217	5964	22 54 31
22 58 20	J1806+6141	11 48 29	43.0	400.3	-6.3		-54.9	-14	5964	No stop
22 59 30	=1805+616	11 49 39	43.1	400.4	-6.3		-55.1	56	5973	22 58 21
22 59 30	151027A	11 49 39	42.5	400.4	-6.3		-54.3	-13	5973	No stop
23 03 10	---	11 53 20	42.9	400.7	-6.3		-54.8	207	6001	22 59 31
23 03 40	J1806+6141	11 53 50	43.5	400.7	-6.2		-55.7	16	6001	23 03 40
23 04 30	=1805+616	11 54 40	43.6	400.8	-6.2		-55.9	50	6008	23 03 41
23 04 30	151027A	11 54 40	43.0	400.9	-6.3		-55.0	-13	6008	No stop
23 08 20	---	11 58 30	43.4	401.2	-6.2		-55.6	217	6037	23 04 31
23 08 20	J1806+6141	11 58 30	44.0	401.2	-6.1		-56.5	-14	6037	No stop
23 09 30	=1805+616	11 59 41	44.1	401.3	-6.1		-56.7	56	6046	23 08 21
23 09 30	151027A	11 59 41	43.5	401.3	-6.2		-55.8	-13	6046	No stop
23 13 10	---	12 03 21	43.9	401.7	-6.1		-56.4	207	6074	23 09 31

```
Schedule for TORUN     (Code Tr )                                  Page  19
               e-EVN: eg091a,rg007b,eg082h,rg008a/rp025
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Tue  15 Mar 2016   Day  75 ---

23 13 40  J1806+6141   12 03 51  44.5 401.7 -6.0     -57.3    16     6074   23 13 40
23 14 30  =1805+616    12 04 41  44.6 401.7 -6.0     -57.4    50     6081   23 13 41

23 14 30  151027A      12 04 41  44.0 401.8 -6.1     -56.6   -13     6081   No stop
23 18 20  ---          12 08 32  44.4 402.1 -6.0     -57.2   217     6110   23 14 31

23 18 20  J1806+6141   12 08 32  45.0 402.1 -6.0     -58.0   -14     6110   No stop
23 19 30  =1805+616    12 09 42  45.1 402.2 -5.9     -58.2    56     6119   23 18 21

23 19 30  151027A      12 09 42  44.5 402.3 -6.0     -57.4   -13     6119   No stop
23 23 10  ---          12 13 23  44.9 402.6 -5.9     -58.0   207     6147   23 19 31

23 23 40  J1806+6141   12 13 53  45.5 402.5 -5.9     -58.9    16     6147   23 23 40
23 24 30  =1805+616    12 14 43  45.6 402.6 -5.9     -59.0    50     6154   23 23 41

23 24 30  151027A      12 14 43  45.0 402.7 -5.9     -58.2   -13     6154   No stop
23 28 20  ---          12 18 34  45.4 403.0 -5.9     -58.8   217     6183   23 24 31

23 28 20  J1806+6141   12 18 34  46.0 403.0 -5.8     -59.6   -14     6183   No stop
23 29 30  =1805+616    12 19 44  46.1 403.1 -5.8     -59.8    56     6192   23 28 21

23 29 30  151027A      12 19 44  45.5 403.2 -5.8     -58.9   -13     6192   No stop
23 33 10  ---          12 23 24  45.9 403.5 -5.8     -59.5   207     6220   23 29 31

23 33 40  J1806+6141   12 23 55  46.5 403.4 -5.7     -60.5    16     6220   23 33 40
23 34 30  =1805+616    12 24 45  46.6 403.5 -5.7     -60.6    50     6227   23 33 41

23 34 30  151027A      12 24 45  46.1 403.6 -5.8     -59.7   -13     6227   No stop
23 38 20  ---          12 28 35  46.5 403.9 -5.7     -60.3   217     6256   23 34 31

23 38 20  J1806+6141   12 28 35  47.0 403.8 -5.6     -61.2   -14     6256   No stop
23 39 30  =1805+616    12 29 46  47.1 403.9 -5.6     -61.4    56     6265   23 38 21

23 39 30  151027A      12 29 46  46.6 404.0 -5.7     -60.5   -13     6265   No stop
23 43 10  ---          12 33 26  47.0 404.3 -5.6     -61.1   207     6294   23 39 31

23 43 40  J1806+6141   12 33 56  47.6 404.3 -5.5     -62.1    16     6294   23 43 40
23 44 30  =1805+616    12 34 46  47.6 404.3 -5.5     -62.2    50     6300   23 43 41

23 44 30  151027A      12 34 46  47.1 404.5 -5.6     -61.3   -13     6300   No stop
23 48 20  ---          12 38 37  47.5 404.8 -5.5     -61.9   217     6329   23 44 31

23 48 20  J1806+6141   12 38 37  48.1 404.6 -5.5     -62.8   -14     6329   No stop
23 49 30  =1805+616    12 39 47  48.2 404.7 -5.4     -63.0    56     6338   23 48 21
```

Schedule for TORUN (Code Tr) Page 20

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 15 Mar 2016 Day 75 ---										
23 49 30	151027A	12 39 47	47.6	404.9	-5.5		-62.1	-13	6338	No stop
23 53 10	---	12 43 28	48.0	405.2	-5.4		-62.7	207	6367	23 49 31
23 53 40	J1806+6141	12 43 58	48.6	405.1	-5.4		-63.7	16	6367	23 53 40
23 54 30	=1805+616	12 44 48	48.7	405.1	-5.4		-63.8	50	6373	23 53 41
23 54 30	151027A	12 44 48	48.2	405.3	-5.4		-62.9	-13	6373	No stop
23 58 20	---	12 48 39	48.6	405.6	-5.4		-63.5	217	6403	23 54 31
23 58 20	J1806+6141	12 48 39	49.1	405.4	-5.3		-64.4	-14	6403	No stop
23 59 30	=1805+616	12 49 49	49.2	405.5	-5.3		-64.6	56	6412	23 58 21
--- Start: Tue 15 Mar 2016 Day 75 -- Stop: Wed 16 Mar 2016 Day 76 ---										
23 59 30	151027A	12 49 49	48.7	405.7	-5.3		-63.7	-13	6412	No stop
00 03 10	---	12 53 29	49.1	406.0	-5.3		-64.3	207	6440	23 59 31
00 03 40	J1806+6141	12 53 59	49.7	405.8	-5.2		-65.3	16	6440	00 03 40
00 04 30	=1805+616	12 54 50	49.8	405.9	-5.2		-65.4	50	6446	00 03 41
00 04 30	J1815+6127	12 54 50	48.7	405.5	-5.3		-63.7	-17	6446	No stop
00 08 00	=1815+614	12 58 20	49.1	405.8	-5.3		-64.2	193	6473	00 04 31
00 08 30	J1806+6141	12 58 50	50.2	406.2	-5.1		-66.1	13	6473	00 08 30
00 09 30	=1805+616	12 59 50	50.3	406.3	-5.1		-66.2	60	6481	00 08 31
00 09 30	151027A	12 59 50	49.8	406.5	-5.2		-65.3	-13	6481	No stop
00 13 20	---	13 03 41	50.2	406.8	-5.1		-65.9	217	6510	00 09 31
00 13 20	J1806+6141	13 03 41	50.7	406.6	-5.0		-66.9	-14	6510	No stop
00 14 30	=1805+616	13 04 51	50.9	406.7	-5.0		-67.1	56	6519	00 13 21
00 14 30	151027A	13 04 51	50.3	406.9	-5.1		-66.1	-13	6519	No stop
00 18 10	---	13 08 32	50.7	407.2	-5.0		-66.7	207	6547	00 14 31
00 18 40	J1806+6141	13 09 02	51.3	407.0	-5.0		-67.7	16	6547	00 18 40
00 19 30	=1805+616	13 09 52	51.4	407.0	-4.9		-67.9	50	6554	00 18 41
00 19 30	151027A	13 09 52	50.9	407.3	-5.0		-66.9	-13	6554	No stop
00 23 20	---	13 13 43	51.3	407.5	-4.9		-67.5	217	6583	00 19 31
00 23 20	J1806+6141	13 13 43	51.8	407.3	-4.9		-68.5	-13	6583	No stop
00 24 30	=1805+616	13 14 53	52.0	407.4	-4.9		-68.7	57	6592	00 23 21

Schedule for TORUN (Code Tr) Page 21

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 16 Mar 2016 Day 76 ---										
00 24 30	151027A	13 14 53	51.4	407.6	-4.9		-67.7	-13	6592	No stop
00 28 10	---	13 18 33	51.9	407.9	-4.9		-68.3	207	6620	00 24 31
00 28 40	J1806+6141	13 19 04	52.4	407.7	-4.8		-69.4	17	6620	00 28 40
00 29 30	=1805+616	13 19 54	52.5	407.7	-4.8		-69.5	50	6627	00 28 41
00 29 30	J1815+6127	13 19 54	51.4	407.4	-4.9		-67.7	-17	6627	No stop
00 33 10	=1815+614	13 23 34	51.8	407.7	-4.9		-68.3	203	6655	00 29 31
00 33 40	J1806+6141	13 24 04	53.0	408.0	-4.7		-70.2	13	6655	00 33 40
00 34 30	=1805+616	13 24 55	53.1	408.1	-4.7		-70.4	50	6662	00 33 41
00 34 30	151027A	13 24 55	52.6	408.3	-4.8		-69.3	-13	6662	No stop
00 38 20	---	13 28 45	53.0	408.6	-4.7		-70.0	217	6691	00 34 31
00 38 20	J1806+6141	13 28 45	53.5	408.3	-4.6		-71.0	-13	6691	No stop
00 39 30	=1805+616	13 29 55	53.6	408.4	-4.6		-71.2	57	6700	00 38 21
00 39 30	151027A	13 29 55	53.1	408.7	-4.7		-70.2	-13	6700	No stop
00 43 10	---	13 33 36	53.5	408.9	-4.6		-70.8	207	6728	00 39 31
00 43 40	J1806+6141	13 34 06	54.1	408.7	-4.5		-71.9	17	6728	00 43 40
00 44 30	=1805+616	13 34 56	54.2	408.7	-4.5		-72.0	50	6735	00 43 41
00 44 30	151027A	13 34 56	53.7	409.0	-4.6		-71.0	-13	6735	No stop
00 48 20	---	13 38 47	54.1	409.3	-4.5		-71.6	217	6764	00 44 31
00 48 20	J1806+6141	13 38 47	54.6	408.9	-4.5		-72.7	-13	6764	No stop
00 49 30	=1805+616	13 39 57	54.8	409.0	-4.4		-72.9	57	6773	00 48 21
00 49 30	151027A	13 39 57	54.3	409.3	-4.5		-71.8	-13	6773	No stop
00 53 10	---	13 43 38	54.7	409.6	-4.4		-72.5	207	6801	00 49 31
00 53 40	J1806+6141	13 44 08	55.3	409.3	-4.4		-73.6	17	6801	00 53 40
00 54 30	=1805+616	13 44 58	55.3	409.3	-4.4		-73.8	50	6808	00 53 41
00 54 30	151027A	13 44 58	54.8	409.7	-4.4		-72.7	-13	6808	No stop
00 58 20	---	13 48 48	55.3	409.9	-4.4		-73.3	217	6837	00 54 31
00 58 20	J1806+6141	13 48 48	55.8	409.5	-4.3		-74.4	-13	6837	No stop
00 59 30	=1805+616	13 49 59	55.9	409.6	-4.3		-74.6	57	6846	00 58 21
00 59 30	151027A	13 49 59	55.4	410.0	-4.3		-73.5	-13	6846	No stop
01 03 10	---	13 53 39	55.8	410.2	-4.3		-74.2	207	6874	00 59 31

Schedule for TORUN (Code Tr) Page 22

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 16 Mar 2016 Day 76 ---										
01 03 40	J1806+6141	13 54 09	56.4	409.8	-4.2		-75.4	17	6874	01 03 40
01 04 30	=1805+616	13 54 59	56.5	409.9	-4.2		-75.5	50	6881	01 03 41
01 04 30	151027A	13 54 59	56.0	410.3	-4.3		-74.4	-13	6881	No stop
01 08 20	---	13 58 50	56.4	410.5	-4.2		-75.1	217	6910	01 04 31
01 08 20	J1806+6141	13 58 50	56.9	410.1	-4.1		-76.2	-13	6910	No stop
01 09 30	=1805+616	14 00 00	57.1	410.1	-4.1		-76.4	57	6919	01 08 21
01 09 30	151027A	14 00 00	56.6	410.5	-4.2		-75.3	-13	6919	No stop
01 13 10	---	14 03 41	57.0	410.7	-4.1		-75.9	207	6947	01 09 31
01 13 40	J1806+6141	14 04 11	57.6	410.4	-4.0		-77.1	17	6947	01 13 40
01 14 30	=1805+616	14 05 01	57.6	410.4	-4.0		-77.3	50	6954	01 13 41
01 14 30	151027A	14 05 01	57.2	410.8	-4.1		-76.1	-13	6954	No stop
01 18 20	---	14 08 52	57.6	411.0	-4.0		-76.8	217	6983	01 14 31
01 18 20	J1806+6141	14 08 52	58.1	410.6	-4.0		-78.0	-13	6983	No stop
01 19 30	=1805+616	14 10 02	58.2	410.6	-3.9		-78.2	57	6992	01 18 21
01 19 30	151027A	14 10 02	57.7	411.1	-4.0		-77.0	-13	6992	No stop
01 23 10	---	14 13 43	58.2	411.3	-3.9		-77.7	207	7020	01 19 31
01 23 40	J1806+6141	14 14 13	58.7	410.8	-3.9		-78.9	17	7020	01 23 40
01 24 30	=1805+616	14 15 03	58.8	410.9	-3.9		-79.1	50	7027	01 23 41
01 24 30	J1815+6127	14 15 03	57.7	410.9	-4.0		-77.1	-17	7027	No stop
01 28 10	=1815+614	14 18 43	58.1	411.0	-4.0		-77.7	203	7055	01 24 31
01 28 40	J1806+6141	14 19 13	59.3	411.0	-3.8		-79.9	13	7055	01 28 40
01 29 30	=1805+616	14 20 04	59.4	411.1	-3.8		-80.0	50	7062	01 28 41
01 30 30	J1746+6226	14 21 04	61.9	410.2	-3.4		-85.4	37	7062	01 30 30
01 33 30	=1745+624	14 24 04	62.3	410.2	-3.4		-86.1	180	7085	01 30 31
01 34 30	J1806+6141	14 25 04	60.0	411.3	-3.7		-80.9	37	7085	01 34 30
01 35 30	=1805+616	14 26 05	60.1	411.3	-3.7		-81.1	60	7092	01 34 31
01 35 30	151027A	14 26 05	59.6	411.8	-3.7		-79.9	-13	7092	No stop
01 39 20	---	14 29 55	60.1	412.0	-3.7		-80.6	217	7122	01 35 31
01 39 20	J1806+6141	14 29 55	60.6	411.4	-3.6		-81.9	-13	7122	No stop
01 40 30	=1805+616	14 31 05	60.7	411.5	-3.6		-82.1	57	7131	01 39 21

Schedule for TORUN (Code Tr) Page 23

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 16 Mar 2016 Day 76 ---										
01 40 30	151027A	14 31 05	60.2	412.0	-3.7		-80.8	-13	7131	No stop
01 44 10	---	14 34 46	60.6	412.1	-3.6		-81.5	207	7159	01 40 31
01 44 40	J1806+6141	14 35 16	61.2	411.6	-3.5		-82.9	17	7159	01 44 40
01 45 30	=1805+616	14 36 06	61.3	411.6	-3.5		-83.1	50	7165	01 44 41
01 45 30	151027A	14 36 06	60.8	412.2	-3.6		-81.8	-13	7165	No stop
01 49 20	---	14 39 57	61.3	412.3	-3.5		-82.5	217	7195	01 45 31
01 49 20	J1806+6141	14 39 57	61.7	411.7	-3.4		-83.8	-13	7195	No stop
01 50 30	=1805+616	14 41 07	61.9	411.8	-3.4		-84.0	57	7204	01 49 21
01 50 30	151027A	14 41 07	61.4	412.4	-3.5		-82.7	-13	7204	No stop
01 54 10	---	14 44 48	61.8	412.5	-3.4		-83.4	207	7232	01 50 31
01 54 40	J1806+6141	14 45 18	62.4	411.9	-3.4		-84.9	17	7232	01 54 40
01 55 30	=1805+616	14 46 08	62.5	411.9	-3.3		-85.0	50	7238	01 54 41
01 55 30	151027A	14 46 08	62.0	412.5	-3.4		-83.7	-13	7238	No stop
01 59 20	---	14 49 58	62.5	412.6	-3.3		-84.4	217	7268	01 55 31
01 59 20	J1806+6141	14 49 58	62.9	412.0	-3.3		-85.8	-13	7268	No stop
02 00 30	=1805+616	14 51 09	63.1	412.0	-3.3		-86.0	57	7277	01 59 21
02 00 30	151027A	14 51 09	62.6	412.6	-3.3		-84.7	-13	7277	No stop
02 04 10	---	14 54 49	63.0	412.7	-3.3		-85.4	207	7305	02 00 31
02 04 40	J1806+6141	14 55 19	63.5	412.1	-3.2		-86.9	17	7305	02 04 40
02 05 30	=1805+616	14 56 09	63.6	412.1	-3.2		-87.1	50	7312	02 04 41
02 05 30	151027A	14 56 09	63.2	412.8	-3.2		-85.7	-13	7312	No stop
02 09 20	---	15 00 00	63.7	412.8	-3.2		-86.4	217	7341	02 05 31
02 09 20	J1806+6141	15 00 00	64.1	412.1	-3.1		-87.9	-13	7341	No stop
02 10 30	=1805+616	15 01 10	64.2	412.1	-3.1		-88.1	57	7350	02 09 21
02 10 30	151027A	15 01 10	63.8	412.8	-3.1		-86.7	-13	7350	No stop
02 14 10	---	15 04 51	64.2	412.9	-3.1		-87.4	207	7378	02 10 31
02 14 40	J1806+6141	15 05 21	64.7	412.2	-3.0		-89.0	17	7378	02 14 40
02 15 30	=1805+616	15 06 11	64.8	412.2	-3.0		-89.2	50	7385	02 14 41
02 15 30	151027A	15 06 11	64.4	412.9	-3.1		-87.7	-13	7385	No stop
02 19 20	---	15 10 02	64.9	412.9	-3.0		-88.5	217	7414	02 15 31

Schedule for TORUN (Code Tr) Page 24

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 16 Mar 2016 Day 76 ---										
02 19 20	J1806+6141	15 10 02	65.3	412.2	-2.9		-90.0	-13	7414	No stop
02 20 30	=1805+616	15 11 12	65.4	412.2	-2.9		-90.3	57	7423	02 19 21
02 20 30	151027A	15 11 12	65.0	413.0	-3.0		-88.8	-13	7423	No stop
02 24 10	---	15 14 53	65.4	413.0	-2.9		-89.6	207	7451	02 20 31
02 24 40	J1806+6141	15 15 23	65.9	412.2	-2.9		-91.2	17	7451	02 24 40
02 25 30	=1805+616	15 16 13	66.0	412.1	-2.8		-91.4	50	7458	02 24 41
02 25 30	J1815+6127	15 16 13	64.9	412.7	-3.0		-88.9	-17	7458	No stop
02 29 10	=1815+614	15 19 53	65.4	412.7	-2.9		-89.7	203	7486	02 25 31
02 29 40	J1806+6141	15 20 23	66.5	412.1	-2.8		-92.4	13	7486	02 29 40
02 30 30	=1805+616	15 21 14	66.6	412.1	-2.8		-92.6	50	7492	02 29 41
02 30 30	151027A	15 21 14	66.2	413.0	-2.8		-91.0	-13	7492	No stop
02 34 20	---	15 25 04	66.7	412.9	-2.8		-91.9	217	7522	02 30 31
02 34 20	J1806+6141	15 25 04	67.1	412.0	-2.7		-93.5	-13	7522	No stop
02 35 30	=1805+616	15 26 14	67.2	412.0	-2.7		-93.8	57	7531	02 34 21
02 35 30	151027A	15 26 14	66.8	412.9	-2.7		-92.1	-14	7531	No stop
02 39 10	---	15 29 55	67.2	412.9	-2.7		-93.0	206	7559	02 35 31
02 39 40	J1806+6141	15 30 25	67.7	411.9	-2.6		-94.8	16	7559	02 39 40
02 40 30	=1805+616	15 31 15	67.8	411.9	-2.6		-95.0	50	7565	02 39 41
02 40 30	151027A	15 31 15	67.4	412.8	-2.6		-93.3	-14	7565	No stop
02 44 20	---	15 35 06	67.9	412.8	-2.6		-94.2	216	7595	02 40 31
02 44 20	J1806+6141	15 35 06	68.3	411.8	-2.5		-95.9	-14	7595	No stop
02 45 30	=1805+616	15 36 16	68.4	411.7	-2.5		-96.2	56	7604	02 44 21
02 45 30	151027A	15 36 16	68.0	412.7	-2.6		-94.5	-14	7604	No stop
02 49 10	---	15 39 57	68.4	412.6	-2.5		-95.4	206	7632	02 45 31
02 49 40	J1806+6141	15 40 27	68.9	411.6	-2.4		-97.3	16	7632	02 49 40
02 50 30	=1805+616	15 41 17	69.0	411.5	-2.4		-97.5	50	7638	02 49 41
02 50 30	151027A	15 41 17	68.6	412.6	-2.5		-95.7	-14	7638	No stop
02 54 20	---	15 45 08	69.1	412.5	-2.4		-96.7	216	7668	02 50 31
02 54 20	J1806+6141	15 45 08	69.4	411.4	-2.4		-98.5	-14	7668	No stop
02 55 30	=1805+616	15 46 18	69.6	411.3	-2.3		-98.8	56	7677	02 54 21

Schedule for TORUN (Code Tr) Page 25

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 16 Mar 2016 Day 76 ---										
02 55 30	151027A	15 46 18	69.2	412.4	-2.4		-97.0	-14	7677	No stop
02 59 10	---	15 49 58	69.6	412.2	-2.3		-98.0	206	7705	02 55 31
02 59 40	J1806+6141	15 50 28	70.1	411.1	-2.3		-100.0	15	7705	02 59 40
03 00 30	=1805+616	15 51 19	70.2	411.0	-2.3		-100.2	50	7712	02 59 41
03 00 30	151027A	15 51 19	69.8	412.2	-2.3		-98.3	-15	7712	No stop
03 04 20	---	15 55 09	70.2	412.0	-2.2		-99.3	215	7741	03 00 31
03 04 20	J1806+6141	15 55 09	70.6	410.8	-2.2		-101.3	-15	7741	No stop
03 05 30	=1805+616	15 56 19	70.7	410.7	-2.2		-101.6	55	7750	03 04 21
03 05 30	151027A	15 56 19	70.4	411.9	-2.2		-99.7	-15	7750	No stop
03 09 10	---	16 00 00	70.8	411.7	-2.2		-100.7	205	7778	03 05 31
03 09 40	J1806+6141	16 00 30	71.2	410.4	-2.1		-102.8	15	7778	03 09 40
03 10 30	=1805+616	16 01 20	71.3	410.3	-2.1		-103.1	50	7785	03 09 41
03 10 30	151027A	16 01 20	71.0	411.6	-2.1		-101.1	-15	7785	No stop
03 14 20	---	16 05 11	71.4	411.3	-2.1		-102.2	215	7814	03 10 31
03 14 20	J1806+6141	16 05 11	71.8	410.0	-2.0		-104.3	-15	7814	No stop
03 15 30	=1805+616	16 06 21	71.9	409.8	-2.0		-104.6	55	7823	03 14 21
03 15 30	151027A	16 06 21	71.6	411.2	-2.1		-102.5	-15	7823	No stop
03 19 10	---	16 10 02	72.0	410.9	-2.0		-103.6	205	7851	03 15 31
03 19 40	J1806+6141	16 10 32	72.4	409.4	-1.9		-105.9	14	7851	03 19 40
03 20 30	=1805+616	16 11 22	72.5	409.3	-1.9		-106.2	50	7858	03 19 41
03 20 30	J1815+6127	16 11 22	71.5	410.9	-2.1		-102.6	-16	7858	No stop
03 24 10	=1815+614	16 15 02	71.9	410.6	-2.0		-103.8	204	7886	03 20 31
03 24 40	J1806+6141	16 15 32	73.0	408.8	-1.8		-107.6	13	7886	03 24 40
03 25 30	=1805+616	16 16 23	73.0	408.7	-1.8		-107.9	50	7892	03 24 41
03 25 30	151027A	16 16 23	72.7	410.2	-1.9		-105.6	-16	7892	No stop
03 29 20	---	16 20 13	73.2	409.8	-1.8		-106.9	214	7922	03 25 31
03 29 20	J1806+6141	16 20 13	73.5	408.2	-1.8		-109.2	-16	7922	No stop
03 30 30	=1805+616	16 21 23	73.6	408.1	-1.8		-109.6	54	7931	03 29 21
03 30 30	151027A	16 21 23	73.3	409.7	-1.8		-107.3	-16	7931	No stop
03 34 10	---	16 25 04	73.7	409.2	-1.8		-108.6	204	7959	03 30 31

Schedule for TORUN (Code Tr) Page 26

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 16 Mar 2016 Day 76 ---										
03 34 40	J1806+6141	16 25 34	74.1	407.4	-1.7		-111.1	13	7959	03 34 40
03 35 30	=1805+616	16 26 24	74.2	407.3	-1.7		-111.5	50	7965	03 34 41
03 35 30	151027A	16 26 24	73.9	409.0	-1.7		-109.0	-16	7965	No stop
03 39 20	---	16 30 15	74.3	408.4	-1.7		-110.4	214	7995	03 35 31
03 39 20	J1806+6141	16 30 15	74.6	406.7	-1.6		-112.9	-17	7995	No stop
03 40 30	=1805+616	16 31 25	74.7	406.5	-1.6		-113.4	53	8004	03 39 21
03 40 30	151027A	16 31 25	74.4	408.2	-1.6		-110.9	-17	8004	No stop
03 44 10	---	16 35 06	74.8	407.6	-1.6		-112.3	203	8032	03 40 31
03 44 40	J1806+6141	16 35 36	75.2	405.7	-1.5		-115.0	13	8032	03 44 40
03 45 30	=1805+616	16 36 26	75.3	405.5	-1.5		-115.4	50	8038	03 44 41
03 45 30	151027A	16 36 26	75.0	407.4	-1.6		-112.8	-17	8038	No stop
03 49 20	---	16 40 17	75.4	406.7	-1.5		-114.3	213	8068	03 45 31
03 49 20	J1806+6141	16 40 17	75.7	404.7	-1.4		-117.0	-18	8068	No stop
03 50 30	=1805+616	16 41 27	75.8	404.5	-1.4		-117.5	52	8077	03 49 21
03 50 30	151027A	16 41 27	75.5	406.4	-1.5		-114.8	-17	8077	No stop
03 54 10	---	16 45 07	75.9	405.7	-1.4		-116.4	203	8105	03 50 31
03 54 40	J1806+6141	16 45 37	76.2	403.5	-1.3		-119.4	12	8105	03 54 40
03 55 30	=1805+616	16 46 28	76.3	403.3	-1.3		-119.8	50	8112	03 54 41
03 55 30	151027A	16 46 28	76.1	405.4	-1.4		-116.9	-18	8112	No stop
03 59 20	---	16 50 18	76.5	404.5	-1.3		-118.7	212	8141	03 55 31
03 59 20	J1806+6141	16 50 18	76.7	402.3	-1.3		-121.6	-18	8141	No stop
04 00 30	=1805+616	16 51 28	76.8	402.0	-1.3		-122.1	52	8150	03 59 21
04 00 30	151027A	16 51 28	76.6	404.2	-1.3		-119.2	-18	8150	No stop
04 04 10	---	16 55 09	77.0	403.2	-1.2		-121.0	202	8178	04 00 31
04 04 40	J1806+6141	16 55 39	77.2	400.8	-1.2		-124.2	11	8178	04 04 40
04 05 30	=1805+616	16 56 29	77.3	400.5	-1.2		-124.7	50	8185	04 04 41
04 05 30	151027A	16 56 29	77.1	402.8	-1.2		-121.6	-18	8185	No stop
04 09 20	---	17 00 20	77.5	401.7	-1.2		-123.6	212	8214	04 05 31
04 09 20	J1806+6141	17 00 20	77.7	399.3	-1.1		-126.7	-19	8214	No stop
04 10 30	=1805+616	17 01 30	77.8	398.9	-1.1		-127.4	51	8223	04 09 21

Schedule for TORUN (Code Tr) Page 27

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 16 Mar 2016 Day 76 ---										
04 10 30	151027A	17 01 30	77.6	401.3	-1.1		-124.2	-19	8223	No stop
04 14 10	---	17 05 11	78.0	400.1	-1.1		-126.2	201	8251	04 10 31
04 14 40	J1806+6141	17 05 41	78.2	397.4	-1.0		-129.7	10	8251	04 14 40
04 15 30	=1805+616	17 06 31	78.3	397.1	-1.0		-130.2	50	8258	04 14 41
04 15 30	J1815+6127	17 06 31	77.5	401.2	-1.2		-124.2	-23	8258	No stop
04 19 10	=1815+614	17 10 11	77.9	400.0	-1.1		-126.2	197	8286	04 15 31
04 19 40	J1806+6141	17 10 42	78.6	395.4	-0.9		-132.8	6	8286	04 19 40
04 20 30	=1805+616	17 11 32	78.7	395.1	-0.9		-133.3	50	8292	04 19 41
04 20 30	151027A	17 11 32	78.6	397.8	-1.0		-129.8	-19	8292	No stop
04 24 20	---	17 15 22	78.9	396.3	-0.9		-132.2	211	8322	04 20 31
04 24 20	J1806+6141	17 15 22	79.0	393.5	-0.9		-135.7	-20	8322	No stop
04 25 30	=1805+616	17 16 32	79.1	392.9	-0.8		-136.5	50	8331	04 24 21
04 25 30	151027A	17 16 32	79.1	395.8	-0.9		-132.9	-20	8331	No stop
04 29 10	---	17 20 13	79.4	394.1	-0.8		-135.3	200	8359	04 25 31
04 29 40	J1806+6141	17 20 43	79.5	390.9	-0.8		-139.4	9	8359	04 29 40
04 30 30	=1805+616	17 21 33	79.5	390.5	-0.7		-140.0	50	8365	04 29 41
04 30 30	151027A	17 21 33	79.5	393.5	-0.8		-136.2	-20	8365	No stop
04 34 20	---	17 25 24	79.8	391.6	-0.7		-138.9	210	8395	04 30 31
04 34 20	J1806+6141	17 25 24	79.8	388.5	-0.7		-142.8	-21	8395	No stop
04 35 30	=1805+616	17 26 34	79.9	387.9	-0.7		-143.6	49	8404	04 34 21
04 35 30	151027A	17 26 34	79.9	391.0	-0.7		-139.8	-20	8404	No stop
04 39 10	---	17 30 15	80.2	389.0	-0.7		-142.6	200	8432	04 35 31
04 39 40	J1806+6141	17 30 45	80.2	385.6	-0.6		-146.9	9	8432	04 39 40
04 40 30	=1805+616	17 31 35	80.2	385.1	-0.6		-147.6	50	8438	04 39 41
04 40 30	151027A	17 31 35	80.3	388.3	-0.6		-143.6	-21	8438	No stop
04 44 20	---	17 35 26	80.5	386.0	-0.6		-146.7	209	8468	04 40 31
04 44 20	J1806+6141	17 35 26	80.5	382.7	-0.5		-150.7	-22	8468	No stop
04 45 30	=1805+616	17 36 36	80.5	382.0	-0.5		-151.7	48	8477	04 44 21
04 45 30	151027A	17 36 36	80.6	385.3	-0.6		-147.6	-21	8477	No stop
04 49 10	---	17 40 16	80.8	383.0	-0.5		-150.7	199	8505	04 45 31

Schedule for TORUN (Code Tr) Page 28

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 16 Mar 2016 Day 76 ---										
04 49 40	J1806+6141	17 40 46	80.7	379.3	-0.4		-155.3	8	8505	04 49 40
04 50 30	=1805+616	17 41 37	80.8	378.7	-0.4		-156.0	50	8512	04 49 41
04 50 30	151027A	17 41 37	80.9	382.1	-0.5		-151.9	-21	8512	No stop
04 54 20	---	17 45 27	81.1	379.4	-0.4		-155.4	209	8541	04 50 31
04 54 20	J1806+6141	17 45 27	81.0	376.1	-0.4		-159.5	-22	8541	No stop
04 55 30	=1805+616	17 46 37	81.0	375.2	-0.3		-160.6	48	8550	04 54 21
04 55 30	151027A	17 46 37	81.2	378.6	-0.4		-156.4	-21	8550	No stop
04 59 10	---	17 50 18	81.3	375.9	-0.3		-159.9	199	8578	04 55 31
04 59 40	J1806+6141	17 50 48	81.2	372.2	-0.3		-164.5	8	8578	04 59 40
05 00 30	=1805+616	17 51 38	81.2	371.6	-0.2		-165.3	50	8585	04 59 41
05 00 30	151027A	17 51 38	81.4	374.9	-0.3		-161.2	-21	8585	No stop
05 04 20	---	17 55 29	81.5	372.0	-0.2		-165.0	209	8614	05 00 31
05 04 20	J1806+6141	17 55 29	81.3	368.6	-0.2		-169.0	-22	8614	No stop
05 05 30	=1805+616	17 56 39	81.3	367.7	-0.2		-170.2	48	8623	05 04 21
05 05 30	151027A	17 56 39	81.5	371.0	-0.2		-166.1	-21	8623	No stop
05 09 10	---	18 00 20	81.6	368.1	-0.2		-169.9	199	8651	05 05 31
05 09 40	J1806+6141	18 00 50	81.4	364.5	-0.1		-174.3	8	8651	05 09 40
05 10 30	=1805+616	18 01 40	81.4	363.8	-0.1		-175.2	50	8658	05 09 41
05 10 30	J1815+6127	18 01 40	81.4	371.4	-0.2		-165.6	-29	8658	No stop
05 14 10	=1815+614	18 05 20	81.5	368.5	-0.2		-169.3	191	8686	05 10 31
05 14 40	J1806+6141	18 05 51	81.4	360.5	-0.0		-179.4	-1	8686	05 14 40
05 15 30	=1805+616	18 06 41	81.4	359.8	0.0		179.8	49	8692	05 14 41
05 16 30	J1746+6226	18 07 41	80.2	345.3	0.4		160.8	16	8692	05 16 30
05 30 00	=1745+624	18 21 13	79.6	337.2	0.6		149.8	810	8796	05 16 31
05 40 00	BLLAC	18 31 15	53.7	85.2	-3.5		-54.1	81	8796	05 40 00
05 45 00	---	18 36 16	54.4	86.2	-3.5		-54.2	300	8835	05 40 01
05 45 40	BLLAC	18 36 56	54.5	86.3	-3.4		-54.2	34	8835	05 45 40
06 00 00	---	18 51 18	56.7	89.0	-3.2		-54.3	860	8945	05 45 41
06 00 40	BLLAC	18 51 58	56.8	89.2	-3.2		-54.3	34	8945	06 00 40
06 15 00	---	19 06 20	58.9	92.1	-3.0		-54.3	860	9055	06 00 41

Schedule for TORUN (Code Tr) Page 29

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 16 Mar 2016 Day 76 ---										
06 26 00	2007+777	19 17 22	64.8	5.8	-0.8		-163.1	474	9055	06 26 00
06 30 00	---	19 21 23	64.9	5.3	-0.7		-164.5	240	9086	06 26 01
06 30 40	2007+777	19 22 03	64.9	5.3	-0.7		-164.8	34	9086	06 30 40
06 36 00	---	19 27 24	64.9	4.6	-0.6		-166.7	320	9127	06 30 41
06 38 30	J0147+5840	19 29 54	41.1	43.3	-6.3		-52.6	47	9127	06 38 30
06 40 30	=0144+584	19 31 55	41.4	43.6	-6.3		-52.9	120	9142	06 38 31
06 40 30	J0151+5454	19 31 55	38.6	47.0	-6.3		-49.9	-24	9142	No stop
06 44 00	---	19 35 25	39.0	47.4	-6.3		-50.4	186	9169	06 40 31
06 45 00	J0147+5840	19 36 25	41.8	44.0	-6.2		-53.6	36	9169	06 45 00
06 46 00	=0144+584	19 37 26	41.9	44.1	-6.2		-53.7	60	9177	06 45 01
06 46 00	V596CAS	19 37 26	40.6	43.1	-6.4		-51.9	-18	9177	No stop
06 49 30	---	19 40 56	41.0	43.4	-6.3		-52.4	192	9204	06 46 01
06 49 30	J0147+5840	19 40 56	42.3	44.5	-6.1		-54.2	-18	9204	No stop
06 51 00	=0144+584	19 42 26	42.5	44.6	-6.1		-54.4	72	9215	06 49 31
06 51 00	V596CAS	19 42 26	41.1	43.6	-6.3		-52.6	-18	9215	No stop
06 54 30	---	19 45 57	41.5	44.0	-6.2		-53.1	192	9242	06 51 01
06 55 00	J0147+5840	19 46 27	42.9	45.0	-6.0		-55.0	12	9242	06 55 00
06 56 00	=0144+584	19 47 27	43.0	45.1	-6.0		-55.2	60	9250	06 55 01
06 56 00	V596CAS	19 47 27	41.7	44.1	-6.2		-53.4	-18	9250	No stop
06 59 30	---	19 50 58	42.0	44.5	-6.2		-53.9	192	9277	06 56 01
06 59 30	J0147+5840	19 50 58	43.4	45.5	-6.0		-55.7	-18	9277	No stop
07 01 00	=0144+584	19 52 28	43.5	45.7	-5.9		-55.9	72	9288	06 59 31
07 01 00	V596CAS	19 52 28	42.2	44.6	-6.1		-54.1	-18	9288	No stop
07 04 30	---	19 55 59	42.6	45.0	-6.1		-54.6	192	9315	07 01 01
07 05 00	J0147+5840	19 56 29	44.0	46.1	-5.9		-56.5	12	9315	07 05 00
07 06 00	=0144+584	19 57 29	44.1	46.2	-5.9		-56.6	60	9323	07 05 01
07 06 00	V596CAS	19 57 29	42.7	45.2	-6.1		-54.8	-18	9323	No stop
07 09 30	---	20 00 59	43.1	45.5	-6.0		-55.3	192	9350	07 06 01
07 09 30	J0147+5840	20 00 59	44.4	46.5	-5.8		-57.1	-19	9350	No stop
07 11 00	=0144+584	20 02 30	44.6	46.6	-5.8		-57.3	71	9362	07 09 31

Schedule for TORUN (Code Tr) Page 30

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 16 Mar 2016 Day 76 ---										
07 11 00	J0151+5454	20 02 30	42.0	50.5	-5.8		-53.9	-23	9362	No stop
07 14 30	---	20 06 00	42.5	50.9	-5.8		-54.3	187	9388	07 11 01
07 15 30	J0147+5840	20 07 00	45.1	47.1	-5.7		-58.0	36	9388	07 15 30
07 16 30	=0144+584	20 08 01	45.2	47.2	-5.7		-58.1	60	9396	07 15 31
07 16 30	V596CAS	20 08 01	43.8	46.2	-5.9		-56.3	-18	9396	No stop
07 20 00	---	20 11 31	44.2	46.6	-5.8		-56.8	192	9423	07 16 31
07 20 00	J0147+5840	20 11 31	45.6	47.5	-5.6		-58.7	-19	9423	No stop
07 21 30	=0144+584	20 13 01	45.8	47.7	-5.6		-58.9	71	9435	07 20 01
07 21 30	V596CAS	20 13 01	44.4	46.7	-5.8		-57.0	-18	9435	No stop
07 25 00	---	20 16 32	44.8	47.1	-5.7		-57.6	192	9462	07 21 31
07 25 30	J0147+5840	20 17 02	46.2	48.1	-5.5		-59.4	11	9462	07 25 30
07 26 30	=0144+584	20 18 02	46.3	48.2	-5.5		-59.6	60	9469	07 25 31
07 26 30	V596CAS	20 18 02	44.9	47.2	-5.7		-57.8	-18	9469	No stop
07 30 00	---	20 21 33	45.3	47.6	-5.6		-58.3	192	9496	07 26 31
07 30 00	J0147+5840	20 21 33	46.7	48.5	-5.5		-60.1	-19	9496	No stop
07 31 30	=0144+584	20 23 03	46.9	48.6	-5.4		-60.3	71	9508	07 30 01
07 31 30	V596CAS	20 23 03	45.5	47.7	-5.6		-58.5	-18	9508	No stop
07 35 00	---	20 26 34	45.9	48.1	-5.6		-59.0	192	9535	07 31 31
07 35 30	J0147+5840	20 27 04	47.3	49.0	-5.4		-60.9	11	9535	07 35 30
07 36 30	=0144+584	20 28 04	47.5	49.1	-5.3		-61.1	60	9542	07 35 31
07 36 30	V596CAS	20 28 04	46.1	48.2	-5.5		-59.2	-19	9542	No stop
07 40 00	---	20 31 34	46.5	48.5	-5.5		-59.7	191	9569	07 36 31
07 40 00	J0147+5840	20 31 34	47.9	49.4	-5.3		-61.6	-19	9569	No stop
07 41 30	=0144+584	20 33 05	48.0	49.6	-5.3		-61.8	71	9581	07 40 01
07 41 30	J0151+5454	20 33 05	45.7	53.9	-5.3		-57.8	-24	9581	No stop
07 45 00	---	20 36 35	46.1	54.3	-5.3		-58.2	186	9608	07 41 31
07 46 00	J0147+5840	20 37 35	48.5	50.0	-5.2		-62.4	36	9608	07 46 00
07 47 00	=0144+584	20 38 36	48.7	50.1	-5.2		-62.6	60	9615	07 46 01
07 47 00	V596CAS	20 38 36	47.2	49.2	-5.4		-60.7	-19	9615	No stop
07 50 30	---	20 42 06	47.6	49.5	-5.3		-61.2	191	9642	07 47 01

Schedule for TORUN (Code Tr) Page 31

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 16 Mar 2016 Day 76 ---										
07 50 30	J0147+5840	20 42 06	49.1	50.4	-5.1		-63.1	-19	9642	No stop
07 52 00	=0144+584	20 43 36	49.2	50.5	-5.1		-63.3	71	9654	07 50 31
07 52 00	V596CAS	20 43 36	47.8	49.7	-5.3		-61.5	-19	9654	No stop
07 55 30	---	20 47 07	48.2	50.0	-5.2		-62.0	191	9681	07 52 01
07 56 00	J0147+5840	20 47 37	49.7	50.9	-5.0		-63.9	11	9681	07 56 00
07 57 00	=0144+584	20 48 37	49.8	51.0	-5.0		-64.1	60	9688	07 56 01
07 57 00	V596CAS	20 48 37	48.4	50.1	-5.2		-62.2	-19	9688	No stop
08 00 30	---	20 52 08	48.8	50.4	-5.1		-62.7	191	9715	07 57 01
08 00 30	J0147+5840	20 52 08	50.2	51.3	-4.9		-64.6	-19	9715	No stop
08 02 00	=0144+584	20 53 38	50.4	51.4	-4.9		-64.8	71	9727	08 00 31
08 02 00	V596CAS	20 53 38	49.0	50.6	-5.1		-62.9	-19	9727	No stop
08 05 30	---	20 57 09	49.4	50.9	-5.1		-63.4	191	9754	08 02 01
08 06 00	J0147+5840	20 57 39	50.9	51.7	-4.9		-65.4	11	9754	08 06 00
08 07 00	=0144+584	20 58 39	51.0	51.8	-4.8		-65.5	60	9762	08 06 01
08 07 00	V596CAS	20 58 39	49.6	51.0	-5.0		-63.6	-19	9762	No stop
08 10 30	---	21 02 09	50.0	51.3	-5.0		-64.2	191	9788	08 07 01
08 10 30	J0147+5840	21 02 09	51.4	52.1	-4.8		-66.0	-19	9788	No stop
08 12 00	=0144+584	21 03 40	51.6	52.2	-4.8		-66.3	71	9800	08 10 31
08 12 00	J0151+5454	21 03 40	49.5	57.2	-4.8		-61.6	-25	9800	No stop
08 15 30	---	21 07 10	49.9	57.6	-4.8		-62.1	185	9827	08 12 01
08 16 30	J0147+5840	21 08 10	52.1	52.6	-4.7		-66.9	35	9827	08 16 30
08 17 30	=0144+584	21 09 11	52.2	52.7	-4.7		-67.1	60	9835	08 16 31
08 17 30	V596CAS	21 09 11	50.8	52.0	-4.9		-65.2	-19	9835	No stop
08 21 00	---	21 12 41	51.2	52.3	-4.8		-65.7	191	9862	08 17 31
08 21 00	J0147+5840	21 12 41	52.7	53.0	-4.6		-67.6	-19	9862	No stop
08 22 30	=0144+584	21 14 11	52.8	53.1	-4.6		-67.8	71	9873	08 21 01
08 22 30	V596CAS	21 14 11	51.4	52.4	-4.8		-65.9	-19	9873	No stop
08 26 00	---	21 17 42	51.8	52.7	-4.7		-66.4	191	9900	08 22 31
08 26 30	J0147+5840	21 18 12	53.3	53.4	-4.5		-68.4	11	9900	08 26 30
08 27 30	=0144+584	21 19 12	53.4	53.5	-4.5		-68.6	60	9908	08 26 31

Schedule for TORUN (Code Tr) Page 32

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 16 Mar 2016 Day 76 ---										
08 27 30	V596CAS	21 19 12	52.0	52.8	-4.7		-66.7	-19	9908	No stop
08 31 00	---	21 22 43	52.4	53.1	-4.6		-67.2	191	9935	08 27 31
08 31 00	J0147+5840	21 22 43	53.9	53.8	-4.4		-69.1	-19	9935	No stop
08 32 30	=0144+584	21 24 13	54.1	53.9	-4.4		-69.3	71	9946	08 31 01
08 32 30	V596CAS	21 24 13	52.6	53.2	-4.6		-67.4	-19	9946	No stop
08 36 00	---	21 27 44	53.0	53.5	-4.5		-67.9	191	9973	08 32 31
08 36 30	J0147+5840	21 28 14	54.5	54.2	-4.3		-69.9	11	9973	08 36 30
08 37 30	=0144+584	21 29 14	54.7	54.3	-4.3		-70.1	60	9981	08 36 31
08 37 30	V596CAS	21 29 14	53.2	53.6	-4.5		-68.1	-19	9981	No stop
08 41 00	---	21 32 44	53.6	53.9	-4.5		-68.7	191	10008	08 37 31
08 41 00	J0147+5840	21 32 44	55.1	54.6	-4.3		-70.6	-19	10008	No stop
08 42 30	=0144+584	21 34 15	55.3	54.7	-4.2		-70.9	71	10019	08 41 01
08 42 30	J0151+5454	21 34 15	53.4	60.3	-4.3		-65.4	-26	10019	No stop
08 46 00	---	21 37 45	53.8	60.7	-4.2		-65.9	184	10046	08 42 31
08 47 00	J0147+5840	21 38 45	55.8	55.0	-4.2		-71.5	34	10046	08 47 00
08 48 00	=0144+584	21 39 46	56.0	55.1	-4.2		-71.7	60	10054	08 47 01
08 48 00	V596CAS	21 39 46	54.5	54.5	-4.3		-69.7	-19	10054	No stop
08 51 30	---	21 43 16	54.9	54.7	-4.3		-70.2	191	10081	08 48 01
08 51 30	J0147+5840	21 43 16	56.4	55.3	-4.1		-72.2	-19	10081	No stop
08 53 00	=0144+584	21 44 46	56.6	55.4	-4.1		-72.5	71	10092	08 51 31
08 53 00	V596CAS	21 44 46	55.1	54.9	-4.3		-70.5	-19	10092	No stop
08 56 30	---	21 48 17	55.5	55.1	-4.2		-71.0	191	10119	08 53 01
08 57 00	J0147+5840	21 48 47	57.1	55.7	-4.0		-73.1	11	10119	08 57 00
08 58 00	=0144+584	21 49 47	57.2	55.8	-4.0		-73.2	60	10127	08 57 01
08 58 00	V596CAS	21 49 47	55.7	55.2	-4.2		-71.2	-19	10127	No stop
09 01 30	---	21 53 18	56.1	55.5	-4.1		-71.8	191	10154	08 58 01
09 01 30	J0147+5840	21 53 18	57.6	56.0	-3.9		-73.8	-19	10154	No stop
09 03 00	=0144+584	21 54 48	57.8	56.1	-3.9		-74.0	71	10165	09 01 31
09 03 00	V596CAS	21 54 48	56.3	55.6	-4.1		-72.0	-19	10165	No stop
09 06 30	---	21 58 19	56.8	55.9	-4.0		-72.5	191	10192	09 03 01

Schedule for TORUN (Code Tr) Page 33

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Wed 16 Mar 2016 Day 76 ---										
09 07 00	J0147+5840	21 58 49	58.3	56.4	-3.8		-74.7	11	10192	09 07 00
09 08 00	=0144+584	21 59 49	58.4	56.5	-3.8		-74.8	60	10200	09 07 01
09 08 00	V596CAS	21 59 49	56.9	56.0	-4.0		-72.8	-19	10200	No stop
09 11 30	---	22 03 19	57.4	56.2	-4.0		-73.3	191	10227	09 08 01
09 11 30	J0147+5840	22 03 19	58.9	56.7	-3.8		-75.4	-19	10227	No stop
09 13 00	=0144+584	22 04 50	59.1	56.8	-3.7		-75.6	71	10238	09 11 31
09 13 00	J0151+5454	22 04 50	57.4	63.3	-3.8		-69.3	-28	10238	No stop
09 16 30	---	22 08 20	57.9	63.6	-3.7		-69.7	182	10265	09 13 01
09 17 30	J0147+5840	22 09 20	59.6	57.1	-3.7		-76.3	32	10265	09 17 30
09 18 30	=0144+584	22 10 21	59.8	57.1	-3.6		-76.5	60	10273	09 17 31
09 18 30	V596CAS	22 10 21	58.3	56.7	-3.8		-74.4	-19	10273	No stop
09 22 00	---	22 13 51	58.7	56.9	-3.8		-74.9	191	10300	09 18 31
09 22 00	J0147+5840	22 13 51	60.2	57.3	-3.6		-77.1	-19	10300	No stop
09 23 30	=0144+584	22 15 21	60.4	57.4	-3.6		-77.3	71	10312	09 22 01
09 23 30	V596CAS	22 15 21	58.9	57.0	-3.8		-75.2	-19	10312	No stop
09 27 00	---	22 18 52	59.3	57.2	-3.7		-75.7	191	10338	09 23 31
09 27 00	J0147+5840	22 18 52	60.8	57.6	-3.5		-77.9	-19	10338	No stop
09 28 30	=0144+584	22 20 22	61.0	57.7	-3.5		-78.1	71	10350	09 27 01
09 28 30	V596CAS	22 20 22	59.5	57.3	-3.7		-76.0	-19	10350	No stop
09 32 00	---	22 23 53	60.0	57.5	-3.6		-76.5	191	10377	09 28 31
09 32 30	J0147+5840	22 24 23	61.5	57.9	-3.4		-78.8	11	10377	09 32 30
09 33 30	=0144+584	22 25 23	61.7	58.0	-3.4		-79.0	60	10385	09 32 31
09 33 30	J0151+5454	22 25 23	60.2	65.2	-3.5		-71.8	-30	10385	No stop
09 37 00	---	22 28 54	60.7	65.5	-3.4		-72.3	180	10411	09 33 31
09 37 30	J0147+5840	22 29 24	62.2	58.2	-3.3		-79.7	0	10411	09 37 30
09 38 50	=0144+584	22 30 44	62.4	58.2	-3.3		-79.9	80	10422	09 37 31
09 43 50	BLLAC	22 35 45	78.0	210.0	0.5		23.9	-19	10422	09 43 50
09 49 50	---	22 41 46	77.5	214.7	0.6		27.5	341	10468	09 43 51
09 50 10	BLLAC	22 42 06	77.5	214.9	0.6		27.7	13	10468	09 50 10
09 56 10	---	22 48 07	76.9	219.3	0.7		31.0	360	10514	09 50 11

Schedule for TORUN (Code Tr) Page 34

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 16 Mar 2016 Day 76 ---										
09 59 50	J2113+4012	22 51 47	69.1	242.1	1.6		44.1	162	10514	09 59 50
10 01 50	=2111+400	22 53 48	68.8	242.8	1.7		44.4	120	10529	09 59 51
10 01 50	J2115+3742	22 53 48	67.1	237.9	1.6		40.0	-25	10529	No stop
10 05 20	---	22 57 18	66.7	239.2	1.7		40.7	185	10556	10 01 51
10 06 20	J2113+4012	22 58 18	68.2	244.5	1.7		45.3	35	10556	10 06 20
10 07 20	=2111+400	22 59 19	68.1	244.9	1.8		45.4	60	10564	10 06 21
10 07 20	V1396CYG	22 59 19	66.1	249.1	2.0		47.2	-24	10564	No stop
10 10 50	---	23 02 49	65.6	250.2	2.0		47.7	186	10591	10 07 21
10 10 50	J2113+4012	23 02 49	67.6	246.1	1.8		46.0	-23	10591	No stop
10 12 20	=2111+400	23 04 19	67.4	246.6	1.8		46.3	67	10603	10 10 51
10 12 20	V1396CYG	23 04 19	65.4	250.7	2.1		47.8	-23	10603	No stop
10 15 50	---	23 07 50	64.9	251.8	2.1		48.2	187	10629	10 12 21
10 16 20	J2113+4012	23 08 20	66.8	248.0	1.9		46.9	7	10629	10 16 20
10 17 20	=2111+400	23 09 20	66.7	248.3	1.9		47.0	60	10637	10 16 21
10 17 20	V1396CYG	23 09 20	64.7	252.2	2.1		48.4	-23	10637	No stop
10 20 50	---	23 12 51	64.2	253.2	2.2		48.8	187	10664	10 17 21
10 20 50	J2113+4012	23 12 51	66.2	249.4	2.0		47.5	-22	10664	No stop
10 22 20	=2111+400	23 14 21	66.0	249.9	2.0		47.7	68	10676	10 20 51
10 22 20	V1396CYG	23 14 21	64.0	253.7	2.2		48.9	-23	10676	No stop
10 25 50	---	23 17 52	63.5	254.7	2.3		49.2	187	10703	10 22 21
10 26 20	J2113+4012	23 18 22	65.4	251.2	2.1		48.2	8	10703	10 26 20
10 27 20	=2111+400	23 19 22	65.3	251.5	2.1		48.3	60	10710	10 26 21
10 27 20	V1396CYG	23 19 22	63.3	255.1	2.3		49.4	-22	10710	No stop
10 30 50	---	23 22 52	62.7	256.0	2.4		49.7	188	10737	10 27 21
10 30 50	J2113+4012	23 22 52	64.8	252.5	2.1		48.7	-22	10737	No stop
10 32 20	=2111+400	23 24 23	64.6	253.0	2.2		48.8	68	10749	10 30 51
10 32 20	J2115+3742	23 24 23	63.0	248.4	2.2		45.0	-24	10749	No stop
10 35 50	---	23 27 53	62.5	249.5	2.2		45.4	186	10776	10 32 21
10 36 50	J2113+4012	23 28 53	63.9	254.3	2.2		49.3	36	10776	10 36 50
10 37 50	=2111+400	23 29 54	63.8	254.5	2.3		49.3	60	10783	10 36 51

Schedule for TORUN (Code Tr) Page 35

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 16 Mar 2016 Day 76 ---										
10 37 50	V1396CYG	23 29 54	61.7	257.9	2.5		50.2	-22	10783	No stop
10 41 20	---	23 33 24	61.2	258.8	2.5		50.4	188	10810	10 37 51
10 41 20	J2113+4012	23 33 24	63.3	255.5	2.3		49.6	-21	10810	No stop
10 42 50	=2111+400	23 34 54	63.0	255.9	2.3		49.8	69	10822	10 41 21
10 42 50	V1396CYG	23 34 54	61.0	259.2	2.6		50.5	-22	10822	No stop
10 46 20	---	23 38 25	60.5	260.0	2.6		50.7	188	10849	10 42 51
10 46 50	J2113+4012	23 38 55	62.5	257.0	2.4		50.1	9	10849	10 46 50
10 47 50	=2111+400	23 39 55	62.3	257.3	2.4		50.2	60	10856	10 46 51
10 47 50	V1396CYG	23 39 55	60.2	260.4	2.7		50.8	-22	10856	No stop
10 51 20	---	23 43 26	59.7	261.3	2.7		50.9	188	10883	10 47 51
10 51 20	J2113+4012	23 43 26	61.8	258.2	2.5		50.4	-21	10883	No stop
10 52 50	=2111+400	23 44 56	61.6	258.6	2.5		50.5	69	10895	10 51 21
10 52 50	V1396CYG	23 44 56	59.5	261.6	2.7		51.0	-22	10895	No stop
10 56 20	---	23 48 27	59.0	262.4	2.8		51.1	188	10922	10 52 51
10 56 50	J2113+4012	23 48 57	61.0	259.6	2.6		50.7	9	10922	10 56 50
10 57 50	=2111+400	23 49 57	60.8	259.8	2.6		50.8	60	10929	10 56 51
10 57 50	V1396CYG	23 49 57	58.7	262.8	2.8		51.2	-22	10929	No stop
11 01 20	---	23 53 28	58.2	263.6	2.9		51.3	188	10956	10 57 51
11 01 20	J2113+4012	23 53 28	60.3	260.7	2.7		51.0	-22	10956	No stop
11 02 50	=2111+400	23 54 58	60.1	261.0	2.7		51.0	68	10968	11 01 21
11 02 50	J2115+3742	23 54 58	58.6	257.0	2.7		47.7	-23	10968	No stop
11 06 20	---	23 58 28	58.1	257.9	2.7		48.0	187	10995	11 02 51
11 07 20	J2113+4012	23 59 28	59.4	262.1	2.8		51.2	37	10995	11 07 20
11 08 20	=2111+400	00 00 29	59.3	262.4	2.8		51.3	60	11003	11 07 21
11 08 20	V1396CYG	00 00 29	57.2	265.2	3.0		51.5	-22	11003	No stop
11 11 50	---	00 03 59	56.7	265.9	3.1		51.6	188	11029	11 08 21
11 11 50	J2113+4012	00 03 59	58.7	263.2	2.8		51.4	-22	11029	No stop
11 13 20	=2111+400	00 05 29	58.5	263.5	2.9		51.4	68	11041	11 11 51
11 13 20	V1396CYG	00 05 29	56.4	266.3	3.1		51.6	-22	11041	No stop
11 16 50	---	00 09 00	55.9	267.0	3.1		51.7	188	11068	11 13 21

Schedule for TORUN (Code Tr) Page 36

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 16 Mar 2016 Day 76 ---										
11 17 20	J2113+4012	00 09 30	57.9	264.4	2.9		51.6	8	11068	11 17 20
11 18 20	=2111+400	00 10 30	57.8	264.6	2.9		51.6	60	11076	11 17 21
11 18 20	V1396CYG	00 10 30	55.7	267.3	3.2		51.7	-22	11076	No stop
11 21 50	---	00 14 01	55.1	268.0	3.2		51.7	188	11103	11 18 21
11 21 50	J2113+4012	00 14 01	57.2	265.4	3.0		51.7	-22	11103	No stop
11 23 20	=2111+400	00 15 31	57.0	265.7	3.0		51.7	68	11114	11 21 51
11 23 20	V1396CYG	00 15 31	54.9	268.4	3.2		51.7	-22	11114	No stop
11 26 50	---	00 19 02	54.4	269.1	3.3		51.7	188	11141	11 23 21
11 27 20	J2113+4012	00 19 32	56.4	266.6	3.1		51.8	8	11141	11 27 20
11 28 20	=2111+400	00 20 32	56.3	266.8	3.1		51.8	60	11149	11 27 21
11 28 20	V1396CYG	00 20 32	54.2	269.4	3.3		51.8	-22	11149	No stop
11 31 50	---	00 24 03	53.6	270.1	3.4		51.8	188	11176	11 28 21
11 31 50	J2113+4012	00 24 03	55.7	267.6	3.2		51.8	-22	11176	No stop
11 33 20	=2111+400	00 25 33	55.5	267.9	3.2		51.9	68	11187	11 31 51
11 33 20	J2115+3742	00 25 33	54.1	264.2	3.2		49.1	-22	11187	No stop
11 36 50	---	00 29 03	53.6	265.0	3.2		49.2	188	11214	11 33 21
11 37 50	J2113+4012	00 30 04	54.8	268.8	3.3		51.9	38	11214	11 37 50
11 38 50	=2111+400	00 31 04	54.7	269.0	3.3		51.9	60	11222	11 37 51
11 38 50	V1396CYG	00 31 04	52.6	271.5	3.5		51.7	-22	11222	No stop
11 42 20	---	00 34 34	52.1	272.2	3.6		51.7	188	11249	11 38 51
11 42 20	J2113+4012	00 34 34	54.2	269.7	3.3		51.9	-22	11249	No stop
11 43 50	=2111+400	00 36 04	53.9	270.0	3.4		51.9	68	11260	11 42 21
11 43 50	V1396CYG	00 36 04	51.8	272.4	3.6		51.7	-22	11260	No stop
11 47 20	---	00 39 35	51.3	273.1	3.6		51.6	188	11287	11 43 51
11 47 50	J2113+4012	00 40 05	53.3	270.8	3.4		51.9	8	11287	11 47 50
11 48 50	=2111+400	00 41 05	53.2	271.0	3.4		51.9	60	11295	11 47 51
11 48 50	V1396CYG	00 41 05	51.1	273.4	3.7		51.6	-22	11295	No stop
11 52 20	---	00 44 36	50.6	274.1	3.7		51.6	188	11322	11 48 51
11 52 20	J2113+4012	00 44 36	52.7	271.7	3.5		51.9	-22	11322	No stop
11 53 50	=2111+400	00 46 06	52.4	272.0	3.5		51.9	68	11333	11 52 21

Schedule for TORUN (Code Tr) Page 37

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 16 Mar 2016 Day 76 ---										
11 53 50	V1396CYG	00 46 06	50.3	274.3	3.8		51.5	-22	11333	No stop
11 57 20	---	00 49 37	49.8	275.0	3.8		51.5	188	11360	11 53 51
11 57 50	J2113+4012	00 50 07	51.8	272.8	3.6		51.8	8	11360	11 57 50
11 58 50	=2111+400	00 51 07	51.7	272.9	3.6		51.8	60	11368	11 57 51
11 58 50	V1396CYG	00 51 07	49.6	275.3	3.8		51.5	-22	11368	No stop
12 02 20	---	00 54 38	49.1	275.9	3.9		51.4	188	11395	11 58 51
12 02 20	J2113+4012	00 54 38	51.2	273.6	3.7		51.8	-22	11395	No stop
12 03 50	=2111+400	00 56 08	50.9	273.9	3.7		51.7	68	11406	12 02 21
12 03 50	J2115+3742	00 56 08	49.5	270.6	3.7		49.4	-21	11406	No stop
12 07 20	---	00 59 38	49.0	271.3	3.7		49.4	189	11433	12 03 51
12 08 20	J2113+4012	01 00 39	50.3	274.7	3.8		51.7	39	11433	12 08 20
12 09 20	=2111+400	01 01 39	50.1	274.9	3.8		51.6	60	11441	12 08 21
12 09 20	V1396CYG	01 01 39	48.0	277.2	4.0		51.2	-22	11441	No stop
12 12 50	---	01 05 09	47.5	277.8	4.1		51.1	188	11468	12 09 21
12 12 50	J2113+4012	01 05 09	49.6	275.6	3.9		51.6	-22	11468	No stop
12 14 20	=2111+400	01 06 40	49.4	275.8	3.9		51.5	68	11479	12 12 51
12 14 20	V1396CYG	01 06 40	47.3	278.1	4.1		51.0	-22	11479	No stop
12 17 50	---	01 10 10	46.7	278.7	4.2		50.9	188	11506	12 14 21
12 18 20	J2113+4012	01 10 40	48.8	276.6	3.9		51.4	8	11506	12 18 20
12 19 20	=2111+400	01 11 40	48.6	276.7	4.0		51.4	60	11514	12 18 21
12 19 20	V1396CYG	01 11 40	46.5	278.9	4.2		50.9	-22	11514	No stop
12 22 50	---	01 15 11	46.0	279.6	4.2		50.8	188	11541	12 19 21
12 22 50	J2113+4012	01 15 11	48.1	277.4	4.0		51.3	-21	11541	No stop
12 24 20	=2111+400	01 16 41	47.9	277.6	4.0		51.3	69	11553	12 22 51
12 24 20	V1396CYG	01 16 41	45.8	279.8	4.3		50.7	-22	11553	No stop
12 27 50	---	01 20 12	45.3	280.4	4.3		50.6	188	11579	12 24 21
12 28 20	J2113+4012	01 20 42	47.3	278.3	4.1		51.1	9	11579	12 28 20
12 29 20	=2111+400	01 21 42	47.1	278.5	4.1		51.1	60	11587	12 28 21
12 29 20	V1396CYG	01 21 42	45.0	280.7	4.3		50.5	-22	11587	No stop
12 32 50	---	01 25 13	44.5	281.3	4.4		50.4	188	11614	12 29 21

Schedule for TORUN (Code Tr) Page 38

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 16 Mar 2016 Day 76 ---										
12 32 50	J2113+4012	01 25 13	46.6	279.1	4.2		51.0	-21	11614	No stop
12 34 20	=2111+400	01 26 43	46.4	279.4	4.2		50.9	69	11626	12 32 51
12 34 20	J2115+3742	01 26 43	44.9	276.4	4.2		49.0	-20	11626	No stop
12 37 50	---	01 30 13	44.4	277.1	4.2		48.9	190	11653	12 34 21
12 38 50	J2113+4012	01 31 14	45.7	280.2	4.3		50.8	40	11653	12 38 50
12 40 20	=2111+400	01 32 44	45.5	280.4	4.3		50.7	90	11664	12 38 51
12 40 20	V1396CYG	01 32 44	43.4	282.6	4.5		50.0	-22	11664	No stop
12 43 50	---	01 36 14	42.9	283.2	4.6		49.9	188	11691	12 40 21
12 43 50	J2113+4012	01 36 14	45.0	281.0	4.4		50.6	-21	11691	No stop
12 45 20	=2111+400	01 37 45	44.7	281.3	4.4		50.5	69	11703	12 43 51
12 45 20	V1396CYG	01 37 45	42.7	283.4	4.6		49.8	-22	11703	No stop
12 48 50	---	01 41 15	42.2	284.0	4.7		49.6	188	11729	12 45 21
12 48 50	J2113+4012	01 41 15	44.2	281.9	4.5		50.4	-21	11729	No stop
12 50 20	=2111+400	01 42 45	44.0	282.2	4.5		50.3	69	11741	12 48 51
12 50 20	V1396CYG	01 42 45	42.0	284.3	4.7		49.6	-22	11741	No stop
12 53 50	---	01 46 16	41.4	284.8	4.8		49.4	188	11768	12 50 21
12 54 20	J2113+4012	01 46 46	43.4	282.8	4.5		50.1	9	11768	12 54 20
12 55 20	=2111+400	01 47 46	43.3	283.0	4.6		50.1	60	11776	12 54 21
12 55 20	V1396CYG	01 47 46	41.2	285.1	4.8		49.3	-22	11776	No stop
12 58 50	---	01 51 17	40.7	285.7	4.8		49.1	188	11803	12 55 21
12 58 50	J2113+4012	01 51 17	42.8	283.6	4.6		49.9	-21	11803	No stop
13 00 40	=2111+400	01 53 07	42.5	283.9	4.7		49.8	89	11817	12 58 51
13 07 00	0234+285	01 59 28	64.7	159.5	-0.7		-13.9	114	11817	13 07 00
13 15 00	---	02 07 29	65.1	163.5	-0.5		-11.2	480	11878	13 07 01
13 15 40	0234+285	02 08 10	65.1	163.9	-0.5		-11.0	33	11878	13 15 40
13 30 00	---	02 22 32	65.6	171.3	-0.3		-5.9	860	11988	13 15 41
13 30 40	0234+285	02 23 12	65.6	171.7	-0.3		-5.7	33	11988	13 30 40
13 45 00	---	02 37 34	65.8	179.3	-0.0		-0.5	860	12099	13 30 41
13 45 40	0234+285	02 38 15	65.8	179.7	-0.0		-0.2	33	12099	13 45 40
14 00 00	---	02 52 37	65.6	187.3	0.2		5.0	860	12209	13 45 41

Schedule for TORUN (Code Tr) Page 39

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 16 Mar 2016 Day 76 ---										
14 00 40	0234+285	02 53 17	65.6	187.7	0.2		5.3	33	12209	14 00 40
14 15 00	---	03 07 39	65.2	195.2	0.5		10.4	860	12319	14 00 41
14 15 40	0234+285	03 08 19	65.2	195.5	0.5		10.6	33	12319	14 15 40
14 30 00	---	03 22 42	64.5	202.7	0.7		15.4	860	12429	14 15 41
14 30 40	0234+285	03 23 22	64.4	203.1	0.7		15.6	33	12429	14 30 40
14 45 00	---	03 37 44	63.5	209.9	1.0		20.0	860	12540	14 30 41
14 45 40	0234+285	03 38 24	63.4	210.2	1.0		20.2	33	12540	14 45 40
15 00 00	---	03 52 47	62.2	216.6	1.2		24.1	860	12650	14 45 41
15 00 40	0234+285	03 53 27	62.2	216.9	1.2		24.3	33	12650	15 00 40
15 15 00	---	04 07 49	60.8	222.8	1.5		27.8	860	12760	15 00 41
15 15 40	0234+285	04 08 29	60.7	223.1	1.5		27.9	33	12760	15 15 40
15 30 00	---	04 22 52	59.2	228.5	1.7		30.9	860	12870	15 15 41
15 30 40	0234+285	04 23 32	59.1	228.8	1.7		31.0	34	12870	15 30 40
15 45 00	---	04 37 54	57.4	233.8	2.0		33.6	860	12981	15 30 41
15 45 40	0234+285	04 38 34	57.3	234.1	2.0		33.7	34	12981	15 45 40
16 00 00	---	04 52 57	55.5	238.7	2.2		35.9	860	13091	15 45 41
16 00 40	0234+285	04 53 37	55.4	238.9	2.2		36.0	34	13091	16 00 40
16 15 00	---	05 07 59	53.6	243.3	2.5		37.8	860	13201	16 00 41
16 15 40	0234+285	05 08 39	53.5	243.5	2.5		37.8	34	13201	16 15 40
16 30 00	---	05 23 02	51.5	247.5	2.7		39.3	860	13311	16 15 41
16 35 00	0528+134	05 28 02	50.4	178.5	-0.1		-0.9	145	13311	16 35 00
16 40 00	---	05 33 03	50.4	180.5	0.0		0.3	300	13350	16 35 01
16 43 30	J0716-1813	05 36 34	15.3	154.8	-1.7		-15.6	64	13350	16 43 30
16 48 00	---	05 41 04	15.6	155.9	-1.6		-15.0	270	13385	16 43 31
16 48 00	FRB150418	05 41 04	14.9	156.5	-1.6		-14.7	-14	13385	No stop
16 50 30	---	05 43 35	15.1	157.1	-1.6		-14.3	136	13404	16 48 01
16 50 30	J0716-1813	05 43 35	15.7	156.5	-1.6		-14.6	-15	13404	No stop
16 52 00	---	05 45 05	15.8	156.9	-1.6		-14.4	75	13415	16 50 31
16 52 00	FRB150418	05 45 05	15.1	157.5	-1.5		-14.1	-14	13415	No stop
16 54 30	---	05 47 36	15.3	158.0	-1.5		-13.7	136	13435	16 52 01

Schedule for TORUN (Code Tr) Page 40

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 16 Mar 2016 Day 76 ---										
16 54 30	J0716-1813	05 47 36	16.0	157.5	-1.5		-14.0	-15	13435	No stop
16 56 00	---	05 49 06	16.1	157.8	-1.5		-13.8	75	13446	16 54 31
16 56 00	FRB150418	05 49 06	15.4	158.4	-1.5		-13.5	-14	13446	No stop
16 58 30	---	05 51 36	15.5	159.0	-1.4		-13.2	136	13465	16 56 01
16 58 30	J0716-1813	05 51 36	16.2	158.4	-1.5		-13.5	-15	13465	No stop
17 00 00	---	05 53 06	16.3	158.8	-1.4		-13.2	75	13477	16 58 31
17 00 00	J0712-1847	05 53 06	16.0	160.4	-1.3		-12.3	-16	13477	No stop
17 02 30	---	05 55 37	16.1	161.0	-1.3		-11.9	134	13496	17 00 01
17 03 10	J0716-1813	05 56 17	16.4	159.5	-1.4		-12.8	24	13496	17 03 10
17 04 00	---	05 57 07	16.5	159.7	-1.4		-12.6	50	13503	17 03 11
17 04 00	FRB150418	05 57 07	15.8	160.3	-1.3		-12.4	-15	13503	No stop
17 06 30	---	05 59 37	15.9	160.9	-1.3		-12.0	135	13522	17 04 01
17 06 30	J0716-1813	05 59 37	16.6	160.4	-1.3		-12.3	-15	13522	No stop
17 08 00	---	06 01 08	16.7	160.7	-1.3		-12.1	75	13533	17 06 31
17 08 00	FRB150418	06 01 08	16.0	161.3	-1.3		-11.8	-15	13533	No stop
17 10 30	---	06 03 38	16.1	161.9	-1.2		-11.4	135	13553	17 08 01
17 10 30	J0716-1813	06 03 38	16.8	161.3	-1.3		-11.7	-15	13553	No stop
17 12 00	---	06 05 08	16.9	161.7	-1.2		-11.5	75	13564	17 10 31
17 12 00	FRB150418	06 05 08	16.2	162.3	-1.2		-11.2	-15	13564	No stop
17 14 30	---	06 07 39	16.3	162.9	-1.2		-10.8	135	13583	17 12 01
17 14 30	J0716-1813	06 07 39	17.0	162.3	-1.2		-11.1	-15	13583	No stop
17 16 00	---	06 09 09	17.1	162.7	-1.2		-10.9	75	13595	17 14 31
17 16 00	J0712-1847	06 09 09	16.8	164.2	-1.1		-9.9	-16	13595	No stop
17 18 30	---	06 11 39	16.9	164.8	-1.0		-9.5	134	13614	17 16 01
17 19 10	J0716-1813	06 12 20	17.2	163.4	-1.1		-10.4	24	13614	17 19 10
17 20 00	---	06 13 10	17.2	163.6	-1.1		-10.3	50	13620	17 19 11
17 20 00	FRB150418	06 13 10	16.5	164.2	-1.1		-10.0	-15	13620	No stop
17 22 30	---	06 15 40	16.6	164.8	-1.0		-9.6	135	13640	17 20 01
17 22 30	J0716-1813	06 15 40	17.3	164.3	-1.1		-9.9	-15	13640	No stop
17 24 00	---	06 17 10	17.4	164.6	-1.0		-9.6	75	13651	17 22 31

Schedule for TORUN (Code Tr) Page 41

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 16 Mar 2016 Day 76 ---										
17 24 00	FRB150418	06 17 10	16.7	165.2	-1.0		-9.4	-15	13651	No stop
17 26 30	---	06 19 41	16.8	165.8	-1.0		-9.0	135	13670	17 24 01
17 26 30	J0716-1813	06 19 41	17.5	165.2	-1.0		-9.3	-15	13670	No stop
17 28 00	---	06 21 11	17.6	165.6	-1.0		-9.0	75	13682	17 26 31
17 28 00	FRB150418	06 21 11	16.8	166.1	-0.9		-8.7	-15	13682	No stop
17 30 30	---	06 23 41	16.9	166.8	-0.9		-8.4	135	13701	17 28 01
17 30 30	J0716-1813	06 23 41	17.7	166.2	-0.9		-8.7	-15	13701	No stop
17 32 00	---	06 25 12	17.7	166.6	-0.9		-8.4	75	13713	17 30 31
17 32 00	J0712-1847	06 25 12	17.3	168.2	-0.8		-7.5	-16	13713	No stop
17 34 30	---	06 27 42	17.4	168.8	-0.8		-7.1	134	13732	17 32 01
17 35 10	J0716-1813	06 28 22	17.8	167.4	-0.8		-7.9	24	13732	17 35 10
17 36 00	---	06 29 12	17.8	167.6	-0.8		-7.8	50	13738	17 35 11
17 36 00	FRB150418	06 29 12	17.1	168.1	-0.8		-7.5	-15	13738	No stop
17 38 30	---	06 31 43	17.2	168.7	-0.8		-7.1	135	13758	17 36 01
17 38 30	J0716-1813	06 31 43	17.9	168.2	-0.8		-7.4	-15	13758	No stop
17 40 00	---	06 33 13	18.0	168.6	-0.8		-7.2	75	13769	17 38 31
17 40 00	FRB150418	06 33 13	17.2	169.1	-0.7		-6.9	-15	13769	No stop
17 42 30	---	06 35 43	17.3	169.7	-0.7		-6.5	135	13788	17 40 01
17 42 30	J0716-1813	06 35 43	18.0	169.2	-0.7		-6.8	-15	13788	No stop
17 44 00	---	06 37 14	18.1	169.6	-0.7		-6.6	75	13800	17 42 31
17 44 00	FRB150418	06 37 14	17.3	170.1	-0.7		-6.3	-15	13800	No stop
17 46 30	---	06 39 44	17.4	170.7	-0.6		-5.9	135	13819	17 44 01
17 46 30	J0716-1813	06 39 44	18.1	170.2	-0.7		-6.2	-15	13819	No stop
17 48 00	---	06 41 14	18.2	170.6	-0.6		-5.9	75	13831	17 46 31
17 48 00	J0712-1847	06 41 14	17.7	172.1	-0.5		-5.0	-16	13831	No stop
17 50 30	---	06 43 45	17.8	172.7	-0.5		-4.6	134	13850	17 48 01
17 51 10	J0716-1813	06 44 25	18.3	171.4	-0.6		-5.4	24	13850	17 51 10
17 52 00	---	06 45 15	18.3	171.6	-0.6		-5.3	50	13856	17 51 11
17 52 00	FRB150418	06 45 15	17.5	172.1	-0.5		-5.0	-15	13856	No stop
17 54 30	---	06 47 45	17.6	172.7	-0.5		-4.6	135	13876	17 52 01

Schedule for TORUN (Code Tr) Page 42

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 16 Mar 2016 Day 76 ---										
17 54 30	J0716-1813	06 47 45	18.3	172.2	-0.5		-4.9	-15	13876	No stop
17 56 00	---	06 49 16	18.4	172.6	-0.5		-4.7	75	13887	17 54 31
17 56 00	FRB150418	06 49 16	17.6	173.0	-0.5		-4.4	-15	13887	No stop
17 58 30	---	06 51 46	17.6	173.7	-0.4		-4.0	135	13906	17 56 01
17 58 30	J0716-1813	06 51 46	18.4	173.2	-0.5		-4.3	-15	13906	No stop
18 00 00	---	06 53 16	18.4	173.6	-0.4		-4.1	75	13918	17 58 31
18 00 00	FRB150418	06 53 16	17.7	174.0	-0.4		-3.8	-15	13918	No stop
18 02 30	---	06 55 47	17.7	174.7	-0.4		-3.4	135	13937	18 00 01
18 02 30	J0716-1813	06 55 47	18.5	174.2	-0.4		-3.7	-15	13937	No stop
18 04 00	---	06 57 17	18.5	174.6	-0.4		-3.4	75	13949	18 02 31
18 04 00	J0712-1847	06 57 17	18.0	176.1	-0.3		-2.5	-16	13949	No stop
18 06 30	---	06 59 47	18.0	176.7	-0.2		-2.1	134	13968	18 04 01
18 07 10	J0716-1813	07 00 27	18.5	175.4	-0.3		-2.9	24	13968	18 07 10
18 08 00	---	07 01 18	18.5	175.6	-0.3		-2.8	50	13974	18 07 11
18 08 00	FRB150418	07 01 18	17.8	176.0	-0.3		-2.5	-15	13974	No stop
18 10 30	---	07 03 48	17.8	176.6	-0.2		-2.1	135	13994	18 08 01
18 10 30	J0716-1813	07 03 48	18.6	176.2	-0.3		-2.4	-15	13994	No stop
18 12 00	---	07 05 18	18.6	176.6	-0.2		-2.2	75	14005	18 10 31
18 12 00	FRB150418	07 05 18	17.8	177.0	-0.2		-1.9	-15	14005	No stop
18 14 30	---	07 07 49	17.8	177.6	-0.2		-1.5	135	14024	18 12 01
18 14 30	J0716-1813	07 07 49	18.6	177.2	-0.2		-1.8	-15	14024	No stop
18 16 00	---	07 09 19	18.6	177.6	-0.2		-1.5	75	14036	18 14 31
18 16 00	FRB150418	07 09 19	17.8	178.0	-0.1		-1.3	-15	14036	No stop
18 18 30	---	07 11 49	17.8	178.6	-0.1		-0.9	135	14055	18 16 01
18 18 30	J0716-1813	07 11 49	18.6	178.2	-0.1		-1.1	-15	14055	No stop
18 20 00	---	07 13 20	18.6	178.6	-0.1		-0.9	75	14067	18 18 31
18 20 00	J0712-1847	07 13 20	18.1	180.1	0.0		0.1	-16	14067	No stop
18 22 30	---	07 15 50	18.1	180.7	0.0		0.5	134	14086	18 20 01
18 23 10	J0716-1813	07 16 30	18.6	179.4	-0.0		-0.4	24	14086	18 23 10
18 24 00	---	07 17 20	18.6	179.6	-0.0		-0.3	50	14092	18 23 11

Schedule for TORUN (Code Tr) Page 43

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 16 Mar 2016 Day 76 ---										
18 24 00	FRB150418	07 17 20	17.9	180.0	0.0		0.0	-15	14092	No stop
18 26 30	---	07 19 51	17.9	180.6	0.0		0.4	135	14111	18 24 01
18 26 30	J0716-1813	07 19 51	18.7	180.2	0.0		0.1	-15	14111	No stop
18 28 00	---	07 21 21	18.6	180.6	0.0		0.4	75	14123	18 26 31
18 28 00	FRB150418	07 21 21	17.9	181.0	0.1		0.6	-15	14123	No stop
18 30 30	---	07 23 51	17.8	181.6	0.1		1.0	135	14142	18 28 01
18 30 30	J0716-1813	07 23 51	18.6	181.2	0.1		0.8	-15	14142	No stop
18 32 00	---	07 25 22	18.6	181.6	0.1		1.0	75	14154	18 30 31
18 32 00	FRB150418	07 25 22	17.8	182.0	0.1		1.3	-15	14154	No stop
18 34 30	---	07 27 52	17.8	182.6	0.2		1.7	135	14173	18 32 01
18 34 30	J0716-1813	07 27 52	18.6	182.2	0.1		1.4	-15	14173	No stop
18 36 00	---	07 29 22	18.6	182.6	0.2		1.6	75	14185	18 34 31
18 36 00	J0712-1847	07 29 22	18.0	184.1	0.3		2.6	-16	14185	No stop
18 38 30	---	07 31 53	18.0	184.7	0.3		3.0	134	14204	18 36 01
18 39 10	J0716-1813	07 32 33	18.6	183.4	0.2		2.2	24	14204	18 39 10
18 40 00	---	07 33 23	18.6	183.6	0.2		2.3	50	14210	18 39 11
18 40 00	FRB150418	07 33 23	17.8	184.0	0.3		2.5	-15	14210	No stop
18 42 30	---	07 35 53	17.7	184.6	0.3		2.9	135	14229	18 40 01
18 42 30	J0716-1813	07 35 53	18.6	184.2	0.3		2.7	-15	14229	No stop
18 44 00	---	07 37 24	18.5	184.6	0.3		2.9	75	14241	18 42 31
18 44 00	FRB150418	07 37 24	17.7	185.0	0.3		3.2	-15	14241	No stop
18 46 30	---	07 39 54	17.7	185.6	0.4		3.6	135	14260	18 44 01
18 46 30	J0716-1813	07 39 54	18.5	185.2	0.3		3.3	-15	14260	No stop
18 48 00	---	07 41 24	18.5	185.6	0.4		3.5	75	14272	18 46 31
18 48 00	FRB150418	07 41 24	17.7	186.0	0.4		3.8	-15	14272	No stop
18 50 30	---	07 43 55	17.6	186.6	0.4		4.2	135	14291	18 48 01
18 50 30	J0716-1813	07 43 55	18.4	186.2	0.4		3.9	-15	14291	No stop
18 52 00	---	07 45 25	18.4	186.6	0.4		4.2	75	14302	18 50 31
18 52 00	J0712-1847	07 45 25	17.7	188.1	0.5		5.1	-16	14302	No stop
18 54 30	---	07 47 55	17.7	188.7	0.6		5.5	134	14322	18 52 01

Schedule for TORUN (Code Tr) Page 44

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	 EL	 AZ	 HA	 UP	 ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 16 Mar 2016 Day 76 ---										
18 55 10	J0716-1813	07 48 35	18.4	187.4	0.5		4.7	24	14322	18 55 10
18 56 00	---	07 49 25	18.3	187.6	0.5		4.8	50	14328	18 55 11
18 56 00	FRB150418	07 49 25	17.5	188.0	0.5		5.0	-16	14328	No stop
18 58 30	---	07 51 56	17.5	188.6	0.6		5.4	134	14347	18 56 01
18 58 30	J0716-1813	07 51 56	18.3	188.2	0.5		5.2	-15	14347	No stop
19 00 00	---	07 53 26	18.3	188.6	0.6		5.4	75	14359	18 58 31
19 00 00	FRB150418	07 53 26	17.4	189.0	0.6		5.7	-16	14359	No stop
19 02 30	---	07 55 57	17.4	189.6	0.6		6.1	134	14378	19 00 01
19 02 30	J0716-1813	07 55 57	18.2	189.2	0.6		5.8	-15	14378	No stop
19 04 00	---	07 57 27	18.2	189.6	0.6		6.1	75	14390	19 02 31
19 04 00	FRB150418	07 57 27	17.3	189.9	0.7		6.3	-16	14390	No stop
19 06 30	---	07 59 57	17.3	190.6	0.7		6.7	134	14409	19 04 01
19 06 30	J0716-1813	07 59 57	18.1	190.2	0.7		6.5	-16	14409	No stop
19 08 00	---	08 01 27	18.1	190.6	0.7		6.7	74	14420	19 06 31
19 08 00	J0712-1847	08 01 27	17.3	192.0	0.8		7.6	-16	14420	No stop
19 10 30	---	08 03 58	17.2	192.6	0.8		8.0	134	14440	19 08 01
19 11 10	J0716-1813	08 04 38	18.0	191.4	0.8		7.2	25	14440	19 11 10
19 12 00	---	08 05 28	17.9	191.6	0.8		7.3	50	14446	19 11 11
19 12 00	FRB150418	08 05 28	17.1	191.9	0.8		7.5	-16	14446	No stop
19 14 30	---	08 07 59	17.0	192.5	0.8		7.9	134	14465	19 12 01
19 14 30	J0716-1813	08 07 59	17.9	192.2	0.8		7.7	-16	14465	No stop
19 16 00	---	08 09 29	17.8	192.6	0.8		7.9	74	14477	19 14 31
19 16 00	FRB150418	08 09 29	17.0	192.9	0.9		8.1	-16	14477	No stop
19 18 30	---	08 11 59	16.9	193.5	0.9		8.5	134	14496	19 16 01
19 18 30	J0716-1813	08 11 59	17.7	193.2	0.9		8.3	-16	14496	No stop
19 20 00	---	08 13 29	17.7	193.6	0.9		8.5	74	14508	19 18 31
19 20 00	FRB150418	08 13 29	16.8	193.9	0.9		8.8	-16	14508	No stop
19 22 30	---	08 16 00	16.7	194.5	1.0		9.1	134	14527	19 20 01
19 22 30	J0716-1813	08 16 00	17.6	194.2	1.0		8.9	-16	14527	No stop
19 24 00	---	08 17 30	17.5	194.6	1.0		9.2	74	14538	19 22 31

Schedule for TORUN (Code Tr) Page 45

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 16 Mar 2016 Day 76 ---										
19 24 00	J0712-1847	08 17 30	16.7	195.9	1.1		10.0	-16	14538	No stop
19 26 30	---	08 20 00	16.6	196.5	1.1		10.4	134	14558	19 24 01
19 27 10	J0716-1813	08 20 41	17.4	195.4	1.0		9.6	25	14558	19 27 10
19 28 00	---	08 21 31	17.4	195.6	1.0		9.8	50	14564	19 27 11
19 28 00	FRB150418	08 21 31	16.5	195.8	1.1		10.0	-16	14564	No stop
19 30 30	---	08 24 01	16.4	196.4	1.1		10.4	134	14583	19 28 01
19 30 30	J0716-1813	08 24 01	17.3	196.2	1.1		10.1	-16	14583	No stop
19 32 00	---	08 25 31	17.2	196.5	1.1		10.4	74	14595	19 30 31
19 32 00	FRB150418	08 25 31	16.4	196.8	1.1		10.6	-16	14595	No stop
19 34 30	---	08 28 02	16.3	197.4	1.2		11.0	134	14614	19 32 01
19 34 30	J0716-1813	08 28 02	17.1	197.2	1.2		10.7	-16	14614	No stop
19 36 00	---	08 29 32	17.0	197.5	1.2		11.0	74	14626	19 34 31
19 36 00	FRB150418	08 29 32	16.2	197.8	1.2		11.2	-16	14626	No stop
19 38 30	---	08 32 02	16.1	198.4	1.2		11.5	134	14645	19 36 01
19 38 30	J0716-1813	08 32 02	16.9	198.1	1.2		11.3	-16	14645	No stop
19 40 00	---	08 33 33	16.8	198.5	1.2		11.6	74	14656	19 38 31
19 40 00	J0712-1847	08 33 33	16.0	199.8	1.3		12.4	-16	14656	No stop
19 42 30	---	08 36 03	15.9	200.4	1.4		12.8	134	14676	19 40 01
19 43 10	J0716-1813	08 36 43	16.7	199.3	1.3		12.0	24	14676	19 43 10
19 44 00	---	08 37 33	16.7	199.5	1.3		12.2	50	14682	19 43 11
19 44 00	FRB150418	08 37 33	15.8	199.7	1.3		12.4	-16	14682	No stop
19 46 30	---	08 40 04	15.7	200.3	1.4		12.7	134	14701	19 44 01
19 46 30	J0716-1813	08 40 04	16.5	200.1	1.4		12.5	-16	14701	No stop
19 48 00	---	08 41 34	16.4	200.4	1.4		12.8	74	14713	19 46 31
19 48 00	FRB150418	08 41 34	15.6	200.7	1.4		12.9	-16	14713	No stop
19 50 30	---	08 44 04	15.5	201.3	1.4		13.3	134	14732	19 48 01
19 50 30	J0716-1813	08 44 04	16.3	201.0	1.4		13.1	-16	14732	No stop
19 52 00	---	08 45 35	16.2	201.4	1.4		13.3	74	14744	19 50 31
19 52 00	FRB150418	08 45 35	15.4	201.6	1.5		13.5	-16	14744	No stop
19 54 30	---	08 48 05	15.2	202.2	1.5		13.9	134	14763	19 52 01

Schedule for TORUN (Code Tr) Page 46

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 16 Mar 2016 Day 76 ---										
19 54 30	J0716-1813	08 48 05	16.1	202.0	1.5		13.7	-16	14763	No stop
19 56 00	---	08 49 35	16.0	202.4	1.5		13.9	74	14774	19 54 31
19 56 00	J0712-1847	08 49 35	15.1	203.6	1.6		14.7	-16	14774	No stop
19 58 30	---	08 52 06	14.9	204.2	1.7		15.1	134	14794	19 56 01
19 59 10	J0716-1813	08 52 46	15.8	203.1	1.6		14.4	24	14794	19 59 10
20 00 00	---	08 53 36	15.8	203.3	1.6		14.5	50	14800	19 59 11
20 00 00	FRB150418	08 53 36	14.9	203.5	1.6		14.7	-16	14800	No stop
20 02 30	---	08 56 06	14.8	204.1	1.6		15.0	134	14819	20 00 01
20 02 30	J0716-1813	08 56 06	15.6	203.9	1.6		14.9	-16	14819	No stop
20 04 00	---	08 57 37	15.5	204.3	1.6		15.1	74	14831	20 02 31
20 04 00	FRB150418	08 57 37	14.7	204.5	1.7		15.3	-16	14831	No stop
20 06 30	---	09 00 07	14.5	205.1	1.7		15.6	134	14850	20 04 01
20 06 30	J0716-1813	09 00 07	15.4	204.9	1.7		15.4	-16	14850	No stop
20 08 00	---	09 01 37	15.3	205.2	1.7		15.6	74	14861	20 06 31
20 08 00	FRB150418	09 01 37	14.4	205.4	1.7		15.8	-16	14861	No stop
20 10 30	---	09 04 08	14.2	206.0	1.8		16.2	134	14881	20 08 01
20 10 30	J0716-1813	09 04 08	15.1	205.8	1.8		16.0	-16	14881	No stop
20 12 00	---	09 05 38	15.0	206.2	1.8		16.2	74	14892	20 10 31
20 12 00	J0712-1847	09 05 38	14.1	207.4	1.9		17.0	-16	14892	No stop
20 14 30	---	09 08 08	13.9	208.0	1.9		17.3	134	14911	20 12 01
20 15 10	J0716-1813	09 08 48	14.8	206.9	1.8		16.6	24	14911	20 15 10
20 16 00	---	09 09 39	14.7	207.1	1.8		16.8	50	14918	20 15 11
20 16 00	FRB150418	09 09 39	13.9	207.3	1.9		16.9	-16	14918	No stop
20 18 30	---	09 12 09	13.7	207.9	1.9		17.3	134	14937	20 16 01
20 18 30	J0716-1813	09 12 09	14.6	207.7	1.9		17.1	-16	14937	No stop
20 20 00	---	09 13 39	14.5	208.1	1.9		17.3	74	14949	20 18 31
20 20 00	FRB150418	09 13 39	13.6	208.2	1.9		17.5	-16	14949	No stop
20 22 30	---	09 16 10	13.4	208.8	2.0		17.8	134	14968	20 20 01
20 22 30	J0716-1813	09 16 10	14.3	208.7	2.0		17.7	-16	14968	No stop
20 24 00	---	09 17 40	14.2	209.0	2.0		17.9	74	14979	20 22 31

Schedule for TORUN (Code Tr) Page 47

e-EVN: eg091a,rg007b,eg082h,rg008a/rp025

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 16 Mar 2016 Day 76 ---										
20 24 00	FRB150418	09 17 40	13.3	209.1	2.0		18.0	-16	14979	No stop
20 26 30	---	09 20 10	13.1	209.7	2.0		18.4	134	14999	20 24 01
20 26 30	J0716-1813	09 20 10	14.0	209.6	2.0		18.2	-16	14999	No stop
20 28 00	---	09 21 41	13.9	209.9	2.0		18.4	74	15010	20 26 31
20 28 00	J0712-1847	09 21 41	12.9	211.1	2.1		19.1	-17	15010	No stop
20 30 30	---	09 24 11	12.7	211.7	2.2		19.5	133	15029	20 28 01
20 31 10	J0716-1813	09 24 51	13.6	210.7	2.1		18.8	23	15029	20 31 10
20 32 00	---	09 25 41	13.6	210.9	2.1		18.9	50	15036	20 31 11
20 32 00	FRB150418	09 25 41	12.7	211.0	2.1		19.1	-16	15036	No stop
20 34 30	---	09 28 12	12.5	211.6	2.2		19.4	134	15055	20 32 01
20 34 30	J0716-1813	09 28 12	13.4	211.4	2.2		19.3	-16	15055	No stop
20 36 00	---	09 29 42	13.3	211.8	2.2		19.5	74	15067	20 34 31
20 36 00	FRB150418	09 29 42	12.4	211.9	2.2		19.6	-16	15067	No stop
20 38 30	---	09 32 12	12.2	212.5	2.2		19.9	134	15086	20 36 01
20 38 30	J0716-1813	09 32 12	13.1	212.4	2.2		19.8	-16	15086	No stop
20 40 00	---	09 33 43	12.9	212.7	2.2		20.0	74	15097	20 38 31
20 40 00	FRB150418	09 33 43	12.1	212.8	2.3		20.1	-16	15097	No stop
20 42 30	---	09 36 13	11.9	213.4	2.3		20.5	134	15117	20 40 01
20 42 30	J0716-1813	09 36 13	12.7	213.3	2.3		20.3	-16	15117	No stop
20 44 00	---	09 37 43	12.6	213.6	2.3		20.5	74	15128	20 42 31
20 44 00	J0712-1847	09 37 43	11.6	214.8	2.4		21.2	-17	15128	No stop
20 46 30	---	09 40 14	11.4	215.3	2.5		21.5	133	15147	20 44 01
20 47 10	J0716-1813	09 40 54	12.4	214.4	2.4		20.9	23	15147	20 47 10
20 48 00	---	09 41 44	12.3	214.5	2.4		21.0	50	15154	20 47 11
20 48 00	FRB150418	09 41 44	11.4	214.6	2.4		21.2	-16	15154	No stop
20 50 30	---	09 44 14	11.2	215.2	2.4		21.5	134	15173	20 48 01
20 50 30	J0716-1813	09 44 14	12.1	215.1	2.4		21.3	-16	15173	No stop
20 52 00	---	09 45 45	11.9	215.5	2.4		21.5	74	15185	20 50 31
20 52 00	FRB150418	09 45 45	11.1	215.5	2.5		21.7	-16	15185	No stop
20 54 30	---	09 48 15	10.8	216.1	2.5		22.0	134	15204	20 52 01

```
Schedule for TORUN     (Code Tr )                                Page  48
               e-EVN: eg091a,rg007b,eg082h,rg008a/rp025
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Wed  16 Mar 2016   Day  76 ---

20 54 30  J0716-1813   09 48 15  11.7 216.0  2.5      21.8   -16    15204   No stop
20 56 00  ---          09 49 45  11.6 216.4  2.5      22.0    74    15215   20 54 31

20 56 00  FRB150418    09 49 45  10.7 216.4  2.5      22.2   -16    15215   No stop
20 58 30  ---          09 52 16  10.5 217.0  2.6      22.5   134    15235   20 56 01

20 58 30  J0716-1813   09 52 16  11.4 216.9  2.6      22.3   -16    15235   No stop
21 00 00  ---          09 53 46  11.2 217.3  2.6      22.5    74    15246   20 58 31

21 00 00  J0712-1847   09 53 46  10.1 218.4  2.7      23.2   -17    15246   No stop
21 02 30  ---          09 56 16   9.9 218.9  2.7      23.5   133    15265   21 00 01

21 03 10  J0716-1813   09 56 56  10.9 218.0  2.6      22.9    23    15265   21 03 10
21 04 00  ---          09 57 47  10.9 218.1  2.6      23.0    50    15272   21 03 11

21 07 30  OJ287        10 01 17  54.6 207.2  1.1      17.0    32    15272   21 07 30
21 10 30  ---          10 04 18  54.4 208.4  1.1      17.7   180    15295   21 07 31



SETUP FILE INFORMATION:
   NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.


 ======== Setup file: sess116.C1024e

   Setup group:    7         Station: TORUN            Total bit rate:  1024
   Format: MARK5B            Bits per sample: 2        Sample rate: 32.000
   Number of channels: 16    DBE type: DBBC_DDC        Speedup factor:   1.00

   Disk used to record data.
```

```
 1st LO=   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00
           4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00   4200.00
 Net SB=         L         L         U         U         L         L         U         U
                 L         L         U         U         L         L         U         U
 IF SB =         U         U         U         U         U         U         U         U
                 U         U         U         U         U         U         U         U
 Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
               RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
 BBC   =         1         5         1         5         2         6         2         6
                 3         7         3         7         4         8         4         8
 BBC SB=         L         L         U         U         L         L         U         U
                 L         L         U         U         L         L         U         U
 IF    =        A1        B1        A1        B1        A1        B1        A1        B1
                A1        B1        A1        B1        A1        B1        A1        B1

 The following frequency sets based on these setups were used.

 Frequency Set:   6  Setup file default.  Used with PCAL = off
 LO sum=   4942.49  4942.49  4942.49  4942.49  4974.49  4974.49  4974.49  4974.49
           5006.49  5006.49  5006.49  5006.49  5038.49  5038.49  5038.49  5038.49
 BBC fr=    742.49   742.49   742.49   742.49   774.49   774.49   774.49   774.49
            806.49   806.49   806.49   806.49   838.49   838.49   838.49   838.49
 Bandwd=     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
             16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
  Matching frequency sets:   6

 Track assignments are:
  track1=  18, 26,  2, 10, 20, 28,  4, 12, 22, 30,  6, 14, 24, 32,  8, 16
  barrel=roll_off


POSITIONS OF SOURCES USED IN RECORDING SCANS

 Source                        Source position (RA/Dec)                        Error
                      (B1950)            (J2000)            (Date)            (mas)

* 160131A           05 10 14.717855   * 05 12 40.351000     05 13 27.288809       0.00
                   -07 06 29.51592    *-07 02 58.80000     -07 02 11.86118        0.00

* J0514-0733        05 12 04.002022   * 05 14 29.037800     05 15 15.791426       0.00
                   -07 36 35.88916    *-07 33 12.94400     -07 32 28.68171        0.00

* 151027A           18 09 25.040766   * 18 09 56.691000     18 10 06.538743       0.00
                    61 20 30.64966    * 61 21 13.03000      61 21 15.57018        0.00

* V1396CYG          20 58 12.167060   * 21 00 06.211740     21 00 42.121836       0.00
                    39 52 23.08541    * 40 04 08.97890      40 07 50.65259        0.00

* J2115+3742        21 12 44.469033   * 21 14 44.117900     21 15 21.817973       0.00
                    37 29 56.03237    * 37 42 25.72400      37 46 21.88103        0.00

* V596CAS           01 55 57.083353   * 01 59 24.175430     02 00 30.380800       0.00
                    58 16 40.28001    * 58 31 12.92590      58 35 54.33613        0.00

* J0151+5454        01 48 18.839204   * 01 51 36.288800     01 52 39.351607       0.00
                    54 39 48.95530    * 54 54 37.68900      54 59 23.47309        0.00

* FRB150418         07 14 22.574368   * 07 16 34.590000     07 17 17.885277       0.00
                   -18 55 15.11780    *-19 00 39.20000     -19 02 47.35389        0.00

* J0716-1813        07 16 01.115592   * 07 18 14.158000     07 18 57.788908       0.00
                   -18 07 33.15134    *-18 13 04.05600     -18 15 14.19711        0.00
```

```
* J0712-1847        07 10 03.093712   * 07 12 15.233900     07 12 58.541808       0.00
                   -18 42 46.88233    *-18 47 53.01600    -18 49 55.43588        0.00

  J0126+2559        01 23 57.254018   * 01 26 42.792637     01 27 35.414207       0.02
* 0123+257          25 43 27.95562    * 25 59 01.30016      26 03 55.33594        0.04

* J0147+5840        01 44 24.000042   * 01 47 46.541223     01 48 51.221512       2.66
  0144+584          58 25 48.56646    * 58 40 44.97262      58 45 33.98776        1.74

  J0237+2848        02 34 55.589590   * 02 37 52.405677     02 38 48.907817       0.01
* 0234+285          28 35 11.40777    * 28 48 08.99002      28 52 12.40676        0.01

* J0517-0520        05 15 00.533133   * 05 17 28.110165     05 18 15.707380       0.20
  0515-053         -05 23 51.07582    *-05 20 40.84200    -05 20 00.06689        0.48

  J0530+1331        05 28 06.759216   * 05 30 56.416747     05 31 51.255334       0.21
* 0528+134          13 29 42.28886    * 13 31 55.14953      13 32 23.32960        0.24

  J0854+2006        08 51 57.250614   * 08 54 48.874926     08 55 45.134745       0.00
  0851+202          20 17 58.41744    * 20 06 30.64089      20 02 36.66962        0.01
* OJ287             GSFC 2011B astro solution    182386 Observations

* J1746+6226        17 45 48.087288   * 17 46 14.034139     17 46 22.219094       0.01
  1745+624          62 27 55.74945    * 62 26 54.73839      62 26 23.56006        0.01

* J1806+6141        18 05 50.088378   * 18 06 19.945896     18 06 29.238724       2.07
  1805+616          61 40 51.66588    * 61 41 18.32974      61 41 15.71939        0.74

* J1815+6127        18 15 05.464436   * 18 15 36.791944     18 15 46.490053       6.64
  1815+614          61 26 04.51478    * 61 27 11.64777      61 27 22.23472        2.26

  J2005+7752        20 07 20.430197   * 20 05 30.998525     20 04 52.370646       0.04
* 2007+777          77 43 58.12303    * 77 52 43.24756      77 55 22.53496        0.01

* J2113+4012        21 11 33.260021   * 21 13 29.486338     21 14 06.068152       0.79
  2111+400          40 00 25.23968    * 40 12 51.38819      40 16 46.21126        0.69

  J2202+4216        22 00 39.362504   * 22 02 43.291371     22 03 22.265488       0.01
* BLLAC             42 02 08.59078    * 42 16 39.97992      42 21 15.79413        0.01
```

Contents

Graphical Plan of Experiments in Feb 2016 1
Experiment Listing 3
rk12nvtr – RadioAstron AGN Survey 6
rp024atr – e-EVN: FRB121102 8
eg082gtr – e-EVN: eg082g, ey024a, ec054d 14
te117tr – e-EVN: 2 Gbps test TE117 51
rk12obtr – RadioAstron AGN Survey 54
rk12octr – RadioAstron AGN Survey 56
rk12oetr – RadioAstron AGN Survey 58
rk12oftr – RadioAstron AGN Survey 60
rk12ogtr – RadioAstron AGN Survey 62
rk12ohtr – RadioAstron AGN Survey 64
rk12oitr – RadioAstron AGN Survey 66
rk12ojtr – RadioAstron AGN Survey 68
rk12oktr – RadioAstron AGN Survey 70
rk12ontr – RadioAstron AGN Survey 72
rk12ootr – RadioAstron AGN Survey 74
rk12oqtr – RadioAstron AGN Survey 76
rk12ortr – RadioAstron AGN Survey 78
i6040tr – MC-NT-TR-YS C-band transient test DOY 16040 80
rk12ostr – RadioAstron AGN Survey 90
rk12ottr – RadioAstron AGN Survey 92
rk12outr – RadioAstron AGN Survey 94
rp024btr – e-EVN: FRB121102 96
rk12owtr – RadioAstron AGN Survey 101
rk12oxtr – RadioAstron AGN Survey 103
rp024ctr – e-EVN: FRB121102 105
rk12oytr – RadioAstron AGN Survey 110
rk12oztr – RadioAstron AGN Survey 112
rk12patr – RadioAstron AGN Survey 114
rk12pbtr – RadioAstron AGN Survey 116
rk12pctr – RadioAstron AGN Survey 118
rk12pdtr – RadioAstron AGN Survey 120
rk12petr – RadioAstron AGN Survey 122
rg18etr – RadioAstron Megamaser observations 124
rk12pftr – RadioAstron AGN Survey 126
rk12pgtr – RadioAstron AGN Survey 128
rk12phtr – RadioAstron AGN Survey 130
rk12pitr – RadioAstron AGN Survey 132
rk12pjtr – RadioAstron AGN Survey 134
rk12pktr – RadioAstron AGN Survey 136
rk12pltr – RadioAstron AGN Survey 138
n16c1tr – Network Monitoring Experiment 141
rk12pmtr – RadioAstron AGN Survey 144
gf019atr – High-resolution, multi-frequency mapping of the compact sources in 146
rk12potr – RadioAstron AGN Survey 170
rk12pptr – RadioAstron AGN Survey 172
rk12pqtr – RadioAstron AGN Survey 174
rk12prtr – RadioAstron AGN Survey 176
rk12pstr – RadioAstron AGN Survey 178
gm073btr – Gravitational lensing by low-mass dark matter haloes 180
rk12pttr – RadioAstron AGN Survey 201
em119atr – Heart of a spiral DRAGN 203

rk12putr – RadioAstron AGN Survey 211
rk12pvtr – RadioAstron AGN Survey 213
rk12pwtr – RadioAstron AGN Survey 215
rk12pxtr – RadioAstron AGN Survey 217
em119btr – Heart of a spiral DRAGN 219
rk12pytr – RadioAstron AGN Survey 227
eg089ctr – RadioAstron Imaging of high-redshift quasars 229
n16m1tr – Network Monitoring Experiment 234
rk12qatr – RadioAstron AGN Survey 237
rk12qbtr – RadioAstron AGN Survey 239
rk12qctr – RadioAstron AGN Survey 241
es079atr – Short-period maser, epoch 1 243
rk12qdtr – RadioAstron AGN Survey 257
em117atr – A 3-D View of high-mass star formation: gas Kinematics and Magnetic 259
rk12qetr – RadioAstron AGN Survey 269
em117btr – A 3-D View of high-mass star formation: gas Kinematics and Magnetic 271
rk12qftr – RadioAstron AGN Survey 282
em117ctr – A 3-D View of high-mass star formation: gas Kinematics and Magnetic 284
rk12qgtr – RadioAstron AGN Survey 294
em117dtr – A 3-D View of high-mass star formation: gas Kinematics and Magnetic 296
rk12qitr – RadioAstron AGN Survey 308
rg18gtr – RadioAstron Megamaser observations 310
rk12qjtr – RadioAstron AGN Survey 312
rk12qktr – RadioAstron AGN Survey 314
rk12qltr – RadioAstron AGN Survey 316
rk12qmtr – RadioAstron AGN Survey 318
rk12qntr – RadioAstron AGN Survey 320
n16l1tr – Network Monitoring Experiment 322
ej016atr – VLBI observations of HS0810+2554 325
eg089dtr – RadioAstron Imaging of high-redshift quasars 335
eg092atr – vhs1256-1257 -Epoch 1 340
ea057btr – GPS Satellite Observations: Frequency Setup Tests 354
ej016btr – VLBI observations of HS0810+2554 363
rk12qvtr – RadioAstron AGN Survey 373
rk12qwtr – RadioAstron AGN Survey 375
eg078dtr – Ultra Deep EVN Observations of HDF North 377
gf019btr – High-resolution, multi-frequency mapping of the compact sources in 390
eg078etr – Ultra Deep EVN Observations of HDF North 414
ey024btr – EVN observations of J1114+3241 with powerful outflow 427
em119ctr – Heart of a spiral DRAGN 430
rk12qytr – RadioAstron AGN Survey 439
rk12ratr – RadioAstron AGN Survey 441
rk12rbtr – RadioAstron AGN Survey 443
em119dtr – Heart of a spiral DRAGN 445
rk12rctr – RadioAstron AGN Survey 454
rk12rdtr – RadioAstron AGN Survey 456
rk12retr – RadioAstron AGN Survey 458
rk12rftr – RadioAstron AGN Survey 460
rk12rgtr – RadioAstron AGN Survey 462
rk12rhtr – RadioAstron AGN Survey 464
rk12ritr – RadioAstron AGN Survey 466
rk12rjtr – RadioAstron AGN Survey 468
rk12rktr – RadioAstron AGN Survey 470
rk12rltr – RadioAstron AGN Survey 472
rk12rmtr – RadioAstron AGN Survey 474

`rk12rntr` – RadioAstron AGN Survey 476
`rk12rotr` – RadioAstron AGN Survey 478
`rk12rptr` – RadioAstron AGN Survey 480
`eg091atr` – e-EVN: eg091a,rg007b,eg082h,rg008a/rp025 482