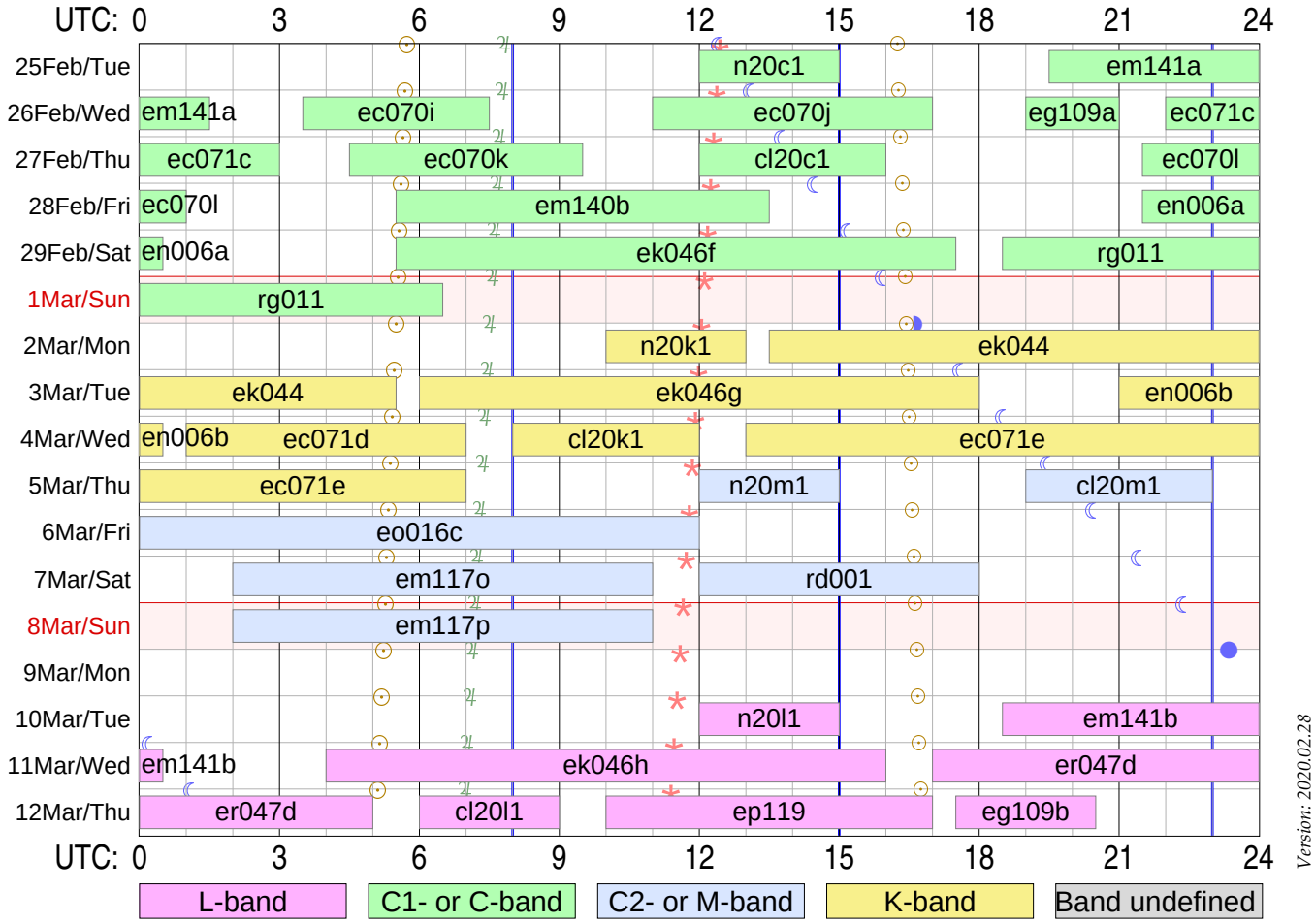
Tr VLBI plan for Feb/Mar 2020



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: 225.0 hours in 33 experiments scheduled

Version: 2020.02.28

Strona zostawiona celowo pusta

EVN Experiments
Feb 2020

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					
2020	D	M	DoW	hh	mm	hh	mm	name		Nr	Corr		~TB	
56	25	02	Wto	12	00	15	00	n20c1	"C"	1	EVN	9	0.69	
56	25	02	Wto	19	30	24	00	em141a	"C"					
57	26	02	Sro	0	00	1	30	em141a	"C"	2	EVN	4	2.76	
57	26	02	Sro	3	30	7	30	ec070i	"C"	3	EVN	5	3.69	
57	26	02	Sro	11	00	17	00	ec070j	"C"	4	EVN	8	5.53	
57	26	02	Sro	19	00	21	00	eg109a	"C"	5	EVN	0	1.84	
57	26	02	Sro	22	00	24	00	ec071c	"C"					
58	27	02	Czw	0	00	3	00	ec071c	"C"	6	EVN	0	4.61	
58	27	02	Czw	4	30	9	30	ec070k	"C"	7	EVN	0	4.61	
58	27	02	Czw	12	00	16	00	cl20c1	"C"	8	EVN	0	0.00	
58	27	02	Czw	21	30	24	00	ec070l	"C"					
59	28	02	Pia	0	00	1	00	ec070l	"C"	9	EVN	3	3.23	
59	28	02	Pia	5	30	13	30	em140b	"C"	10	EVN	5	7.37	
59	28	02	Pia	21	30	24	00	en006a	"C"					
60	29	02	Sob	0	00	0	30	en006a	"C"	11	EVN	7	1.38	
60	29	02	Sob	5	30	17	30	ek046f	"C"	12	EVN	1	5.53	
60	29	02	Sob	18	30	24	00	rg011	"C"					
61	1	03	Nie	0	00	6	30	rg011	"C"	13	EVN	7	11.06	
62	2	03	Pon	10	00	13	00	n20k1	"K"	14	EVN	2	1.38	
62	2	03	Pon	13	30	24	00	ek044	"K"					
63	3	03	Wto	0	00	5	30	ek044	"K"	15	EVN	6	7.37	
63	3	03	Wto	6	00	18	00	ek046g	"K"	16	EVN	5	11.06	
63	3	03	Wto	21	00	24	00	en006b	"K"					
64	4	03	Sro	0	00	0	30	en006b	"K"	17	EVN	7	1.61	
64	4	03	Sro	1	00	7	00	ec071d	"K"	18	EVN	7	5.53	
64	4	03	Sro	8	00	12	00	cl20k1	"K"	19	EVN	0	0.00	
64	4	03	Sro	13	00	24	00	ec071e	"K"					
65	5	03	Czw	0	00	7	00	ec071e	"K"	20	EVN	2	16.59	
65	5	03	Czw	12	00	15	00	n20m1	"M"	21	EVN	6	0.35	
65	5	03	Czw	19	00	23	00	cl20m1	"M"	22	EVN	0	0.00	
66	6	03	Pia	0	00	12	00	eo016c	"M"	23	EVN	2	1.38	
67	7	03	Sob	2	00	11	00	em117o	"M"	24	EVN	7	0.52	
68	8	03	Nie	2	00	11	00	em117p	"M"	25	EVN	7	0.52	
70	10	03	Wto	12	00	15	00	n20l1	"L"	26	EVN	8	0.69	
70	10	03	Wto	18	30	24	00	em141b	"L"					
71	11	03	Sro	0	00	0	30	em141b	"L"	27	EVN	4	2.76	
71	11	03	Sro	4	00	16	00	ek046h	"L"	28	EVN	8	5.53	
71	11	03	Sro	17	00	24	00	er047d	"L"					
72	12	03	Czw	0	00	5	00	er047d	"L"	29	EVN	6	5.53	

```
72 12 03 Czw   6 00   9 00  cl20l1   "L"  30 EVN 0  0.00
72 12 03 Czw  10 00  17 00  ep119    "L"  31 EVN 1  3.23
72 12 03 Czw  17 30  20 30  eg109b   "L"  32 EVN 7  1.38
```

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

`http://paulo.astro.uni.torun.pl/~pw/VLBI/schedules/feb20.pdf`

n20c1tr

Network Monitoring Experiment

PI: *Olga Bayandina*

```
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
-------------------------------------------------------------------------------------------
 --- Tue  25 Feb 2020   Day  56 ---
 ---------- N20C1 ----------

 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  J0237+2848   23 33 33  48.5 106.9 -3.1     -41.0     0        0   12 00 00
12 10 00  =0234+285    23 43 35  49.9 109.5 -2.9     -40.3   600       39   12 00 01

12 13 00  J0237+2848   23 46 36  50.4 110.3 -2.9     -40.0   173       39   12 13 00
12 25 00  =0234+285    23 58 38  52.0 113.5 -2.7     -39.0   720       85   12 13 01

12 28 00  J0237+2848   00 01 38  52.5 114.4 -2.6     -38.7   173       85   12 28 00
12 40 00  =0234+285    00 13 40  54.1 117.8 -2.4     -37.3   720      131   12 28 01

12 43 00  J0237+2848   00 16 40  54.5 118.7 -2.4     -37.0   173      131   12 43 00
12 55 00  =0234+285    00 28 42  56.0 122.5 -2.2     -35.4   720      178   12 43 01

12 58 00  J0237+2848   00 31 43  56.4 123.4 -2.1     -34.9   173      178   12 58 00
13 10 00  =0234+285    00 43 45  57.9 127.5 -1.9     -33.0   720      224   12 58 01

13 13 00  J0237+2848   00 46 45  58.2 128.5 -1.9     -32.5   173      224   13 13 00
13 25 00  =0234+285    00 58 47  59.6 132.9 -1.7     -30.2   720      271   13 13 01

13 29 00  J0530+1331   01 02 48  24.4 100.1 -4.5     -37.5    93      271   13 29 00
13 40 00  =0528+134    01 13 50  26.0 102.4 -4.3     -37.1   660      313   13 29 01

13 43 00  J0530+1331   01 16 50  26.4 103.1 -4.3     -37.0   173      313   13 43 00
13 55 00  =0528+134    01 28 52  28.2 105.7 -4.1     -36.5   720      359   13 43 01

13 58 00  J0530+1331   01 31 53  28.6 106.4 -4.0     -36.3   173      359   13 58 00
14 10 00  =0528+134    01 43 55  30.3 109.1 -3.8     -35.7   720      406   13 58 01

14 13 00  J0530+1331   01 46 55  30.8 109.8 -3.8     -35.5   173      406   14 13 00
14 25 00  =0528+134    01 58 57  32.4 112.6 -3.6     -34.8   720      452   14 13 01

14 28 00  J0530+1331   02 01 58  32.9 113.3 -3.5     -34.6   173      452   14 28 00
14 40 00  =0528+134    02 14 00  34.5 116.2 -3.3     -33.7   720      499   14 28 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
-----------------------------------------------------------------------------------------

 --- Tue  25 Feb 2020   Day  56 ---
14 43 00  J0530+1331   02 17 00  34.9 117.0 -3.3     -33.4   173      499   14 43 00
14 55 00  =0528+134    02 29 02  36.5 120.0 -3.1     -32.3   720      545   14 43 01

14 58 00  J0530+1331   02 32 03  36.9 120.7 -3.0     -32.1   173      545   14 58 00
15 00 00  =0528+134    02 34 03  37.1 121.3 -3.0     -31.9   120      553   14 58 01



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


 ======== Setup file: sess120.C512

   Setup group:   10         Station: TORUN            Total bit rate:   512
   Format: VDIF              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         9         1         9         2        10         2        10
                  3        11         3        11         4        12         4        12
  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=   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:   7

  Track assignments are:
   track1=   1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15, 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 39 02.102749       0.00
* J0237+2848        28 35 11.40773    * 28 48 08.98999      28 53 16.94302        0.00
  J0237+28          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,  58420 observations.

  0528+134          05 28 06.759216   * 05 30 56.416746     05 32 04.166514       0.21
* J0530+1331        13 29 42.28882    * 13 31 55.14948      13 32 41.13647        0.24
  J0530+13          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution, 138236 observations.
```

em141atr

EVN-6CM-CGCG-N

PI: *Mar Mezcua*

```
Address:  Institute of Space Sciences (ICE, CSIC)
Observing mode: Continuum
Schedule for TORUN     (Code Tr )                                  Page   2
               EVN-6CM-CGCG-N
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  25 Feb 2020   Day  56 ---
 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

19 30 00  4C39.25      07 04 47  61.8 105.5 -2.4     -48.1     0        0   19 30 00
19 34 00  ---          07 08 48  62.3 106.6 -2.3     -47.7   240       31   19 30 01

19 35 30  J0945-0153   07 10 18  26.0 135.5 -2.6     -24.9   -60       31   19 35 30
19 38 30  =0943-016    07 13 19  26.3 136.2 -2.6     -24.6   120       54   19 35 31

19 38 30  CGCG-N       07 13 19  27.6 136.1 -2.5     -24.6   -18       54   No stop
19 43 30  ---          07 18 20  28.1 137.4 -2.4     -24.0   282       93   19 38 31

19 44 10  J0945-0153   07 19 00  26.9 137.7 -2.5     -23.9    22       93   19 44 10
19 46 10  =0943-016    07 21 00  27.1 138.2 -2.4     -23.6   120      108   19 44 11

19 46 10  CGCG-N       07 21 00  28.4 138.1 -2.4     -23.7   -18      108   No stop
19 51 10  ---          07 26 01  28.9 139.4 -2.3     -23.0   282      147   19 46 11

19 51 10  J0945-0153   07 26 01  27.6 139.5 -2.3     -23.0   -18      147   No stop
19 53 40  =0943-016    07 28 31  27.8 140.1 -2.3     -22.7   132      166   19 51 11

19 53 40  CGCG-N       07 28 31  29.1 140.0 -2.3     -22.7   -18      166   No stop
19 58 40  ---          07 33 32  29.6 141.4 -2.2     -22.0   282      205   19 53 41

19 59 20  J0945-0153   07 34 12  28.4 141.6 -2.2     -21.9    22      205   19 59 20
20 01 20  =0943-016    07 36 13  28.5 142.2 -2.2     -21.6   120      220   19 59 21

20 01 20  CGCG-N       07 36 13  29.8 142.1 -2.1     -21.7   -18      220   No stop
20 06 20  ---          07 41 13  30.3 143.4 -2.1     -21.0   282      259   20 01 21

20 06 20  J0945-0153   07 41 13  29.0 143.5 -2.1     -20.9   -18      259   No stop
20 08 50  =0943-016    07 43 44  29.2 144.2 -2.1     -20.6   132      278   20 06 21

20 08 50  CGCG-N       07 43 44  30.5 144.1 -2.0     -20.6   -18      278   No stop
20 13 50  ---          07 48 45  31.0 145.5 -1.9     -19.9   282      317   20 08 51

20 14 30  J0945-0153   07 49 25  29.7 145.7 -2.0     -19.8    22      317   20 14 30
20 16 30  =0943-016    07 51 25  29.9 146.2 -1.9     -19.5   120      332   20 14 31
```

Schedule for TORUN (Code Tr) Page 3

EVN-6CM-CGCG-N

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 25 Feb 2020 Day 56 ---										
20 16 30	CGCG-N	07 51 25	31.2	146.2	-1.9		-19.5	-18	332	No stop
20 21 30	---	07 56 26	31.6	147.6	-1.8		-18.8	282	371	20 16 31
20 21 30	J0945-0153	07 56 26	30.3	147.6	-1.8		-18.8	-18	371	No stop
20 24 00	=0943-016	07 58 56	30.5	148.3	-1.8		-18.4	132	390	20 21 31
20 24 00	CGCG-N	07 58 56	31.8	148.3	-1.8		-18.4	-18	390	No stop
20 29 00	---	08 03 57	32.2	149.7	-1.7		-17.6	282	429	20 24 01
20 29 40	J0945-0153	08 04 37	30.9	149.9	-1.7		-17.6	22	429	20 29 40
20 31 40	=0943-016	08 06 37	31.1	150.4	-1.7		-17.3	120	444	20 29 41
20 31 40	CGCG-N	08 06 37	32.4	150.5	-1.6		-17.2	-18	444	No stop
20 36 40	---	08 11 38	32.7	151.9	-1.6		-16.4	282	483	20 31 41
20 36 40	J0945-0153	08 11 38	31.4	151.8	-1.6		-16.5	-18	483	No stop
20 39 10	=0943-016	08 14 09	31.6	152.5	-1.5		-16.1	132	502	20 36 41
20 39 10	CGCG-N	08 14 09	32.9	152.6	-1.5		-16.0	-18	502	No stop
20 44 10	---	08 19 10	33.3	154.0	-1.4		-15.2	282	541	20 39 11
20 44 50	J0945-0153	08 19 50	32.0	154.1	-1.4		-15.2	22	541	20 44 50
20 46 50	=0943-016	08 21 50	32.1	154.7	-1.4		-14.9	120	556	20 44 51
20 46 50	CGCG-N	08 21 50	33.4	154.8	-1.4		-14.8	-18	556	No stop
20 51 50	---	08 26 51	33.7	156.3	-1.3		-14.0	282	595	20 46 51
20 51 50	J0945-0153	08 26 51	32.4	156.1	-1.3		-14.1	-18	595	No stop
20 54 20	=0943-016	08 29 21	32.6	156.9	-1.3		-13.7	132	614	20 51 51
20 54 20	CGCG-N	08 29 21	33.9	157.0	-1.3		-13.6	-18	614	No stop
20 59 20	---	08 34 22	34.2	158.5	-1.2		-12.7	282	653	20 54 21
21 00 00	J0945-0153	08 35 02	32.9	158.5	-1.2		-12.7	22	653	21 00 00
21 02 00	=0943-016	08 37 02	33.0	159.1	-1.2		-12.4	120	669	21 00 01
21 02 00	CGCG-N	08 37 02	34.3	159.3	-1.1		-12.3	-18	669	No stop
21 07 00	---	08 42 03	34.6	160.7	-1.1		-11.4	282	707	21 02 01
21 07 00	J0945-0153	08 42 03	33.3	160.5	-1.1		-11.5	-18	707	No stop
21 09 30	=0943-016	08 44 34	33.4	161.3	-1.0		-11.1	132	727	21 07 01
21 12 30	4C39.25	08 47 34	74.2	149.6	-0.7		-23.0	13	727	21 12 30
21 16 00	---	08 51 05	74.5	152.0	-0.6		-21.3	210	754	21 12 31
21 17 50	J0945-0153	08 52 55	33.8	163.7	-0.9		-9.7	-56	754	21 17 50
21 20 50	=0943-016	08 55 56	33.9	164.6	-0.8		-9.2	124	777	21 17 51

Schedule for TORUN (Code Tr) Page 4

EVN-6CM-CGCG-N

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 25 Feb 2020 Day 56 ---										
21 20 50	CGCG-N	08 55 56	35.2	164.9	-0.8		-9.0	-18	777	No stop
21 25 50	---	09 00 56	35.4	166.4	-0.7		-8.1	282	815	21 20 51
21 26 30	J0945-0153	09 01 36	34.1	166.3	-0.8		-8.2	22	815	21 26 30
21 28 30	=0943-016	09 03 37	34.2	166.9	-0.7		-7.8	120	831	21 26 31
21 28 30	CGCG-N	09 03 37	35.5	167.2	-0.7		-7.6	-18	831	No stop
21 33 30	---	09 08 38	35.6	168.8	-0.6		-6.7	282	870	21 28 31
21 33 30	J0945-0153	09 08 38	34.3	168.4	-0.6		-6.9	-18	870	No stop
21 36 00	=0943-016	09 11 08	34.4	169.2	-0.6		-6.5	132	889	21 33 31
21 36 00	CGCG-N	09 11 08	35.7	169.5	-0.6		-6.3	-18	889	No stop
21 41 00	---	09 16 09	35.8	171.1	-0.5		-5.3	282	927	21 36 01
21 41 40	J0945-0153	09 16 49	34.6	170.9	-0.5		-5.5	22	927	21 41 40
21 43 40	=0943-016	09 18 49	34.6	171.5	-0.5		-5.1	120	943	21 41 41
21 43 40	CGCG-N	09 18 49	35.9	171.9	-0.4		-4.9	-18	943	No stop
21 48 40	---	09 23 50	36.0	173.4	-0.4		-3.9	282	982	21 43 41
21 48 40	J0945-0153	09 23 50	34.7	173.0	-0.4		-4.2	-18	982	No stop
21 51 10	=0943-016	09 26 21	34.8	173.8	-0.3		-3.7	132	1001	21 48 41
21 51 10	CGCG-N	09 26 21	36.0	174.2	-0.3		-3.5	-18	1001	No stop
21 56 10	---	09 31 21	36.1	175.8	-0.2		-2.5	282	1040	21 51 11
21 56 50	J0945-0153	09 32 01	34.8	175.5	-0.2		-2.7	22	1040	21 56 50
21 58 50	=0943-016	09 34 02	34.9	176.1	-0.2		-2.3	120	1055	21 56 51
21 58 50	CGCG-N	09 34 02	36.1	176.6	-0.2		-2.1	-18	1055	No stop
22 03 50	---	09 39 03	36.2	178.1	-0.1		-1.1	282	1094	21 58 51
22 03 50	J0945-0153	09 39 03	34.9	177.6	-0.1		-1.4	-18	1094	No stop
22 06 20	=0943-016	09 41 33	34.9	178.4	-0.1		-1.0	132	1113	22 03 51
22 06 20	CGCG-N	09 41 33	36.2	178.9	-0.1		-0.7	-18	1113	No stop
22 11 20	---	09 46 34	36.2	180.5	0.0		0.3	282	1152	22 06 21
22 12 00	J0945-0153	09 47 14	34.9	180.1	0.0		0.1	22	1152	22 12 00
22 14 00	=0943-016	09 49 14	34.9	180.8	0.0		0.5	120	1167	22 12 01
22 14 00	CGCG-N	09 49 14	36.2	181.3	0.1		0.8	-18	1167	No stop
22 19 00	---	09 54 15	36.1	182.8	0.2		1.7	282	1206	22 14 01

Schedule for TORUN (Code Tr) Page 5

EVN-6CM-CGCG-N

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 25 Feb 2020 Day 56 ---										
22 19 00	J0945-0153	09 54 15	34.9	182.3	0.1		1.4	-18	1206	No stop
22 21 30	=0943-016	09 56 46	34.9	183.0	0.2		1.8	132	1225	22 19 01
22 21 30	CGCG-N	09 56 46	36.1	183.6	0.2		2.2	-18	1225	No stop
22 26 30	---	10 01 46	36.1	185.2	0.3		3.1	282	1264	22 21 31
22 27 10	J0945-0153	10 02 26	34.8	184.8	0.3		2.9	22	1264	22 27 10
22 29 10	=0943-016	10 04 27	34.8	185.4	0.3		3.2	120	1279	22 27 11
22 29 10	CGCG-N	10 04 27	36.0	186.0	0.3		3.6	-18	1279	No stop
22 34 10	---	10 09 28	35.9	187.5	0.4		4.5	282	1318	22 29 11
22 34 10	J0945-0153	10 09 28	34.7	186.9	0.4		4.1	-18	1318	No stop
22 36 40	=0943-016	10 11 58	34.7	187.7	0.4		4.6	132	1337	22 34 11
22 36 40	CGCG-N	10 11 58	35.9	188.3	0.4		5.0	-18	1337	No stop
22 41 40	---	10 16 59	35.8	189.8	0.5		5.9	282	1376	22 36 41
22 42 20	J0945-0153	10 17 39	34.5	189.4	0.5		5.6	22	1376	22 42 20
22 44 20	=0943-016	10 19 39	34.5	190.0	0.5		6.0	120	1391	22 42 21
22 44 20	CGCG-N	10 19 39	35.7	190.7	0.6		6.4	-18	1391	No stop
22 49 20	---	10 24 40	35.5	192.2	0.7		7.3	282	1430	22 44 21
22 49 20	J0945-0153	10 24 40	34.4	191.5	0.6		6.9	-18	1430	No stop
22 51 50	=0943-016	10 27 11	34.3	192.2	0.7		7.3	132	1449	22 49 21
22 51 50	CGCG-N	10 27 11	35.5	193.0	0.7		7.7	-17	1449	No stop
22 56 50	---	10 32 11	35.3	194.5	0.8		8.6	283	1488	22 51 51
22 57 30	J0945-0153	10 32 51	34.1	193.9	0.8		8.3	22	1488	22 57 30
22 59 30	=0943-016	10 34 52	34.0	194.5	0.8		8.7	120	1503	22 57 31
22 59 30	CGCG-N	10 34 52	35.2	195.3	0.8		9.1	-17	1503	No stop
23 04 30	---	10 39 53	35.0	196.8	0.9		10.0	283	1542	22 59 31
23 04 30	J0945-0153	10 39 53	33.8	196.0	0.9		9.6	-17	1542	No stop
23 07 00	=0943-016	10 42 23	33.7	196.8	0.9		10.0	133	1561	23 04 31
23 07 00	CGCG-N	10 42 23	34.9	197.6	1.0		10.4	-17	1561	No stop
23 12 00	---	10 47 24	34.6	199.0	1.0		11.3	283	1600	23 07 01
23 12 40	J0945-0153	10 48 04	33.4	198.5	1.0		11.0	23	1600	23 12 40
23 14 40	=0943-016	10 50 04	33.4	199.0	1.1		11.3	120	1615	23 12 41

Schedule for TORUN (Code Tr) Page 6

EVN-6CM-CGCG-N

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 25 Feb 2020 Day 56 ---										
23 14 40	CGCG-N	10 50 04	34.5	199.8	1.1		11.8	-17	1615	No stop
23 19 40	---	10 55 05	34.2	201.3	1.2		12.6	283	1654	23 14 41
23 19 40	J0945-0153	10 55 05	33.1	200.5	1.1		12.2	-17	1654	No stop
23 22 10	=0943-016	10 57 35	33.0	201.2	1.2		12.6	133	1673	23 19 41
23 22 10	CGCG-N	10 57 35	34.1	202.1	1.2		13.0	-17	1673	No stop
23 27 10	---	11 02 36	33.8	203.5	1.3		13.9	283	1712	23 22 11
23 27 50	J0945-0153	11 03 16	32.6	202.9	1.3		13.5	23	1712	23 27 50
23 29 50	=0943-016	11 05 17	32.5	203.5	1.3		13.8	120	1727	23 27 51
23 29 50	CGCG-N	11 05 17	33.6	204.3	1.3		14.3	-17	1727	No stop
23 34 50	---	11 10 18	33.3	205.8	1.4		15.1	283	1766	23 29 51
23 34 50	J0945-0153	11 10 18	32.2	204.9	1.4		14.7	-17	1766	No stop
23 37 20	=0943-016	11 12 48	32.1	205.6	1.4		15.1	133	1785	23 34 51
23 37 20	CGCG-N	11 12 48	33.1	206.5	1.5		15.5	-17	1785	No stop
23 42 20	---	11 17 49	32.8	207.9	1.5		16.3	283	1824	23 37 21
23 43 00	J0945-0153	11 18 29	31.7	207.2	1.5		16.0	23	1824	23 43 00
23 45 00	=0943-016	11 20 29	31.5	207.8	1.6		16.3	120	1840	23 43 01
23 45 00	CGCG-N	11 20 29	32.6	208.7	1.6		16.8	-17	1840	No stop
23 50 00	---	11 25 30	32.2	210.1	1.7		17.5	283	1878	23 45 01
23 50 00	J0945-0153	11 25 30	31.2	209.2	1.6		17.0	-17	1878	No stop
23 52 30	=0943-016	11 28 00	31.0	209.9	1.7		17.4	133	1898	23 50 01
23 52 30	CGCG-N	11 28 00	32.0	210.8	1.7		17.9	-17	1898	No stop
23 57 30	---	11 33 01	31.7	212.2	1.8		18.7	283	1936	23 52 31
--- Start: Tue 25 Feb 2020 Day 56 -- Stop: Wed 26 Feb 2020 Day 57 ---										
23 58 10	J0945-0153	11 33 41	30.6	211.5	1.8		18.3	23	1936	23 58 10
00 00 10	=0943-016	11 35 42	30.4	212.0	1.8		18.6	120	1952	23 58 11
00 00 10	CGCG-N	11 35 42	31.4	213.0	1.8		19.1	-17	1952	No stop
00 05 10	---	11 40 43	31.0	214.3	1.9		19.8	283	1990	00 00 11
00 05 10	J0945-0153	11 40 43	30.0	213.4	1.9		19.3	-17	1990	No stop
00 07 40	=0943-016	11 43 13	29.8	214.1	1.9		19.7	133	2010	00 05 11

Schedule for TORUN (Code Tr) Page 7

EVN-6CM-CGCG-N

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 26 Feb 2020 Day 57 ---										
00 07 40	CGCG-N	11 43 13	30.8	215.0	2.0		20.2	-17	2010	No stop
00 12 40	---	11 48 14	30.4	216.4	2.1		20.9	283	2048	00 07 41
00 13 20	J0945-0153	11 48 54	29.3	215.6	2.0		20.5	23	2048	00 13 20
00 15 20	=0943-016	11 50 54	29.1	216.1	2.1		20.8	120	2064	00 13 21
00 15 20	CGCG-N	11 50 54	30.1	217.1	2.1		21.2	-16	2064	No stop
00 20 20	---	11 55 55	29.7	218.5	2.2		21.9	284	2102	00 15 21
00 20 20	J0945-0153	11 55 55	28.7	217.5	2.2		21.4	-17	2102	No stop
00 22 50	=0943-016	11 58 25	28.4	218.1	2.2		21.8	133	2122	00 20 21
00 22 50	CGCG-N	11 58 25	29.4	219.1	2.2		22.3	-16	2122	No stop
00 27 50	---	12 03 26	28.9	220.4	2.3		22.9	284	2160	00 22 51
00 28 30	J0945-0153	12 04 06	27.9	219.6	2.3		22.5	23	2160	00 28 30
00 30 30	=0943-016	12 06 07	27.7	220.2	2.3		22.8	120	2176	00 28 31
00 30 30	CGCG-N	12 06 07	28.7	221.1	2.4		23.3	-16	2176	No stop
00 35 30	---	12 11 08	28.2	222.5	2.4		23.9	284	2214	00 30 31
00 35 30	J0945-0153	12 11 08	27.2	221.5	2.4		23.4	-16	2214	No stop
00 38 00	=0943-016	12 13 38	27.0	222.1	2.4		23.8	134	2234	00 35 31
00 38 00	CGCG-N	12 13 38	27.9	223.1	2.5		24.2	-16	2234	No stop
00 43 00	---	12 18 39	27.4	224.4	2.6		24.8	284	2272	00 38 01
00 43 40	J0945-0153	12 19 19	26.4	223.5	2.5		24.5	24	2272	00 43 40
00 45 40	=0943-016	12 21 19	26.2	224.1	2.6		24.7	120	2288	00 43 41
00 45 40	CGCG-N	12 21 19	27.1	225.1	2.6		25.2	-16	2288	No stop
00 50 40	---	12 26 20	26.6	226.3	2.7		25.8	284	2326	00 45 41
00 50 40	J0945-0153	12 26 20	25.6	225.3	2.7		25.3	-16	2326	No stop
00 53 10	=0943-016	12 28 50	25.4	225.9	2.7		25.6	134	2346	00 50 41
00 53 10	CGCG-N	12 28 50	26.3	227.0	2.7		26.0	-16	2346	No stop
00 58 10	---	12 33 51	25.8	228.2	2.8		26.6	284	2384	00 53 11
00 58 50	J0945-0153	12 34 31	24.8	227.4	2.8		26.2	24	2384	00 58 50
01 00 50	=0943-016	12 36 32	24.5	227.8	2.8		26.5	120	2400	00 58 51
01 00 50	CGCG-N	12 36 32	25.5	228.9	2.9		26.9	-16	2400	No stop
01 05 50	---	12 41 33	24.9	230.1	2.9		27.4	284	2439	01 00 51

```
Schedule for TORUN     (Code Tr )                                  Page   8
               EVN-6CM-CGCG-N
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  26 Feb 2020   Day  57 ---

01 05 50  J0945-0153   12 41 33  24.0 229.1  2.9      27.0   -16     2439   No stop
01 08 20  =0943-016    12 44 03  23.7 229.7  3.0      27.3   134     2458   01 05 51

01 08 20  CGCG-N       12 44 03  24.6 230.7  3.0      27.7   -16     2458   No stop
01 13 20  ---          12 49 04  24.0 231.9  3.1      28.2   284     2497   01 08 21

01 14 00  J0945-0153   12 49 44  23.0 231.1  3.0      27.9    24     2497   01 14 00
01 16 00  =0943-016    12 51 44  22.8 231.5  3.1      28.1   120     2512   01 14 01

01 16 00  CGCG-N       12 51 44  23.7 232.6  3.1      28.5   -16     2512   No stop
01 21 00  ---          12 56 45  23.1 233.8  3.2      29.0   284     2551   01 16 01

01 21 00  J0945-0153   12 56 45  22.2 232.7  3.2      28.6   -16     2551   No stop
01 23 30  =0943-016    12 59 15  21.9 233.3  3.2      28.8   134     2570   01 21 01

01 23 30  CGCG-N       12 59 15  22.8 234.4  3.2      29.2   -16     2570   No stop
01 27 30  ---          13 03 16  22.3 235.3  3.3      29.6   224     2601   01 23 31

01 27 30  J0945-0153   13 03 16  21.4 234.3  3.3      29.2   -16     2601   No stop
01 30 00  =0943-016    13 05 46  21.1 234.9  3.3      29.4   134     2620   01 27 31



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


 ======== Setup file: sess120.C1024

   Setup group:   10         Station: TORUN            Total bit rate:  1024
   Format: VDIF              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         9         1         9         2        10         2        10
                  3        11         3        11         4        12         4        12
  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=   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:   7

  Track assignments are:
   track1=   1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15, 16
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

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

* CGCG-N            09 41 28.477609   * 09 44 01.880000     09 45 03.957584       0.00
                   -00 24 44.30465    *-00 38 32.02000     -00 44 09.74497        0.00

* 4C39.25           09 23 55.319216   * 09 27 03.013937     09 28 18.833099       0.31
  J0927+3902        39 15 23.56644    * 39 02 20.85185      38 57 04.50153        0.16
  0923+392          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
  J0927+39          GSFC 2016a X/S astro solution, 250526 observations.

  0943-016          09 43 11.438534   * 09 45 44.037315     09 46 45.802296       0.08
* J0945-0153       -01 39 12.04502    *-01 53 03.95569     -01 58 43.36022        0.17
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,    140 observations.
```

ec070itr

AGN Cores

PI: *E. Chiaraluce*

```
Address:  INAF-IAPS

Observing mode: Phase-referencing for sources at 6 cm
Schedule for TORUN     (Code Tr )                                  Page   2
               AGN Cores
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  26 Feb 2020   Day  57 ---
 Next scan frequencies:  4830.49  4830.49  4830.49  4830.49  4894.49  4894.49  4894.49  4894.49
                         4958.49  4958.49  4958.49  4958.49  5022.49  5022.49  5022.49  5022.49
 Next BBC frequencies:    630.49   630.49   630.49   630.49   694.49   694.49   694.49   694.49
                          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
                           32.00    32.00    32.00    32.00    32.00    32.00    32.00    32.00

03 30 00  J1738-1503   15 06 06  14.3 141.8 -2.6     -22.6     0        0   03 30 00
03 31 00  =1735-150    15 07 06  14.4 142.1 -2.5     -22.5    60       15   03 30 01

03 31 50 2E1739.1-121  15 07 57  16.8 140.3 -2.6     -23.1    27       15   03 31 50
03 36 25  ---          15 12 32  17.2 141.3 -2.5     -22.6   275       86   03 31 51

03 36 58  J1738-1503   15 13 05  15.0 143.5 -2.4     -21.7    10       86   03 36 58
03 37 58  =1735-150    15 14 05  15.0 143.7 -2.4     -21.6    60      102   03 36 59

03 38 48 2E1739.1-121  15 14 55  17.4 141.9 -2.5     -22.3    27      102   03 38 48
03 43 23  ---          15 19 31  17.8 143.0 -2.4     -21.7   275      173   03 38 49

03 43 55  J1738-1503   15 20 04  15.6 145.1 -2.3     -20.8    10      173   03 43 55
03 44 55  =1735-150    15 21 04  15.6 145.3 -2.3     -20.7    60      188   03 43 56

03 45 45 2E1739.1-121  15 21 54  18.1 143.6 -2.4     -21.4    27      188   03 45 45
03 50 20  ---          15 26 30  18.5 144.7 -2.3     -20.8   275      259   03 45 46

03 50 53  J1738-1503   15 27 03  16.1 146.7 -2.2     -19.9    10      259   03 50 53
03 51 53  =1735-150    15 28 03  16.2 147.0 -2.2     -19.8    60      274   03 50 54

03 52 43 2E1739.1-121  15 28 53  18.7 145.3 -2.2     -20.5    27      274   03 52 43
03 57 18  ---          15 33 29  19.1 146.4 -2.2     -19.9   275      345   03 52 44

03 57 56  J1738-1503   15 34 07  16.7 148.4 -2.1     -19.0    16      345   03 57 56
03 58 56  =1735-150    15 35 07  16.8 148.7 -2.1     -18.9    60      361   03 57 57

03 59 46 2E1739.1-121  15 35 58  19.3 147.0 -2.1     -19.6    27      361   03 59 46
04 04 21  ---          15 40 33  19.6 148.1 -2.0     -18.9   275      432   03 59 47

04 05 00  J1738-1503   15 41 12  17.3 150.1 -2.0     -18.1    15      432   04 05 00
04 06 00  =1735-150    15 42 12  17.3 150.3 -2.0     -17.9    60      447   04 05 01

04 06 50 2E1739.1-121  15 43 02  19.8 148.7 -2.0     -18.6    27      447   04 06 50
04 11 25  ---          15 47 38  20.2 149.8 -1.9     -18.0   275      518   04 06 51
```

Schedule for TORUN (Code Tr) Page 3

AGN Cores

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 26 Feb 2020 Day 57 ---										
04 12 03	J1738-1503	15 48 16	17.8	151.8	-1.9		-17.1	15	518	04 12 03
04 13 03	=1735-150	15 49 16	17.8	152.1	-1.8		-16.9	60	533	04 12 04
04 13 53	2E1739.1-121	15 50 06	20.4	150.5	-1.9		-17.6	27	533	04 13 53
04 18 28	---	15 54 42	20.7	151.6	-1.8		-17.0	275	604	04 13 54
04 19 06	J1738-1503	15 55 20	18.3	153.5	-1.7		-16.1	15	604	04 19 06
04 20 06	=1735-150	15 56 20	18.3	153.8	-1.7		-15.9	60	620	04 19 07
04 20 56	2E1739.1-121	15 57 11	20.9	152.2	-1.8		-16.6	27	620	04 20 56
04 25 31	---	16 01 46	21.2	153.4	-1.7		-16.0	275	690	04 20 57
04 29 30	J1642+3948	16 05 46	75.2	150.3	-0.6		-22.7	23	690	04 29 30
04 31 30	=3C345	16 07 46	75.3	151.7	-0.6		-21.7	120	721	04 29 31
04 35 35	J1738-1503	16 11 52	19.3	157.6	-1.5		-13.7	21	721	04 35 35
04 36 35	=1735-150	16 12 52	19.3	157.9	-1.4		-13.6	60	737	04 35 36
04 37 25	2E1739.1-121	16 13 42	21.9	156.4	-1.5		-14.2	26	737	04 37 25
04 42 25	---	16 18 43	22.2	157.7	-1.4		-13.5	300	814	04 37 26
04 43 15	J1738-1503	16 19 33	19.7	159.5	-1.3		-12.6	27	814	04 43 15
04 44 15	=1735-150	16 20 34	19.8	159.8	-1.3		-12.4	60	830	04 43 16
04 45 05	2E1739.1-121	16 21 24	22.4	158.4	-1.4		-13.1	26	830	04 45 05
04 50 05	---	16 26 25	22.7	159.7	-1.3		-12.3	300	907	04 45 06
04 50 55	J1756-1427	16 27 15	19.7	156.7	-1.5		-14.2	25	907	04 50 55
04 51 55	=1753-144	16 28 15	19.8	157.0	-1.5		-14.0	60	922	04 50 56
04 52 45	IGRJ18027-14	16 29 05	19.0	155.7	-1.6		-14.8	34	922	04 52 45
04 57 45	---	16 34 06	19.3	157.0	-1.5		-14.1	300	1000	04 52 46
04 58 35	J1756-1427	16 34 56	20.2	158.7	-1.4		-13.0	34	1000	04 58 35
04 59 35	=1753-144	16 35 56	20.2	158.9	-1.4		-12.9	60	1015	04 58 36
05 00 25	IGRJ18027-14	16 36 46	19.5	157.6	-1.5		-13.7	34	1015	05 00 25
05 05 25	---	16 41 47	19.7	158.9	-1.4		-12.9	300	1092	05 00 26
05 06 15	J1756-1427	16 42 37	20.6	160.6	-1.2		-11.9	34	1092	05 06 15
05 07 15	=1753-144	16 43 37	20.6	160.9	-1.2		-11.7	60	1108	05 06 16
05 08 05	IGRJ18027-14	16 44 27	19.9	159.6	-1.3		-12.5	34	1108	05 08 05
05 13 05	---	16 49 28	20.1	160.8	-1.2		-11.8	300	1185	05 08 06
05 13 55	J1756-1427	16 50 18	20.9	162.6	-1.1		-10.7	34	1185	05 13 55
05 14 55	=1753-144	16 51 19	21.0	162.8	-1.1		-10.6	60	1201	05 13 56

Schedule for TORUN (Code Tr) Page 4

AGN Cores

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 26 Feb 2020 Day 57 ---										
05 15 45	IGRJ18027-14	16 52 09	20.3	161.5	-1.2		-11.4	34	1201	05 15 45
05 20 45	---	16 57 10	20.5	162.8	-1.1		-10.6	300	1278	05 15 46
05 25 07	J1642+3948	17 01 33	76.3	194.7	0.3		11.4	39	1278	05 25 07
05 27 08	=3C345	17 03 34	76.2	196.3	0.3		12.7	121	1309	05 25 08
05 31 25	J1756-1427	17 07 51	21.6	167.0	-0.8		-8.0	37	1309	05 31 25
05 32 25	=1753-144	17 08 51	21.6	167.3	-0.8		-7.8	60	1325	05 31 26
05 33 15	IGRJ18027-14	17 09 41	21.0	166.0	-0.9		-8.7	34	1325	05 33 15
05 38 15	---	17 14 42	21.2	167.2	-0.8		-7.9	300	1402	05 33 16
05 39 05	J1756-1427	17 15 32	21.8	169.0	-0.7		-6.8	34	1402	05 39 05
05 40 05	=1753-144	17 16 32	21.9	169.3	-0.7		-6.6	60	1417	05 39 06
05 40 55	IGRJ18027-14	17 17 23	21.3	167.9	-0.8		-7.5	34	1417	05 40 55
05 45 55	---	17 22 23	21.4	169.2	-0.7		-6.7	300	1495	05 40 56
05 46 45	J1756-1427	17 23 13	22.0	171.0	-0.6		-5.5	34	1495	05 46 45
05 47 45	=1753-144	17 24 14	22.1	171.3	-0.6		-5.4	60	1510	05 46 46
05 48 35	IGRJ18027-14	17 25 04	21.5	169.9	-0.6		-6.2	34	1510	05 48 35
05 53 35	---	17 30 05	21.6	171.2	-0.6		-5.5	300	1587	05 48 36
05 54 25	J1756-1427	17 30 55	22.2	173.0	-0.4		-4.3	33	1587	05 54 25
05 55 25	=1753-144	17 31 55	22.2	173.3	-0.4		-4.2	60	1603	05 54 26
05 56 15	IGRJ18027-14	17 32 45	21.7	171.9	-0.5		-5.0	34	1603	05 56 15
06 01 15	---	17 37 46	21.8	173.2	-0.4		-4.2	300	1680	05 56 16
06 02 05	J1756-1427	17 38 36	22.3	175.0	-0.3		-3.1	33	1680	06 02 05
06 03 05	=1753-144	17 39 36	22.3	175.3	-0.3		-2.9	60	1696	06 02 06
06 03 55	IGRJ18027-14	17 40 26	21.8	173.9	-0.4		-3.8	34	1696	06 03 55
06 08 55	---	17 45 27	21.9	175.2	-0.3		-3.0	300	1773	06 03 56
06 09 45	J1756-1427	17 46 17	22.4	177.1	-0.2		-1.8	33	1773	06 09 45
06 10 45	=1753-144	17 47 17	22.4	177.3	-0.2		-1.7	60	1788	06 09 46
06 11 35	IGRJ18027-14	17 48 08	21.9	175.9	-0.3		-2.6	34	1788	06 11 35
06 16 35	---	17 53 08	22.0	177.2	-0.2		-1.7	300	1866	06 11 36

```
Schedule for TORUN     (Code Tr )                                  Page   5
               AGN Cores
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  26 Feb 2020   Day  57 ---

 ---------- Eff pointing ----------

06 18 20  J1941-0511   17 54 53  27.5 149.4 -1.8     -17.9    34     1866   06 18 20
06 19 20  =1939-053    17 55 54  27.5 149.7 -1.8     -17.7    60     1881   06 18 21

 ---------- Eff pointing ----------

06 20 00 IGRJ19378-06  17 56 34  26.9 151.4 -1.7     -16.8    24     1881   06 20 00
06 24 25  ---          18 00 59  27.2 152.5 -1.6     -16.2   265     1949   06 20 01

 ---------- Eff pointing ----------

06 25 15  J1941-0511   18 01 50  28.0 151.2 -1.7     -16.9    34     1949   06 25 15
06 26 15  =1939-053    18 02 50  28.1 151.5 -1.7     -16.7    60     1965   06 25 16

 ---------- Eff pointing ----------

06 26 55 IGRJ19378-06  18 03 30  27.4 153.2 -1.6     -15.8    24     1965   06 26 55
06 31 20  ---          18 07 56  27.7 154.4 -1.5     -15.1   265     2033   06 26 56

06 32 00  J1941-0511   18 08 36  28.5 153.1 -1.6     -15.8    24     2033   06 32 00
06 33 00  =1939-053    18 09 36  28.5 153.4 -1.6     -15.7    60     2048   06 32 01

06 33 40 IGRJ19378-06  18 10 16  27.9 155.0 -1.5     -14.8    24     2048   06 33 40
06 38 40  ---          18 15 17  28.2 156.4 -1.4     -14.0   300     2126   06 33 41

06 39 20  J1941-0511   18 15 57  28.9 155.1 -1.4     -14.7    24     2126   06 39 20
06 40 20  =1939-053    18 16 57  29.0 155.4 -1.4     -14.6    60     2141   06 39 21

06 41 00 IGRJ19378-06  18 17 37  28.3 157.1 -1.3     -13.6    24     2141   06 41 00
06 46 00  ---          18 22 38  28.6 158.4 -1.3     -12.8   300     2219   06 41 01

06 46 40  J1941-0511   18 23 18  29.4 157.1 -1.3     -13.6    24     2219   06 46 40
06 47 40  =1939-053    18 24 18  29.4 157.4 -1.3     -13.4    60     2234   06 46 41

06 48 20 IGRJ19378-06  18 24 58  28.7 159.1 -1.2     -12.5    24     2234   06 48 20
06 53 20  ---          18 29 59  29.0 160.5 -1.1     -11.6   300     2311   06 48 21

06 54 00  J1941-0511   18 30 39  29.8 159.2 -1.2     -12.4    24     2311   06 54 00
06 55 00  =1939-053    18 31 39  29.9 159.5 -1.2     -12.2    60     2327   06 54 01

06 55 40 IGRJ19378-06  18 32 20  29.1 161.1 -1.1     -11.3    24     2327   06 55 40
07 00 40  ---          18 37 20  29.3 162.5 -1.0     -10.5   300     2404   06 55 41
```

```
Schedule for TORUN     (Code Tr )                                  Page   6
               AGN Cores
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  26 Feb 2020   Day  57 ---

07 01 20  J1941-0511   18 38 01  30.2 161.2 -1.1     -11.2    24     2404   07 01 20
07 02 20  =1939-053    18 39 01  30.2 161.5 -1.1     -11.0    60     2419   07 01 21

07 03 00 IGRJ19378-06  18 39 41  29.4 163.2 -1.0     -10.1    24     2419   07 03 00
07 08 00  ---          18 44 42  29.6 164.6 -0.9      -9.2   300     2497   07 03 01

07 08 40  J1941-0511   18 45 22  30.5 163.3 -1.0     -10.0    24     2497   07 08 40
07 09 40  =1939-053    18 46 22  30.5 163.6 -0.9      -9.8    60     2512   07 08 41

07 10 20 IGRJ19378-06  18 47 02  29.7 165.3 -0.9      -8.8    24     2512   07 10 20
07 15 20  ---          18 52 03  29.9 166.7 -0.8      -8.0   300     2590   07 10 21

07 16 00  J1941-0511   18 52 43  30.8 165.4 -0.8      -8.7    24     2590   07 16 00
07 17 00  =1939-053    18 53 43  30.8 165.7 -0.8      -8.6    60     2605   07 16 01

07 17 40 IGRJ19378-06  18 54 23  30.0 167.3 -0.7      -7.6    24     2605   07 17 40
07 22 40  ---          18 59 24  30.2 168.8 -0.7      -6.8   300     2682   07 17 41

07 23 20  J1941-0511   19 00 04  31.1 167.5 -0.7      -7.5    24     2682   07 23 20
07 24 20  =1939-053    19 01 04  31.1 167.8 -0.7      -7.3    60     2698   07 23 21

07 25 00 IGRJ19378-06  19 01 44  30.2 169.4 -0.6      -6.4    24     2698   07 25 00
07 30 00  ---          19 06 45  30.4 170.9 -0.5      -5.5   300     2775   07 25 01



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


 ======== Setup file: sess120.C2048

   Setup group:    8         Station: TORUN            Total bit rate:  2048
   Format: VDIF              Bits per sample: 2        Sample rate: 64.000
   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         9         1         9         2        10         2        10
                  3        11         3        11         4        12         4        12
  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=   4830.49  4830.49  4830.49  4830.49  4894.49  4894.49  4894.49  4894.49
            4958.49  4958.49  4958.49  4958.49  5022.49  5022.49  5022.49  5022.49
  BBC fr=    630.49   630.49   630.49   630.49   694.49   694.49   694.49   694.49
             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
              32.00    32.00    32.00    32.00    32.00    32.00    32.00    32.00
   Matching frequency sets:   6

  Track assignments are:
   track1=   1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15, 16
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

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

* 2E1739.1-121      17 39 07.439901   * 17 41 55.606000     17 43 01.819105       0.00
                   -12 10 36.04482    *-12 12 01.09000     -12 12 34.74323        0.00

* IGRJ18027-14      17 59 55.798347   * 18 02 47.382000     18 03 54.820428       0.00
                   -14 54 58.06666    *-14 54 52.11000     -14 54 48.86946        0.00

* IGRJ19378-06      19 34 41.602006   * 19 37 22.100000     19 38 24.700880       0.00
                   -06 19 52.56388    *-06 13 04.80000     -06 10 26.06753        0.00

  3C345             16 41 17.606229   * 16 42 58.809967     16 43 38.746974       0.79
* J1642+3948        39 54 10.81492    * 39 48 36.99399      39 46 08.66987        0.59
  1641+399          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
  J1642+39          GSFC 2016a X/S astro solution,  53724 observations.

  1735-150          17 35 19.993403   * 17 38 11.635502     17 39 19.245390       0.10
* J1738-1503       -15 01 19.16690    *-15 03 00.59593     -15 03 39.69386        0.23
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,    140 observations.

  1753-144          17 53 34.862995   * 17 56 25.862412     17 57 33.108112       0.71
* J1756-1427       -14 26 47.73724    *-14 27 09.56332     -14 27 17.44339        1.25
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,     44 observations.
```

```
  1939-053          19 39 07.661037   * 19 41 47.008580     19 42 49.139713       0.10
* J1941-0511       -05 18 37.74340    *-05 11 32.38334     -05 08 46.98028        0.22
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,    123 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)
   2E1739.1-121        71.7
   IGRJ18027-14        66.4
   IGRJ19378-06        43.9
   J1642+3948          94.1
   J1738-1503          72.3
   J1756-1427          68.0
   J1941-0511          42.9

  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
```

ec070jtr

AGN Cores

PI: *E. Chiaraluce*

```
Address:  INAF-IAPS

Observing mode: Phase-referencing for sources at 6 cm
Schedule for TORUN     (Code Tr )                                  Page   2
               AGN Cores
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  26 Feb 2020   Day  57 ---
 Next scan frequencies:  4830.49  4830.49  4830.49  4830.49  4894.49  4894.49  4894.49  4894.49
                         4958.49  4958.49  4958.49  4958.49  5022.49  5022.49  5022.49  5022.49
 Next BBC frequencies:    630.49   630.49   630.49   630.49   694.49   694.49   694.49   694.49
                          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
                           32.00    32.00    32.00    32.00    32.00    32.00    32.00    32.00

11 00 00  J0507+4645   22 37 20  31.8  52.9 -6.5     -44.4     0        0   11 00 00
11 01 00  =0503+466    22 38 20  31.9  53.1 -6.5     -44.5    60       15   11 00 01

11 01 45  LEDA168563   22 39 06  35.7  52.9 -6.2     -47.6    17       15   11 01 45
11 06 45  ---          22 44 06  36.3  53.5 -6.2     -48.1   300       93   11 01 46

11 07 30  J0507+4645   22 44 51  32.7  54.0 -6.4     -45.2    17       93   11 07 30
11 08 30  =0503+466    22 45 52  32.8  54.1 -6.4     -45.3    60      108   11 07 31

11 09 15  LEDA168563   22 46 37  36.6  53.9 -6.1     -48.4    17      108   11 09 15
11 14 15  ---          22 51 38  37.3  54.6 -6.0     -49.0   300      185   11 09 16

11 15 00  J0507+4645   22 52 23  33.6  55.1 -6.3     -46.0    17      185   11 15 00
11 16 00  =0503+466    22 53 23  33.7  55.2 -6.3     -46.1    60      201   11 15 01

11 16 45  LEDA168563   22 54 08  37.6  54.9 -6.0     -49.3    17      201   11 16 45
11 21 45  ---          22 59 09  38.2  55.6 -5.9     -49.8   300      278   11 16 46

11 22 30  J0507+4645   22 59 54  34.5  56.1 -6.1     -46.7    17      278   11 22 30
11 23 30  =0503+466    23 00 54  34.6  56.3 -6.1     -46.8    60      294   11 22 31

11 24 15  LEDA168563   23 01 39  38.5  55.9 -5.9     -50.1    17      294   11 24 15
11 29 15  ---          23 06 40  39.1  56.6 -5.8     -50.6   300      371   11 24 16

11 30 00  J0507+4645   23 07 25  35.5  57.2 -6.0     -47.5    17      371   11 30 00
11 31 00  =0503+466    23 08 25  35.6  57.3 -6.0     -47.6    60      386   11 30 01

11 31 45  LEDA168563   23 09 10  39.4  56.9 -5.7     -50.9    17      386   11 31 45
11 36 45  ---          23 14 11  40.1  57.5 -5.7     -51.4   300      464   11 31 46

11 37 30  J0507+4645   23 14 56  36.4  58.3 -5.9     -48.2    17      464   11 37 30
11 38 30  =0503+466    23 15 56  36.5  58.4 -5.9     -48.3    60      479   11 37 31

11 39 15  LEDA168563   23 16 42  40.4  57.9 -5.6     -51.7    17      479   11 39 15
11 44 15  ---          23 21 42  41.0  58.5 -5.5     -52.2   300      556   11 39 16
```

Schedule for TORUN (Code Tr) Page 3

AGN Cores

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 26 Feb 2020 Day 57 ---										
11 45 00	J0507+4645	23 22 27	37.4	59.3	-5.8		-49.0	17	556	11 45 00
11 46 00	=0503+466	23 23 27	37.5	59.5	-5.8		-49.1	60	572	11 45 01
11 46 45	LEDA168563	23 24 13	41.3	58.9	-5.5		-52.4	17	572	11 46 45
11 51 45	---	23 29 13	42.0	59.5	-5.4		-53.0	300	649	11 46 46
11 52 29	J0507+4645	23 29 58	38.4	60.4	-5.6		-49.7	17	649	11 52 29
11 53 29	=0503+466	23 30 58	38.5	60.5	-5.6		-49.8	60	665	11 52 30
11 54 15	LEDA168563	23 31 44	42.3	59.9	-5.4		-53.2	17	665	11 54 15
11 59 15	---	23 36 44	43.0	60.5	-5.3		-53.7	300	742	11 54 16
11 59 59	J0507+4645	23 37 29	39.3	61.5	-5.5		-50.4	17	742	11 59 59
12 00 59	=0503+466	23 38 29	39.5	61.6	-5.5		-50.5	60	757	12 00 00
12 01 44	LEDA168563	23 39 15	43.3	60.8	-5.2		-54.0	17	757	12 01 44
12 06 44	---	23 44 15	44.0	61.5	-5.2		-54.5	300	835	12 01 45
12 07 29	J0507+4645	23 45 00	40.3	62.5	-5.4		-51.1	17	835	12 07 29
12 08 29	=0503+466	23 46 00	40.5	62.7	-5.4		-51.2	60	850	12 07 30
12 09 14	LEDA168563	23 46 46	44.3	61.8	-5.1		-54.7	17	850	12 09 14
12 14 14	---	23 51 46	45.0	62.5	-5.0		-55.2	300	927	12 09 15
12 14 59	J0507+4645	23 52 31	41.3	63.6	-5.3		-51.8	17	927	12 14 59
12 15 59	=0503+466	23 53 31	41.5	63.7	-5.3		-51.8	60	943	12 15 00
12 16 44	LEDA168563	23 54 16	45.3	62.8	-5.0		-55.5	17	943	12 16 44
12 21 44	---	23 59 17	46.0	63.5	-4.9		-56.0	300	1020	12 16 45
12 25 28	J0237+2848	00 03 03	52.6	114.8	-2.6		-38.5	108	1020	12 25 28
12 27 28	=0234+285	00 05 03	52.9	115.3	-2.6		-38.3	120	1051	12 25 29
12 29 19	J0419+3955	00 06 54	46.0	80.7	-4.2		-50.7	26	1051	12 29 19
12 30 19	=0415+398	00 07 54	46.1	80.9	-4.2		-50.7	60	1067	12 29 20
12 31 04	3C111	00 08 39	45.2	83.3	-4.2		-49.3	26	1067	12 31 04
12 35 49	---	00 13 25	45.9	84.2	-4.1		-49.4	285	1140	12 31 05
12 36 26	J0419+3955	00 14 02	47.1	82.0	-4.1		-50.9	19	1140	12 36 26
12 37 26	=0415+398	00 15 02	47.2	82.2	-4.1		-50.9	60	1156	12 36 27
12 38 11	3C111	00 15 47	46.3	84.6	-4.1		-49.4	26	1156	12 38 11
12 42 56	---	00 20 33	47.0	85.5	-4.0		-49.5	285	1229	12 38 12
12 43 33	J0419+3955	00 21 11	48.1	83.3	-4.0		-51.1	19	1229	12 43 33
12 44 33	=0415+398	00 22 11	48.3	83.4	-4.0		-51.1	60	1244	12 43 34

Schedule for TORUN (Code Tr) Page 4

AGN Cores

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 26 Feb 2020 Day 57 ---										
12 45 18	3C111	00 22 56	47.3	85.9	-3.9		-49.5	26	1244	12 45 18
12 50 03	---	00 27 42	48.0	86.9	-3.9		-49.6	285	1318	12 45 19
12 50 41	J0419+3955	00 28 19	49.2	84.6	-3.9		-51.3	19	1318	12 50 41
12 51 41	=0415+398	00 29 19	49.3	84.7	-3.9		-51.3	60	1333	12 50 42
12 52 26	3C111	00 30 05	48.4	87.3	-3.8		-49.6	26	1333	12 52 26
12 57 11	---	00 34 50	49.1	88.2	-3.7		-49.7	285	1407	12 52 27
12 57 49	J0419+3955	00 35 28	50.3	85.9	-3.8		-51.4	19	1407	12 57 49
12 58 49	=0415+398	00 36 28	50.4	86.1	-3.7		-51.4	60	1422	12 57 50
12 59 34	3C111	00 37 14	49.5	88.7	-3.7		-49.7	26	1422	12 59 34
13 04 19	---	00 41 59	50.2	89.6	-3.6		-49.7	285	1496	12 59 35
13 04 57	J0419+3955	00 42 38	51.3	87.2	-3.6		-51.5	19	1496	13 04 57
13 05 57	=0415+398	00 43 38	51.5	87.4	-3.6		-51.5	60	1511	13 04 58
13 06 42	3C111	00 44 23	50.5	90.1	-3.6		-49.7	26	1511	13 06 42
13 11 27	---	00 49 09	51.3	91.1	-3.5		-49.7	285	1584	13 06 43
13 12 46	J0313+4120	00 50 28	63.3	101.3	-2.4		-51.7	21	1584	13 12 46
13 13 46	=0309+411	00 51 28	63.5	101.6	-2.4		-51.7	60	1600	13 12 47
13 14 31	NGC1275	00 52 14	62.7	99.7	-2.5		-52.3	27	1600	13 14 31
13 19 16	---	00 56 59	63.4	101.0	-2.4		-52.0	285	1673	13 14 32
13 20 01	J0313+4120	00 57 44	64.4	103.3	-2.3		-51.2	27	1673	13 20 01
13 21 01	=0309+411	00 58 45	64.5	103.5	-2.3		-51.1	60	1689	13 20 02
13 21 46	NGC1275	00 59 30	63.7	101.6	-2.4		-51.9	27	1689	13 21 46
13 26 31	---	01 04 16	64.4	102.9	-2.3		-51.5	285	1762	13 21 47
13 27 16	J0313+4120	01 05 01	65.4	105.3	-2.2		-50.6	27	1762	13 27 16
13 28 16	=0309+411	01 06 01	65.6	105.6	-2.1		-50.5	60	1778	13 27 17
13 29 01	NGC1275	01 06 46	64.8	103.5	-2.2		-51.3	27	1778	13 29 01
13 33 46	---	01 11 32	65.5	104.9	-2.2		-50.9	285	1851	13 29 02
13 34 31	J0313+4120	01 12 17	66.5	107.4	-2.0		-49.8	26	1851	13 34 31
13 35 31	=0309+411	01 13 17	66.6	107.7	-2.0		-49.7	60	1867	13 34 32
13 36 16	NGC1275	01 14 02	65.9	105.6	-2.1		-50.6	26	1867	13 36 16
13 41 01	---	01 18 48	66.6	107.0	-2.0		-50.1	285	1940	13 36 17

Schedule for TORUN (Code Tr) Page 5

AGN Cores

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 26 Feb 2020 Day 57 ---										
13 41 46	J0313+4120	01 19 33	67.5	109.7	-1.9		-48.9	26	1940	13 41 46
13 42 46	=0309+411	01 20 33	67.7	110.0	-1.9		-48.8	60	1955	13 41 47
13 43 31	NGC1275	01 21 18	66.9	107.8	-2.0		-49.9	26	1955	13 43 31
13 48 16	---	01 26 04	67.6	109.3	-1.9		-49.3	285	2029	13 43 32
13 49 01	J0313+4120	01 26 49	68.5	112.1	-1.8		-47.9	25	2029	13 49 01
13 50 01	=0309+411	01 27 49	68.7	112.5	-1.8		-47.7	60	2044	13 49 02
13 50 46	NGC1275	01 28 34	67.9	110.1	-1.9		-48.9	26	2044	13 50 46
13 55 31	---	01 33 20	68.6	111.7	-1.8		-48.3	285	2118	13 50 47
14 06 13	J0512+1517	01 44 03	34.3	112.2	-3.5		-35.2	495	2118	14 06 13
14 07 13	=0509+152	01 45 04	34.5	112.4	-3.5		-35.1	60	2133	14 06 14
14 07 53	4U0517+17	01 45 44	35.8	112.2	-3.4		-35.5	22	2133	14 07 53
14 12 45	---	01 50 37	36.5	113.4	-3.4		-35.1	292	2208	14 07 54
14 13 30	J0512+1517	01 51 22	35.4	113.9	-3.4		-34.7	27	2208	14 13 30
14 14 30	=0509+152	01 52 22	35.5	114.2	-3.4		-34.6	60	2224	14 13 31
14 15 10	4U0517+17	01 53 02	36.8	114.0	-3.3		-34.9	22	2224	14 15 10
14 20 02	---	01 57 55	37.5	115.2	-3.2		-34.5	292	2299	14 15 11
14 20 47	J0512+1517	01 58 40	36.4	115.7	-3.3		-34.1	27	2299	14 20 47
14 21 47	=0509+152	01 59 40	36.5	116.0	-3.2		-34.0	60	2315	14 20 48
14 22 27	4U0517+17	02 00 20	37.8	115.8	-3.2		-34.3	22	2315	14 22 27
14 27 19	---	02 05 13	38.5	117.0	-3.1		-33.9	292	2390	14 22 28
14 28 04	J0512+1517	02 05 58	37.3	117.6	-3.1		-33.5	27	2390	14 28 04
14 29 04	=0509+152	02 06 58	37.5	117.8	-3.1		-33.4	60	2405	14 28 05
14 29 44	4U0517+17	02 07 38	38.8	117.6	-3.1		-33.7	22	2405	14 29 44
14 34 36	---	02 12 31	39.5	118.9	-3.0		-33.3	292	2481	14 29 45
14 35 21	J0512+1517	02 13 16	38.3	119.4	-3.0		-32.8	27	2481	14 35 21
14 36 21	=0509+152	02 14 16	38.4	119.7	-3.0		-32.7	60	2496	14 35 22
14 37 01	4U0517+17	02 14 56	39.8	119.5	-2.9		-33.0	22	2496	14 37 01
14 41 53	---	02 19 49	40.4	120.8	-2.9		-32.6	292	2571	14 37 02
14 42 38	J0512+1517	02 20 34	39.2	121.3	-2.9		-32.1	27	2571	14 42 38
14 43 38	=0509+152	02 21 35	39.4	121.6	-2.9		-32.0	60	2587	14 42 39

Schedule for TORUN (Code Tr) Page 6

AGN Cores

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 26 Feb 2020 Day 57 ---										
14 44 18	4U0517+17	02 22 15	40.7	121.4	-2.8		-32.3	22	2587	14 44 18
14 49 10	---	02 27 07	41.3	122.7	-2.7		-31.8	292	2662	14 44 19
14 49 55	J0512+1517	02 27 53	40.2	123.3	-2.8		-31.4	27	2662	14 49 55
14 50 55	=0509+152	02 28 53	40.3	123.5	-2.7		-31.3	60	2677	14 49 56
14 51 35	4U0517+17	02 29 33	41.6	123.4	-2.7		-31.5	22	2677	14 51 35
14 56 27	---	02 34 26	42.3	124.7	-2.6		-31.0	292	2753	14 51 36
14 57 12	J0512+1517	02 35 11	41.1	125.3	-2.6		-30.6	27	2753	14 57 12
14 58 12	=0509+152	02 36 11	41.2	125.5	-2.6		-30.4	60	2768	14 57 13
14 58 52	4U0517+17	02 36 51	42.6	125.4	-2.6		-30.7	22	2768	14 58 52
15 03 44	---	02 41 44	43.1	126.8	-2.5		-30.1	292	2843	14 58 53
15 04 29	J0512+1517	02 42 29	42.0	127.3	-2.5		-29.7	27	2843	15 04 29
15 05 29	=0509+152	02 43 29	42.1	127.6	-2.5		-29.6	60	2859	15 04 30
15 06 09	4U0517+17	02 44 09	43.4	127.5	-2.5		-29.8	22	2859	15 06 09
15 11 01	---	02 49 02	44.0	128.9	-2.4		-29.2	292	2934	15 06 10
15 11 46	J0512+1517	02 49 47	42.8	129.4	-2.4		-28.8	27	2934	15 11 46
15 12 46	=0509+152	02 50 47	42.9	129.7	-2.4		-28.6	60	2949	15 11 47
15 13 26	4U0517+17	02 51 27	44.3	129.6	-2.3		-28.9	22	2949	15 13 26
15 18 18	---	02 56 20	44.9	131.1	-2.3		-28.2	292	3025	15 13 27
15 19 03	J0512+1517	02 57 05	43.7	131.5	-2.3		-27.8	27	3025	15 19 03
15 20 03	=0509+152	02 58 06	43.8	131.8	-2.3		-27.7	60	3040	15 19 04
15 20 43	4U0517+17	02 58 46	45.1	131.8	-2.2		-27.8	22	3040	15 20 43
15 25 35	---	03 03 38	45.7	133.3	-2.1		-27.1	292	3115	15 20 44
15 27 35	J0555+3948	03 05 39	58.3	97.2	-2.9		-50.9	33	3115	15 27 35
15 29 36	=0552+398	03 07 41	58.6	97.7	-2.8		-50.8	121	3147	15 27 36
---------- Eff pointing ----------										
15 30 32	J0607+4739	03 08 37	61.2	82.4	-3.0		-62.1	11	3147	15 30 32
15 31 32	=0603+476	03 09 37	61.4	82.6	-3.0		-62.1	60	3162	15 30 33
---------- Eff pointing ----------										
15 32 12	MCG+08-11-11	03 10 17	62.8	87.2	-2.8		-60.5	16	3162	15 32 12
15 37 12	---	03 15 18	63.5	88.1	-2.7		-60.6	300	3239	15 32 13

```
Schedule for TORUN     (Code Tr )                                  Page   7
               AGN Cores
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  26 Feb 2020   Day  57 ---

 ---------- Eff pointing ----------

15 37 52  J0607+4739   03 15 58  62.3  83.6 -2.9     -62.4    16     3239   15 37 52
15 38 52  =0603+476    03 16 58  62.5  83.8 -2.9     -62.4    60     3255   15 37 53

 ---------- Eff pointing ----------

15 39 32 MCG+08-11-11  03 17 38  63.9  88.5 -2.6     -60.6    16     3255   15 39 32
15 44 32  ---          03 22 39  64.6  89.5 -2.6     -60.6   300     3332   15 39 33

15 45 12  J0607+4739   03 23 19  63.4  84.9 -2.8     -62.6    16     3332   15 45 12
15 46 12  =0603+476    03 24 20  63.6  85.1 -2.7     -62.7    60     3347   15 45 13

15 46 57 MCG+08-11-11  03 25 04  65.0  90.0 -2.5     -60.6    20     3347   15 46 57
15 51 57  ---          03 30 05  65.8  91.0 -2.4     -60.6   300     3425   15 46 58

15 52 42  J0607+4739   03 30 50  64.6  86.2 -2.6     -62.8    20     3425   15 52 42
15 53 42  =0603+476    03 31 50  64.7  86.4 -2.6     -62.8    60     3440   15 52 43

15 54 27 MCG+08-11-11  03 32 35  66.1  91.5 -2.4     -60.6    20     3440   15 54 27
15 59 27  ---          03 37 36  66.9  92.6 -2.3     -60.5   300     3518   15 54 28

16 00 12  J0607+4739   03 38 21  65.7  87.6 -2.5     -63.0    20     3518   16 00 12
16 01 12  =0603+476    03 39 22  65.8  87.8 -2.5     -63.0    60     3533   16 00 13

16 01 58 MCG+08-11-11  03 40 07  67.3  93.2 -2.3     -60.5    20     3533   16 01 58
16 06 58  ---          03 45 08  68.0  94.3 -2.2     -60.3   300     3610   16 01 59

16 07 43  J0607+4739   03 45 54  66.8  89.0 -2.4     -63.1    20     3610   16 07 43
16 08 43  =0603+476    03 46 54  67.0  89.2 -2.4     -63.1    60     3626   16 07 44

16 09 29 MCG+08-11-11  03 47 40  68.4  94.9 -2.1     -60.3    20     3626   16 09 29
16 14 29  ---          03 52 41  69.1  96.0 -2.1     -60.1   300     3703   16 09 30

16 15 15  J0607+4739   03 53 27  68.0  90.5 -2.3     -63.1    20     3703   16 15 15
16 16 15  =0603+476    03 54 27  68.1  90.7 -2.2     -63.1    60     3718   16 15 16

16 17 01 MCG+08-11-11  03 55 13  69.5  96.7 -2.0     -59.9    20     3718   16 17 01
16 22 01  ---          04 00 14  70.3  97.9 -1.9     -59.7   300     3796   16 17 02

16 22 48  J0607+4739   04 01 01  69.1  92.1 -2.1     -63.0    19     3796   16 22 48
16 23 48  =0603+476    04 02 01  69.2  92.3 -2.1     -63.0    60     3811   16 22 49

16 24 35 MCG+08-11-11  04 02 48  70.6  98.6 -1.9     -59.5    20     3811   16 24 35
16 29 35  ---          04 07 49  71.4 100.0 -1.8     -59.1   300     3889   16 24 36
```

```
Schedule for TORUN     (Code Tr )                                  Page   8
               AGN Cores
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  26 Feb 2020   Day  57 ---

16 30 21  J0607+4739   04 08 36  70.2  93.8 -2.0     -62.8    19     3889   16 30 21
16 31 21  =0603+476    04 09 36  70.4  94.0 -2.0     -62.8    60     3904   16 30 22

16 32 09 MCG+08-11-11  04 10 24  71.8 100.7 -1.8     -58.9    19     3904   16 32 09
16 37 09  ---          04 15 24  72.5 102.1 -1.7     -58.4   300     3981   16 32 10

16 37 56  J0607+4739   04 16 12  71.4  95.5 -1.9     -62.5    19     3981   16 37 56
16 38 56  =0603+476    04 17 12  71.5  95.8 -1.9     -62.5    60     3997   16 37 57

16 39 45 MCG+08-11-11  04 18 01  72.9 102.9 -1.6     -58.1    19     3997   16 39 45
16 44 45  ---          04 23 01  73.6 104.5 -1.6     -57.5   300     4074   16 39 46

16 45 33  J0607+4739   04 23 50  72.5  97.5 -1.8     -62.1    19     4074   16 45 33
16 46 33  =0603+476    04 24 50  72.7  97.7 -1.7     -62.1    60     4089   16 45 34

16 47 22 MCG+08-11-11  04 25 39  74.0 105.4 -1.5     -57.2    19     4089   16 47 22
16 52 22  ---          04 30 40  74.7 107.2 -1.4     -56.4   300     4167   16 47 23

16 53 10  J0607+4739   04 31 29  73.6  99.6 -1.6     -61.5    18     4167   16 53 10
16 54 10  =0603+476    04 32 29  73.8  99.8 -1.6     -61.5    60     4182   16 53 11

16 55 00 MCG+08-11-11  04 33 18  75.1 108.1 -1.4     -55.9    18     4182   16 55 00
17 00 00  ---          04 38 19  75.8 110.1 -1.3     -54.9   300     4260   16 55 01



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


 ======== Setup file: sess120.C2048

   Setup group:    9         Station: TORUN            Total bit rate:  2048
   Format: VDIF              Bits per sample: 2        Sample rate: 64.000
   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         9         1         9         2        10         2        10
                  3        11         3        11         4        12         4        12
  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=   4830.49  4830.49  4830.49  4830.49  4894.49  4894.49  4894.49  4894.49
            4958.49  4958.49  4958.49  4958.49  5022.49  5022.49  5022.49  5022.49
  BBC fr=    630.49   630.49   630.49   630.49   694.49   694.49   694.49   694.49
             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
              32.00    32.00    32.00    32.00    32.00    32.00    32.00    32.00
   Matching frequency sets:   6

  Track assignments are:
   track1=   1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15, 16
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

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

* NGC1275           03 16 29.567169   * 03 19 48.160000     03 21 06.740072       0.00
                    41 19 51.91887    * 41 30 42.10600      41 35 03.51528        0.00

* 3C111             04 15 00.610027   * 04 18 21.277000     04 19 41.027471       0.00
                    37 54 19.28051    * 38 01 35.80000      38 04 31.01886        0.00

* LEDA168563        04 48 16.403866   * 04 52 04.770000     04 53 35.821892       0.00
                    49 27 44.25242    * 49 32 44.75900      49 34 48.93878        0.00

* 4U0517+17         05 07 52.526999   * 05 10 45.540000     05 11 54.507048       0.00
                    16 26 18.40938    * 16 29 58.21400      16 31 19.82198        0.00

* MCG+08-11-11      05 51 09.666878   * 05 54 53.610000     05 56 23.219680       0.00
                    46 25 51.25108    * 46 26 21.70000      46 26 36.53001        0.00

  0234+285          02 34 55.589590   * 02 37 52.405677     02 39 02.079526       0.00
* J0237+2848        28 35 11.40773    * 28 48 08.98999      28 53 16.83309        0.00
  J0237+28          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,  58420 observations.

  0309+411          03 09 44.793507   * 03 13 01.962121     03 14 19.932927       0.02
* J0313+4120        41 08 48.80285    * 41 20 01.18344      41 24 31.34283        0.02
  J0313+41          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,   2729 observations.
```

```
  0415+398          04 15 58.485958   * 04 19 22.549519     04 20 43.665350       0.02
* J0419+3955        39 48 16.37511    * 39 55 28.97755      39 58 23.22804        0.02
  J0419+39          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,   3001 observations.

  0503+466          05 03 40.950102   * 05 07 23.658828     05 08 52.521950       0.11
* J0507+4645        46 41 46.51685    * 46 45 42.33852      46 47 19.81595        0.11
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,    142 observations.

  0509+152          05 09 49.452721   * 05 12 41.012978     05 13 49.409931       0.14
* J0512+1517        15 13 51.94226    * 15 17 23.48078      15 18 41.39595        0.16
  J0512+15          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,    136 observations.

  0552+398          05 52 01.407168   * 05 55 30.805611     05 56 54.565392       0.00
* J0555+3948        39 48 21.94581    * 39 48 49.16496      39 49 00.91354        0.00
  DA193             /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
  J0555+39          GSFC 2016a X/S astro solution, 415688 observations.

  0603+476          06 03 36.208490   * 06 07 23.255004     06 08 54.178059       0.13
* J0607+4739        47 40 10.99329    * 47 39 46.94194      47 39 40.12169        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,    144 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)
   NGC1275             82.1
   3C111               92.1
   LEDA168563          99.4
   4U0517+17          100.9
   MCG+08-11-11       110.1
   J0237+2848          69.5
   J0313+4120          80.8
   J0419+3955          92.6
   J0507+4645         101.9
   J0512+1517         101.2
   J0555+3948         111.0
   J0607+4739         112.0

  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
```

eg109atr

A dual AGN candidate with 0.13 arcsec separation

PI: *Krisztina Gabanyi*

```
Address:  MTA-ELTE Extragalactic Astrophysics Research Group

Observing mode: 6 cm 2 Gb/s
Schedule for TORUN     (Code Tr )                                  Page   2
               A dual AGN candidate with 0.13 arcsec separation
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  26 Feb 2020   Day  57 ---

 Next scan frequencies:  4830.49  4830.49  4830.49  4830.49  4894.49  4894.49  4894.49  4894.49
                         4958.49  4958.49  4958.49  4958.49  5022.49  5022.49  5022.49  5022.49
 Next BBC frequencies:    630.49   630.49   630.49   630.49   694.49   694.49   694.49   694.49
                          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
                           32.00    32.00    32.00    32.00    32.00    32.00    32.00    32.00

19 00 00  J0956+2515   06 38 39  43.7 107.0 -3.3     -39.4     0        0   19 00 00
19 07 00  =0953+254    06 45 40  44.7 108.7 -3.2     -38.9   420      108   19 00 01

19 08 25  J1007+1356   06 47 05  34.2 115.1 -3.4     -34.1    32      108   19 08 25
19 09 35  =1004+141    06 48 16  34.4 115.4 -3.3     -34.0    70      126   19 08 26

19 09 35  J1010+1413   06 48 16  34.3 114.6 -3.4     -34.3   -13      126   No stop
19 13 05  ---          06 51 46  34.7 115.4 -3.3     -34.0   197      180   19 09 36

19 13 05  J1007+1356   06 51 46  34.9 116.3 -3.3     -33.7   -13      180   No stop
19 14 35  =1004+141    06 53 16  35.1 116.6 -3.3     -33.6    77      204   19 13 06

19 14 35  J1010+1413   06 53 16  34.9 115.8 -3.3     -33.9   -13      204   No stop
19 18 05  ---          06 56 47  35.4 116.7 -3.2     -33.6   197      258   19 14 36

19 18 50  J1007+1356   06 57 32  35.7 117.7 -3.2     -33.2    32      258   19 18 50
19 20 00  =1004+141    06 58 42  35.8 118.0 -3.2     -33.1    70      276   19 18 51

19 20 00  J1010+1413   06 58 42  35.7 117.1 -3.2     -33.4   -13      276   No stop
19 23 30  ---          07 02 13  36.1 118.0 -3.2     -33.1   197      330   19 20 01

19 23 30  J1007+1356   07 02 13  36.3 118.9 -3.1     -32.8   -13      330   No stop
19 25 00  =1004+141    07 03 43  36.5 119.3 -3.1     -32.7    77      353   19 23 31

19 25 00  J1010+1413   07 03 43  36.3 118.4 -3.1     -33.0   -13      353   No stop
19 28 30  ---          07 07 14  36.8 119.3 -3.1     -32.7   197      407   19 25 01

19 29 15  J1007+1356   07 07 59  37.0 120.4 -3.0     -32.3    31      407   19 29 15
19 30 25  =1004+141    07 09 09  37.2 120.7 -3.0     -32.1    70      425   19 29 16

19 30 25  J1010+1413   07 09 09  37.1 119.8 -3.0     -32.5   -13      425   No stop
19 33 55  ---          07 12 40  37.5 120.7 -3.0     -32.2   197      479   19 30 26

19 33 55  J1007+1356   07 12 40  37.6 121.6 -2.9     -31.8   -14      479   No stop
19 35 25  =1004+141    07 14 10  37.8 122.0 -2.9     -31.7    76      502   19 33 56
```

Schedule for TORUN (Code Tr) Page 3

A dual AGN candidate with 0.13 arcsec separation

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 26 Feb 2020 Day 57 ---										
19 35 25	J1010+1413	07 14 10	37.7	121.1	-3.0		-32.0	-13	502	No stop
19 38 55	---	07 17 40	38.2	122.0	-2.9		-31.7	197	556	19 35 26
19 39 40	J1007+1356	07 18 26	38.4	123.1	-2.8		-31.2	31	556	19 39 40
19 40 50	=1004+141	07 19 36	38.5	123.4	-2.8		-31.1	70	575	19 39 41
19 40 50	J1010+1413	07 19 36	38.4	122.5	-2.9		-31.5	-13	575	No stop
19 44 20	---	07 23 06	38.8	123.4	-2.8		-31.1	197	629	19 40 51
19 44 20	J1007+1356	07 23 06	38.9	124.3	-2.8		-30.7	-14	629	No stop
19 45 50	=1004+141	07 24 37	39.1	124.7	-2.7		-30.5	76	652	19 44 21
19 45 50	J1010+1413	07 24 37	39.0	123.8	-2.8		-31.0	-13	652	No stop
19 49 20	---	07 28 07	39.5	124.8	-2.7		-30.6	197	706	19 45 51
19 50 05	J1007+1356	07 28 52	39.6	125.9	-2.7		-30.1	31	706	19 50 05
19 51 15	=1004+141	07 30 02	39.8	126.2	-2.6		-29.9	70	724	19 50 06
19 51 15	J1010+1413	07 30 02	39.7	125.3	-2.7		-30.4	-13	724	No stop
19 54 45	---	07 33 33	40.1	126.2	-2.6		-30.0	197	778	19 51 16
19 54 45	J1007+1356	07 33 33	40.2	127.2	-2.6		-29.5	-14	778	No stop
19 56 15	=1004+141	07 35 03	40.4	127.6	-2.6		-29.3	76	801	19 54 46
19 56 15	J1010+1413	07 35 03	40.3	126.7	-2.6		-29.8	-13	801	No stop
19 59 45	---	07 38 34	40.7	127.6	-2.5		-29.4	197	855	19 56 16
20 00 30	J1007+1356	07 39 19	40.9	128.8	-2.5		-28.8	31	855	20 00 30
20 01 40	=1004+141	07 40 29	41.0	129.1	-2.5		-28.7	70	873	20 00 31
20 01 40	J1010+1413	07 40 29	41.0	128.2	-2.5		-29.1	-13	873	No stop
20 05 10	---	07 44 00	41.4	129.2	-2.5		-28.7	197	927	20 01 41
20 05 10	J1007+1356	07 44 00	41.4	130.1	-2.4		-28.2	-14	927	No stop
20 06 40	=1004+141	07 45 30	41.6	130.5	-2.4		-28.0	76	951	20 05 11
20 06 40	J1010+1413	07 45 30	41.5	129.6	-2.4		-28.5	-13	951	No stop
20 10 10	---	07 49 01	41.9	130.6	-2.4		-28.0	197	1005	20 06 41
20 10 55	J1007+1356	07 49 46	42.1	131.8	-2.3		-27.5	31	1005	20 10 55
20 12 05	=1004+141	07 50 56	42.2	132.1	-2.3		-27.3	70	1023	20 10 56
20 12 05	J1010+1413	07 50 56	42.2	131.1	-2.3		-27.8	-14	1023	No stop
20 15 35	---	07 54 26	42.6	132.2	-2.3		-27.3	196	1077	20 12 06
20 15 35	J1007+1356	07 54 26	42.6	133.1	-2.2		-26.8	-14	1077	No stop
20 17 05	=1004+141	07 55 57	42.8	133.6	-2.2		-26.6	76	1100	20 15 36

Schedule for TORUN (Code Tr) Page 4

A dual AGN candidate with 0.13 arcsec separation

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 26 Feb 2020 Day 57 ---										
20 17 05	J1010+1413	07 55 57	42.7	132.6	-2.3		-27.1	-14	1100	No stop
20 20 35	---	07 59 27	43.1	133.6	-2.2		-26.6	196	1154	20 17 06
20 21 20	J1007+1356	08 00 12	43.2	134.8	-2.1		-26.0	31	1154	20 21 20
20 22 30	=1004+141	08 01 23	43.4	135.2	-2.1		-25.8	70	1172	20 21 21
20 22 30	J1010+1413	08 01 23	43.3	134.2	-2.2		-26.3	-14	1172	No stop
20 26 00	---	08 04 53	43.7	135.3	-2.1		-25.8	196	1226	20 22 31
20 26 00	J1007+1356	08 04 53	43.7	136.3	-2.1		-25.3	-14	1226	No stop
20 27 30	=1004+141	08 06 23	43.9	136.7	-2.0		-25.1	76	1250	20 26 01
20 27 30	J1010+1413	08 06 23	43.9	135.7	-2.1		-25.6	-14	1250	No stop
20 31 00	---	08 09 54	44.2	136.8	-2.0		-25.1	196	1304	20 27 31
20 31 45	J1007+1356	08 10 39	44.3	138.0	-2.0		-24.4	31	1304	20 31 45
20 32 55	=1004+141	08 11 49	44.4	138.4	-1.9		-24.3	70	1322	20 31 46
20 32 55	J1010+1413	08 11 49	44.4	137.4	-2.0		-24.8	-14	1322	No stop
20 36 25	---	08 15 20	44.8	138.5	-1.9		-24.2	196	1376	20 32 56
20 36 25	J1007+1356	08 15 20	44.8	139.5	-1.9		-23.7	-14	1376	No stop
20 37 55	=1004+141	08 16 50	44.9	139.9	-1.9		-23.5	76	1399	20 36 26
20 37 55	J1010+1413	08 16 50	44.9	138.9	-1.9		-24.0	-14	1399	No stop
20 41 25	---	08 20 21	45.3	140.0	-1.9		-23.4	196	1453	20 37 56
20 42 10	J1007+1356	08 21 06	45.3	141.3	-1.8		-22.8	31	1453	20 42 10
20 43 20	=1004+141	08 22 16	45.4	141.7	-1.8		-22.6	70	1471	20 42 11
20 43 20	J1010+1413	08 22 16	45.4	140.7	-1.8		-23.1	-14	1471	No stop
20 46 50	---	08 25 47	45.8	141.8	-1.8		-22.5	196	1525	20 43 21
20 46 50	J1007+1356	08 25 47	45.8	142.8	-1.7		-22.0	-14	1525	No stop
20 48 20	=1004+141	08 27 17	45.9	143.3	-1.7		-21.7	76	1548	20 46 51
20 48 20	J1010+1413	08 27 17	45.9	142.3	-1.7		-22.3	-14	1548	No stop
20 51 50	---	08 30 47	46.2	143.4	-1.7		-21.7	196	1603	20 48 21
20 51 50	J1007+1356	08 30 47	46.2	144.4	-1.6		-21.1	-14	1603	No stop
20 53 20	=1004+141	08 32 18	46.3	144.9	-1.6		-20.8	76	1626	20 51 51
20 54 00	J0956+2515	08 32 58	57.8	142.0	-1.4		-24.1	-17	1626	20 54 00
21 00 00	=0953+254	08 38 59	58.4	144.3	-1.3		-22.8	343	1718	20 54 01

SETUP FILE INFORMATION:

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


======== Setup file: sess120.C2048

  Setup group:    9         Station: TORUN            Total bit rate:  2048
  Format: VDIF              Bits per sample: 2        Sample rate: 64.000
  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         9         1         9         2        10         2        10
                  3        11         3        11         4        12         4        12
  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=   4830.49  4830.49  4830.49  4830.49  4894.49  4894.49  4894.49  4894.49
            4958.49  4958.49  4958.49  4958.49  5022.49  5022.49  5022.49  5022.49
  BBC fr=    630.49   630.49   630.49   630.49   694.49   694.49   694.49   694.49
             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
              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,  9, 10, 11, 12, 13, 14, 15, 16
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

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

* J1010+1413        10 07 41.257077   * 10 10 22.957500     10 11 28.322132       0.00
                    14 27 47.72580    * 14 13 00.87500      14 07 00.31895        0.00

  0953+254          09 53 59.738485   * 09 56 49.875379     09 57 58.619738       0.11
* J0956+2515        25 29 33.58574    * 25 15 16.04984      25 09 27.93847        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  29729 observations

  1004+141          10 04 59.783934   * 10 07 41.498088     10 08 46.866828       0.10
* J1007+1356        14 11 10.91501    * 13 56 29.60078      13 50 31.24655        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  4729 observations
```

ec071ctr

EVN 5 GHz and 22 GHz study of 43 compact radio sources

PI: *Carolina Casadio Address: MPIfR*

```
Observing mode: Continuum

Schedule for TORUN     (Code Tr )                                    Page   2
               EVN 5 GHz and 22 GHz study of 43 compact radio sources
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  26 Feb 2020   Day  57 ---
 Next scan frequencies:  4830.49  4830.49  4830.49  4830.49  4894.49  4894.49  4894.49  4894.49
                         4958.49  4958.49  4958.49  4958.49  5022.49  5022.49  5022.49  5022.49
 Next BBC frequencies:    630.49   630.49   630.49   630.49   694.49   694.49   694.49   694.49
                          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
                           32.00    32.00    32.00    32.00    32.00    32.00    32.00    32.00
22 00 00  J1038+4244   09 39 09  75.5 130.1 -1.0     -38.6     0        0   22 00 00
22 01 00  ---          09 40 09  75.6 130.7 -1.0     -38.3    60       15   22 00 01

22 01 00  J1037+4335   09 40 09  76.4 129.0 -1.0     -40.0   -16       15   No stop
22 04 00  ---          09 43 09  76.7 130.9 -0.9     -38.7   164       62   22 01 01

22 04 00  J1038+4244   09 43 09  76.0 132.5 -0.9     -37.0   -17       62   No stop
22 05 30  ---          09 44 39  76.1 133.4 -0.9     -36.4    73       85   22 04 01

22 05 30  J1037+4335   09 44 39  76.9 131.8 -0.9     -38.1   -16       85   No stop
22 08 30  ---          09 47 40  77.2 133.7 -0.8     -36.7   164      131   22 05 31

22 08 30  J1038+4244   09 47 40  76.4 135.3 -0.9     -35.1   -17      131   No stop
22 10 00  ---          09 49 10  76.6 136.2 -0.8     -34.4    73      155   22 08 31

22 10 00  J1037+4335   09 49 10  77.4 134.7 -0.8     -36.0   -16      155   No stop
22 13 00  ---          09 52 11  77.7 136.8 -0.8     -34.5   164      201   22 10 01

22 13 40  J1038+4244   09 52 51  77.0 138.7 -0.8     -32.6    24      201   22 13 40
22 14 40  ---          09 53 51  77.1 139.4 -0.8     -32.1    60      216   22 13 41

22 16 40  J0927+3902   09 55 51  75.1 201.2  0.5      16.2   -19      216   22 16 40
22 19 40  ---          09 58 52  74.9 203.4  0.5      17.9   161      263   22 16 41

22 23 00  J0847-0703   10 02 12  27.8 200.6  1.2      12.3     9      263   22 23 00
22 24 00  ---          10 03 12  27.7 200.9  1.2      12.5    60      278   22 23 01

22 24 00  J0900-0652   10 03 12  28.5 197.6  1.0      10.5   -21      278   No stop
22 27 30  ---          10 06 43  28.4 198.6  1.1      11.1   189      332   22 24 01

22 27 30  J0847-0703   10 06 43  27.6 201.9  1.3      13.0   -21      332   No stop
22 29 00  ---          10 08 13  27.5 202.3  1.3      13.3    69      356   22 27 31

22 29 00  J0840-0648   10 08 13  27.2 204.5  1.5      14.5   -18      356   No stop
22 32 20  ---          10 11 34  27.0 205.4  1.5      15.0   182      407   22 29 01
```

Schedule for TORUN (Code Tr) Page 3

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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	26 Feb 2020	Day 57 ---								
22 32 20	J0900-0652	10 11 34	28.1	199.9	1.2		11.9	-26	407	No stop
22 35 50	---	10 15 04	27.9	200.9	1.2		12.4	184	461	22 32 21
22 36 20	J0847-0703	10 15 35	27.0	204.3	1.4		14.4	9	461	22 36 20
22 37 20	---	10 16 35	27.0	204.5	1.5		14.6	60	477	22 36 21
22 37 20	J0840-0648	10 16 35	26.7	206.7	1.6		15.8	-18	477	No stop
22 40 40	---	10 19 55	26.5	207.6	1.6		16.3	182	528	22 37 21
22 40 40	J0900-0652	10 19 55	27.7	202.2	1.3		13.2	-26	528	No stop
22 44 10	---	10 23 26	27.5	203.1	1.4		13.8	184	582	22 40 41
22 44 40	J0847-0703	10 23 56	26.5	206.5	1.6		15.7	9	582	22 44 40
22 45 40	---	10 24 56	26.4	206.8	1.6		15.8	60	598	22 44 41
22 45 40	J0840-0648	10 24 56	26.1	208.9	1.7		17.0	-18	598	No stop
22 49 00	---	10 28 17	25.9	209.8	1.8		17.5	182	649	22 45 41
22 49 00	J0900-0652	10 28 17	27.2	204.4	1.5		14.5	-26	649	No stop
22 52 30	---	10 31 47	27.0	205.4	1.5		15.0	184	703	22 49 01
22 53 00	J0847-0703	10 32 17	25.9	208.7	1.7		16.9	9	703	22 53 00
22 54 00	---	10 33 17	25.8	209.0	1.7		17.1	60	719	22 53 01
22 54 00	J0840-0648	10 33 17	25.5	211.1	1.9		18.2	-18	719	No stop
22 57 20	---	10 36 38	25.2	212.0	1.9		18.7	182	770	22 54 01
22 57 20	J0900-0652	10 36 38	26.6	206.7	1.6		15.8	-25	770	No stop
23 00 50	---	10 40 09	26.4	207.6	1.6		16.3	185	824	22 57 21
23 01 20	J0847-0703	10 40 39	25.3	210.9	1.9		18.1	9	824	23 01 20
23 02 20	---	10 41 39	25.2	211.2	1.9		18.3	60	840	23 01 21
23 06 00	J1308+0401	10 45 19	32.6	135.9	-2.4		-24.8	54	840	23 06 00
23 07 00	---	10 46 20	32.7	136.1	-2.4		-24.6	60	855	23 06 01
23 07 00	J1306+0341	10 46 20	32.6	136.8	-2.3		-24.3	-13	855	No stop
23 10 30	---	10 49 50	33.0	137.8	-2.3		-23.8	197	909	23 07 01
23 10 30	J1308+0401	10 49 50	33.1	137.1	-2.3		-24.2	-12	909	No stop
23 12 00	---	10 51 20	33.3	137.5	-2.3		-24.0	78	933	23 10 31
23 12 00	J1306+0341	10 51 20	33.2	138.2	-2.3		-23.6	-13	933	No stop
23 15 30	---	10 54 51	33.5	139.2	-2.2		-23.2	197	987	23 12 01
23 15 50	J1308+0401	10 55 11	33.6	138.6	-2.2		-23.5	8	987	23 15 50
23 16 50	---	10 56 11	33.7	138.8	-2.2		-23.3	60	1002	23 15 51

Schedule for TORUN (Code Tr) Page 4

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 26 Feb 2020 Day 57 ---										
23 16 50	J1306+0341	10 56 11	33.6	139.5	-2.2		-23.0	-13	1002	No stop
23 20 20	---	10 59 42	34.0	140.5	-2.1		-22.5	197	1056	23 16 51
23 20 20	J1308+0401	10 59 42	34.1	139.8	-2.2		-22.9	-12	1056	No stop
23 21 50	---	11 01 12	34.2	140.2	-2.1		-22.6	78	1080	23 20 21
23 23 20	J1310+3220	11 02 42	58.9	119.2	-2.1		-38.3	-17	1080	23 23 20
23 26 20	---	11 05 43	59.3	120.2	-2.1		-37.8	163	1126	23 23 21
23 27 50	1413+135	11 07 13	35.4	118.5	-3.2		-32.8	-14	1126	23 27 50
23 33 50	---	11 13 14	36.1	120.0	-3.1		-32.3	346	1219	23 27 51
23 36 20	J1209-2032	11 15 44	15.3	166.8	-0.9		-8.4	42	1219	23 36 20
23 37 20	---	11 16 45	15.3	167.0	-0.9		-8.3	60	1234	23 36 21
23 37 20	J1218-2159	11 16 45	13.6	164.9	-1.1		-9.7	-20	1234	No stop
23 40 30	---	11 19 55	13.7	165.7	-1.0		-9.2	170	1283	23 37 21
23 40 30	J1209-2032	11 19 55	15.4	167.8	-0.8		-7.8	-20	1283	No stop
23 42 10	---	11 21 35	15.5	168.2	-0.8		-7.6	80	1309	23 40 31
23 42 10	J1218-2159	11 21 35	13.8	166.1	-1.0		-9.0	-20	1309	No stop
23 45 20	---	11 24 46	13.9	166.8	-0.9		-8.5	170	1358	23 42 11
23 45 40	J1209-2032	11 25 06	15.6	169.0	-0.8		-7.0	0	1358	23 45 40
23 46 40	---	11 26 06	15.6	169.3	-0.7		-6.9	60	1373	23 45 41
23 46 40	J1218-2159	11 26 06	13.9	167.1	-0.9		-8.3	-20	1373	No stop
23 49 50	---	11 29 17	14.0	167.9	-0.8		-7.8	170	1422	23 46 41
23 49 50	J1209-2032	11 29 17	15.7	170.0	-0.7		-6.4	-20	1422	No stop
23 51 30	---	11 30 57	15.8	170.4	-0.7		-6.1	80	1448	23 49 51
23 54 30	J1148+1840	11 33 57	55.3	173.4	-0.3		-4.1	18	1448	23 54 30
23 55 30	---	11 34 58	55.3	173.9	-0.2		-3.9	60	1463	23 54 31
23 55 30	J1143+1834	11 34 58	55.3	176.0	-0.2		-2.5	-18	1463	No stop
23 59 00	---	11 38 28	55.3	177.5	-0.1		-1.6	192	1517	23 55 31
--- Start: Wed 26 Feb 2020 Day 57 -- Stop: Thu 27 Feb 2020 Day 58 ---										
23 59 00	J1148+1840	11 38 28	55.4	175.3	-0.2		-3.0	-18	1517	No stop
00 00 30	---	11 39 58	55.4	175.9	-0.2		-2.6	72	1541	23 59 01

Schedule for TORUN (Code Tr) Page 5

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 27 Feb 2020 Day 58 ---										
00 00 30	J1143+1834	11 39 58	55.4	178.1	-0.1		-1.2	-18	1541	No stop
00 04 00	---	11 43 29	55.4	179.6	-0.0		-0.3	192	1595	00 00 31
00 04 30	J1148+1840	11 43 59	55.4	177.6	-0.1		-1.5	12	1595	00 04 30
00 05 30	---	11 44 59	55.4	178.0	-0.1		-1.2	60	1610	00 04 31
00 05 30	J1143+1834	11 44 59	55.4	180.2	0.0		0.1	-18	1610	No stop
00 09 00	---	11 48 30	55.4	181.7	0.1		1.1	192	1664	00 05 31
00 09 00	J1148+1840	11 48 30	55.5	179.5	-0.0		-0.3	-18	1664	No stop
00 10 30	---	11 50 00	55.5	180.1	0.0		0.1	72	1688	00 09 01
00 10 30	J1143+1834	11 50 00	55.4	182.3	0.1		1.5	-18	1688	No stop
00 14 00	---	11 53 31	55.3	183.8	0.2		2.4	192	1742	00 10 31
00 14 30	J1148+1840	11 54 01	55.5	181.8	0.1		1.1	12	1742	00 14 30
00 15 30	---	11 55 01	55.4	182.2	0.1		1.4	60	1757	00 14 31
00 15 30	J1143+1834	11 55 01	55.3	184.4	0.2		2.8	-18	1757	No stop
00 19 00	---	11 58 31	55.3	185.8	0.2		3.7	192	1811	00 15 31
00 19 00	J1148+1840	11 58 31	55.4	183.7	0.1		2.3	-18	1811	No stop
00 20 30	---	12 00 02	55.4	184.3	0.2		2.7	72	1834	00 19 01
00 23 30	J1209-2032	12 03 02	16.2	178.2	-0.1		-1.1	19	1834	00 23 30
00 24 30	---	12 04 02	16.2	178.5	-0.1		-1.0	60	1850	00 23 31
00 24 30	J1218-2159	12 04 02	14.7	176.2	-0.3		-2.5	-19	1850	No stop
00 28 00	---	12 07 33	14.8	177.0	-0.2		-1.9	191	1904	00 24 31
00 28 00	J1209-2032	12 07 33	16.2	179.3	-0.0		-0.4	-19	1904	No stop
00 29 40	---	12 09 13	16.2	179.7	-0.0		-0.2	81	1930	00 28 01
00 29 40	J1218-2159	12 09 13	14.8	177.4	-0.2		-1.7	-19	1930	No stop
00 33 10	---	12 12 44	14.8	178.3	-0.1		-1.1	191	1984	00 29 41
00 33 40	J1209-2032	12 13 14	16.2	180.7	0.0		0.5	11	1984	00 33 40
00 34 40	---	12 14 14	16.2	181.0	0.1		0.6	60	1999	00 33 41
00 36 10	J1343-1747	12 15 44	16.4	157.9	-1.5		-13.7	29	1999	00 36 10
00 37 10	---	12 16 44	16.5	158.2	-1.5		-13.6	60	2015	00 36 11
00 37 10	J1344-1739	12 16 44	16.6	158.0	-1.5		-13.6	-9	2015	No stop
00 40 40	---	12 20 15	16.8	158.9	-1.4		-13.1	201	2069	00 37 11

Schedule for TORUN (Code Tr) Page 6

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 27 Feb 2020 Day 58 ---										
00 41 10	J1343-1747	12 20 45	16.7	159.1	-1.4		-13.0	21	2069	00 41 10
00 42 10	---	12 21 45	16.8	159.4	-1.4		-12.8	60	2084	00 41 11
00 42 40	J1344-1739	12 22 15	16.9	159.4	-1.4		-12.8	21	2084	00 42 40
00 46 10	---	12 25 46	17.1	160.2	-1.3		-12.3	210	2138	00 42 41
00 46 40	J1343-1747	12 26 16	17.0	160.5	-1.3		-12.2	21	2138	00 46 40
00 47 40	---	12 27 16	17.1	160.7	-1.3		-12.0	60	2154	00 46 41
00 51 40	J1038+4244	12 31 17	68.7	251.9	1.9		50.9	32	2154	00 51 40
00 53 10	---	12 32 47	68.5	252.3	1.9		51.1	90	2177	00 51 41
00 53 10	J1037+4335	12 32 47	68.9	254.5	1.9		52.9	-18	2177	No stop
00 56 40	---	12 36 18	68.4	255.5	2.0		53.3	192	2231	00 53 11
00 57 10	J1038+4244	12 36 48	67.9	253.6	2.0		51.5	12	2231	00 57 10
00 58 40	---	12 38 18	67.7	254.0	2.0		51.7	90	2254	00 57 11
00 58 40	J1037+4335	12 38 18	68.1	256.1	2.0		53.5	-18	2254	No stop
01 02 10	---	12 41 48	67.6	257.1	2.1		53.8	192	2308	00 58 41
01 02 10	J1038+4244	12 41 48	67.2	255.1	2.0		52.1	-18	2308	No stop
01 03 50	---	12 43 29	67.0	255.6	2.1		52.2	82	2334	01 02 11
01 05 50	J0923+2815	12 45 29	45.8	256.0	3.3		41.4	27	2334	01 05 50
01 06 50	---	12 46 29	45.7	256.2	3.4		41.4	60	2350	01 05 51
01 06 50	J0918+2650	12 46 29	43.8	256.2	3.4		40.8	-21	2350	No stop
01 10 40	---	12 50 20	43.3	257.1	3.5		41.0	209	2409	01 06 51
01 10 40	J0923+2815	12 50 20	45.1	257.1	3.4		41.6	-20	2409	No stop
01 12 30	---	12 52 10	44.8	257.6	3.5		41.7	90	2437	01 10 41
01 12 30	J0918+2650	12 52 10	43.0	257.5	3.5		41.0	-21	2437	No stop
01 16 20	---	12 56 01	42.4	258.4	3.6		41.2	209	2497	01 12 31
01 16 50	J0923+2815	12 56 31	44.2	258.6	3.5		41.9	10	2497	01 16 50
01 18 00	---	12 57 41	44.0	258.8	3.5		41.9	70	2515	01 16 51
01 18 00	J0918+2650	12 57 41	42.2	258.7	3.6		41.3	-21	2515	No stop
01 21 50	---	13 01 32	41.6	259.6	3.7		41.4	209	2574	01 18 01
01 21 50	J0923+2815	13 01 32	43.5	259.7	3.6		42.1	-20	2574	No stop
01 23 40	---	13 03 22	43.2	260.1	3.6		42.1	90	2602	01 21 51

Schedule for TORUN (Code Tr) Page 7

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 27 Feb 2020 Day 58 ---										
01 23 40	J0918+2650	13 03 22	41.4	260.0	3.7		41.5	-21	2602	No stop
01 27 30	---	13 07 13	40.8	260.9	3.8		41.6	209	2661	01 23 41
01 28 00	J0923+2815	13 07 43	42.5	261.1	3.7		42.3	10	2661	01 28 00
01 29 10	---	13 08 53	42.4	261.3	3.7		42.3	70	2679	01 28 01
01 29 10	J0918+2650	13 08 53	40.5	261.2	3.8		41.7	-21	2679	No stop
01 33 00	---	13 12 44	40.0	262.1	3.9		41.8	209	2739	01 29 11
01 33 00	J0923+2815	13 12 44	41.8	262.2	3.8		42.4	-20	2739	No stop
01 34 50	---	13 14 34	41.5	262.6	3.8		42.5	90	2767	01 33 01
01 38 20	J1310+3220	13 18 04	69.1	183.9	0.1		2.8	37	2767	01 38 20
01 41 20	---	13 21 05	69.1	185.7	0.2		4.1	180	2813	01 38 21
01 42 50	1413+135	13 22 35	48.7	159.7	-0.9		-12.3	0	2813	01 42 50
01 48 10	---	13 27 56	49.0	161.7	-0.8		-11.2	320	2896	01 42 51
01 50 00	J1308+0401	13 29 46	40.6	186.7	0.3		4.1	45	2896	01 50 00
01 51 00	---	13 30 47	40.6	187.1	0.4		4.2	60	2911	01 50 01
01 51 00	J1306+0341	13 30 47	40.3	187.7	0.4		4.6	-12	2911	No stop
01 54 30	---	13 34 17	40.2	188.8	0.4		5.3	198	2965	01 51 01
01 54 30	J1308+0401	13 34 17	40.5	188.2	0.4		4.9	-12	2965	No stop
01 56 00	---	13 35 47	40.5	188.7	0.4		5.2	78	2989	01 54 31
01 56 00	J1306+0341	13 35 47	40.1	189.3	0.5		5.6	-12	2989	No stop
01 59 30	---	13 39 18	40.1	190.5	0.5		6.3	198	3043	01 56 01
02 00 00	J1308+0401	13 39 48	40.4	190.0	0.5		6.0	18	3043	02 00 00
02 01 00	---	13 40 48	40.4	190.3	0.5		6.2	60	3058	02 00 01
02 02 40	J1343-1747	13 42 28	19.0	179.4	-0.0		-0.4	6	3058	02 02 40
02 03 40	---	13 43 29	19.0	179.7	-0.0		-0.2	60	3074	02 02 41
02 03 40	J1344-1739	13 43 29	19.2	179.6	-0.0		-0.3	-9	3074	No stop
02 07 10	---	13 46 59	19.2	180.5	0.0		0.3	201	3128	02 03 41
02 07 10	J1343-1747	13 46 59	19.0	180.6	0.0		0.4	-9	3128	No stop
02 08 40	---	13 48 29	19.0	180.9	0.1		0.6	81	3151	02 07 11
02 08 40	J1344-1739	13 48 29	19.1	180.8	0.1		0.5	-9	3151	No stop
02 12 10	---	13 52 00	19.1	181.7	0.1		1.1	201	3205	02 08 41

Schedule for TORUN (Code Tr) Page 8

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 27 Feb 2020 Day 58 ---										
02 12 40	J1343-1747	13 52 30	19.0	182.0	0.1		1.2	21	3205	02 12 40
02 13 40	---	13 53 30	19.0	182.2	0.1		1.4	60	3220	02 12 41
02 14 10	J1344-1739	13 54 00	19.1	182.2	0.1		1.4	21	3220	02 14 10
02 17 10	---	13 57 01	19.1	183.0	0.2		1.9	180	3267	02 14 11
02 17 10	J1343-1747	13 57 01	19.0	183.1	0.2		2.0	-9	3267	No stop
02 18 40	---	13 58 31	18.9	183.5	0.2		2.2	81	3290	02 17 11
02 23 20	J1125+5000	14 03 12	65.7	278.4	2.6		67.2	76	3290	02 23 20
02 24 20	---	14 04 12	65.6	278.5	2.6		67.2	60	3305	02 23 21
02 24 20	J1132+5100	14 04 12	67.0	279.8	2.5		69.8	-19	3305	No stop
02 27 20	---	14 07 12	66.6	280.2	2.6		69.6	161	3352	02 24 21
02 28 00	J1125+5000	14 07 53	65.0	279.1	2.7		67.0	21	3352	02 28 00
02 29 00	---	14 08 53	64.9	279.2	2.7		66.9	60	3367	02 28 01
02 29 00	J1132+5100	14 08 53	66.3	280.4	2.6		69.4	-19	3367	No stop
02 32 30	---	14 12 23	65.8	280.9	2.6		69.2	191	3421	02 29 01
02 32 30	J1125+5000	14 12 23	64.4	279.7	2.8		66.7	-19	3421	No stop
02 34 10	---	14 14 04	64.1	280.0	2.8		66.6	81	3447	02 32 31
02 34 10	J1132+5100	14 14 04	65.6	281.1	2.7		69.1	-19	3447	No stop
02 37 40	---	14 17 34	65.1	281.6	2.7		68.8	191	3501	02 34 11
02 38 20	J1125+5000	14 18 14	63.5	280.6	2.9		66.4	21	3501	02 38 20
02 39 20	---	14 19 14	63.4	280.7	2.9		66.3	60	3517	02 38 21
02 39 20	J1132+5100	14 19 14	64.8	281.8	2.8		68.7	-19	3517	No stop
02 42 50	---	14 22 45	64.3	282.3	2.8		68.5	191	3571	02 39 21
02 42 50	J1125+5000	14 22 45	62.8	281.2	2.9		66.1	-19	3571	No stop
02 44 30	---	14 24 25	62.6	281.5	3.0		66.0	81	3597	02 42 51
02 44 30	J1132+5100	14 24 25	64.1	282.5	2.8		68.3	-19	3597	No stop
02 48 00	---	14 27 56	63.5	283.0	2.9		68.1	191	3651	02 44 31
02 48 40	J1125+5000	14 28 36	62.0	282.1	3.0		65.7	21	3651	02 48 40
02 49 40	---	14 29 36	61.8	282.2	3.0		65.6	60	3666	02 48 41
02 51 30	J0927+3902	14 31 26	38.1	286.6	5.1		47.7	7	3666	02 51 30
02 53 30	---	14 33 27	37.8	286.9	5.1		47.6	120	3697	02 51 31

```
Schedule for TORUN     (Code Tr )                                  Page   9
               EVN 5 GHz and 22 GHz study of 43 compact radio sources
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  27 Feb 2020   Day  58 ---

02 57 00  J1310+3220   14 36 57  64.1 224.9  1.4      30.1    70     3697   02 57 00
03 00 00  ---          14 39 58  63.8 226.1  1.5      30.8   180     3743   02 57 01



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


 ======== Setup file: sess120.C2048

   Setup group:    9         Station: TORUN            Total bit rate:  2048
   Format: VDIF              Bits per sample: 2        Sample rate: 64.000
   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         9         1         9         2        10         2        10
                  3        11         3        11         4        12         4        12
  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:   4  Setup file default.  Used with PCAL = off
  LO sum=   4830.49  4830.49  4830.49  4830.49  4894.49  4894.49  4894.49  4894.49
            4958.49  4958.49  4958.49  4958.49  5022.49  5022.49  5022.49  5022.49
  BBC fr=    630.49   630.49   630.49   630.49   694.49   694.49   694.49   694.49
             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
              32.00    32.00    32.00    32.00    32.00    32.00    32.00    32.00
   Matching frequency sets:   4

  Track assignments are:
   track1=   1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15, 16
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

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

* J0840-0648        08 37 37.915419   * 08 40 05.600000     08 41 05.321605       0.00
                   -06 38 12.67079    *-06 48 53.00000     -06 53 17.93789        0.00

* J0900-0652        08 57 43.189190   * 09 00 11.300000     09 01 11.234706       0.00
                   -06 40 26.63498    *-06 52 12.00000     -06 57 02.36355        0.00

* J0918+2650        09 15 41.599983   * 09 18 37.500000     09 19 48.501334       0.00
                    27 03 20.51255    * 26 50 41.00000      26 45 32.76897        0.00

* J1037+4335        10 34 22.618877   * 10 37 19.300000     10 38 30.856597       0.00
                    43 50 50.11347    * 43 35 15.00000      43 28 56.15769        0.00

* J1132+5100        11 30 06.350802   * 11 32 50.400000     11 33 57.077943       0.00
                    51 16 54.10719    * 51 00 20.00000      50 53 35.71632        0.00

* J1143+1834        11 40 50.579123   * 11 43 26.100000     11 44 28.960036       0.00
                    18 51 16.95576    * 18 34 38.00000      18 27 52.13434        0.00

* J1218-2159        12 16 22.874190   * 12 18 58.700000     12 20 01.800025       0.00
                   -21 42 06.75084    *-21 58 46.00000     -22 05 25.40662        0.00

* J1306+0341        13 03 43.483483   * 13 06 16.000000     13 07 17.455888       0.00
                    03 57 40.04903    * 03 41 38.00000      03 35 09.00578        0.00
```

```
* J1344-1739        13 41 20.487767   * 13 44 03.400000    13 45 08.957869       0.00
                   -17 24 02.73936    *-17 39 06.00000    -17 45 05.30341        0.00

* 1413+135          14 13 33.904120   * 14 15 58.810800    14 16 56.953918       0.00
                    13 34 17.29303    * 13 20 23.60100     13 14 43.52132        0.00

* J0847-0703        08 45 29.085085   * 08 47 56.737247    08 48 56.465210       0.00
                   -06 52 10.54042    *-07 03 16.90286    -07 07 52.04706        0.00

* J0923+2815        09 20 54.881885   * 09 23 51.523414    09 25 02.835608       0.00
                    28 28 19.23745    * 28 15 25.02211     28 10 11.00962        0.00

* J1038+4244        10 35 22.424586   * 10 38 18.190525    10 39 29.368700       0.00
                    43 00 19.42047    * 42 44 42.76087     42 38 23.21264        0.00

* J1125+5000        11 22 43.717857   * 11 25 29.949300    11 26 37.474091       0.00
                    50 16 43.14435    * 50 00 13.53800     49 53 31.33712        0.00

* J1148+1840        11 46 02.761062   * 11 48 37.776789    11 49 40.427609       0.00
                    18 56 49.43689    * 18 40 08.96963     18 33 22.44551        0.00

* J1209-2032        12 06 39.987259   * 12 09 14.610976    12 10 17.239494       0.00
                   -20 15 57.37320    *-20 32 38.99012    -20 39 20.03092        0.00

* J1308+0401        13 05 43.183380   * 13 08 15.553073    13 09 16.943047       0.00
                    04 17 08.92278    * 04 01 09.35140     03 54 41.28760        0.00

* J1343-1747        13 40 54.456598   * 13 43 37.414200    13 44 42.993389       0.00
                   -17 32 51.36588    *-17 47 55.44700    -17 53 55.04546        0.00

* J1310+3220        13 08 07.556269   * 13 10 28.660000    13 11 25.644472       0.00
                    32 36 40.23602    * 32 20 43.78000     32 14 11.91506        0.00

* J0927+3902        09 23 55.315268   * 09 27 03.010000    09 28 18.820366       0.00
                    39 15 23.56442    * 39 02 20.85000     38 57 04.70159        0.00
```

ec070ktr

AGN Cores

PI: *E. Chiaraluce*

```
Address:  INAF-IAPS

Observing mode: Phase-referencing for sources at 6 cm
Schedule for TORUN     (Code Tr )                                  Page   2
               AGN Cores
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  27 Feb 2020   Day  58 ---
 Next scan frequencies:  4830.49  4830.49  4830.49  4830.49  4894.49  4894.49  4894.49  4894.49
                         4958.49  4958.49  4958.49  4958.49  5022.49  5022.49  5022.49  5022.49
 Next BBC frequencies:    630.49   630.49   630.49   630.49   694.49   694.49   694.49   694.49
                          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
                           32.00    32.00    32.00    32.00    32.00    32.00    32.00    32.00

04 30 00  J1926+7706   16 10 13  60.2  19.7 -3.3    -114.6     0        0   04 30 00
04 31 00  =1928+770    16 11 13  60.2  19.6 -3.2    -114.9    60       15   04 30 01

04 31 52  3C390.3      16 12 05  60.7  12.6 -2.5    -132.2    23       15   04 31 52
04 36 52  ---          16 17 06  60.8  12.3 -2.4    -133.7   300       93   04 31 53

04 37 44  J1926+7706   16 17 58  60.6  19.3 -3.1    -116.8    23       93   04 37 44
04 38 44  =1928+770    16 18 58  60.6  19.3 -3.1    -117.1    60      108   04 37 45

04 39 37  3C390.3      16 19 51  60.9  12.1 -2.3    -134.6    23      108   04 39 37
04 44 37  ---          16 24 52  61.1  11.8 -2.3    -136.1   300      185   04 39 38

04 45 29  J1926+7706   16 25 45  60.9  18.9 -3.0    -119.1    23      185   04 45 29
04 46 29  =1928+770    16 26 45  61.0  18.8 -3.0    -119.4    60      201   04 45 30

04 47 34  3C390.3      16 27 50  61.2  11.6 -2.2    -137.0    36      201   04 47 34
04 51 43  ---          16 32 00  61.3  11.3 -2.1    -138.3   249      265   04 47 35

04 52 36  J1926+7706   16 32 53  61.3  18.5 -2.9    -121.2    24      265   04 52 36
04 53 36  =1928+770    16 33 53  61.3  18.4 -2.9    -121.5    60      281   04 52 37

04 54 41  3C390.3      16 34 58  61.4  11.1 -2.1    -139.2    36      281   04 54 41
04 58 50  ---          16 39 08  61.5  10.8 -2.0    -140.5   249      345   04 54 42

04 59 44  J1926+7706   16 40 01  61.6  18.0 -2.8    -123.3    24      345   04 59 44
05 00 44  =1928+770    16 41 01  61.7  18.0 -2.7    -123.6    60      360   04 59 45

05 01 49  3C390.3      16 42 06  61.6  10.6 -2.0    -141.4    35      360   05 01 49
05 05 58  ---          16 46 16  61.7  10.3 -1.9    -142.7   249      424   05 01 50

05 06 51  J1926+7706   16 47 10  61.9  17.6 -2.6    -125.5    24      424   05 06 51
05 07 51  =1928+770    16 48 10  62.0  17.5 -2.6    -125.8    60      440   05 06 52

05 08 56  3C390.3      16 49 15  61.8  10.1 -1.9    -143.6    35      440   05 08 56
05 13 05  ---          16 53 25  61.9   9.8 -1.8    -144.9   249      504   05 08 57
```

Schedule for TORUN (Code Tr) Page 3

AGN Cores

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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	27 Feb 2020	Day 58 ---								
05 21 37	J1954-1123	17 01 58	15.7	135.5	-2.9		-25.4	247	504	05 21 37
05 22 37	=1951-115	17 02 58	15.8	135.8	-2.9		-25.3	60	519	05 21 38
05 23 27	NGC6814	17 03 48	18.1	138.3	-2.7		-23.9	28	519	05 23 27
05 27 35	---	17 07 57	18.5	139.3	-2.6		-23.5	248	583	05 23 28
05 28 40	J1954-1123	17 09 02	16.4	137.2	-2.8		-24.6	43	583	05 28 40
05 29 40	=1951-115	17 10 02	16.5	137.4	-2.8		-24.5	60	599	05 28 41
05 30 30	NGC6814	17 10 52	18.8	140.0	-2.5		-23.1	28	599	05 30 30
05 34 38	---	17 15 01	19.2	141.0	-2.5		-22.6	248	663	05 30 31
05 35 43	J1954-1123	17 16 06	17.1	138.8	-2.7		-23.8	43	663	05 35 43
05 36 43	=1951-115	17 17 06	17.2	139.1	-2.6		-23.7	60	678	05 35 44
05 37 33	NGC6814	17 17 57	19.4	141.7	-2.4		-22.2	28	678	05 37 33
05 41 41	---	17 22 05	19.8	142.7	-2.4		-21.7	248	742	05 37 34
05 42 46	J1954-1123	17 23 10	17.8	140.5	-2.5		-22.9	43	742	05 42 46
05 43 46	=1951-115	17 24 11	17.9	140.7	-2.5		-22.8	60	757	05 42 47
05 44 36	NGC6814	17 25 01	20.1	143.4	-2.3		-21.3	28	757	05 44 36
05 48 44	---	17 29 09	20.4	144.4	-2.2		-20.8	248	821	05 44 37
05 49 34	J1954-1123	17 30 00	18.4	142.1	-2.4		-22.1	28	821	05 49 34
05 50 34	=1951-115	17 31 00	18.5	142.4	-2.4		-22.0	60	837	05 49 35
05 51 24	NGC6814	17 31 50	20.7	145.1	-2.2		-20.4	28	837	05 51 24
05 56 24	---	17 36 51	21.1	146.3	-2.1		-19.8	300	914	05 51 25
05 57 14	J1954-1123	17 37 41	19.1	144.0	-2.3		-21.1	29	914	05 57 14
05 58 14	=1951-115	17 38 41	19.2	144.2	-2.3		-21.0	60	930	05 57 15
05 59 04	NGC6814	17 39 31	21.3	147.0	-2.1		-19.4	29	930	05 59 04
06 04 04	---	17 44 32	21.7	148.2	-2.0		-18.7	300	1007	05 59 05
---------- Eff pointing ----------										
06 04 54	J1954-1123	17 45 22	19.8	145.8	-2.2		-20.1	29	1007	06 04 54
06 05 54	=1951-115	17 46 22	19.9	146.1	-2.2		-20.0	60	1022	06 04 55
---------- Eff pointing ----------										
06 06 44	NGC6814	17 47 12	21.9	148.9	-1.9		-18.4	29	1022	06 06 44
06 10 14	---	17 50 43	22.2	149.8	-1.9		-17.9	210	1076	06 06 45

```
Schedule for TORUN     (Code Tr )                                  Page   4
               AGN Cores
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  27 Feb 2020   Day  58 ---

 ---------- Eff pointing ----------

06 11 04  J1954-1123   17 51 33  20.3 147.4 -2.1     -19.3    29     1076   06 11 04
06 12 04  =1951-115    17 52 33  20.4 147.6 -2.1     -19.2    60     1092   06 11 05

 ---------- Eff pointing ----------

06 12 54  NGC6814      17 53 23  22.4 150.5 -1.8     -17.5    29     1092   06 12 54
06 16 24  ---          17 56 54  22.7 151.4 -1.8     -17.0   210     1146   06 12 55

06 19 54  J1959+3846   18 00 25  65.1 112.8 -2.0     -45.3    38     1146   06 19 54
06 20 54  =1957+386    18 01 25  65.2 113.1 -2.0     -45.1    60     1161   06 19 55

06 21 44  CYGA         18 02 15  66.7 109.9 -2.0     -48.2    28     1161   06 21 44
06 26 44  ---          18 07 16  67.4 111.5 -1.9     -47.5   300     1239   06 21 45

06 27 34  J1959+3846   18 08 06  66.1 115.4 -1.9     -44.1    28     1239   06 27 34
06 28 34  =1957+386    18 09 06  66.3 115.7 -1.8     -44.0    60     1254   06 27 35

06 29 24  CYGA         18 09 56  67.7 112.4 -1.8     -47.1    28     1254   06 29 24
06 34 24  ---          18 14 57  68.4 114.2 -1.8     -46.3   300     1331   06 29 25

06 35 14  J1959+3846   18 15 47  67.2 118.1 -1.7     -42.8    28     1331   06 35 14
06 36 14  =1957+386    18 16 47  67.3 118.5 -1.7     -42.6    60     1347   06 35 15

06 37 04  CYGA         18 17 38  68.8 115.1 -1.7     -45.9    28     1347   06 37 04
06 42 04  ---          18 22 38  69.5 117.0 -1.6     -45.0   300     1424   06 37 05

06 42 54  J1959+3846   18 23 28  68.2 121.1 -1.6     -41.3    27     1424   06 42 54
06 43 54  =1957+386    18 24 29  68.3 121.5 -1.6     -41.1    60     1440   06 42 55

06 44 44  CYGA         18 25 19  69.8 118.0 -1.6     -44.4    28     1440   06 44 44
06 49 44  ---          18 30 20  70.5 120.1 -1.5     -43.4   300     1517   06 44 45

06 50 34  J1959+3846   18 31 10  69.1 124.2 -1.5     -39.6    27     1517   06 50 34
06 51 34  =1957+386    18 32 10  69.3 124.6 -1.5     -39.4    60     1532   06 50 35

06 52 24  CYGA         18 33 00  70.8 121.2 -1.5     -42.7    28     1532   06 52 24
06 57 24  ---          18 38 01  71.5 123.3 -1.4     -41.5   300     1610   06 52 25

06 58 14  J1959+3846   18 38 51  70.1 127.5 -1.4     -37.7    27     1610   06 58 14
06 59 14  =1957+386    18 39 51  70.2 128.0 -1.3     -37.4    60     1625   06 58 15

07 00 04  CYGA         18 40 41  71.8 124.6 -1.3     -40.8    28     1625   07 00 04
07 05 04  ---          18 45 42  72.4 126.9 -1.2     -39.3   300     1702   07 00 05
```

Schedule for TORUN (Code Tr) Page 5

AGN Cores

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 27 Feb 2020 Day 58 ---										
07 08 29	J2253+1608	18 49 08	30.0	103.3	-4.1		-37.5	32	1702	07 08 29
07 10 29	=3C454.3	18 51 08	30.2	103.7	-4.1		-37.4	120	1733	07 08 30
07 13 52	J2007+4029	18 54 32	72.3	127.7	-1.2		-38.7	32	1733	07 13 52
07 14 52	=2005+403	18 55 32	72.4	128.2	-1.2		-38.4	60	1749	07 13 53
07 15 42	IGRJ20186+40	18 56 22	71.3	123.1	-1.4		-41.6	24	1749	07 15 42
07 20 42	---	19 01 23	72.0	125.3	-1.3		-40.3	300	1826	07 15 43
07 21 32	J2007+4029	19 02 13	73.2	131.6	-1.1		-36.2	23	1826	07 21 32
07 22 32	=2005+403	19 03 13	73.3	132.1	-1.1		-35.9	60	1842	07 21 33
07 23 22	IGRJ20186+40	19 04 03	72.3	126.6	-1.3		-39.5	24	1842	07 23 22
07 28 22	---	19 09 04	72.9	129.1	-1.2		-38.0	300	1919	07 23 23
07 29 12	J2007+4029	19 09 54	74.0	135.8	-1.0		-33.4	22	1919	07 29 12
07 30 12	=2005+403	19 10 55	74.1	136.4	-1.0		-33.0	60	1934	07 29 13
07 31 02	IGRJ20186+40	19 11 45	73.2	130.5	-1.1		-37.1	23	1934	07 31 02
07 36 02	---	19 16 46	73.7	133.1	-1.0		-35.3	300	2012	07 31 03
07 36 52	J2007+4029	19 17 36	74.8	140.4	-0.8		-30.2	21	2012	07 36 52
07 37 52	=2005+403	19 18 36	74.9	141.1	-0.8		-29.8	60	2027	07 36 53
07 38 42	IGRJ20186+40	19 19 26	74.0	134.6	-1.0		-34.3	22	2027	07 38 42
07 43 42	---	19 24 27	74.6	137.6	-0.9		-32.3	300	2104	07 38 43
07 44 32	J2007+4029	19 25 17	75.5	145.4	-0.7		-26.6	20	2104	07 44 32
07 45 32	=2005+403	19 26 17	75.6	146.1	-0.7		-26.1	60	2120	07 44 33
07 46 22	IGRJ20186+40	19 27 07	74.8	139.2	-0.9		-31.2	21	2120	07 46 22
07 51 22	---	19 32 08	75.3	142.4	-0.8		-28.9	300	2197	07 46 23
07 52 12	J2007+4029	19 32 58	76.1	150.9	-0.6		-22.6	19	2197	07 52 12
07 53 12	=2005+403	19 33 58	76.2	151.6	-0.6		-22.1	60	2213	07 52 13
07 54 02	IGRJ20186+40	19 34 48	75.5	144.2	-0.7		-27.6	20	2213	07 54 02
07 59 02	---	19 39 49	76.0	147.6	-0.7		-25.1	300	2290	07 54 03
07 59 53	J2007+4029	19 40 40	76.6	156.7	-0.5		-18.2	18	2290	07 59 53
08 00 53	=2005+403	19 41 40	76.7	157.4	-0.4		-17.6	60	2305	07 59 54
08 01 43	IGRJ20186+40	19 42 31	76.2	149.5	-0.6		-23.7	19	2305	08 01 43
08 06 43	---	19 47 31	76.5	153.3	-0.5		-20.9	300	2383	08 01 44

Schedule for TORUN (Code Tr) Page 6

AGN Cores

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 27 Feb 2020 Day 58 ---										
08 07 36	J2007+4029	19 48 24	77.0	162.9	-0.3		-13.5	19	2383	08 07 36
08 08 36	=2005+403	19 49 24	77.0	163.7	-0.3		-12.8	60	2398	08 07 37
08 09 27	IGRJ20186+40	19 50 15	76.7	155.4	-0.5		-19.3	19	2398	08 09 27
08 14 27	---	19 55 16	77.0	159.3	-0.4		-16.2	300	2475	08 09 28
08 15 21	J2007+4029	19 56 11	77.3	169.4	-0.2		-8.4	20	2475	08 15 21
08 16 21	=2005+403	19 57 11	77.3	170.2	-0.2		-7.7	60	2491	08 15 22
08 17 14	IGRJ20186+40	19 58 04	77.1	161.6	-0.4		-14.5	20	2491	08 17 14
08 22 14	---	20 03 05	77.3	165.8	-0.3		-11.2	300	2568	08 17 15
08 32 34	J2017+7440	20 13 27	68.4	0.6	-0.1		-178.6	276	2568	08 32 34
08 33 34	=2017+743	20 14 27	68.4	0.4	-0.0		-179.0	60	2584	08 32 35
08 34 24	4C+74.26	20 15 17	67.7	4.5	-0.5		-169.3	27	2584	08 34 24
08 39 24	---	20 20 18	67.8	3.7	-0.4		-171.2	300	2661	08 34 25
08 40 14	J2017+7440	20 21 08	68.4	-0.8	0.1		178.2	26	2661	08 40 14
08 41 14	=2017+743	20 22 08	68.3	-0.9	0.1		177.8	60	2676	08 40 15
08 42 04	4C+74.26	20 22 58	67.8	3.3	-0.3		-172.3	26	2676	08 42 04
08 47 04	---	20 27 59	67.8	2.4	-0.2		-174.3	300	2754	08 42 05
08 47 54	J2017+7440	20 28 49	68.3	-2.1	0.2		175.1	26	2754	08 47 54
08 48 54	=2017+743	20 29 50	68.3	-2.3	0.2		174.7	60	2769	08 47 55
08 49 44	4C+74.26	20 30 40	67.9	2.0	-0.2		-175.4	26	2769	08 49 44
08 54 44	---	20 35 41	67.9	1.1	-0.1		-177.4	300	2846	08 49 45
08 55 34	J2017+7440	20 36 31	68.3	-3.5	0.3		172.0	26	2846	08 55 34
08 56 34	=2017+743	20 37 31	68.3	-3.7	0.3		171.6	60	2862	08 55 35
08 57 24	4C+74.26	20 38 21	67.9	0.7	-0.1		-178.4	26	2862	08 57 24
09 02 24	---	20 43 22	67.9	-0.2	0.0		179.6	300	2939	08 57 25
09 03 14	J2017+7440	20 44 12	68.2	-4.8	0.5		168.9	26	2939	09 03 14
09 04 14	=2017+743	20 45 12	68.2	-5.0	0.5		168.5	60	2955	09 03 15
09 05 04	4C+74.26	20 46 02	67.9	-0.6	0.1		178.5	26	2955	09 05 04
09 10 04	---	20 51 03	67.9	-1.5	0.1		176.5	300	3032	09 05 05
09 10 54	J2017+7440	20 51 53	68.1	-6.2	0.6		165.8	26	3032	09 10 54
09 11 54	=2017+743	20 52 53	68.1	-6.3	0.6		165.4	60	3047	09 10 55

```
Schedule for TORUN     (Code Tr )                                Page   7
               AGN Cores
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  27 Feb 2020   Day  58 ---

09 12 44  4C+74.26     20 53 44  67.9  -1.9  0.2     175.4    26     3047   09 12 44
09 17 44  ---          20 58 44  67.8  -2.8  0.3     173.4   300     3125   09 12 45

09 28 00  J2253+1608   21 09 02  47.7 140.5 -1.8     -23.4   318     3125   09 28 00
09 30 00  =3C454.3     21 11 02  47.9 141.2 -1.7     -23.1   120     3156   09 28 01



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


 ======== Setup file: sess120.C2048

   Setup group:    9         Station: TORUN            Total bit rate:  2048
   Format: VDIF              Bits per sample: 2        Sample rate: 64.000
   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         9         1         9         2        10         2        10
                  3        11         3        11         4        12         4        12
  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=   4830.49  4830.49  4830.49  4830.49  4894.49  4894.49  4894.49  4894.49
            4958.49  4958.49  4958.49  4958.49  5022.49  5022.49  5022.49  5022.49
  BBC fr=    630.49   630.49   630.49   630.49   694.49   694.49   694.49   694.49
             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
              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,  9, 10, 11, 12, 13, 14, 15, 16
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

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

* 3C390.3           18 45 37.628314   * 18 42 08.990000     18 40 41.266752       0.00
                    79 43 06.36658    * 79 46 17.12800      79 47 11.94577        0.00

* NGC6814           19 39 55.787469   * 19 42 40.640000     19 43 44.945364       0.00
                   -10 26 33.32153    *-10 19 24.60000     -10 16 36.64657        0.00

* CYGA              19 57 44.441322   * 19 59 28.357000     20 00 08.171528       0.00
                    40 35 46.36316    * 40 44 02.09700      40 47 07.72296        0.00

* IGRJ20186+40      20 16 52.176330   * 20 18 38.736000     20 19 19.528678       0.00
                    40 31 33.26387    * 40 40 59.94000      40 44 34.53394        0.00

* 4C+74.26          20 43 12.983217   * 20 42 37.308000     20 42 17.809907       0.00
                    74 57 08.70011    * 75 08 02.44500      75 12 11.64555        0.00

  1928+770          19 28 27.104128   * 19 26 31.190957     19 25 40.177192       0.92
* J1926+7706        77 00 18.21292    * 77 06 31.49667      77 08 42.86526        0.08
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,    122 observations.

  1951-115          19 51 55.450721   * 19 54 41.155731     19 55 45.745906       0.07
* J1954-1123       -11 31 18.19357    *-11 23 22.64219     -11 20 16.09551        0.16
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,    162 observations.
```

```
  1957+386          19 57 34.798169   * 19 59 22.039277     20 00 03.213043       0.15
* J1959+3846        38 38 38.93398    * 38 46 54.16575      38 49 59.77300        0.14
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,    107 observations.

  2005+403          20 05 59.558887   * 20 07 44.944837     20 08 25.315282       0.35
* J2007+4029        40 21 01.80218    * 40 29 48.60403      40 33 06.92460        0.27
  J2007+40          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,    152 observations.

  2017+743          20 17 59.383085   * 20 17 13.079311     20 16 49.813460       0.09
* J2017+7440        74 31 21.92027    * 74 40 47.99992      74 44 20.34568        0.02
  2017+74           /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
  2017+745          GSFC 2016a X/S astro solution,   2111 observations.
  J2017+74

  3C454.3           22 51 29.519739   * 22 53 57.747939     22 54 55.236659       0.65
* J2253+1608        15 52 54.34808    * 16 08 53.56091      16 15 08.43765        0.73
  2251+158          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
  J2253+16          GSFC 2016a X/S astro solution,  41272 observations.
```

ec070ltr

AGN Cores

PI: *E. Chiaraluce*

```
Address:  INAF-IAPS
Observing mode: Phase-referencing for sources at 6 cm
Schedule for TORUN     (Code Tr )                                  Page   2
               AGN Cores
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  27 Feb 2020   Day  58 ---
 Next scan frequencies:  4830.49  4830.49  4830.49  4830.49  4894.49  4894.49  4894.49  4894.49
                         4958.49  4958.49  4958.49  4958.49  5022.49  5022.49  5022.49  5022.49
 Next BBC frequencies:    630.49   630.49   630.49   630.49   694.49   694.49   694.49   694.49
                          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
                           32.00    32.00    32.00    32.00    32.00    32.00    32.00    32.00

21 30 00  J1248-0632   09 13 00  14.9 123.6 -3.6     -30.2     0        0   21 30 00
21 31 00  =1245-062    09 14 00  15.0 123.8 -3.6     -30.1    60       15   21 30 01

21 31 45  NGC4593      09 14 45  17.2 125.4 -3.4     -29.5    23       15   21 31 45
21 36 23  ---          09 19 24  17.8 126.4 -3.4     -29.0   278       87   21 31 46

21 36 54  J1248-0632   09 19 55  15.8 125.2 -3.5     -29.6     9       87   21 36 54
21 37 54  =1245-062    09 20 55  15.9 125.4 -3.5     -29.5    60      103   21 36 55

21 38 39  NGC4593      09 21 41  18.1 126.9 -3.3     -28.8    23      103   21 38 39
21 43 17  ---          09 26 19  18.6 128.0 -3.2     -28.4   278      174   21 38 40

21 43 48  J1248-0632   09 26 50  16.6 126.7 -3.4     -29.0     9      174   21 43 48
21 44 48  =1245-062    09 27 51  16.7 127.0 -3.4     -28.9    60      190   21 43 49

21 45 33  NGC4593      09 28 36  18.9 128.5 -3.2     -28.2    23      190   21 45 33
21 50 11  ---          09 33 14  19.4 129.6 -3.1     -27.7   278      261   21 45 34

21 50 42  J1248-0632   09 33 45  17.4 128.3 -3.3     -28.3     9      261   21 50 42
21 51 42  =1245-062    09 34 46  17.5 128.5 -3.2     -28.2    60      277   21 50 43

21 52 27  NGC4593      09 35 31  19.7 130.1 -3.1     -27.5    23      277   21 52 27
21 57 05  ---          09 40 10  20.2 131.2 -3.0     -27.0   278      348   21 52 28

21 57 36  J1248-0632   09 40 41  18.2 129.9 -3.1     -27.6    10      348   21 57 36
21 58 36  =1245-062    09 41 41  18.3 130.1 -3.1     -27.5    60      364   21 57 37

21 59 21  NGC4593      09 42 26  20.5 131.8 -3.0     -26.7    23      364   21 59 21
22 03 59  ---          09 47 05  21.0 132.9 -2.9     -26.2   278      435   21 59 22

22 04 44  J1248-0632   09 47 50  19.0 131.6 -3.0     -26.9    24      435   22 04 44
22 05 44  =1245-062    09 48 50  19.2 131.8 -3.0     -26.8    60      451   22 04 45

22 06 29  NGC4593      09 49 35  21.3 133.5 -2.9     -26.0    23      451   22 06 29
22 11 29  ---          09 54 36  21.8 134.7 -2.8     -25.4   300      528   22 06 30
```

Schedule for TORUN (Code Tr) Page 3

AGN Cores

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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	27 Feb 2020	Day 58 ---								
22 12 14	J1248-0632	09 55 21	19.9	133.3	-2.9		-26.1	24	528	22 12 14
22 13 14	=1245-062	09 56 21	20.0	133.6	-2.9		-26.0	60	544	22 12 15
22 13 59	NGC4593	09 57 06	22.1	135.3	-2.7		-25.1	24	544	22 13 59
22 18 59	---	10 02 07	22.6	136.5	-2.6		-24.5	300	621	22 14 00
22 19 44	J1248-0632	10 02 52	20.7	135.1	-2.8		-25.2	24	621	22 19 44
22 20 44	=1245-062	10 03 52	20.8	135.4	-2.8		-25.1	60	636	22 19 45
22 21 29	NGC4593	10 04 38	22.9	137.1	-2.6		-24.2	24	636	22 21 29
22 26 29	---	10 09 38	23.4	138.4	-2.5		-23.6	300	714	22 21 30
22 27 14	J1248-0632	10 10 23	21.5	137.0	-2.7		-24.4	24	714	22 27 14
22 28 14	=1245-062	10 11 24	21.6	137.2	-2.6		-24.3	60	729	22 27 15
22 28 59	NGC4593	10 12 09	23.6	139.0	-2.5		-23.3	24	729	22 28 59
22 33 59	---	10 17 10	24.1	140.3	-2.4		-22.7	300	806	22 29 00
22 34 44	J1248-0632	10 17 55	22.2	138.8	-2.5		-23.5	24	806	22 34 44
22 35 44	=1245-062	10 18 55	22.3	139.0	-2.5		-23.3	60	822	22 34 45
22 36 29	NGC4593	10 19 40	24.3	140.9	-2.4		-22.4	24	822	22 36 29
22 41 29	---	10 24 41	24.8	142.2	-2.3		-21.7	300	899	22 36 30
22 42 14	J1248-0632	10 25 26	23.0	140.7	-2.4		-22.5	24	899	22 42 14
22 43 14	=1245-062	10 26 26	23.0	140.9	-2.4		-22.4	60	915	22 42 15
22 43 54	NGC4593	10 27 06	25.0	142.8	-2.2		-21.4	19	915	22 43 54
22 45 24	---	10 28 36	25.2	143.2	-2.2		-21.2	90	938	22 43 55
22 48 00	3C286	10 31 13	50.3	106.6	-3.0		-41.9	48	938	22 48 00
22 50 00	---	10 33 13	50.6	107.1	-3.0		-41.7	120	969	22 48 01
22 51 49	J1331+0608	10 35 03	30.7	125.9	-3.0		-29.3	20	969	22 51 49
22 52 49	=1329+063	10 36 03	30.8	126.2	-2.9		-29.2	60	984	22 51 50
22 53 29	NGC5252	10 36 43	28.7	125.6	-3.0		-29.3	18	984	22 53 29
22 58 29	---	10 41 44	29.3	126.9	-3.0		-28.8	300	1061	22 53 30
22 59 09	J1331+0608	10 42 24	31.6	127.8	-2.8		-28.5	18	1061	22 59 09
23 00 09	=1329+063	10 43 24	31.7	128.0	-2.8		-28.4	60	1077	22 59 10
23 00 49	NGC5252	10 44 04	29.6	127.5	-2.9		-28.6	18	1077	23 00 49
23 05 49	---	10 49 05	30.2	128.7	-2.8		-28.0	300	1154	23 00 50
23 06 29	J1331+0608	10 49 45	32.4	129.7	-2.7		-27.7	18	1154	23 06 29
23 07 29	=1329+063	10 50 45	32.5	129.9	-2.7		-27.6	60	1170	23 06 30

```
Schedule for TORUN     (Code Tr )                                  Page   4
               AGN Cores
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  27 Feb 2020   Day  58 ---

23 08 09  NGC5252      10 51 25  30.5 129.3 -2.8     -27.8    18     1170   23 08 09
23 13 09  ---          10 56 26  31.0 130.6 -2.7     -27.2   300     1247   23 08 10

23 13 49  J1331+0608   10 57 06  33.3 131.6 -2.6     -26.8    18     1247   23 13 49
23 14 49  =1329+063    10 58 07  33.4 131.9 -2.6     -26.7    60     1262   23 13 50

23 15 29  NGC5252      10 58 47  31.3 131.2 -2.7     -26.9    18     1262   23 15 29
23 20 29  ---          11 03 47  31.9 132.5 -2.6     -26.3   300     1340   23 15 30

 ---------- Eff pointing ----------

23 21 09  J1331+0608   11 04 28  34.1 133.6 -2.5     -25.9    18     1340   23 21 09
23 22 09  =1329+063    11 05 28  34.2 133.9 -2.5     -25.8    60     1355   23 21 10

 ---------- Eff pointing ----------

23 22 49  NGC5252      11 06 08  32.1 133.2 -2.6     -26.1    18     1355   23 22 49
23 27 49  ---          11 11 09  32.7 134.5 -2.5     -25.4   300     1432   23 22 50

 ---------- Eff pointing ----------

23 28 29  J1331+0608   11 11 49  34.9 135.6 -2.4     -25.0    18     1432   23 28 29
23 29 29  =1329+063    11 12 49  35.0 135.9 -2.3     -24.9    60     1448   23 28 30

 ---------- Eff pointing ----------

23 30 09  NGC5252      11 13 29  32.9 135.1 -2.4     -25.2    18     1448   23 30 09
23 35 09  ---          11 18 30  33.4 136.5 -2.3     -24.5   300     1525   23 30 10

23 35 49  J1331+0608   11 19 10  35.6 137.6 -2.2     -24.0    18     1525   23 35 49
23 36 49  =1329+063    11 20 10  35.7 137.9 -2.2     -23.9    60     1541   23 35 50

23 37 29  NGC5252      11 20 50  33.7 137.1 -2.3     -24.2    18     1541   23 37 29
23 42 29  ---          11 25 51  34.2 138.5 -2.2     -23.5   300     1618   23 37 30

23 43 09  J1331+0608   11 26 31  36.3 139.7 -2.1     -23.0    18     1618   23 43 09
23 44 09  =1329+063    11 27 31  36.4 140.0 -2.1     -22.9    60     1633   23 43 10

23 44 49  NGC5252      11 28 11  34.4 139.1 -2.2     -23.2    18     1633   23 44 49
23 49 49  ---          11 33 12  34.9 140.5 -2.1     -22.5   300     1711   23 44 50

23 50 29  J1331+0608   11 33 52  37.0 141.8 -2.0     -21.9    18     1711   23 50 29
23 51 29  =1329+063    11 34 53  37.1 142.1 -2.0     -21.8    60     1726   23 50 30
```

Schedule for TORUN (Code Tr) Page 5

AGN Cores

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 27 Feb 2020 Day 58 ---										
23 52 09	NGC5252	11 35 33	35.1	141.2	-2.1		-22.2	18	1726	23 52 09
23 57 09	---	11 40 33	35.6	142.6	-2.0		-21.4	300	1803	23 52 10
23 57 49	J1331+0608	11 41 14	37.7	143.9	-1.9		-20.8	18	1803	23 57 49
23 58 49	=1329+063	11 42 14	37.8	144.2	-1.8		-20.7	60	1819	23 57 50
--- Start: Thu 27 Feb 2020 Day 58 -- Stop: Fri 28 Feb 2020 Day 59 ---										
23 59 29	NGC5252	11 42 54	35.8	143.3	-1.9		-21.1	19	1819	23 59 29
00 04 29	---	11 47 55	36.2	144.7	-1.9		-20.3	300	1896	23 59 30
00 05 09	J1331+0608	11 48 35	38.3	146.1	-1.7		-19.7	18	1896	00 05 09
00 06 09	=1329+063	11 49 35	38.4	146.4	-1.7		-19.5	60	1912	00 05 10
00 06 49	NGC5252	11 50 15	36.4	145.4	-1.8		-20.0	19	1912	00 06 49
00 09 19	---	11 52 45	36.7	146.1	-1.8		-19.6	150	1950	00 06 50
00 11 20	3C286	11 54 46	61.2	132.4	-1.6		-30.9	15	1950	00 11 20
00 13 22	---	11 56 49	61.5	133.2	-1.6		-30.5	122	1982	00 11 21
00 15 50	J1404-0013	11 59 17	30.5	142.7	-2.1		-21.3	18	1982	00 15 50
00 16 50	=1401+000	12 00 17	30.6	143.0	-2.1		-21.2	60	1997	00 15 51
00 17 34	NGC5506	12 01 02	27.1	142.0	-2.2		-21.7	17	1997	00 17 34
00 22 34	---	12 06 03	27.5	143.3	-2.1		-21.1	300	2075	00 17 35
00 23 19	J1404-0013	12 06 48	31.2	144.7	-2.0		-20.3	17	2075	00 23 19
00 24 19	=1401+000	12 07 48	31.3	145.0	-2.0		-20.1	60	2090	00 23 20
00 25 03	NGC5506	12 08 32	27.7	144.0	-2.1		-20.7	17	2090	00 25 03
00 30 03	---	12 13 33	28.2	145.3	-2.0		-20.0	300	2167	00 25 04
00 30 48	J1404-0013	12 14 18	31.8	146.8	-1.8		-19.2	17	2167	00 30 48
00 31 48	=1401+000	12 15 18	31.9	147.1	-1.8		-19.0	60	2183	00 30 49
00 32 33	NGC5506	12 16 03	28.4	146.0	-2.0		-19.7	17	2183	00 32 33
00 37 33	---	12 21 04	28.8	147.3	-1.9		-19.0	300	2260	00 32 34
00 38 18	J1404-0013	12 21 49	32.4	148.9	-1.7		-18.1	18	2260	00 38 18
00 39 18	=1401+000	12 22 49	32.5	149.2	-1.7		-17.9	60	2275	00 38 19
00 40 02	NGC5506	12 23 33	29.0	148.0	-1.8		-18.6	17	2275	00 40 02
00 45 02	---	12 28 34	29.4	149.3	-1.8		-17.9	300	2353	00 40 03

```
Schedule for TORUN     (Code Tr )                                  Page   6
               AGN Cores
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  28 Feb 2020   Day  59 ---

00 45 47  J1404-0013   12 29 19  33.0 151.0 -1.6     -16.9    18     2353   00 45 47
00 46 47  =1401+000    12 30 19  33.0 151.3 -1.6     -16.8    60     2368   00 45 48

00 47 31  NGC5506      12 31 04  29.6 150.0 -1.7     -17.5    17     2368   00 47 31
00 52 31  ---          12 36 05  29.9 151.4 -1.6     -16.7   300     2446   00 47 32

00 53 16  J1404-0013   12 36 49  33.5 153.2 -1.5     -15.7    18     2446   00 53 16
00 54 16  =1401+000    12 37 50  33.6 153.5 -1.5     -15.6    60     2461   00 53 17

00 55 00  NGC5506      12 38 34  30.1 152.1 -1.6     -16.4    17     2461   00 55 00
01 00 00  ---          12 43 35  30.5 153.5 -1.5     -15.6   300     2538   00 55 01



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


 ======== Setup file: sess120.C2048

   Setup group:    9         Station: TORUN            Total bit rate:  2048
   Format: VDIF              Bits per sample: 2        Sample rate: 64.000
   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         9         1         9         2        10         2        10
                  3        11         3        11         4        12         4        12
  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=   4830.49  4830.49  4830.49  4830.49  4894.49  4894.49  4894.49  4894.49
            4958.49  4958.49  4958.49  4958.49  5022.49  5022.49  5022.49  5022.49
  BBC fr=    630.49   630.49   630.49   630.49   694.49   694.49   694.49   694.49
             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
              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,  9, 10, 11, 12, 13, 14, 15, 16
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

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

* NGC4593            12 37 04.666004   * 12 39 39.445000     12 40 41.932107       0.00
                    -05 04 10.89761    *-05 20 39.02000     -05 27 16.91540        0.00

* NGC5252            13 35 44.341975   * 13 38 15.871000     13 39 16.830912       0.00
                     04 47 47.16378    * 04 32 33.51800      04 26 23.78021        0.00

* NGC5506            14 10 39.141168   * 14 13 14.879000     14 14 17.382835       0.00
                    -02 58 27.08611    *-03 12 27.65100     -03 18 05.85693        0.00

  1245-062           12 45 47.681424   * 12 48 22.975659     12 49 25.648696       0.05
* J1248-0632        -06 15 48.75641    *-06 32 09.81786     -06 38 44.47322        0.10
                     /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                     GSFC 2016a X/S astro solution,    261 observations.

* 3C286              13 28 49.657769   * 13 31 08.288061     13 32 04.214128       0.17
  J1331+3030         30 45 58.64066    * 30 30 32.95930      30 24 13.23984        0.16
  1328+307           /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
  J1331+30           GSFC 2016a X/S astro solution,    269 observations.

  1329+063           13 29 22.954597   * 13 31 53.897134     13 32 54.646070       0.10
* J1331+0608         06 23 48.09892    * 06 08 23.39134      06 02 08.83047        0.18
                     /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                     GSFC 2016a X/S astro solution,    147 observations.
```

```
  1401+000          14 01 38.289229   * 14 04 12.123975     14 05 13.902862       0.06
* J1404-0013        00 00 56.29689    *-00 13 25.09126     -00 19 12.55361        0.12
  J1401-000         /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,    209 observations.
```

em140btr

Revealing the radio structure of TDE AT2019dsg

PI: *Jun Yang, contact person*

```
Address:  Onsala Space Observatory

Observing mode: 2048-16-2
Schedule for TORUN     (Code Tr )                                  Page   2
               Revealing the radio structure of TDE AT2019dsg
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  28 Feb 2020   Day  59 ---
 ---------- Fringe finder ----------

 Next scan frequencies:  4830.49  4830.49  4830.49  4830.49  4894.49  4894.49  4894.49  4894.49
                         4958.49  4958.49  4958.49  4958.49  5022.49  5022.49  5022.49  5022.49
 Next BBC frequencies:    630.49   630.49   630.49   630.49   694.49   694.49   694.49   694.49
                          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
                           32.00    32.00    32.00    32.00    32.00    32.00    32.00    32.00

05 30 00  3C345        17 14 19  75.7 204.5  0.5      18.9     0        0   05 30 00
05 35 00  ---          17 19 20  75.4 208.1  0.6      21.6   300       77   05 30 01

 ---------- Main calibrator ----------

05 37 00  J2052+1619   17 21 20  34.9 110.8 -3.5     -35.8   -89       77   05 37 00
05 40 00  ---          17 24 21  35.3 111.5 -3.5     -35.6    91      124   05 37 01

 ---------- 50s gap for Tsys ----------

05 40 50  J2052+1619   17 25 11  35.4 111.7 -3.5     -35.6    44      124   05 40 50
05 41 20  ---          17 25 41  35.5 111.8 -3.5     -35.5    30      131   05 40 51

05 41 50  J2058+1512   17 26 11  33.8 111.3 -3.6     -35.4    10      131   05 41 50
05 44 40  ---          17 29 01  34.2 112.0 -3.5     -35.3   170      175   05 41 51

05 45 10  J2052+1619   17 29 32  36.0 112.8 -3.4     -35.3    10      175   05 45 10
05 45 40  ---          17 30 02  36.1 112.9 -3.4     -35.2    30      183   05 45 11

05 46 10  AT2019DSG    17 30 32  33.8 113.4 -3.5     -34.6     7      183   05 46 10
05 49 00  ---          17 33 22  34.2 114.1 -3.4     -34.4   170      227   05 46 11

05 49 30  J2052+1619   17 33 52  36.6 113.8 -3.3     -34.9     7      227   05 49 30
05 50 00  ---          17 34 22  36.7 113.9 -3.3     -34.9    30      234   05 49 31

05 50 30  AT2019DSG    17 34 52  34.4 114.5 -3.4     -34.3     7      234   05 50 30
05 53 20  ---          17 37 43  34.8 115.2 -3.3     -34.1   170      278   05 50 31

05 53 50  J2052+1619   17 38 13  37.2 114.9 -3.3     -34.6     7      278   05 53 50
05 54 20  ---          17 38 43  37.3 115.0 -3.2     -34.6    30      286   05 53 51

05 54 50  AT2019DSG    17 39 13  35.0 115.5 -3.3     -34.0     7      286   05 54 50
05 57 40  ---          17 42 04  35.4 116.2 -3.3     -33.8   170      330   05 54 51
```

Schedule for TORUN (Code Tr) Page 3

Revealing the radio structure of TDE AT2019dsg

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 28 Feb 2020 Day 59 ---										
05 58 10	J2052+1619	17 42 34	37.8	116.0	-3.2		-34.2	7	330	05 58 10
05 58 40	---	17 43 04	37.9	116.1	-3.2		-34.2	30	338	05 58 11
05 59 10	AT2019DSG	17 43 34	35.6	116.6	-3.2		-33.6	7	338	05 59 10
06 02 00	---	17 46 24	36.0	117.3	-3.2		-33.4	170	381	05 59 11
06 02 30	J2052+1619	17 46 54	38.4	117.1	-3.1		-33.9	7	381	06 02 30
06 03 00	---	17 47 24	38.5	117.2	-3.1		-33.8	30	389	06 02 31
06 03 30	AT2019DSG	17 47 55	36.2	117.7	-3.2		-33.3	7	389	06 03 30
06 06 20	---	17 50 45	36.6	118.4	-3.1		-33.0	170	433	06 03 31
---------- 50s gap for Tsys ----------										
06 07 10	J2052+1619	17 51 35	39.0	118.3	-3.0		-33.5	27	433	06 07 10
06 07 40	---	17 52 05	39.1	118.4	-3.0		-33.4	30	441	06 07 11
06 08 10	J2058+1512	17 52 35	37.4	117.8	-3.1		-33.4	10	441	06 08 10
06 11 00	---	17 55 26	37.8	118.5	-3.1		-33.2	170	484	06 08 11
06 11 30	J2052+1619	17 55 56	39.6	119.4	-3.0		-33.1	10	484	06 11 30
06 12 00	---	17 56 26	39.6	119.5	-3.0		-33.0	30	492	06 11 31
06 12 30	AT2019DSG	17 56 56	37.4	120.0	-3.0		-32.5	7	492	06 12 30
06 15 20	---	17 59 46	37.7	120.7	-3.0		-32.2	170	536	06 12 31
06 15 50	J2052+1619	18 00 17	40.1	120.5	-2.9		-32.6	7	536	06 15 50
06 16 20	---	18 00 47	40.2	120.7	-2.9		-32.6	30	544	06 15 51
06 16 50	AT2019DSG	18 01 17	37.9	121.1	-2.9		-32.0	7	544	06 16 50
06 19 40	---	18 04 07	38.3	121.9	-2.9		-31.8	170	587	06 16 51
06 20 10	J2052+1619	18 04 37	40.7	121.7	-2.8		-32.2	7	587	06 20 10
06 20 40	---	18 05 07	40.8	121.8	-2.8		-32.1	30	595	06 20 11
06 21 10	AT2019DSG	18 05 37	38.5	122.3	-2.9		-31.6	7	595	06 21 10
06 24 00	---	18 08 28	38.8	123.0	-2.8		-31.3	170	639	06 21 11
06 24 30	J2052+1619	18 08 58	41.3	122.9	-2.7		-31.7	7	639	06 24 30
06 25 00	---	18 09 28	41.3	123.0	-2.7		-31.7	30	647	06 24 31
06 25 30	AT2019DSG	18 09 58	39.0	123.4	-2.8		-31.1	7	647	06 25 30
06 28 20	---	18 12 49	39.4	124.2	-2.8		-30.8	170	690	06 25 31
06 28 50	J2052+1619	18 13 19	41.8	124.0	-2.7		-31.2	7	690	06 28 50
06 29 20	---	18 13 49	41.9	124.2	-2.7		-31.2	30	698	06 28 51

Schedule for TORUN (Code Tr) Page 4

Revealing the radio structure of TDE AT2019dsg

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 28 Feb 2020 Day 59 ---										
06 29 50	AT2019DSG	18 14 19	39.6	124.6	-2.7		-30.7	7	698	06 29 50
06 32 40	---	18 17 09	39.9	125.4	-2.7		-30.4	170	742	06 29 51
---------- 50s gap for Tsys ----------										
06 33 30	J2052+1619	18 17 59	42.4	125.3	-2.6		-30.7	27	742	06 33 30
06 34 00	---	18 18 30	42.4	125.5	-2.6		-30.6	30	750	06 33 31
06 34 30	J2058+1512	18 19 00	40.8	124.7	-2.7		-30.8	10	750	06 34 30
06 37 20	---	18 21 50	41.1	125.5	-2.6		-30.4	170	794	06 34 31
06 37 50	J2052+1619	18 22 20	42.9	126.6	-2.5		-30.2	10	794	06 37 50
06 38 20	---	18 22 50	43.0	126.7	-2.5		-30.1	30	801	06 37 51
06 38 50	AT2019DSG	18 23 20	40.7	127.1	-2.6		-29.6	7	801	06 38 50
06 41 40	---	18 26 11	41.0	127.8	-2.5		-29.3	170	845	06 38 51
06 42 10	J2052+1619	18 26 41	43.4	127.8	-2.4		-29.6	7	845	06 42 10
06 42 40	---	18 27 11	43.5	127.9	-2.4		-29.6	30	853	06 42 11
06 43 10	AT2019DSG	18 27 41	41.2	128.3	-2.5		-29.1	7	853	06 43 10
06 46 00	---	18 30 32	41.5	129.1	-2.5		-28.8	170	897	06 43 11
06 46 30	J2052+1619	18 31 02	43.9	129.1	-2.4		-29.1	7	897	06 46 30
06 47 00	---	18 31 32	44.0	129.2	-2.4		-29.0	30	904	06 46 31
06 47 30	AT2019DSG	18 32 02	41.7	129.5	-2.4		-28.6	7	904	06 47 30
06 50 20	---	18 34 52	42.0	130.3	-2.4		-28.2	170	948	06 47 31
06 50 50	J2052+1619	18 35 22	44.4	130.3	-2.3		-28.5	7	948	06 50 50
06 51 20	---	18 35 52	44.5	130.5	-2.3		-28.4	30	956	06 50 51
06 51 50	AT2019DSG	18 36 22	42.2	130.7	-2.4		-28.0	7	956	06 51 50
06 54 40	---	18 39 13	42.5	131.6	-2.3		-27.6	170	1000	06 51 51
06 55 10	J2052+1619	18 39 43	44.9	131.6	-2.2		-27.9	7	1000	06 55 10
06 55 40	---	18 40 13	45.0	131.8	-2.2		-27.8	30	1007	06 55 11
06 56 10	AT2019DSG	18 40 43	42.7	132.0	-2.3		-27.4	7	1007	06 56 10
06 59 00	---	18 43 34	43.0	132.8	-2.2		-27.0	170	1051	06 56 11
---------- 50s gap for Tsys ----------										
06 59 50	J2052+1619	18 44 24	45.5	133.0	-2.2		-27.2	27	1051	06 59 50
07 00 20	---	18 44 54	45.5	133.2	-2.1		-27.2	30	1059	06 59 51

```
Schedule for TORUN     (Code Tr )                                  Page   5
              Revealing the radio structure of TDE AT2019dsg
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  28 Feb 2020   Day  59 ---

07 00 50  J2058+1512   18 45 24  43.9 132.2 -2.2     -27.4    10     1059   07 00 50
07 03 40  ---          18 48 14  44.2 133.1 -2.2     -27.0   170     1103   07 00 51

07 04 10  J2052+1619   18 48 45  45.9 134.4 -2.1     -26.6    10     1103   07 04 10
07 04 40  ---          18 49 15  46.0 134.5 -2.1     -26.5    30     1110   07 04 11

07 05 10  AT2019DSG    18 49 45  43.7 134.7 -2.1     -26.1     7     1110   07 05 10
07 08 00  ---          18 52 35  44.0 135.5 -2.1     -25.7   170     1154   07 05 11

07 08 30  J2052+1619   18 53 05  46.4 135.7 -2.0     -25.9     7     1154   07 08 30
07 09 00  ---          18 53 35  46.4 135.9 -2.0     -25.8    30     1162   07 08 31

07 09 30  AT2019DSG    18 54 05  44.1 136.0 -2.1     -25.5     7     1162   07 09 30
07 12 20  ---          18 56 56  44.4 136.9 -2.0     -25.1   170     1206   07 09 31

07 12 50  J2052+1619   18 57 26  46.8 137.1 -1.9     -25.2     7     1206   07 12 50
07 13 20  ---          18 57 56  46.9 137.2 -1.9     -25.1    30     1213   07 12 51

07 13 50  AT2019DSG    18 58 26  44.6 137.3 -2.0     -24.8     7     1213   07 13 50
07 16 40  ---          19 01 17  44.9 138.2 -1.9     -24.4   170     1257   07 13 51

07 17 10  J2052+1619   19 01 47  47.3 138.5 -1.9     -24.5     7     1257   07 17 10
07 17 40  ---          19 02 17  47.3 138.6 -1.9     -24.4    30     1265   07 17 11

07 18 10  AT2019DSG    19 02 47  45.0 138.7 -1.9     -24.1     7     1265   07 18 10
07 21 00  ---          19 05 37  45.3 139.6 -1.9     -23.7   170     1309   07 18 11

07 21 30  J2052+1619   19 06 07  47.7 139.9 -1.8     -23.8     7     1309   07 21 30
07 22 00  ---          19 06 37  47.7 140.0 -1.8     -23.7    30     1317   07 21 31

07 22 30  AT2019DSG    19 07 08  45.4 140.0 -1.8     -23.4     7     1317   07 22 30
07 25 20  ---          19 09 58  45.7 141.0 -1.8     -23.0   170     1360   07 22 31

 ---------- 50s gap for Tsys ----------

07 26 10  J2052+1619   19 10 48  48.1 141.4 -1.7     -23.0    27     1360   07 26 10
07 26 40  ---          19 11 18  48.2 141.6 -1.7     -22.9    30     1368   07 26 11

07 27 10  J2058+1512   19 11 48  46.6 140.4 -1.8     -23.4    10     1368   07 27 10
07 30 00  ---          19 14 39  46.9 141.3 -1.8     -22.9   170     1412   07 27 11

07 30 30  J2052+1619   19 15 09  48.5 142.9 -1.6     -22.2    10     1412   07 30 30
07 31 00  ---          19 15 39  48.6 143.0 -1.6     -22.1    30     1420   07 30 31
```

```
Schedule for TORUN     (Code Tr )                                  Page   6
              Revealing the radio structure of TDE AT2019dsg
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  28 Feb 2020   Day  59 ---

07 31 30  AT2019DSG    19 16 09  46.3 142.9 -1.7     -21.9     7     1420   07 31 30
07 34 20  ---          19 18 59  46.5 143.9 -1.6     -21.4   170     1463   07 31 31

07 34 50  J2052+1619   19 19 30  48.9 144.3 -1.6     -21.4     7     1463   07 34 50
07 35 20  ---          19 20 00  49.0 144.5 -1.6     -21.3    30     1471   07 34 51

07 35 50  AT2019DSG    19 20 30  46.7 144.4 -1.6     -21.2     7     1471   07 35 50
07 38 40  ---          19 23 20  46.9 145.3 -1.6     -20.7   170     1515   07 35 51

07 39 10  J2052+1619   19 23 50  49.3 145.8 -1.5     -20.6     7     1515   07 39 10
07 39 40  ---          19 24 20  49.3 146.0 -1.5     -20.5    30     1523   07 39 11

07 40 10  AT2019DSG    19 24 50  47.0 145.8 -1.6     -20.4     7     1523   07 40 10
07 43 00  ---          19 27 41  47.3 146.8 -1.5     -19.9   170     1566   07 40 11

07 43 30  J2052+1619   19 28 11  49.7 147.3 -1.4     -19.8     7     1566   07 43 30
07 44 00  ---          19 28 41  49.7 147.5 -1.4     -19.7    30     1574   07 43 31

07 44 30  AT2019DSG    19 29 11  47.4 147.3 -1.5     -19.6     7     1574   07 44 30
07 47 20  ---          19 32 02  47.6 148.2 -1.4     -19.0   170     1618   07 44 31

07 47 50  J2052+1619   19 32 32  50.0 148.9 -1.4     -18.9     7     1618   07 47 50
07 48 20  ---          19 33 02  50.0 149.0 -1.3     -18.8    30     1626   07 47 51

07 48 50  AT2019DSG    19 33 32  47.7 148.7 -1.4     -18.8     7     1626   07 48 50
07 51 40  ---          19 36 22  48.0 149.7 -1.4     -18.2   170     1669   07 48 51

 ---------- 50s gap for Tsys ----------

07 52 30  J2052+1619   19 37 12  50.4 150.5 -1.3     -17.9    27     1669   07 52 30
07 53 00  ---          19 37 43  50.4 150.7 -1.3     -17.8    30     1677   07 52 31

07 53 30  J2058+1512   19 38 13  48.9 149.3 -1.4     -18.5    11     1677   07 53 30
07 56 20  ---          19 41 03  49.1 150.3 -1.3     -18.0   170     1721   07 53 31

07 56 50  J2052+1619   19 41 33  50.7 152.1 -1.2     -17.0    11     1721   07 56 50
07 57 20  ---          19 42 03  50.7 152.3 -1.2     -16.9    30     1729   07 56 51

07 57 50  AT2019DSG    19 42 33  48.4 151.9 -1.3     -17.0     7     1729   07 57 50
08 00 40  ---          19 45 24  48.6 152.8 -1.2     -16.4   170     1773   07 57 51

08 01 10  J2052+1619   19 45 54  51.0 153.7 -1.1     -16.1     7     1773   08 01 10
08 01 40  ---          19 46 24  51.0 153.8 -1.1     -16.0    30     1780   08 01 11
```

Schedule for TORUN (Code Tr) Page 7

Revealing the radio structure of TDE AT2019dsg

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 28 Feb 2020 Day 59 ---										
08 02 10	AT2019DSG	19 46 54	48.7	153.4	-1.2		-16.1	7	1780	08 02 10
08 05 00	---	19 49 44	48.9	154.4	-1.1		-15.5	170	1824	08 02 11
08 05 30	J2052+1619	19 50 15	51.3	155.3	-1.1		-15.2	7	1824	08 05 30
08 06 00	---	19 50 45	51.3	155.4	-1.0		-15.1	30	1832	08 05 31
08 06 30	AT2019DSG	19 51 15	49.0	154.9	-1.1		-15.2	7	1832	08 06 30
08 09 20	---	19 54 05	49.2	155.9	-1.1		-14.6	170	1876	08 06 31
08 09 50	J2052+1619	19 54 35	51.5	156.9	-1.0		-14.2	7	1876	08 09 50
08 10 20	---	19 55 05	51.6	157.1	-1.0		-14.1	30	1883	08 09 51
08 10 50	AT2019DSG	19 55 35	49.3	156.5	-1.0		-14.3	7	1883	08 10 50
08 13 40	---	19 58 26	49.4	157.5	-1.0		-13.7	170	1927	08 10 51
08 14 10	J2052+1619	19 58 56	51.8	158.5	-0.9		-13.3	7	1927	08 14 10
08 14 40	---	19 59 26	51.8	158.7	-0.9		-13.1	30	1935	08 14 11
08 15 10	AT2019DSG	19 59 56	49.5	158.0	-1.0		-13.4	8	1935	08 15 10
08 18 00	---	20 02 47	49.7	159.1	-0.9		-12.8	170	1979	08 15 11
---------- 50s gap for Tsys ----------										
08 18 50	J2052+1619	20 03 37	52.0	160.3	-0.8		-12.2	27	1979	08 18 50
08 19 20	---	20 04 07	52.0	160.5	-0.8		-12.1	30	1986	08 18 51
08 19 50	J2058+1512	20 04 37	50.7	158.8	-0.9		-13.0	11	1986	08 19 50
08 22 40	---	20 07 27	50.8	159.8	-0.9		-12.4	170	2030	08 19 51
08 23 10	J2052+1619	20 07 57	52.2	161.9	-0.8		-11.2	11	2030	08 23 10
08 23 40	---	20 08 28	52.3	162.1	-0.8		-11.1	30	2038	08 23 11
08 24 10	AT2019DSG	20 08 58	50.0	161.3	-0.8		-11.4	8	2038	08 24 10
08 27 00	---	20 11 48	50.1	162.4	-0.8		-10.8	170	2082	08 24 11
08 27 30	J2052+1619	20 12 18	52.4	163.6	-0.7		-10.2	8	2082	08 27 30
08 28 00	---	20 12 48	52.4	163.8	-0.7		-10.1	30	2089	08 27 31
08 28 30	AT2019DSG	20 13 18	50.2	163.0	-0.7		-10.5	8	2089	08 28 30
08 31 20	---	20 16 09	50.3	164.0	-0.7		-9.8	170	2133	08 28 31
08 31 50	J2052+1619	20 16 39	52.6	165.3	-0.6		-9.1	8	2133	08 31 50
08 32 20	---	20 17 09	52.6	165.5	-0.6		-9.0	30	2141	08 31 51

Schedule for TORUN (Code Tr) Page 8

Revealing the radio structure of TDE AT2019dsg

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 28 Feb 2020 Day 59 ---										
08 32 50	AT2019DSG	20 17 39	50.4	164.6	-0.7		-9.5	8	2141	08 32 50
08 35 40	---	20 20 30	50.5	165.6	-0.6		-8.8	170	2185	08 32 51
08 36 10	J2052+1619	20 21 00	52.8	167.0	-0.5		-8.1	8	2185	08 36 10
08 36 40	---	20 21 30	52.8	167.2	-0.5		-8.0	30	2193	08 36 11
08 37 10	AT2019DSG	20 22 00	50.5	166.2	-0.6		-8.5	8	2193	08 37 10
08 40 00	---	20 24 50	50.6	167.3	-0.6		-7.8	170	2236	08 37 11
08 40 30	J2052+1619	20 25 20	52.9	168.7	-0.5		-7.0	8	2236	08 40 30
08 41 00	---	20 25 50	52.9	168.9	-0.5		-6.9	30	2244	08 40 31
08 41 30	AT2019DSG	20 26 20	50.7	167.9	-0.5		-7.5	8	2244	08 41 30
08 44 20	---	20 29 11	50.8	168.9	-0.5		-6.8	170	2288	08 41 31
---------- 50s gap for Tsys ----------										
08 45 10	J2052+1619	20 30 01	53.0	170.6	-0.4		-5.9	28	2288	08 45 10
08 45 40	---	20 30 31	53.0	170.8	-0.4		-5.8	30	2296	08 45 11
08 46 10	J2058+1512	20 31 01	51.8	168.8	-0.5		-6.9	12	2296	08 46 10
08 49 00	---	20 33 52	51.8	169.9	-0.4		-6.3	170	2339	08 46 11
08 49 30	J2052+1619	20 34 22	53.1	172.3	-0.3		-4.8	11	2339	08 49 30
08 50 00	---	20 34 52	53.1	172.5	-0.3		-4.7	30	2347	08 49 31
08 50 30	AT2019DSG	20 35 22	50.9	171.3	-0.4		-5.4	8	2347	08 50 30
08 53 20	---	20 38 12	51.0	172.4	-0.3		-4.7	170	2391	08 50 31
08 53 50	J2052+1619	20 38 43	53.2	174.0	-0.2		-3.7	8	2391	08 53 50
08 54 20	---	20 39 13	53.2	174.2	-0.2		-3.6	30	2399	08 53 51
08 54 50	AT2019DSG	20 39 43	51.0	173.0	-0.3		-4.4	8	2399	08 54 50
08 57 40	---	20 42 33	51.1	174.1	-0.3		-3.7	170	2442	08 54 51
08 58 10	J2052+1619	20 43 03	53.2	175.8	-0.2		-2.7	8	2442	08 58 10
08 58 40	---	20 43 33	53.3	176.0	-0.2		-2.5	30	2450	08 58 11
08 59 10	AT2019DSG	20 44 03	51.1	174.6	-0.2		-3.3	8	2450	08 59 10
09 02 00	---	20 46 54	51.1	175.7	-0.2		-2.6	170	2494	08 59 11
09 02 30	J2052+1619	20 47 24	53.3	177.5	-0.1		-1.6	8	2494	09 02 30
09 03 00	---	20 47 54	53.3	177.7	-0.1		-1.4	30	2502	09 02 31

Schedule for TORUN (Code Tr) Page 9

Revealing the radio structure of TDE AT2019dsg

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 28 Feb 2020 Day 59 ---										
09 03 30	AT2019DSG	20 48 24	51.1	176.3	-0.2		-2.3	8	2502	09 03 30
09 06 20	---	20 51 15	51.2	177.4	-0.1		-1.6	170	2545	09 03 31
09 06 50	J2052+1619	20 51 45	53.3	179.2	-0.0		-0.5	8	2545	09 06 50
09 07 20	---	20 52 15	53.3	179.4	-0.0		-0.3	30	2553	09 06 51
09 07 50	AT2019DSG	20 52 45	51.2	178.0	-0.1		-1.2	8	2553	09 07 50
09 10 40	---	20 55 35	51.2	179.1	-0.0		-0.6	170	2597	09 07 51
---------- 50s gap for Tsys ----------										
09 11 30	J2052+1619	20 56 25	53.3	181.1	0.0		0.7	28	2597	09 11 30
09 12 00	---	20 56 56	53.3	181.3	0.1		0.8	30	2605	09 11 31
09 12 30	J2058+1512	20 57 26	52.2	179.1	-0.0		-0.6	11	2605	09 12 30
09 15 20	---	21 00 16	52.2	180.2	0.0		0.1	170	2649	09 12 31
09 15 50	J2052+1619	21 00 46	53.3	182.9	0.1		1.8	11	2649	09 15 50
09 16 20	---	21 01 16	53.3	183.1	0.1		1.9	30	2656	09 15 51
09 16 50	AT2019DSG	21 01 46	51.2	181.5	0.1		0.9	8	2656	09 16 50
09 19 40	---	21 04 37	51.2	182.6	0.1		1.6	170	2700	09 16 51
09 20 10	J2052+1619	21 05 07	53.2	184.6	0.2		2.9	8	2700	09 20 10
09 20 40	---	21 05 37	53.2	184.8	0.2		3.0	30	2708	09 20 11
09 21 10	AT2019DSG	21 06 07	51.2	183.1	0.1		2.0	8	2708	09 21 10
09 24 00	---	21 08 57	51.1	184.2	0.2		2.6	170	2752	09 21 11
09 24 30	J2052+1619	21 09 28	53.2	186.3	0.3		4.0	8	2752	09 24 30
09 25 00	---	21 09 58	53.2	186.5	0.3		4.1	30	2759	09 24 31
09 25 30	AT2019DSG	21 10 28	51.1	184.8	0.2		3.0	8	2759	09 25 30
09 28 20	---	21 13 18	51.1	185.9	0.3		3.7	170	2803	09 25 31
09 28 50	J2052+1619	21 13 48	53.1	188.1	0.3		5.0	9	2803	09 28 50
09 29 20	---	21 14 18	53.1	188.3	0.3		5.2	30	2811	09 28 51
09 29 50	AT2019DSG	21 14 48	51.0	186.5	0.3		4.0	9	2811	09 29 50
09 32 40	---	21 17 39	51.0	187.6	0.3		4.7	170	2855	09 29 51
09 33 10	J2052+1619	21 18 09	53.0	189.8	0.4		6.1	9	2855	09 33 10
09 33 40	---	21 18 39	53.0	190.0	0.4		6.2	30	2862	09 33 11

```
Schedule for TORUN     (Code Tr )                                  Page  10
              Revealing the radio structure of TDE AT2019dsg
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  28 Feb 2020   Day  59 ---

09 34 10  AT2019DSG    21 19 09  51.0 188.2  0.4       5.0     9     2862   09 34 10
09 37 00  ---          21 22 00  50.9 189.3  0.4       5.7   170     2906   09 34 11

 ---------- Main calibrator ----------

09 37 30  J2052+1619   21 22 30  52.9 191.5  0.5       7.2     9     2906   09 37 30
09 38 00  ---          21 23 00  52.9 191.7  0.5       7.3    30     2914   09 37 31

09 38 30  J2058+1512   21 23 30  51.9 189.3  0.4       5.8    11     2914   09 38 30
09 41 20  ---          21 26 20  51.8 190.4  0.4       6.5   170     2958   09 38 31

09 41 50  J2052+1619   21 26 50  52.7 193.2  0.6       8.2    10     2958   09 41 50
09 42 20  ---          21 27 20  52.7 193.4  0.6       8.4    30     2965   09 41 51

 ---------- Ef out to check pointing ----------

09 45 20  3C454.3      21 30 21  49.6 147.7 -1.4     -19.5    73     2965   09 45 20
09 50 20  ---          21 35 22  50.0 149.5 -1.3     -18.5   300     3043   09 45 21

 ---------- Ef in ----------

09 53 00  J2052+1619   21 38 02  52.3 197.6  0.7      10.9    49     3043   09 53 00
09 54 00  ---          21 39 02  52.2 198.0  0.8      11.1    60     3058   09 53 01

 ---------- 50s gap for Tsys ----------

09 54 50  J2052+1619   21 39 53  52.2 198.3  0.8      11.3    43     3058   09 54 50
09 55 20  ---          21 40 23  52.2 198.5  0.8      11.4    30     3066   09 54 51

09 55 50  J2058+1512   21 40 53  51.3 196.0  0.7       9.9    11     3066   09 55 50
09 58 40  ---          21 43 43  51.2 197.1  0.7      10.5   170     3110   09 55 51

09 59 10  J2052+1619   21 44 13  52.0 199.9  0.8      12.3    10     3110   09 59 10
09 59 40  ---          21 44 43  52.0 200.1  0.9      12.4    30     3117   09 59 11

10 00 10  AT2019DSG    21 45 13  50.1 198.0  0.8      11.0     9     3117   10 00 10
10 03 00  ---          21 48 04  49.9 199.1  0.8      11.7   170     3161   10 00 11

10 03 30  J2052+1619   21 48 34  51.8 201.6  0.9      13.3     9     3161   10 03 30
10 04 00  ---          21 49 04  51.7 201.8  0.9      13.4    30     3169   10 03 31

10 04 30  AT2019DSG    21 49 34  49.9 199.6  0.9      12.0     9     3169   10 04 30
10 07 20  ---          21 52 25  49.7 200.7  0.9      12.6   170     3213   10 04 31
```

Schedule for TORUN (Code Tr) Page 11

Revealing the radio structure of TDE AT2019dsg

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 28 Feb 2020 Day 59 ---										
10 07 50	J2052+1619	21 52 55	51.5	203.2	1.0		14.3	9	3213	10 07 50
10 08 20	---	21 53 25	51.5	203.4	1.0		14.4	30	3220	10 07 51
10 08 50	AT2019DSG	21 53 55	49.6	201.2	0.9		12.9	9	3220	10 08 50
10 11 40	---	21 56 45	49.5	202.2	1.0		13.6	170	3264	10 08 51
10 12 10	J2052+1619	21 57 15	51.2	204.8	1.1		15.2	10	3264	10 12 10
10 12 40	---	21 57 45	51.2	205.0	1.1		15.4	30	3272	10 12 11
10 13 10	AT2019DSG	21 58 16	49.4	202.8	1.0		13.9	9	3272	10 13 10
10 16 00	---	22 01 06	49.2	203.8	1.1		14.5	170	3316	10 13 11
10 16 30	J2052+1619	22 01 36	51.0	206.4	1.1		16.2	10	3316	10 16 30
10 17 00	---	22 02 06	50.9	206.6	1.1		16.3	30	3324	10 16 31
10 17 30	AT2019DSG	22 02 36	49.1	204.3	1.1		14.8	10	3324	10 17 30
10 20 20	---	22 05 27	48.9	205.4	1.1		15.4	170	3367	10 17 31
---------- 50s gap for Tsys ----------										
10 21 10	J2052+1619	22 06 17	50.6	208.1	1.2		17.2	30	3367	10 21 10
10 21 40	---	22 06 47	50.6	208.3	1.2		17.3	30	3375	10 21 11
10 22 10	J2058+1512	22 07 17	49.9	205.8	1.1		15.7	11	3375	10 22 10
10 25 00	---	22 10 07	49.7	206.8	1.2		16.3	170	3419	10 22 11
10 25 30	J2052+1619	22 10 38	50.3	209.7	1.3		18.1	10	3419	10 25 30
10 26 00	---	22 11 08	50.3	209.9	1.3		18.2	30	3427	10 25 31
10 26 30	AT2019DSG	22 11 38	48.5	207.5	1.2		16.6	10	3427	10 26 30
10 29 20	---	22 14 28	48.3	208.5	1.3		17.2	170	3470	10 26 31
10 29 50	J2052+1619	22 14 58	50.0	211.2	1.4		18.9	10	3470	10 29 50
10 30 20	---	22 15 28	50.0	211.4	1.4		19.0	30	3478	10 29 51
10 30 50	AT2019DSG	22 15 58	48.2	209.1	1.3		17.5	10	3478	10 30 50
10 33 40	---	22 18 49	48.0	210.0	1.3		18.1	170	3522	10 30 51
10 34 10	J2052+1619	22 19 19	49.6	212.8	1.4		19.8	10	3522	10 34 10
10 34 40	---	22 19 49	49.6	212.9	1.4		19.9	30	3530	10 34 11
10 35 10	AT2019DSG	22 20 19	47.9	210.6	1.4		18.4	10	3530	10 35 10
10 38 00	---	22 23 10	47.7	211.5	1.4		18.9	170	3573	10 35 11

Schedule for TORUN (Code Tr) Page 12

Revealing the radio structure of TDE AT2019dsg

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 28 Feb 2020 Day 59 ---										
10 38 30	J2052+1619	22 23 40	49.3	214.3	1.5		20.6	10	3573	10 38 30
10 39 00	---	22 24 10	49.2	214.4	1.5		20.7	30	3581	10 38 31
10 39 30	AT2019DSG	22 24 40	47.6	212.0	1.4		19.2	10	3581	10 39 30
10 42 20	---	22 27 30	47.3	213.0	1.5		19.7	170	3625	10 39 31
10 42 50	J2052+1619	22 28 00	48.9	215.7	1.6		21.5	10	3625	10 42 50
10 43 20	---	22 28 31	48.9	215.9	1.6		21.5	30	3633	10 42 51
10 43 50	AT2019DSG	22 29 01	47.2	213.5	1.5		20.0	10	3633	10 43 50
10 46 40	---	22 31 51	47.0	214.4	1.6		20.5	170	3677	10 43 51
---------- 50s gap for Tsys ----------										
10 47 30	J2052+1619	22 32 41	48.5	217.3	1.7		22.3	30	3677	10 47 30
10 48 00	---	22 33 11	48.4	217.5	1.7		22.4	30	3684	10 47 31
10 48 30	J2058+1512	22 33 41	47.9	215.0	1.6		20.9	11	3684	10 48 30
10 51 20	---	22 36 32	47.6	216.0	1.6		21.4	170	3728	10 48 31
10 51 50	J2052+1619	22 37 02	48.1	218.8	1.7		23.1	10	3728	10 51 50
10 52 20	---	22 37 32	48.0	218.9	1.7		23.2	30	3736	10 51 51
10 52 50	AT2019DSG	22 38 02	46.4	216.5	1.7		21.6	10	3736	10 52 50
10 55 40	---	22 40 53	46.2	217.4	1.7		22.1	170	3780	10 52 51
10 56 10	J2052+1619	22 41 23	47.7	220.2	1.8		23.8	10	3780	10 56 10
10 56 40	---	22 41 53	47.6	220.4	1.8		23.9	30	3787	10 56 11
10 57 10	AT2019DSG	22 42 23	46.0	217.9	1.7		22.4	11	3787	10 57 10
11 00 00	---	22 45 13	45.8	218.8	1.8		22.9	170	3831	10 57 11
11 00 30	J2052+1619	22 45 43	47.2	221.6	1.9		24.6	10	3831	11 00 30
11 01 00	---	22 46 13	47.2	221.8	1.9		24.6	30	3839	11 00 31
11 01 30	AT2019DSG	22 46 43	45.6	219.3	1.8		23.1	11	3839	11 01 30
11 04 20	---	22 49 34	45.4	220.2	1.9		23.6	170	3883	11 01 31
11 04 50	J2052+1619	22 50 04	46.8	223.0	1.9		25.3	10	3883	11 04 50
11 05 20	---	22 50 34	46.8	223.1	1.9		25.3	30	3890	11 04 51
11 05 50	AT2019DSG	22 51 04	45.2	220.7	1.9		23.8	11	3890	11 05 50
11 08 40	---	22 53 55	44.9	221.6	1.9		24.3	170	3934	11 05 51

Schedule for TORUN (Code Tr) Page 13

Revealing the radio structure of TDE AT2019dsg

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 28 Feb 2020 Day 59 ---										
11 09 10	J2052+1619	22 54 25	46.4	224.4	2.0		26.0	10	3934	11 09 10
11 09 40	---	22 54 55	46.3	224.5	2.0		26.0	30	3942	11 09 11
11 10 10	AT2019DSG	22 55 25	44.8	222.0	2.0		24.5	11	3942	11 10 10
11 13 00	---	22 58 15	44.5	222.9	2.0		24.9	170	3986	11 10 11
---------- 50s gap for Tsys ----------										
11 13 50	J2052+1619	22 59 06	45.9	225.8	2.1		26.7	30	3986	11 13 50
11 14 20	---	22 59 36	45.8	226.0	2.1		26.7	30	3993	11 13 51
11 14 50	J2058+1512	23 00 06	45.4	223.5	2.0		25.4	11	3993	11 14 50
11 17 40	---	23 02 56	45.1	224.4	2.1		25.8	170	4037	11 14 51
11 18 10	J2052+1619	23 03 26	45.4	227.1	2.2		27.3	10	4037	11 18 10
11 18 40	---	23 03 56	45.3	227.3	2.2		27.4	30	4045	11 18 11
11 19 10	AT2019DSG	23 04 26	43.9	224.8	2.1		25.9	11	4045	11 19 10
11 22 00	---	23 07 17	43.5	225.6	2.2		26.3	170	4089	11 19 11
11 22 30	J2052+1619	23 07 47	44.9	228.4	2.2		27.9	10	4089	11 22 30
11 23 00	---	23 08 17	44.9	228.6	2.2		28.0	30	4096	11 22 31
11 23 30	AT2019DSG	23 08 47	43.4	226.1	2.2		26.5	11	4096	11 23 30
11 26 20	---	23 11 38	43.1	226.9	2.2		26.9	170	4140	11 23 31
11 26 50	J2052+1619	23 12 08	44.4	229.7	2.3		28.5	10	4140	11 26 50
11 27 20	---	23 12 38	44.4	229.9	2.3		28.6	30	4148	11 26 51
11 27 50	AT2019DSG	23 13 08	42.9	227.4	2.3		27.1	11	4148	11 27 50
11 30 40	---	23 15 58	42.6	228.2	2.3		27.5	170	4192	11 27 51
11 31 10	J2052+1619	23 16 28	43.9	231.0	2.4		29.1	10	4192	11 31 10
11 31 40	---	23 16 58	43.9	231.2	2.4		29.2	30	4200	11 31 11
11 32 10	AT2019DSG	23 17 29	42.4	228.7	2.3		27.7	11	4200	11 32 10
11 35 00	---	23 20 19	42.1	229.5	2.4		28.1	170	4243	11 32 11
11 35 30	J2052+1619	23 20 49	43.4	232.3	2.5		29.7	10	4243	11 35 30
11 36 00	---	23 21 19	43.3	232.4	2.5		29.7	30	4251	11 35 31
11 36 30	AT2019DSG	23 21 49	41.9	229.9	2.4		28.3	11	4251	11 36 30
11 39 20	---	23 24 40	41.6	230.7	2.4		28.7	170	4295	11 36 31

Schedule for TORUN (Code Tr) Page 14

Revealing the radio structure of TDE AT2019dsg

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 28 Feb 2020 Day 59 ---										
---------- 50s gap for Tsys ----------										
11 40 10	J2052+1619	23 25 30	42.8	233.6	2.5		30.3	30	4295	11 40 10
11 40 40	---	23 26 00	42.8	233.7	2.5		30.3	30	4303	11 40 11
11 41 10	J2058+1512	23 26 30	42.5	231.4	2.4		29.1	11	4303	11 41 10
11 44 00	---	23 29 20	42.1	232.2	2.5		29.5	170	4346	11 41 11
11 44 30	J2052+1619	23 29 51	42.3	234.8	2.6		30.8	11	4346	11 44 30
11 45 00	---	23 30 21	42.2	235.0	2.6		30.8	30	4354	11 44 31
11 45 30	AT2019DSG	23 30 51	40.9	232.5	2.5		29.4	11	4354	11 45 30
11 48 20	---	23 33 41	40.5	233.3	2.6		29.8	170	4398	11 45 31
11 48 50	J2052+1619	23 34 11	41.8	236.0	2.7		31.3	10	4398	11 48 50
11 49 20	---	23 34 41	41.7	236.2	2.7		31.3	30	4406	11 48 51
11 49 50	AT2019DSG	23 35 11	40.4	233.7	2.6		29.9	11	4406	11 49 50
11 52 40	---	23 38 02	40.0	234.4	2.7		30.3	170	4449	11 49 51
11 53 10	J2052+1619	23 38 32	41.2	237.2	2.7		31.7	10	4449	11 53 10
11 53 40	---	23 39 02	41.2	237.3	2.8		31.8	30	4457	11 53 11
11 54 10	AT2019DSG	23 39 32	39.8	234.9	2.7		30.4	11	4457	11 54 10
11 57 00	---	23 42 23	39.5	235.6	2.7		30.8	170	4501	11 54 11
11 57 30	J2052+1619	23 42 53	40.7	238.4	2.8		32.2	10	4501	11 57 30
11 58 00	---	23 43 23	40.6	238.5	2.8		32.3	30	4509	11 57 31
11 58 30	AT2019DSG	23 43 53	39.3	236.0	2.8		30.9	11	4509	11 58 30
12 01 20	---	23 46 43	38.9	236.8	2.8		31.2	170	4552	11 58 31
12 01 50	J2052+1619	23 47 13	40.1	239.5	2.9		32.7	10	4552	12 01 50
12 02 20	---	23 47 43	40.1	239.7	2.9		32.7	30	4560	12 01 51
12 02 50	AT2019DSG	23 48 14	38.7	237.2	2.8		31.4	11	4560	12 02 50
12 05 40	---	23 51 04	38.4	237.9	2.9		31.7	170	4604	12 02 51
---------- 50s gap for Tsys ----------										
12 06 30	J2052+1619	23 51 54	39.5	240.8	3.0		33.1	30	4604	12 06 30
12 07 00	---	23 52 24	39.4	240.9	3.0		33.2	30	4612	12 06 31
12 07 30	J2058+1512	23 52 54	39.2	238.7	2.9		32.1	11	4612	12 07 30
12 10 20	---	23 55 45	38.8	239.4	2.9		32.4	170	4656	12 07 31

Schedule for TORUN (Code Tr) Page 15

Revealing the radio structure of TDE AT2019dsg

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 28 Feb 2020 Day 59 ---										
12 10 50	J2052+1619	23 56 15	38.9	241.9	3.0		33.5	11	4656	12 10 50
12 11 20	---	23 56 45	38.9	242.0	3.1		33.6	30	4663	12 10 51
12 11 50	AT2019DSG	23 57 15	37.6	239.6	3.0		32.3	11	4663	12 11 50
12 14 40	---	00 00 06	37.2	240.3	3.0		32.6	170	4707	12 11 51
12 15 10	J2052+1619	00 00 36	38.4	243.0	3.1		33.9	10	4707	12 15 10
12 15 40	---	00 01 06	38.3	243.1	3.1		33.9	30	4715	12 15 11
12 16 10	AT2019DSG	00 01 36	37.0	240.7	3.1		32.7	11	4715	12 16 10
12 19 00	---	00 04 26	36.7	241.4	3.1		33.0	170	4759	12 16 11
12 19 30	J2052+1619	00 04 56	37.8	244.1	3.2		34.3	10	4759	12 19 30
12 20 00	---	00 05 26	37.7	244.2	3.2		34.3	30	4766	12 19 31
12 20 30	AT2019DSG	00 05 56	36.5	241.8	3.1		33.1	11	4766	12 20 30
12 23 20	---	00 08 47	36.1	242.5	3.2		33.3	170	4810	12 20 31
12 23 50	J2052+1619	00 09 17	37.2	245.2	3.3		34.6	11	4810	12 23 50
12 24 20	---	00 09 47	37.1	245.3	3.3		34.7	30	4818	12 23 51
12 24 50	AT2019DSG	00 10 17	35.9	242.9	3.2		33.5	11	4818	12 24 50
12 27 40	---	00 13 08	35.5	243.6	3.3		33.7	170	4862	12 24 51
12 28 10	J2052+1619	00 13 38	36.6	246.2	3.3		35.0	11	4862	12 28 10
12 28 40	---	00 14 08	36.5	246.4	3.3		35.0	30	4869	12 28 11
12 29 10	AT2019DSG	00 14 38	35.3	243.9	3.3		33.8	11	4869	12 29 10
12 32 00	---	00 17 28	34.9	244.6	3.3		34.0	170	4913	12 29 11
---------- 50s gap for Tsys ----------										
12 32 50	J2052+1619	00 18 18	35.9	247.4	3.4		35.3	31	4913	12 32 50
12 33 20	---	00 18 49	35.9	247.5	3.4		35.3	30	4921	12 32 51
12 33 50	J2058+1512	00 19 19	35.7	245.4	3.3		34.5	12	4921	12 33 50
12 36 40	---	00 22 09	35.3	246.1	3.4		34.7	170	4965	12 33 51
12 37 10	J2052+1619	00 22 39	35.3	248.4	3.5		35.6	11	4965	12 37 10
12 37 40	---	00 23 09	35.3	248.5	3.5		35.6	30	4972	12 37 11
12 38 10	AT2019DSG	00 23 39	34.1	246.1	3.4		34.5	11	4972	12 38 10
12 41 00	---	00 26 30	33.7	246.8	3.5		34.7	170	5016	12 38 11

Schedule for TORUN (Code Tr) Page 16

Revealing the radio structure of TDE AT2019dsg

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 28 Feb 2020 Day 59 ---										
12 41 30	J2052+1619	00 27 00	34.7	249.5	3.6		35.9	11	5016	12 41 30
12 42 00	---	00 27 30	34.7	249.6	3.6		35.9	30	5024	12 41 31
12 42 30	AT2019DSG	00 28 00	33.5	247.2	3.5		34.8	11	5024	12 42 30
12 45 20	---	00 30 51	33.1	247.9	3.5		35.0	170	5068	12 42 31
12 45 50	J2052+1619	00 31 21	34.1	250.5	3.6		36.2	11	5068	12 45 50
12 46 20	---	00 31 51	34.0	250.6	3.6		36.2	30	5075	12 45 51
12 46 50	AT2019DSG	00 32 21	32.9	248.2	3.6		35.1	11	5075	12 46 50
12 49 40	---	00 35 11	32.5	248.9	3.6		35.3	170	5119	12 46 51
12 50 10	J2052+1619	00 35 41	33.5	251.5	3.7		36.4	11	5119	12 50 10
12 50 40	---	00 36 11	33.4	251.6	3.7		36.4	30	5127	12 50 11
12 51 10	AT2019DSG	00 36 42	32.3	249.2	3.6		35.4	11	5127	12 51 10
12 54 00	---	00 39 32	31.9	249.9	3.7		35.6	170	5171	12 51 11
12 54 30	J2052+1619	00 40 02	32.9	252.5	3.8		36.7	11	5171	12 54 30
12 55 00	---	00 40 32	32.8	252.6	3.8		36.7	30	5179	12 54 31
12 55 30	AT2019DSG	00 41 02	31.6	250.2	3.7		35.7	11	5179	12 55 30
12 58 20	---	00 43 53	31.2	250.9	3.8		35.8	170	5222	12 55 31
---------- 50s gap for Tsys ----------										
12 59 10	J2052+1619	00 44 43	32.2	253.6	3.9		36.9	31	5222	12 59 10
12 59 40	---	00 45 13	32.1	253.7	3.9		36.9	30	5230	12 59 11
13 00 10	J2058+1512	00 45 43	32.0	251.6	3.8		36.2	12	5230	13 00 10
13 03 00	---	00 48 33	31.6	252.3	3.8		36.4	170	5274	13 00 11
13 03 30	J2052+1619	00 49 04	31.6	254.5	3.9		37.1	12	5274	13 03 30
13 04 00	---	00 49 34	31.5	254.6	3.9		37.1	30	5282	13 03 31
13 04 30	AT2019DSG	00 50 04	30.4	252.3	3.9		36.2	11	5282	13 04 30
13 07 20	---	00 52 54	30.0	252.9	3.9		36.3	170	5325	13 04 31
13 07 50	J2052+1619	00 53 24	31.0	255.5	4.0		37.3	11	5325	13 07 50
13 08 20	---	00 53 54	30.9	255.6	4.0		37.3	30	5333	13 07 51
13 08 50	AT2019DSG	00 54 24	29.7	253.3	3.9		36.4	11	5333	13 08 50
13 11 40	---	00 57 15	29.3	253.9	4.0		36.5	170	5377	13 08 51

```
Schedule for TORUN     (Code Tr )                                Page  17
              Revealing the radio structure of TDE AT2019dsg
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  28 Feb 2020   Day  59 ---

13 12 10  J2052+1619   00 57 45  30.3 256.5  4.1      37.5    11     5377   13 12 10
13 12 40  ---          00 58 15  30.2 256.6  4.1      37.5    30     5385   13 12 11

13 13 10  AT2019DSG    00 58 45  29.1 254.3  4.0      36.6    11     5385   13 13 10
13 16 00  ---          01 01 36  28.7 254.9  4.1      36.7   170     5428   13 13 11

13 16 30  J2052+1619   01 02 06  29.7 257.4  4.1      37.7    11     5428   13 16 30
13 17 00  ---          01 02 36  29.6 257.5  4.1      37.7    30     5436   13 16 31

13 17 30  AT2019DSG    01 03 06  28.5 255.2  4.1      36.8    11     5436   13 17 30
13 20 20  ---          01 05 56  28.1 255.8  4.1      36.9   170     5480   13 17 31

13 20 50  J2052+1619   01 06 26  29.0 258.4  4.2      37.8    11     5480   13 20 50
13 21 20  ---          01 06 56  29.0 258.5  4.2      37.8    30     5488   13 20 51

13 21 50  AT2019DSG    01 07 27  27.8 256.2  4.2      37.0    11     5488   13 21 50
13 24 40  ---          01 10 17  27.4 256.8  4.2      37.1   170     5531   13 21 51

13 25 10  J2052+1619   01 10 47  28.4 259.3  4.3      38.0    11     5531   13 25 10
13 25 40  ---          01 11 17  28.3 259.4  4.3      38.0    30     5539   13 25 11

13 26 10  J2058+1512   01 11 47  28.3 257.4  4.2      37.4    12     5539   13 26 10
13 29 00  ---          01 14 38  27.8 258.1  4.2      37.5   170     5583   13 26 11

13 29 30  J2052+1619   01 15 08  27.8 260.2  4.4      38.1    12     5583   13 29 30
13 30 00  ---          01 15 38  27.7 260.3  4.4      38.1    30     5591   13 29 31



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


 ======== Setup file: sess120.C2048

   Setup group:    9         Station: TORUN            Total bit rate:  2048
   Format: VDIF              Bits per sample: 2        Sample rate: 64.000
   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         9         1         9         2        10         2        10
                  3        11         3        11         4        12         4        12
  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=   4830.49  4830.49  4830.49  4830.49  4894.49  4894.49  4894.49  4894.49
            4958.49  4958.49  4958.49  4958.49  5022.49  5022.49  5022.49  5022.49
  BBC fr=    630.49   630.49   630.49   630.49   694.49   694.49   694.49   694.49
             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
              32.00    32.00    32.00    32.00    32.00    32.00    32.00    32.00
   Matching frequency sets:   6

  Track assignments are:
   track1=   1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15, 16
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

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

* AT2019DSG         20 54 41.265069   * 20 57 02.965020     20 57 57.914266      12.00
                    14 00 40.58052    * 14 12 16.28980      14 16 45.26400        4.00
                    From ATel 13105, e-MERLIN observations, 0.35 mJy on 2019 Jun 20

* J2058+1512        20 56 24.919674   * 20 58 45.819173     20 59 40.443962       2.08
                    15 00 32.08468    * 15 12 13.18646      15 16 44.22055        3.10
                    rfc_2019c Petrov and Kovalev, in preparation  6 observations

* J2052+1619        20 50 24.087782   * 20 52 43.619855     20 53 37.709826       0.14
                    16 08 26.79250    * 16 19 48.82816      16 24 12.11140        0.21
                    rfc_2019c Petrov and Kovalev, in preparation  337 observations

* 3C345             16 41 17.606229   * 16 42 58.809967     16 43 38.812600       0.79
  J1642+3948        39 54 10.81492    * 39 48 36.99399      39 46 08.55860        0.59
  1641+399          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
  J1642+39          GSFC 2016a X/S astro solution,  53724 observations.

* 3C454.3           22 51 29.519739   * 22 53 57.747939     22 54 55.236124       0.65
  J2253+1608        15 52 54.34808    * 16 08 53.56091      16 15 08.28855        0.73
  2251+158          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
  J2253+16          GSFC 2016a X/S astro solution,  41272 observations.
```

en006atr

EN006A

PI: *Nimmo*

```
Address:  API
Observing mode: evn

Schedule for TORUN     (Code Tr )                                  Page   2
               EN006A
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  28 Feb 2020   Day  59 ---
 Next scan frequencies:  4830.49  4830.49  4830.49  4830.49  4894.49  4894.49  4894.49  4894.49
                         4958.49  4958.49  4958.49  4958.49  5022.49  5022.49  5022.49  5022.49
 Next BBC frequencies:    630.49   630.49   630.49   630.49   694.49   694.49   694.49   694.49
                          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
                           32.00    32.00    32.00    32.00    32.00    32.00    32.00    32.00

21 30 00  J1159+2914   09 16 57  51.8 112.4 -2.7     -39.5     0        0   21 30 00
21 34 00  =1156+295    09 20 57  52.3 113.5 -2.7     -39.1   240       62   21 30 01

21 36 00  J1305-1033   09 22 58  10.5 124.1 -3.7     -30.4   -50       62   21 36 00
21 37 30  =1302-102    09 24 28  10.7 124.4 -3.7     -30.3    40       85   21 36 01

21 37 30  SN2012AU     09 24 28  12.3 126.6 -3.5     -29.3   -20       85   No stop
21 41 00  ---          09 27 59  12.7 127.4 -3.5     -29.0   190      139   21 37 31

21 41 00  J1305-1033   09 27 59  11.2 125.2 -3.6     -30.0   -19      139   No stop
21 42 30  =1302-102    09 29 29  11.3 125.5 -3.6     -29.8    71      162   21 41 01

21 42 30  SN2012AU     09 29 29  12.9 127.7 -3.4     -28.9   -20      162   No stop
21 46 00  ---          09 32 59  13.3 128.5 -3.4     -28.5   190      216   21 42 31

21 46 40  J1305-1033   09 33 39  11.8 126.4 -3.5     -29.4    21      216   21 46 40
21 48 10  =1302-102    09 35 10  12.0 126.8 -3.5     -29.3    90      240   21 46 41

21 48 10  SN2012AU     09 35 10  13.6 129.0 -3.3     -28.3   -19      240   No stop
21 51 40  ---          09 38 40  14.0 129.8 -3.3     -28.0   191      294   21 48 11

21 51 40  J1305-1033   09 38 40  12.4 127.5 -3.5     -29.0   -19      294   No stop
21 53 10  =1302-102    09 40 11  12.6 127.9 -3.4     -28.8    71      317   21 51 41

21 53 10  J1303-1051   09 40 11  12.6 128.5 -3.4     -28.6   -12      317   No stop
21 56 10  =1300-105    09 43 11  13.0 129.2 -3.4     -28.3   168      363   21 53 11

21 56 40  J1305-1033   09 43 41  13.0 128.7 -3.4     -28.5    18      363   21 56 40
21 58 10  =1302-102    09 45 11  13.2 129.0 -3.4     -28.4    90      386   21 56 41

21 58 10  SN2012AU     09 45 11  14.7 131.2 -3.2     -27.3   -19      386   No stop
22 01 40  ---          09 48 42  15.1 132.0 -3.1     -27.0   191      441   21 58 11

22 01 40  J1305-1033   09 48 42  13.6 129.8 -3.3     -28.0   -19      441   No stop
22 03 10  =1302-102    09 50 12  13.8 130.1 -3.3     -27.9    71      464   22 01 41
```

Schedule for TORUN (Code Tr) Page 3

EN006A

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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	28 Feb 2020	Day 59 ---								
22 03 10	SN2012AU	09 50 12	15.3	132.4	-3.1		-26.8	-19	464	No stop
22 06 40	---	09 53 43	15.7	133.2	-3.0		-26.4	191	518	22 03 11
22 07 20	J1305-1033	09 54 23	14.3	131.0	-3.2		-27.4	21	518	22 07 20
22 08 50	=1302-102	09 55 53	14.4	131.4	-3.2		-27.3	90	541	22 07 21
22 08 50	SN2012AU	09 55 53	15.9	133.7	-3.0		-26.2	-19	541	No stop
22 12 20	---	09 59 24	16.3	134.5	-2.9		-25.8	191	595	22 08 51
22 12 20	J1305-1033	09 59 24	14.8	132.2	-3.1		-26.9	-19	595	No stop
22 13 50	=1302-102	10 00 54	15.0	132.5	-3.1		-26.8	71	618	22 12 21
22 13 50	J1303-1051	10 00 54	15.0	133.2	-3.1		-26.5	-12	618	No stop
22 16 50	=1300-105	10 03 54	15.3	133.9	-3.0		-26.2	168	665	22 13 51
22 17 20	J1305-1033	10 04 25	15.4	133.3	-3.0		-26.4	18	665	22 17 20
22 18 50	=1302-102	10 05 55	15.5	133.7	-3.0		-26.2	90	688	22 17 21
22 18 50	SN2012AU	10 05 55	17.0	136.0	-2.8		-25.1	-19	688	No stop
22 22 20	---	10 09 25	17.3	136.8	-2.8		-24.7	191	742	22 18 51
22 22 20	J1305-1033	10 09 25	15.9	134.5	-3.0		-25.9	-19	742	No stop
22 23 50	=1302-102	10 10 56	16.1	134.8	-2.9		-25.7	71	765	22 22 21
22 23 50	SN2012AU	10 10 56	17.5	137.2	-2.7		-24.5	-19	765	No stop
22 27 20	---	10 14 26	17.8	138.0	-2.7		-24.1	191	819	22 23 51
22 28 00	J1305-1033	10 15 06	16.5	135.8	-2.9		-25.2	21	819	22 28 00
22 29 30	=1302-102	10 16 37	16.7	136.1	-2.8		-25.1	90	842	22 28 01
22 29 30	SN2012AU	10 16 37	18.1	138.5	-2.7		-23.9	-19	842	No stop
22 33 00	---	10 20 07	18.4	139.3	-2.6		-23.4	191	897	22 29 31
22 33 00	J1305-1033	10 20 07	17.0	136.9	-2.8		-24.7	-19	897	No stop
22 34 30	=1302-102	10 21 37	17.2	137.3	-2.7		-24.5	71	920	22 33 01
22 34 30	J1303-1051	10 21 37	17.2	138.0	-2.7		-24.2	-12	920	No stop
22 37 30	=1300-105	10 24 38	17.5	138.7	-2.7		-23.8	168	966	22 34 31
22 38 00	J1305-1033	10 25 08	17.6	138.1	-2.7		-24.1	18	966	22 38 00
22 39 30	=1302-102	10 26 38	17.7	138.5	-2.7		-23.9	90	989	22 38 01
22 39 30	SN2012AU	10 26 38	19.0	140.9	-2.5		-22.7	-19	989	No stop
22 43 00	---	10 30 09	19.4	141.7	-2.4		-22.2	191	1043	22 39 31
22 43 00	J1305-1033	10 30 09	18.1	139.3	-2.6		-23.5	-19	1043	No stop
22 44 30	=1302-102	10 31 39	18.2	139.7	-2.6		-23.3	71	1067	22 43 01

Schedule for TORUN (Code Tr) Page 4

EN006A

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 28 Feb 2020 Day 59 ---										
22 44 30	SN2012AU	10 31 39	19.5	142.1	-2.4		-22.0	-19	1067	No stop
22 48 00	---	10 35 10	19.8	142.9	-2.3		-21.6	191	1121	22 44 31
22 48 40	J1305-1033	10 35 50	18.6	140.7	-2.5		-22.8	21	1121	22 48 40
22 50 10	=1302-102	10 37 20	18.7	141.0	-2.5		-22.6	90	1144	22 48 41
22 50 10	SN2012AU	10 37 20	20.0	143.5	-2.3		-21.3	-19	1144	No stop
22 53 40	---	10 40 50	20.3	144.3	-2.3		-20.9	191	1198	22 50 11
22 53 40	J1305-1033	10 40 50	19.1	141.9	-2.4		-22.2	-19	1198	No stop
22 55 10	=1302-102	10 42 21	19.2	142.2	-2.4		-22.0	71	1221	22 53 41
22 55 10	J1303-1051	10 42 21	19.1	142.9	-2.4		-21.7	-13	1221	No stop
22 58 10	=1300-105	10 45 21	19.4	143.6	-2.3		-21.3	167	1268	22 55 11
22 58 40	J1305-1033	10 45 51	19.5	143.1	-2.3		-21.5	18	1268	22 58 40
23 00 10	=1302-102	10 47 22	19.7	143.4	-2.3		-21.3	90	1291	22 58 41
23 00 10	SN2012AU	10 47 22	20.9	145.9	-2.1		-20.0	-19	1291	No stop
23 03 40	---	10 50 52	21.2	146.8	-2.1		-19.5	191	1345	23 00 11
23 03 40	J1305-1033	10 50 52	20.0	144.3	-2.3		-20.9	-19	1345	No stop
23 05 10	=1302-102	10 52 22	20.1	144.7	-2.2		-20.7	71	1368	23 03 41
23 05 10	SN2012AU	10 52 22	21.3	147.2	-2.1		-19.3	-19	1368	No stop
23 08 40	---	10 55 53	21.6	148.1	-2.0		-18.8	191	1422	23 05 11
23 09 20	J1305-1033	10 56 33	20.5	145.7	-2.2		-20.2	21	1422	23 09 20
23 10 50	=1302-102	10 58 03	20.6	146.1	-2.1		-20.0	90	1445	23 09 21
23 10 50	SN2012AU	10 58 03	21.7	148.6	-2.0		-18.5	-19	1445	No stop
23 14 20	---	11 01 34	22.0	149.5	-1.9		-18.1	191	1499	23 10 51
23 14 20	J1305-1033	11 01 34	20.9	146.9	-2.1		-19.5	-19	1499	No stop
23 15 50	=1302-102	11 03 04	21.0	147.3	-2.1		-19.3	71	1523	23 14 21
23 15 50	J1303-1051	11 03 04	20.9	148.0	-2.0		-18.9	-13	1523	No stop
23 18 50	=1300-105	11 06 05	21.1	148.7	-2.0		-18.5	167	1569	23 15 51
23 19 20	J1305-1033	11 06 35	21.3	148.2	-2.0		-18.8	18	1569	23 19 20
23 20 50	=1302-102	11 08 05	21.4	148.5	-2.0		-18.6	90	1592	23 19 21
23 20 50	SN2012AU	11 08 05	22.5	151.1	-1.8		-17.1	-20	1592	No stop
23 24 20	---	11 11 36	22.8	152.0	-1.7		-16.6	190	1646	23 20 51

Schedule for TORUN (Code Tr) Page 5

EN006A

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 28 Feb 2020 Day 59 ---										
23 24 20	J1305-1033	11 11 36	21.7	149.4	-1.9		-18.1	-19	1646	No stop
23 25 50	=1302-102	11 13 06	21.8	149.8	-1.9		-17.9	71	1669	23 24 21
23 25 50	SN2012AU	11 13 06	22.9	152.4	-1.7		-16.4	-20	1669	No stop
23 29 20	---	11 16 36	23.1	153.3	-1.7		-15.9	190	1724	23 25 51
23 30 00	J1305-1033	11 17 16	22.1	150.9	-1.8		-17.3	21	1724	23 30 00
23 31 30	=1302-102	11 18 47	22.2	151.2	-1.8		-17.1	90	1747	23 30 01
23 31 30	SN2012AU	11 18 47	23.2	153.9	-1.6		-15.6	-20	1747	No stop
23 35 00	---	11 22 17	23.5	154.8	-1.6		-15.1	190	1801	23 31 31
23 35 00	J1305-1033	11 22 17	22.5	152.1	-1.7		-16.6	-19	1801	No stop
23 36 30	=1302-102	11 23 48	22.6	152.5	-1.7		-16.4	71	1824	23 35 01
23 36 30	J1303-1051	11 23 48	22.4	153.2	-1.7		-16.0	-13	1824	No stop
23 39 30	=1300-105	11 26 48	22.6	154.0	-1.6		-15.6	167	1870	23 36 31
23 40 00	J1305-1033	11 27 18	22.8	153.4	-1.7		-15.9	18	1870	23 40 00
23 41 30	=1302-102	11 28 48	22.9	153.8	-1.6		-15.7	90	1894	23 40 01
23 41 30	SN2012AU	11 28 48	23.9	156.5	-1.5		-14.1	-20	1894	No stop
23 45 00	---	11 32 19	24.1	157.4	-1.4		-13.6	190	1948	23 41 31
23 45 00	J1305-1033	11 32 19	23.1	154.7	-1.6		-15.1	-20	1948	No stop
23 46 30	=1302-102	11 33 49	23.2	155.1	-1.5		-14.9	70	1971	23 45 01
23 46 30	SN2012AU	11 33 49	24.2	157.8	-1.4		-13.3	-20	1971	No stop
23 50 00	---	11 37 20	24.4	158.7	-1.3		-12.8	190	2025	23 46 31
23 50 40	J1305-1033	11 38 00	23.5	156.2	-1.5		-14.3	20	2025	23 50 40
23 52 10	=1302-102	11 39 30	23.6	156.6	-1.5		-14.1	90	2048	23 50 41
23 52 10	SN2012AU	11 39 30	24.5	159.3	-1.3		-12.5	-20	2048	No stop
23 55 40	---	11 43 01	24.7	160.2	-1.2		-11.9	190	2102	23 52 11
23 55 40	J1305-1033	11 43 01	23.8	157.5	-1.4		-13.5	-20	2102	No stop
23 57 10	=1302-102	11 44 31	23.9	157.9	-1.4		-13.3	70	2126	23 55 41
--- Start: Fri 28 Feb 2020 Day 59 -- Stop: Sat 29 Feb 2020 Day 60 ---										
23 57 10	J1303-1051	11 44 31	23.7	158.5	-1.3		-12.9	-13	2126	No stop
00 00 10	=1300-105	11 47 31	23.9	159.3	-1.3		-12.5	167	2172	23 57 11

Schedule for TORUN (Code Tr) Page 6

EN006A

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 29 Feb 2020 Day 60 ---										
00 00 40	J1305-1033	11 48 01	24.1	158.8	-1.3		-12.8	18	2172	00 00 40
00 02 10	=1302-102	11 49 32	24.1	159.2	-1.3		-12.5	90	2195	00 00 41
00 02 10	SN2012AU	11 49 32	25.0	161.9	-1.1		-10.9	-20	2195	No stop
00 05 40	---	11 53 02	25.1	162.9	-1.0		-10.4	190	2249	00 02 11
00 05 40	J1305-1033	11 53 02	24.3	160.1	-1.2		-12.0	-20	2249	No stop
00 07 10	=1302-102	11 54 33	24.4	160.5	-1.2		-11.8	70	2272	00 05 41
00 07 10	SN2012AU	11 54 33	25.2	163.3	-1.0		-10.1	-20	2272	No stop
00 10 40	---	11 58 03	25.4	164.2	-1.0		-9.6	190	2326	00 07 11
00 11 10	J1305-1033	11 58 33	24.6	161.6	-1.1		-11.1	10	2326	00 11 10
00 12 40	=1302-102	12 00 03	24.7	162.0	-1.1		-10.9	90	2350	00 11 11
00 12 40	SN2012AU	12 00 03	25.4	164.8	-0.9		-9.2	-20	2350	No stop
00 16 10	---	12 03 34	25.6	165.7	-0.9		-8.7	190	2404	00 12 41
00 16 10	J1305-1033	12 03 34	24.8	162.9	-1.1		-10.4	-20	2404	No stop
00 17 40	=1302-102	12 05 04	24.9	163.3	-1.0		-10.1	70	2427	00 16 11
00 18 40	J1159+2914	12 06 04	66.0	183.0	0.1		2.0	-108	2427	00 18 40
00 22 40	=1156+295	12 10 05	66.0	185.1	0.2		3.5	132	2489	00 18 41
00 24 40	B0950+08	12 12 05	36.8	224.5	2.3		25.1	-3	2489	00 24 40
00 30 00	---	12 17 26	36.3	225.9	2.4		25.8	317	2571	00 24 41

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

======== Setup file: sess120.C2048

Setup group: 9 Station: TORUN Total bit rate: 2048
Format: VDIF Bits per sample: 2 Sample rate: 64.000
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         9         1         9         2        10         2        10
                  3        11         3        11         4        12         4        12
  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=   4830.49  4830.49  4830.49  4830.49  4894.49  4894.49  4894.49  4894.49
            4958.49  4958.49  4958.49  4958.49  5022.49  5022.49  5022.49  5022.49
  BBC fr=    630.49   630.49   630.49   630.49   694.49   694.49   694.49   694.49
             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
              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,  9, 10, 11, 12, 13, 14, 15, 16
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

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

* SN2012AU          12 52 15.654500   * 12 54 52.180000     12 55 55.361753       0.00
                   -09 58 35.28501    *-10 14 50.20000     -10 21 21.54541        0.00

* B0950+08          09 50 30.550681   * 09 53 09.309700     09 54 13.488774       0.00
                    08 09 45.15217    * 07 55 35.75000      07 49 49.79505        0.00

  1156+295          11 56 57.786211   * 11 59 31.833912     12 00 34.155351       0.00
* J1159+2914        29 31 25.73880    * 29 14 43.82690      29 07 56.01159        0.00
  J1159+29          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,  78215 observations.

  1300-105          13 00 36.725045   * 13 03 13.867939     13 04 17.272363       0.05
* J1303-1051       -10 35 11.31901    *-10 51 17.12904     -10 57 44.49779        0.12
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,    288 observations.

  1302-102          13 02 55.848549   * 13 05 33.015034     13 06 36.418834       0.03
* J1305-1033       -10 17 16.37568    *-10 33 19.42812     -10 39 45.71188        0.06
  J1305-10          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,    978 observations.
```

ek046ftr

Resolving the mystery of large VLBI-Gaia offsets

PI: *Yuri Kovalev*

```
Address:  Lebedev Physical Institute

Observing mode: continuum
Schedule for TORUN     (Code Tr )                                  Page   2
               Resolving the mystery of large VLBI-Gaia offsets
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  29 Feb 2020   Day  60 ---
 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

05 30 00  J1632+8232   17 18 16  60.4  -3.1  0.8     165.4     0        0   05 30 00
05 33 35  =1637+826    17 21 51  60.4  -3.4  0.9     164.3   215       28   05 30 01

05 38 44  J1740+4506   17 27 01  81.7 163.1 -0.2     -14.3   -40       28   05 38 44
05 42 19  =1738+451    17 30 37  81.8 167.4 -0.2     -10.7   175       55   05 38 45

05 45 16  J1824+5651   17 33 34  81.8  57.6 -0.8    -111.9   -58       55   05 45 16
05 48 51  =1823+568    17 37 10  82.3  56.2 -0.8    -114.1   157       83   05 45 17

05 51 10  J1806+6949   17 39 29  73.0   8.0 -0.5    -166.0    27       83   05 51 10
05 54 45  =1807+698    17 43 04  73.1   7.0 -0.4    -167.8   215      111   05 51 11

05 55 42  J1849+6705   17 44 02  73.9  23.2 -1.1    -142.5    10      111   05 55 42
05 59 17  =1849+670    17 47 37  74.1  22.2 -1.0    -144.4   215      138   05 55 43

06 00 34  J2009+7229   17 48 54  65.5  24.6 -2.3    -123.4    30      138   06 00 34
06 04 09  =2010+723    17 52 30  65.7  24.3 -2.3    -124.6   215      166   06 00 35

06 10 12  J1759+2343   17 58 35  60.6 179.4 -0.0      -0.4    39      166   06 10 12
06 13 47  =1756+237    18 02 10  60.6 181.1  0.0       0.7   215      194   06 10 13

06 18 04  J2253+1608   18 06 28  23.6  94.2 -4.8     -38.6    68      194   06 18 04
06 21 39  =2251+158    18 10 03  24.2  95.0 -4.7     -38.5   215      222   06 18 05

06 23 08  J2216+3518   18 11 33  44.2  87.1 -4.1     -47.4     0      222   06 23 08
06 26 43  =2214+350    18 15 08  44.8  87.8 -4.0     -47.4   215      249   06 23 09

06 27 34  J2244+4057   18 15 59  44.4  76.9 -4.5     -50.9    14      249   06 27 34
06 31 09  =2241+406    18 19 35  45.0  77.5 -4.4     -51.0   215      277   06 27 35

06 34 06  J2356+8152   18 22 32  53.2  13.4 -5.6     -85.6    33      277   06 34 06
06 37 41  =2353+816    18 26 07  53.4  13.4 -5.5     -86.5   215      305   06 34 07

06 38 45  J0157+7442   18 27 12  45.2  20.0 -7.5     -51.7    20      305   06 38 45
06 42 20  =0153+744    18 30 48  45.4  20.2 -7.5     -52.4   215      332   06 38 46
```

Schedule for TORUN (Code Tr) Page 3

Resolving the mystery of large VLBI-Gaia offsets

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

--- Sat 29 Feb 2020 Day 60 ---

---------- >>> Effelsberg pointing is possible - 500 sec long gap <<< ----------

Start UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
06 43 25	J0011+7045	18 31 53	50.5	30.9	-5.7		-70.3	28	332	06 43 25
06 47 00	=0008+704	18 35 28	50.8	31.1	-5.6		-71.0	215	360	06 43 26
06 51 58	J2131-1207	18 40 27	15.2	136.2	-2.9		-25.1	73	360	06 51 58
06 55 33	=2128-123	18 44 02	15.6	137.0	-2.8		-24.7	215	388	06 51 59
06 55 59	J2129-1538	18 44 29	12.7	139.2	-2.8		-24.0	2	388	06 55 59
06 59 34	=2126-158	18 48 05	13.0	140.0	-2.7		-23.6	215	415	06 56 00
07 03 46	J1740+4506	18 52 17	75.9	242.7	1.2		49.1	2	415	07 03 46
07 07 21	=1738+451	18 55 52	75.4	244.4	1.3		50.1	215	443	07 03 47
07 09 32	J1759+2343	18 58 04	58.6	206.2	1.0		16.9	39	443	07 09 32
07 13 07	=1756+237	19 01 40	58.4	207.7	1.0		17.8	215	471	07 09 33
07 19 19	J1824+5651	19 07 52	82.7	305.5	0.7		116.6	158	471	07 19 19
07 22 54	=1823+568	19 11 28	82.3	303.9	0.8		114.2	215	499	07 19 20
07 25 26	J1806+6949	19 14 01	71.6	341.6	1.1		146.6	62	499	07 25 26
07 29 01	=1807+698	19 17 36	71.4	340.7	1.2		145.0	215	526	07 25 27
07 30 09	J1849+6705	19 18 45	75.5	348.5	0.5		162.0	37	526	07 30 09
07 33 44	=1849+670	19 22 20	75.4	347.2	0.6		159.9	215	554	07 30 10
07 35 01	J2009+7229	19 23 37	69.9	370.0	-0.8		-159.6	16	554	07 35 01
07 38 36	=2010+723	19 27 13	70.0	369.3	-0.7		-161.1	215	582	07 35 02
07 48 47	J2131-1207	19 37 25	20.4	149.8	-1.9		-18.0	155	582	07 48 47
07 52 22	=2128-123	19 41 01	20.6	150.7	-1.9		-17.5	215	609	07 48 48
07 52 56	J2129-1538	19 41 35	17.5	152.5	-1.8		-16.7	8	609	07 52 56
07 56 31	=2126-158	19 45 10	17.7	153.4	-1.8		-16.2	215	637	07 52 57
07 58 42	J2253+1608	19 47 22	38.2	117.0	-3.1		-33.9	41	637	07 58 42
08 02 17	=2251+158	19 50 58	38.6	117.9	-3.1		-33.6	215	665	07 58 43
08 03 48	J2216+3518	19 52 29	59.1	110.3	-2.4		-43.7	0	665	08 03 48
08 07 23	=2214+350	19 56 04	59.6	111.4	-2.4		-43.3	215	692	08 03 49
08 08 21	J2244+4057	19 57 03	59.5	96.1	-2.8		-52.4	12	692	08 08 21
08 11 56	=2241+406	20 00 38	60.0	96.9	-2.7		-52.2	215	720	08 08 22
08 15 41	J2356+8152	20 04 23	56.7	12.5	-3.9		-111.6	41	720	08 15 41
08 19 16	=2353+816	20 07 59	56.8	12.4	-3.8		-112.5	215	748	08 15 42

Schedule for TORUN (Code Tr) Page 4

Resolving the mystery of large VLBI-Gaia offsets

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 29 Feb 2020 Day 60 ---										
08 20 33	J0011+7045	20 09 16	58.4	33.1	-4.1		-91.6	21	748	08 20 33
08 24 08	=0008+704	20 12 52	58.7	33.0	-4.0		-92.5	215	775	08 20 34
08 25 02	J0157+7442	20 13 46	51.4	24.8	-5.8		-73.9	13	775	08 25 02
08 28 37	=0153+744	20 17 22	51.6	24.9	-5.7		-74.7	215	803	08 25 03
08 38 33	J2131-1207	20 27 19	23.4	162.6	-1.1		-10.6	308	803	08 38 33
08 42 08	=2128-123	20 30 55	23.5	163.5	-1.0		-10.0	215	831	08 38 34
08 42 42	J2129-1538	20 31 29	20.2	164.9	-1.0		-9.3	8	831	08 42 42
08 46 17	=2126-158	20 35 05	20.3	165.8	-0.9		-8.8	215	859	08 42 43
08 49 57	J1759+2343	20 38 46	48.1	241.2	2.6		35.1	55	859	08 49 57
08 53 32	=1756+237	20 42 22	47.6	242.2	2.7		35.5	215	886	08 49 58
09 01 21	J0251+4315	20 50 11	32.9	420.1	-6.0		-45.7	98	886	09 01 21
09 04 56	=0248+430	20 53 47	33.4	420.6	-6.0		-46.0	215	914	09 01 22
09 07 29	J0542+4951	20 56 20	20.6	390.8	-8.8		-28.5	78	914	09 07 29
09 11 04	=0538+498	20 59 56	20.9	391.4	-8.7		-29.0	215	942	09 07 30
09 14 09	J1632+8232	21 03 02	55.3	347.7	4.5		101.9	43	942	09 14 09
09 17 44	=1637+826	21 06 37	55.2	347.7	4.6		100.9	215	969	09 14 10
09 21 39	J1740+4506	21 10 32	55.6	278.3	3.5		57.3	80	969	09 21 39
09 25 14	=1738+451	21 14 08	55.0	278.9	3.6		57.2	215	997	09 21 40
09 26 11	J1824+5651	21 15 06	65.6	296.1	2.8		80.6	4	997	09 26 11
09 29 46	=1823+568	21 18 41	65.2	296.3	2.9		80.0	215	1025	09 26 12
09 31 39	J1806+6949	21 20 34	62.6	325.9	3.2		102.3	38	1025	09 31 39
09 35 14	=1807+698	21 24 10	62.3	325.7	3.3		101.3	215	1052	09 31 40
09 36 02	J1849+6705	21 24 58	66.7	321.9	2.6		107.6	17	1052	09 36 02
09 39 37	=1849+670	21 28 33	66.4	321.6	2.7		106.5	215	1080	09 36 03
---------- >>> Effelsberg pointing - 500 sec long gap <<< ----------										
09 55 07	J2131-1207	21 44 06	24.8	183.1	0.2		1.9	632	1080	09 55 07
09 58 42	=2128-123	21 47 42	24.8	184.1	0.3		2.5	215	1108	09 55 08
09 59 16	J2129-1538	21 48 16	21.2	184.6	0.3		2.9	7	1108	09 59 16
10 02 51	=2126-158	21 51 51	21.2	185.6	0.4		3.5	215	1136	09 59 17

Schedule for TORUN (Code Tr) Page 5

Resolving the mystery of large VLBI-Gaia offsets

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 29 Feb 2020 Day 60 ---										
10 06 38	J1759+2343	21 55 39	37.2	260.2	3.9		40.3	63	1136	10 06 38
10 10 13	=1756+237	21 59 14	36.7	261.0	4.0		40.4	215	1163	10 06 39
10 15 18	J2253+1608	22 04 21	51.8	160.1	-0.8		-12.3	88	1163	10 15 18
10 18 53	=2251+158	22 07 56	52.0	161.5	-0.8		-11.5	215	1191	10 15 19
10 20 23	J2216+3518	22 09 26	72.3	174.8	-0.1		-3.8	0	1191	10 20 23
10 23 58	=2214+350	22 13 02	72.3	177.2	-0.1		-2.1	215	1219	10 20 24
10 25 20	J2244+4057	22 14 24	76.9	153.6	-0.5		-20.7	19	1219	10 25 20
10 28 55	=2241+406	22 17 59	77.1	156.5	-0.5		-18.5	215	1246	10 25 21
10 30 23	J0005+3820	22 19 28	66.4	117.6	-1.8		-42.8	-4	1246	10 30 23
10 33 58	=0003+380	22 23 03	66.9	118.9	-1.7		-42.1	211	1274	10 30 24
10 34 51	J0048+3157	22 23 57	56.5	114.2	-2.4		-40.3	0	1274	10 34 51
10 38 26	=0046+316	22 27 32	57.0	115.2	-2.4		-39.9	215	1302	10 34 52
10 39 32	J0052+4402	22 28 39	64.8	96.0	-2.4		-56.3	13	1302	10 39 32
10 43 07	=0049+437	22 32 14	65.3	96.8	-2.4		-56.2	215	1329	10 39 33
10 44 19	J0152+3350	22 33 26	50.0	98.1	-3.3		-45.8	0	1329	10 44 19
10 47 54	=0149+335	22 37 01	50.5	98.9	-3.3		-45.6	215	1357	10 44 20
10 49 27	J0231+1322	22 38 35	29.4	107.8	-3.9		-36.0	0	1357	10 49 27
10 53 02	=0229+131	22 42 10	29.9	108.6	-3.8		-35.8	215	1385	10 49 28
11 01 22	J1740+4506	22 50 32	41.2	-66.3	5.2		51.2	135	1385	11 01 22
11 04 57	=1738+451	22 54 07	40.7	-65.7	5.2		50.9	215	1413	11 01 23
11 06 06	J1824+5651	22 55 17	52.6	-56.3	4.5		66.1	10	1413	11 06 06
11 09 41	=1823+568	22 58 52	52.1	-56.0	4.6		65.6	215	1440	11 06 07
11 11 46	J2009+7229	23 00 58	63.5	-27.2	2.9		113.8	52	1440	11 11 46
11 15 21	=2010+723	23 04 33	63.2	-27.4	2.9		112.8	215	1468	11 11 47
11 21 48	J2129-1538	23 11 01	18.0	205.5	1.7		15.6	-95	1468	11 21 48
11 25 23	=2126-158	23 14 36	17.8	206.4	1.7		16.1	120	1496	11 21 49
11 25 57	J2131-1207	23 15 11	21.3	207.0	1.7		16.2	7	1496	11 25 57
11 29 32	=2128-123	23 18 46	21.0	207.9	1.8		16.7	215	1523	11 25 58
11 33 08	J1759+2343	23 22 23	24.3	277.7	5.4		40.5	62	1523	11 33 08
11 36 43	=1756+237	23 25 59	23.7	278.4	5.4		40.5	215	1551	11 33 09

Schedule for TORUN (Code Tr) Page 6

Resolving the mystery of large VLBI-Gaia offsets

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 29 Feb 2020 Day 60 ---										
11 41 12	J2253+1608	23 30 28	52.5	194.1	0.6		8.8	84	1551	11 41 12
11 44 47	=2251+158	23 34 04	52.4	195.5	0.7		9.6	215	1579	11 41 13
11 46 15	J2216+3518	23 35 32	67.6	225.7	1.3		31.8	13	1579	11 46 15
11 49 50	=2214+350	23 39 08	67.2	227.4	1.4		32.8	215	1606	11 46 16
11 51 21	J2244+4057	23 40 39	74.7	223.5	0.9		33.2	49	1606	11 51 21
11 54 56	=2241+406	23 44 15	74.4	225.6	1.0		34.7	215	1634	11 51 22
12 02 22	J2356+8152	23 51 42	61.1	360.4	-0.1		-178.3	161	1634	12 02 22
12 05 57	=2353+816	23 55 17	61.1	360.1	-0.0		-179.4	215	1662	12 02 23
12 07 07	J0011+7045	23 56 28	72.1	364.3	-0.3		-172.1	15	1662	12 07 07
12 10 42	=0008+704	00 00 03	72.2	363.3	-0.2		-173.9	215	1689	12 07 08
12 12 21	J0157+7442	00 01 43	65.3	378.0	-2.0		-135.0	54	1689	12 12 21
12 15 56	=0153+744	00 05 18	65.5	377.6	-1.9		-136.3	215	1717	12 12 22
12 25 55	J0005+3820	00 15 19	75.3	186.5	0.1		4.9	196	1717	12 25 55
12 29 30	=0003+380	00 18 54	75.2	189.2	0.2		7.0	215	1745	12 25 56
12 30 38	J0048+3157	00 20 03	68.3	162.7	-0.5		-12.2	0	1745	12 30 38
12 34 13	=0046+316	00 23 38	68.4	164.7	-0.4		-10.7	215	1773	12 30 39
12 35 39	J0052+4402	00 25 04	79.9	149.5	-0.5		-25.1	29	1773	12 35 39
12 39 14	=0049+437	00 28 40	80.2	152.9	-0.4		-22.4	215	1800	12 35 40
12 40 22	J0152+3350	00 29 48	65.7	133.7	-1.4		-31.5	0	1800	12 40 22
12 43 57	=0149+335	00 33 24	66.1	135.3	-1.3		-30.6	215	1828	12 40 23
12 45 34	J0231+1322	00 35 01	44.0	138.3	-2.0		-24.2	0	1828	12 45 34
12 49 09	=0229+131	00 38 37	44.4	139.4	-1.9		-23.7	215	1856	12 45 35
12 51 20	J0251+4315	00 40 48	66.2	100.8	-2.2		-54.2	36	1856	12 51 20
12 54 55	=0248+430	00 44 24	66.7	101.8	-2.1		-53.9	215	1883	12 51 21
12 57 28	J0542+4951	00 46 57	45.7	62.8	-5.0		-55.9	60	1883	12 57 28
13 01 03	=0538+498	00 50 33	46.2	63.2	-4.9		-56.3	215	1911	12 57 29
13 12 38	J1632+8232	01 02 10	48.1	-8.9	8.5		45.2	536	1911	13 12 38
13 16 13	=1637+826	01 05 45	48.0	-8.8	8.6		44.4	215	1939	13 12 39
13 18 20	J1824+5651	01 07 52	37.4	-42.5	6.7		48.0	44	1939	13 18 20
13 21 55	=1823+568	01 11 28	37.1	-42.1	6.8		47.5	215	1966	13 18 21

Schedule for TORUN (Code Tr) Page 7

Resolving the mystery of large VLBI-Gaia offsets

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 29 Feb 2020 Day 60 ---										
13 23 14	J1806+6949	01 12 47	43.8	-27.2	7.1		52.8	35	1966	13 23 14
13 26 49	=1807+698	01 16 23	43.5	-27.0	7.2		52.2	215	1994	13 23 15
13 27 34	J1849+6705	01 17 08	45.1	-33.2	6.5		57.6	18	1994	13 27 34
13 31 09	=1849+670	01 20 43	44.8	-32.9	6.5		57.0	215	2022	13 27 35
13 32 48	J1740+4506	01 22 23	22.6	-43.7	7.7		36.0	2	2022	13 32 48
13 36 23	=1738+451	01 25 59	22.2	-43.1	7.8		35.6	215	2050	13 32 49
---------- >>> Effelsberg pointing - 500 sec long gap <<< ----------										
13 48 53	J2253+1608	01 38 31	41.3	236.7	2.7		31.5	177	2050	13 48 53
13 52 28	=2251+158	01 42 06	40.8	237.7	2.8		31.9	215	2077	13 48 54
13 54 23	J2216+3518	01 44 02	50.0	265.0	3.4		47.2	46	2077	13 54 23
13 57 58	=2214+350	01 47 37	49.5	265.8	3.5		47.3	215	2105	13 54 24
13 58 41	J2244+4057	01 48 20	57.2	267.3	3.1		52.7	0	2105	13 58 41
14 02 16	=2241+406	01 51 56	56.7	268.0	3.1		52.7	215	2133	13 58 42
14 04 20	J0005+3820	01 54 00	66.5	242.2	1.8		42.7	56	2133	14 04 20
14 07 55	=0003+380	01 57 35	66.0	243.5	1.8		43.3	215	2160	14 04 21
14 09 43	J0048+3157	01 59 24	65.5	217.7	1.2		25.7	41	2160	14 09 43
14 13 18	=0046+316	02 02 59	65.2	219.3	1.2		26.7	215	2188	14 09 44
14 14 38	J0052+4402	02 04 20	75.3	239.5	1.2		46.2	25	2188	14 14 38
14 18 13	=0049+437	02 07 55	74.9	241.3	1.2		47.2	215	2216	14 14 39
14 20 10	J0152+3350	02 09 53	70.6	190.2	0.3		7.3	0	2216	14 20 10
14 23 45	=0149+335	02 13 28	70.5	192.4	0.3		8.9	215	2243	14 20 11
14 25 18	J0231+1322	02 15 02	50.2	173.2	-0.3		-4.2	3	2243	14 25 18
14 28 53	=0229+131	02 18 38	50.3	174.6	-0.2		-3.3	215	2271	14 25 19
14 31 13	J0251+4315	02 20 58	78.9	148.4	-0.5		-25.7	19	2271	14 31 13
14 34 48	=0248+430	02 24 33	79.2	151.5	-0.5		-23.2	215	2299	14 31 14
14 37 34	J0542+4951	02 27 20	59.8	75.9	-3.3		-64.6	0	2299	14 37 34
14 41 09	=0538+498	02 30 55	60.3	76.4	-3.2		-64.9	215	2326	14 37 35
14 52 45	J1632+8232	02 42 33	46.3	-4.9	10.2		23.2	517	2326	14 52 45
14 56 20	=1637+826	02 46 08	46.2	-4.8	10.3		22.4	215	2354	14 52 46

Schedule for TORUN (Code Tr) Page 8

Resolving the mystery of large VLBI-Gaia offsets

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 29 Feb 2020 Day 60 ---										
14 57 47	J2009+7229	02 47 36	47.1	-25.8	6.6		60.6	31	2354	14 57 47
15 01 22	=2010+723	02 51 12	46.9	-25.6	6.7		59.8	215	2382	14 57 48
15 02 54	J2356+8152	02 52 44	58.4	-10.6	2.9		127.3	34	2382	15 02 54
15 06 29	=2353+816	02 56 19	58.3	-10.8	3.0		126.3	215	2410	15 02 55
15 07 31	J0011+7045	02 57 21	64.6	-30.2	2.7		112.6	8	2410	15 07 31
15 11 06	=0008+704	03 00 57	64.4	-30.5	2.8		111.5	215	2437	15 07 32
15 12 45	J0157+7442	03 02 36	67.4	-10.7	1.1		154.8	44	2437	15 12 45
15 16 20	=0153+744	03 06 12	67.3	-11.2	1.1		153.4	215	2465	15 12 46
15 26 44	J0048+3157	03 16 37	56.4	246.1	2.4		40.4	95	2465	15 26 44
15 30 19	=0046+316	03 20 13	55.9	247.1	2.5		40.8	215	2493	15 26 45
15 31 40	J0052+4402	03 21 35	64.3	264.7	2.5		56.5	32	2493	15 31 40
15 35 15	=0049+437	03 25 10	63.8	265.5	2.5		56.6	215	2520	15 31 41
15 37 51	J0152+3350	03 27 46	64.6	230.5	1.6		33.9	69	2520	15 37 51
15 41 26	=0149+335	03 31 22	64.2	231.9	1.6		34.7	215	2548	15 37 52
15 42 59	J0231+1322	03 32 55	48.6	202.4	1.0		13.6	19	2548	15 42 59
15 46 34	=0229+131	03 36 31	48.4	203.7	1.1		14.4	215	2576	15 43 00
15 48 46	J0251+4315	03 38 43	77.6	222.5	0.8		33.9	8	2576	15 48 46
15 52 21	=0248+430	03 42 18	77.3	224.9	0.8		35.7	215	2603	15 48 47
15 57 09	J0542+4951	03 47 07	71.6	88.3	-2.0		-68.6	0	2603	15 57 09
16 00 44	=0538+498	03 50 43	72.2	89.0	-1.9		-68.7	215	2631	15 57 10
16 10 19	J1849+6705	04 00 20	34.3	-18.4	9.2		29.2	344	2631	16 10 19
16 13 54	=1849+670	04 03 56	34.1	-18.1	9.2		28.6	215	2659	16 10 20
16 14 59	J2009+7229	04 05 00	42.5	-20.9	7.9		45.5	19	2659	16 14 59
16 18 34	=2010+723	04 08 36	42.3	-20.6	8.0		44.9	215	2687	16 15 00
16 20 00	J1632+8232	04 10 03	45.6	-1.0	11.7		4.4	32	2687	16 20 00
16 23 35	=1637+826	04 13 38	45.6	-0.8	11.7		3.6	215	2714	16 20 01
16 24 45	J1806+6949	04 14 48	34.6	-11.3	10.1		20.0	14	2714	16 24 45
16 28 20	=1807+698	04 18 23	34.5	-11.0	10.2		19.4	215	2742	16 24 46
16 30 14	J2356+8152	04 20 18	55.7	-13.0	4.4		103.6	21	2742	16 30 14
16 33 49	=2353+816	04 23 54	55.6	-13.1	4.4		102.7	215	2770	16 30 15

```
Schedule for TORUN     (Code Tr )                                  Page   9
              Resolving the mystery of large VLBI-Gaia offsets
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  29 Feb 2020   Day  60 ---

16 35 11  J0011+7045   04 25 16  57.6 -33.1  4.2      89.4    27     2770   16 35 11
16 38 46  =0008+704    04 28 52  57.3 -33.1  4.3      88.5   215     2797   16 35 12

16 40 25  J0157+7442   04 30 31  63.6 -21.2  2.5     124.0    60     2797   16 40 25
16 44 00  =0153+744    04 34 06  63.4 -21.5  2.6     122.9   215     2825   16 40 26

16 53 57  J0048+3157   04 44 05  43.6 267.3  3.9      45.1     5     2825   16 53 57
16 57 32  =0046+316    04 47 41  43.1 268.0  4.0      45.1   215     2853   16 53 58

16 58 47  J0052+4402   04 48 56  51.3 281.2  3.9      55.2    30     2853   16 58 47
17 02 24  =0049+437    04 52 33  50.7 281.8  4.0      55.0   217     2881   16 58 48

17 04 13  J0152+3350   04 54 23  52.9 257.3  3.0      44.9    45     2881   17 04 13
17 07 50  =0149+335    04 58 00  52.4 258.2  3.1      45.1   217     2909   17 04 14

17 09 41  J0231+1322   04 59 52  40.9 230.3  2.5      28.4    40     2909   17 09 41
17 13 18  =0229+131    05 03 29  40.4 231.3  2.5      28.8   217     2937   17 09 42

17 15 30  J0251+4315   05 05 41  66.1 259.4  2.2      54.2    21     2937   17 15 30
17 19 07  =0248+430    05 09 19  65.6 260.3  2.3      54.5   217     2965   17 15 31

17 26 20  J0542+4951   05 16 34  84.6 124.2 -0.5     -50.4   141     2965   17 26 20
17 29 57  =0538+498    05 20 11  85.1 128.5 -0.4     -46.8   217     2992   17 26 21



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


 ======== Setup file: sess120.C1024_32

   Setup group:   10         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         9         1         9         2        10         2        10
  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 = 1MHz
  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)

  0003+380          00 03 22.335504   * 00 05 57.175393     00 06 57.272942       0.13
* J0005+3820        38 03 33.40997    * 38 20 15.14904      38 26 51.31600        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  1840 observations

  0008+704          00 08 49.693643   * 00 11 31.902797     00 12 33.420700       0.56
* J0011+7045        70 28 50.79210    * 70 45 31.62634      70 52 13.83719        0.22
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  176 observations

  0046+316          00 46 04.857322   * 00 48 47.141480     00 49 50.433367       0.12
* J0048+3157        31 41 04.49533    * 31 57 25.08484      32 03 52.64019        0.11
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  1080 observations

  0049+437          00 49 39.848494   * 00 52 27.825867     00 53 33.266278       0.18
* J0052+4402        43 46 37.37207    * 44 02 54.51597      44 09 23.64359        0.15
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  255 observations

  0149+335          01 49 40.036701   * 01 52 34.576408     01 53 43.031029       0.18
* J0152+3350        33 35 46.68972    * 33 50 33.15880      33 56 24.96597        0.18
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  151 observations

  0153+744          01 53 04.337075   * 01 57 34.964939     01 59 21.086791       0.44
* J0157+7442        74 28 05.62189    * 74 42 43.22953      74 48 41.26075        0.11
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  1126 observations

  0229+131          02 29 02.524214   * 02 31 45.894061     02 32 50.135385       0.10
* J0231+1322        13 09 40.78819    * 13 22 54.71634      13 28 03.85156        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  109449 observations
```

```
  0248+430          02 48 18.485707   * 02 51 34.536750     02 52 51.850090       0.14
* J0251+4315        43 02 56.98557    * 43 15 15.82919      43 20 12.48272        0.11
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  1308 observations

  0538+498          05 38 43.517524   * 05 42 36.137901     05 44 09.086752       0.16
* J0542+4951        49 49 42.83716    * 49 51 07.23379      49 51 44.75312        0.11
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  2002 observations

  1637+826          16 37 56.926910   * 16 32 31.969878     16 30 26.021715       0.78
* J1632+8232        82 38 18.49826    * 82 32 16.39990      82 29 26.86309        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  10135 observations

  1738+451          17 38 39.409580   * 17 40 06.372611     17 40 40.304576       0.21
* J1740+4506        45 08 20.31720    * 45 06 50.37091      45 05 58.26381        0.20
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  123 observations

  1756+237          17 56 55.937405   * 17 59 00.358089     17 59 49.161077       0.19
* J1759+2343        23 43 55.77917    * 23 43 46.95383      23 43 32.00913        0.21
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  181 observations

  1807+698          18 07 18.543587   * 18 06 50.680645     18 06 38.061292       0.29
* J1806+6949        69 48 57.10467    * 69 49 28.10852      69 49 20.96032        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  146554 observations

  1823+568          18 23 14.951492   * 18 24 07.068370     18 24 26.583575       0.18
* J1824+5651        56 49 18.07202    * 56 51 01.49083      56 51 25.45645        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  11370 observations

  1849+670          18 49 16.505869   * 18 49 16.072281     18 49 13.882798       0.26
* J1849+6705        67 02 07.88053    * 67 05 41.68027      67 06 49.17978        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  47097 observations

  2010+723          20 10 16.209308   * 20 09 52.303853     20 09 38.826383       0.41
* J2009+7229        72 20 20.74085    * 72 29 19.35053      72 32 39.95809        0.12
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  438 observations

  2126-158          21 26 26.777532   * 21 29 12.175899     21 30 16.380642       0.10
* J2129-1538       -15 51 50.34808    *-15 38 41.04191     -15 33 31.89920        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  14782 observations

  2128-123          21 28 52.676060   * 21 31 35.261752     21 32 38.381111       0.10
* J2131-1207       -12 20 20.53571    *-12 07 04.79610     -12 01 53.60880        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  16909 observations

  2214+350          22 14 07.014327   * 22 16 20.009902     22 17 11.251899       0.12
* J2216+3518        35 03 15.09223    * 35 18 14.17996      35 24 05.21722        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  30582 observations

  2241+406          22 41 57.956930   * 22 44 12.731148     22 45 04.595744       0.23
* J2244+4057        40 41 27.56069    * 40 57 13.62048      41 03 24.90148        0.22
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
```

```
                    rfc_2018a Petrov and Kovalev, in preparation  85 observations

  2251+158          22 51 29.519743   * 22 53 57.747942     22 54 55.237861       0.10
* J2253+1608        15 52 54.34805    * 16 08 53.56088      16 15 08.16195        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  41804 observations

  2353+816          23 53 58.676764   * 23 56 22.793915     23 57 12.804491       0.72
* J2356+8152        81 36 10.67120    * 81 52 52.25510      81 59 35.66092        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  3111 observations
```

rg011tr

Are g-ray blazars associated with neutrinos? The case of IC 200109A

PI: *M. Giroletti*

```
Address:  INAF/IRA

Observing mode: 6cm
Schedule for TORUN     (Code Tr )                                    Page   2
               Are g-ray blazars associated with neutrinos? The case of IC 200109A
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  29 Feb 2020   Day  60 ---
 Next scan frequencies:  4830.49  4830.49  4830.49  4830.49  4894.49  4894.49  4894.49  4894.49
                         4958.49  4958.49  4958.49  4958.49  5022.49  5022.49  5022.49  5022.49
 Next BBC frequencies:    630.49   630.49   630.49   630.49   694.49   694.49   694.49   694.49
                          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
                           32.00    32.00    32.00    32.00    32.00    32.00    32.00    32.00

18 30 00  1156+295     06 20 24  25.8  75.1 -5.7     -41.6     0        0   18 30 00
18 35 00  ---          06 25 25  26.5  76.0 -5.6     -41.8   300       77   18 30 01

18 36 30  1100+122     06 26 55  21.8  99.5 -4.6     -37.2    28       77   18 36 30
18 42 30  ---          06 32 56  22.7 100.8 -4.5     -37.1   360      170   18 36 31

18 43 10  SOURCEB1     06 33 36  21.5  98.2 -4.7     -37.5    20      170   18 43 10
18 44 40  ---          06 35 06  21.7  98.5 -4.7     -37.4    90      193   18 43 11

18 45 20  1100+122     06 35 46  23.2 101.4 -4.5     -37.0    20      193   18 45 20
18 49 20  ---          06 39 47  23.7 102.2 -4.4     -36.8   240      255   18 45 21

18 50 00  SOURCEB2     06 40 27  22.5  99.6 -4.6     -37.3    20      255   18 50 00
18 51 30  ---          06 41 57  22.8  99.9 -4.6     -37.3    90      278   18 50 01

18 52 10  1100+122     06 42 37  24.2 102.8 -4.4     -36.7    20      278   18 52 10
18 56 10  ---          06 46 38  24.7 103.7 -4.3     -36.6   240      340   18 52 11

18 56 50  SOURCEC      06 47 18  24.6 106.2 -4.2     -35.9    21      340   18 56 50
18 58 20  ---          06 48 48  24.8 106.5 -4.2     -35.8    90      363   18 56 51

18 59 00  1100+122     06 49 28  25.2 104.3 -4.2     -36.5    22      363   18 59 00
19 03 00  ---          06 53 29  25.7 105.2 -4.2     -36.3   240      425   18 59 01

19 03 40  SOURCEB1     06 54 09  24.5 102.5 -4.4     -36.9    20      425   19 03 40
19 05 10  ---          06 55 39  24.8 102.8 -4.3     -36.8    90      448   19 03 41

19 05 50  1100+122     06 56 20  26.2 105.8 -4.1     -36.2    20      448   19 05 50
19 09 50  ---          07 00 20  26.7 106.7 -4.1     -36.0   240      510   19 05 51

19 10 30  SOURCEB2     07 01 00  25.6 104.0 -4.2     -36.6    20      510   19 10 30
19 12 00  ---          07 02 31  25.8 104.3 -4.2     -36.6    90      533   19 10 31

19 12 40  1100+122     07 03 11  27.1 107.3 -4.0     -35.9    20      533   19 12 40
19 16 40  ---          07 07 11  27.7 108.2 -3.9     -35.6   240      595   19 12 41
```

Schedule for TORUN (Code Tr) Page 3

Are g-ray blazars associated with neutrinos? The case of IC 200109A

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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	29 Feb 2020	Day 60 ---								
19 17 20	SOURCEC	07 07 51	27.5	110.7	-3.8		-34.8	21	595	19 17 20
19 18 50	---	07 09 22	27.7	111.1	-3.8		-34.7	90	618	19 17 21
19 19 30	1100+122	07 10 02	28.1	108.9	-3.9		-35.5	21	618	19 19 30
19 23 30	---	07 14 03	28.7	109.8	-3.8		-35.3	240	680	19 19 31
19 24 10	SOURCEB1	07 14 43	27.5	107.0	-4.0		-36.0	20	680	19 24 10
19 25 40	---	07 16 13	27.7	107.3	-4.0		-35.9	90	703	19 24 11
19 26 20	1100+122	07 16 53	29.1	110.4	-3.8		-35.1	20	703	19 26 20
19 30 20	---	07 20 54	29.6	111.3	-3.7		-34.9	240	765	19 26 21
19 31 00	SOURCEB2	07 21 34	28.5	108.6	-3.9		-35.6	20	765	19 31 00
19 32 30	---	07 23 04	28.7	108.9	-3.9		-35.6	90	788	19 31 01
19 33 10	1100+122	07 23 44	30.0	112.0	-3.7		-34.7	19	788	19 33 10
19 37 10	---	07 27 45	30.6	112.9	-3.6		-34.4	240	850	19 33 11
19 37 50	SOURCEC	07 28 25	30.3	115.5	-3.5		-33.4	21	850	19 37 50
19 39 20	---	07 29 55	30.5	115.9	-3.5		-33.3	90	873	19 37 51
19 40 00	1100+122	07 30 35	31.0	113.6	-3.6		-34.2	21	873	19 40 00
19 44 00	---	07 34 36	31.5	114.6	-3.5		-33.9	240	935	19 40 01
19 45 40	1156+295	07 36 16	37.0	89.3	-4.4		-43.4	34	935	19 45 40
19 48 40	---	07 39 17	37.5	89.9	-4.4		-43.4	180	982	19 45 41
19 50 20	1100+122	07 40 57	32.4	116.1	-3.4		-33.4	33	982	19 50 20
19 56 20	---	07 46 58	33.2	117.6	-3.3		-33.0	360	1074	19 50 21
19 57 05	SOURCEB1	07 47 43	32.2	114.6	-3.5		-34.0	24	1074	19 57 05
19 58 35	---	07 49 13	32.4	115.0	-3.4		-33.9	90	1098	19 57 06
19 59 20	1100+122	07 49 58	33.6	118.3	-3.2		-32.7	24	1098	19 59 20
20 03 20	---	07 53 59	34.1	119.3	-3.2		-32.4	240	1159	19 59 21
20 04 05	SOURCEB2	07 54 44	33.1	116.3	-3.3		-33.4	24	1159	20 04 05
20 05 35	---	07 56 14	33.3	116.7	-3.3		-33.3	90	1183	20 04 06
20 06 20	1100+122	07 57 00	34.5	120.0	-3.1		-32.1	24	1183	20 06 20
20 10 20	---	08 01 00	35.0	121.1	-3.1		-31.7	240	1244	20 06 21
20 11 00	SOURCEC	08 01 40	34.7	123.8	-2.9		-30.5	21	1244	20 11 00
20 12 30	---	08 03 11	34.9	124.1	-2.9		-30.4	90	1268	20 11 01
20 13 10	1100+122	08 03 51	35.4	121.8	-3.0		-31.4	21	1268	20 13 10
20 17 10	---	08 07 51	35.9	122.8	-2.9		-31.0	240	1329	20 13 11

Schedule for TORUN (Code Tr) Page 4

Are g-ray blazars associated with neutrinos? The case of IC 200109A

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 29 Feb 2020 Day 60 ---										
20 17 55	SOURCEB1	08 08 36	34.9	119.7	-3.1		-32.3	24	1329	20 17 55
20 19 25	---	08 10 07	35.1	120.1	-3.1		-32.1	90	1353	20 17 56
20 20 10	1100+122	08 10 52	36.3	123.6	-2.9		-30.7	24	1353	20 20 10
20 24 10	---	08 14 52	36.8	124.6	-2.8		-30.3	240	1414	20 20 11
20 24 55	SOURCEB2	08 15 38	35.9	121.6	-3.0		-31.6	24	1414	20 24 55
20 26 25	---	08 17 08	36.1	121.9	-3.0		-31.4	90	1438	20 24 56
20 27 10	1100+122	08 17 53	37.2	125.4	-2.8		-30.0	24	1438	20 27 10
20 31 10	---	08 21 54	37.7	126.5	-2.7		-29.5	240	1499	20 27 11
20 31 50	SOURCEC	08 22 34	37.2	129.3	-2.6		-28.2	20	1499	20 31 50
20 33 20	---	08 24 04	37.4	129.7	-2.6		-28.0	90	1523	20 31 51
20 34 00	1100+122	08 24 44	38.0	127.3	-2.7		-29.2	21	1523	20 34 00
20 38 00	---	08 28 45	38.5	128.4	-2.6		-28.8	240	1584	20 34 01
20 38 45	SOURCEB1	08 29 30	37.6	125.2	-2.8		-30.2	24	1584	20 38 45
20 40 15	---	08 31 00	37.8	125.6	-2.7		-30.0	90	1608	20 38 46
20 41 00	1100+122	08 31 45	38.8	129.2	-2.5		-28.4	23	1608	20 41 00
20 45 00	---	08 35 46	39.3	130.3	-2.5		-27.9	240	1669	20 41 01
20 45 45	SOURCEB2	08 36 31	38.5	127.1	-2.7		-29.4	24	1669	20 45 45
20 47 15	---	08 38 01	38.6	127.5	-2.6		-29.2	90	1693	20 45 46
20 48 00	1100+122	08 38 46	39.6	131.2	-2.4		-27.5	23	1693	20 48 00
20 52 00	---	08 42 47	40.1	132.3	-2.4		-27.0	240	1755	20 48 01
20 52 40	SOURCEC	08 43 27	39.5	135.1	-2.2		-25.5	20	1755	20 52 40
20 54 10	---	08 44 57	39.7	135.6	-2.2		-25.3	90	1778	20 52 41
20 54 50	1100+122	08 45 38	40.4	133.1	-2.3		-26.6	21	1778	20 54 50
20 58 50	---	08 49 38	40.8	134.3	-2.2		-26.1	240	1840	20 54 51
21 00 35	1156+295	08 51 23	48.2	105.8	-3.2		-41.4	33	1840	21 00 35
21 03 35	---	08 54 24	48.6	106.5	-3.1		-41.2	180	1886	21 00 36
21 05 25	OQ208	08 56 14	29.4	80.9	-5.2		-42.4	24	1886	21 05 25
21 10 25	---	09 01 15	30.1	81.8	-5.1		-42.5	300	1963	21 05 26
21 13 10	1100+122	09 04 01	42.3	138.5	-2.0		-24.0	37	1963	21 13 10
21 19 10	---	09 10 02	42.9	140.4	-1.9		-23.0	360	2056	21 13 11

Schedule for TORUN (Code Tr) Page 5

Are g-ray blazars associated with neutrinos? The case of IC 200109A

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 29 Feb 2020 Day 60 ---										
21 19 55	SOURCEB1	09 10 47	42.3	136.8	-2.1		-24.9	23	2056	21 19 55
21 21 25	---	09 12 17	42.4	137.3	-2.1		-24.7	90	2079	21 19 56
21 22 10	1100+122	09 13 02	43.2	141.3	-1.9		-22.6	22	2079	21 22 10
21 26 10	---	09 17 03	43.6	142.5	-1.8		-21.9	240	2141	21 22 11
21 26 55	SOURCEB2	09 17 48	43.0	139.0	-2.0		-23.8	23	2141	21 26 55
21 28 25	---	09 19 18	43.1	139.4	-1.9		-23.6	90	2164	21 26 56
21 29 10	1100+122	09 20 03	43.8	143.5	-1.7		-21.4	22	2164	21 29 10
21 33 10	---	09 24 04	44.2	144.8	-1.7		-20.7	240	2226	21 29 11
21 33 50	SOURCEC	09 24 44	43.4	147.7	-1.6		-19.1	20	2226	21 33 50
21 35 20	---	09 26 14	43.5	148.1	-1.5		-18.8	90	2249	21 33 51
21 36 00	1100+122	09 26 54	44.4	145.7	-1.6		-20.2	21	2249	21 36 00
21 40 00	---	09 30 55	44.8	147.0	-1.6		-19.5	240	2311	21 36 01
21 40 45	SOURCEB1	09 31 40	44.3	143.3	-1.7		-21.6	22	2311	21 40 45
21 42 15	---	09 33 10	44.4	143.7	-1.7		-21.3	90	2334	21 40 46
21 43 00	1100+122	09 33 55	45.0	147.9	-1.5		-19.0	22	2334	21 43 00
21 47 00	---	09 37 56	45.3	149.3	-1.4		-18.3	240	2396	21 43 01
21 47 45	SOURCEB2	09 38 41	44.9	145.5	-1.6		-20.4	22	2396	21 47 45
21 49 15	---	09 40 11	45.0	146.0	-1.6		-20.1	90	2419	21 47 46
21 50 00	1100+122	09 40 57	45.5	150.3	-1.4		-17.7	22	2419	21 50 00
21 54 00	---	09 44 57	45.8	151.6	-1.3		-17.0	240	2481	21 50 01
21 54 40	SOURCEC	09 45 37	44.9	154.5	-1.2		-15.2	20	2481	21 54 40
21 56 10	---	09 47 08	45.0	155.0	-1.2		-14.9	90	2504	21 54 41
21 56 50	1100+122	09 47 48	46.0	152.6	-1.3		-16.4	21	2504	21 56 50
22 00 50	---	09 51 48	46.3	153.9	-1.2		-15.6	240	2566	21 56 51
22 01 35	SOURCEB1	09 52 33	46.0	150.1	-1.4		-17.9	22	2566	22 01 35
22 03 05	---	09 54 04	46.1	150.6	-1.4		-17.6	90	2589	22 01 36
22 03 50	1100+122	09 54 49	46.5	155.0	-1.2		-15.1	22	2589	22 03 50
22 07 50	---	09 58 50	46.7	156.3	-1.1		-14.3	240	2651	22 03 51
22 08 35	SOURCEB2	09 59 35	46.5	152.5	-1.3		-16.5	22	2651	22 08 35
22 10 05	---	10 01 05	46.6	153.0	-1.2		-16.2	90	2674	22 08 36

Schedule for TORUN (Code Tr) Page 6

Are g-ray blazars associated with neutrinos? The case of IC 200109A

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 29 Feb 2020 Day 60 ---										
22 10 50	1100+122	10 01 50	46.9	157.4	-1.0		-13.7	22	2674	22 10 50
22 14 50	---	10 05 51	47.1	158.8	-1.0		-12.8	240	2736	22 10 51
22 15 30	SOURCEC	10 06 31	46.1	161.6	-0.9		-11.1	20	2736	22 15 30
22 17 00	---	10 08 01	46.1	162.2	-0.8		-10.8	90	2759	22 15 31
22 17 40	1100+122	10 08 41	47.3	159.8	-0.9		-12.2	21	2759	22 17 40
22 21 40	---	10 12 42	47.5	161.2	-0.9		-11.4	240	2821	22 17 41
22 23 40	1156+295	10 14 42	59.2	130.5	-1.8		-31.5	43	2821	22 23 40
22 26 40	---	10 17 43	59.5	131.6	-1.7		-30.9	180	2868	22 23 41
22 28 30	1100+122	10 19 33	47.8	163.6	-0.7		-10.0	31	2868	22 28 30
22 36 30	---	10 27 34	48.1	166.5	-0.6		-8.2	480	2991	22 28 31
22 36 35	1100+122	10 27 39	48.1	166.6	-0.6		-8.2	-1	2991	No stop
22 38 35	---	10 29 40	48.2	167.3	-0.6		-7.8	119	3023	22 36 31
22 39 20	SOURCEB1	10 30 25	48.3	163.3	-0.8		-10.2	22	3023	22 39 20
22 40 50	---	10 31 55	48.3	163.8	-0.7		-9.9	90	3047	22 39 21
22 41 35	1100+122	10 32 40	48.3	168.4	-0.5		-7.1	21	3047	22 41 35
22 45 35	---	10 36 41	48.4	169.9	-0.5		-6.2	240	3108	22 41 36
22 46 20	SOURCEB2	10 37 26	48.6	165.9	-0.6		-8.6	22	3108	22 46 20
22 47 50	---	10 38 56	48.6	166.4	-0.6		-8.3	90	3132	22 46 21
22 48 35	1100+122	10 39 41	48.5	171.0	-0.4		-5.5	21	3132	22 48 35
22 52 35	---	10 43 42	48.6	172.4	-0.3		-4.6	240	3193	22 48 36
22 53 15	SOURCEC	10 44 22	47.2	175.1	-0.2		-3.0	21	3193	22 53 15
22 54 45	---	10 45 52	47.2	175.7	-0.2		-2.6	90	3217	22 53 16
22 55 25	1100+122	10 46 32	48.6	173.5	-0.3		-4.0	21	3217	22 55 25
22 59 25	---	10 50 33	48.7	175.0	-0.2		-3.1	240	3278	22 55 26
23 00 10	SOURCEB1	10 51 18	49.0	170.9	-0.4		-5.6	22	3278	23 00 10
23 01 40	---	10 52 48	49.0	171.5	-0.4		-5.2	90	3302	23 00 11
23 02 25	1100+122	10 53 33	48.7	176.1	-0.2		-2.4	21	3302	23 02 25
23 06 25	---	10 57 34	48.7	177.6	-0.1		-1.5	240	3363	23 02 26
23 07 10	SOURCEB2	10 58 19	49.1	173.6	-0.3		-4.0	22	3363	23 07 10
23 08 40	---	10 59 50	49.1	174.1	-0.3		-3.6	90	3387	23 07 11

Schedule for TORUN (Code Tr) Page 7

Are g-ray blazars associated with neutrinos? The case of IC 200109A

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 29 Feb 2020 Day 60 ---										
23 09 25	1100+122	11 00 35	48.8	178.7	-0.1		-0.8	21	3387	23 09 25
23 13 25	---	11 04 35	48.8	180.2	0.0		0.1	240	3448	23 09 26
23 14 05	SOURCEC	11 05 15	47.3	182.7	0.1		1.6	21	3448	23 14 05
23 15 35	---	11 06 46	47.3	183.2	0.1		2.0	90	3472	23 14 06
23 16 15	1100+122	11 07 26	48.8	181.2	0.1		0.8	21	3472	23 16 15
23 20 15	---	11 11 26	48.7	182.7	0.1		1.7	240	3534	23 16 16
23 21 00	SOURCEB1	11 12 12	49.2	178.7	-0.1		-0.8	22	3534	23 21 00
23 22 30	---	11 13 42	49.2	179.3	-0.0		-0.5	90	3557	23 21 01
23 23 15	1100+122	11 14 27	48.7	183.8	0.2		2.3	21	3557	23 23 15
23 27 15	---	11 18 28	48.7	185.3	0.2		3.3	240	3619	23 23 16
23 28 00	SOURCEB2	11 19 13	49.3	181.4	0.1		0.8	22	3619	23 28 00
23 29 30	---	11 20 43	49.2	181.9	0.1		1.2	90	3642	23 28 01
23 30 15	1100+122	11 21 28	48.6	186.4	0.3		3.9	21	3642	23 30 15
23 34 15	---	11 25 29	48.5	187.9	0.4		4.8	240	3704	23 30 16
23 34 55	SOURCEC	11 26 09	46.9	190.2	0.5		6.2	20	3704	23 34 55
23 36 25	---	11 27 39	46.9	190.8	0.5		6.5	90	3727	23 34 56
23 37 05	1100+122	11 28 19	48.5	189.0	0.4		5.5	20	3727	23 37 05
23 41 05	---	11 32 20	48.4	190.4	0.5		6.4	240	3789	23 37 06
23 43 05	1156+295	11 34 20	65.6	166.0	-0.4		-9.5	42	3789	23 43 05
23 46 05	---	11 37 21	65.7	167.6	-0.4		-8.5	180	3835	23 43 06
23 48 05	1100+122	11 39 21	48.2	193.0	0.6		7.9	41	3835	23 48 05
23 54 05	---	11 45 22	47.9	195.2	0.7		9.2	360	3928	23 48 06
23 54 50	SOURCEB1	11 46 07	48.8	191.3	0.5		6.9	22	3928	23 54 50
23 56 20	---	11 47 37	48.8	191.9	0.5		7.3	90	3951	23 54 51
--- Start: Sat 29 Feb 2020 Day 60 -- Stop: Sun 1 Mar 2020 Day 61 ---										
23 57 05	1100+122	11 48 22	47.8	196.2	0.7		9.9	22	3951	23 57 05
00 01 05	---	11 52 23	47.7	197.7	0.8		10.7	240	4013	23 57 06
00 01 50	SOURCEB2	11 53 08	48.6	193.9	0.6		8.5	22	4013	00 01 50
00 03 20	---	11 54 38	48.5	194.5	0.7		8.9	90	4036	00 01 51

Schedule for TORUN (Code Tr) Page 8

Are g-ray blazars associated with neutrinos? The case of IC 200109A

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 1 Mar 2020 Day 61 ---										
00 04 05	1100+122	11 55 24	47.5	198.8	0.9		11.4	22	4036	00 04 05
00 08 05	---	11 59 24	47.3	200.2	0.9		12.2	240	4098	00 04 06
00 08 45	SOURCEC	12 00 04	45.5	202.1	1.0		13.3	20	4098	00 08 45
00 10 15	---	12 01 35	45.4	202.6	1.1		13.6	90	4121	00 08 46
00 10 55	1100+122	12 02 15	47.2	201.2	1.0		12.8	20	4121	00 10 55
00 14 55	---	12 06 15	46.9	202.6	1.0		13.6	240	4183	00 10 56
00 15 40	SOURCEB1	12 07 01	48.0	198.9	0.9		11.5	23	4183	00 15 40
00 17 10	---	12 08 31	47.9	199.5	0.9		11.8	90	4206	00 15 41
00 17 55	1100+122	12 09 16	46.8	203.6	1.1		14.2	22	4206	00 17 55
00 21 55	---	12 13 17	46.5	205.0	1.2		15.0	240	4268	00 17 56
00 22 40	SOURCEB2	12 14 02	47.6	201.5	1.0		13.0	23	4268	00 22 40
00 24 10	---	12 15 32	47.5	202.0	1.0		13.3	90	4291	00 22 41
00 24 55	1100+122	12 16 17	46.3	206.0	1.2		15.6	22	4291	00 24 55
00 28 55	---	12 20 18	46.0	207.4	1.3		16.4	240	4353	00 24 56
00 29 35	SOURCEC	12 20 58	44.2	209.1	1.4		17.3	19	4353	00 29 35
00 31 05	---	12 22 28	44.0	209.6	1.4		17.5	90	4376	00 29 36
00 31 45	1100+122	12 23 08	45.8	208.3	1.3		16.9	19	4376	00 31 45
00 35 45	---	12 27 09	45.6	209.7	1.4		17.7	240	4438	00 31 46
00 36 30	SOURCEB1	12 27 54	46.8	206.2	1.2		15.8	23	4438	00 36 30
00 38 00	---	12 29 24	46.7	206.8	1.2		16.1	90	4461	00 36 31
00 38 45	1100+122	12 30 09	45.3	210.7	1.4		18.2	23	4461	00 38 45
00 42 45	---	12 34 10	45.0	212.0	1.5		19.0	240	4523	00 38 46
00 43 30	SOURCEB2	12 34 55	46.3	208.7	1.3		17.2	23	4523	00 43 30
00 45 00	---	12 36 25	46.2	209.2	1.3		17.4	90	4546	00 43 31
00 45 45	1100+122	12 37 10	44.8	213.0	1.6		19.5	23	4546	00 45 45
00 49 45	---	12 41 11	44.4	214.3	1.6		20.2	240	4608	00 45 46
00 50 25	SOURCEC	12 41 51	42.5	215.8	1.7		20.9	19	4608	00 50 25
00 51 55	---	12 43 21	42.3	216.2	1.8		21.2	90	4631	00 50 26
00 52 35	1100+122	12 44 02	44.2	215.2	1.7		20.7	19	4631	00 52 35
00 56 35	---	12 48 02	43.8	216.5	1.7		21.4	240	4693	00 52 36

Schedule for TORUN (Code Tr) Page 9

Are g-ray blazars associated with neutrinos? The case of IC 200109A

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 1 Mar 2020 Day 61 ---										
00 58 20	1156+295	12 49 48	64.4	205.5	0.8		17.2	14	4693	00 58 20
01 01 20	---	12 52 48	64.2	207.0	0.9		18.2	180	4739	00 58 21
01 04 20	OQ208	12 55 49	61.9	144.7	-1.2		-23.3	40	4739	01 04 20
01 07 20	---	12 58 49	62.2	146.0	-1.2		-22.5	180	4786	01 04 21
01 11 10	1100+122	13 02 40	42.5	221.0	2.0		23.7	66	4786	01 11 10
01 17 10	---	13 08 41	41.9	222.8	2.1		24.6	360	4878	01 11 11
01 17 55	SOURCEB1	13 09 26	43.4	219.8	1.9		23.2	24	4878	01 17 55
01 19 25	---	13 10 56	43.2	220.3	1.9		23.4	90	4902	01 17 56
01 20 10	1100+122	13 11 41	41.6	223.7	2.1		25.1	24	4902	01 20 10
01 24 10	---	13 15 42	41.1	224.9	2.2		25.7	240	4963	01 20 11
01 24 55	SOURCEB2	13 16 27	42.7	222.0	2.0		24.3	24	4963	01 24 55
01 26 25	---	13 17 57	42.5	222.4	2.0		24.5	90	4987	01 24 56
01 27 10	1100+122	13 18 42	40.8	225.8	2.2		26.1	24	4987	01 27 10
01 31 10	---	13 22 43	40.4	226.9	2.3		26.6	240	5048	01 27 11
01 31 50	SOURCEC	13 23 23	38.3	228.0	2.4		27.0	19	5048	01 31 50
01 33 20	---	13 24 53	38.1	228.4	2.5		27.2	90	5072	01 31 51
01 34 00	1100+122	13 25 33	40.1	227.7	2.4		27.0	19	5072	01 34 00
01 38 00	---	13 29 34	39.6	228.9	2.4		27.5	240	5133	01 34 01
01 38 45	SOURCEB1	13 30 19	41.2	226.1	2.2		26.3	25	5133	01 38 45
01 40 15	---	13 31 49	41.1	226.5	2.3		26.5	90	5157	01 38 46
01 41 00	1100+122	13 32 35	39.3	229.7	2.5		27.9	24	5157	01 41 00
01 45 00	---	13 36 35	38.8	230.8	2.5		28.4	240	5218	01 41 01
01 45 45	SOURCEB2	13 37 20	40.5	228.1	2.4		27.2	25	5218	01 45 45
01 47 15	---	13 38 51	40.3	228.6	2.4		27.4	90	5242	01 45 46
01 48 00	1100+122	13 39 36	38.5	231.7	2.6		28.8	25	5242	01 48 00
01 52 00	---	13 43 36	38.0	232.7	2.7		29.2	240	5303	01 48 01
01 52 40	SOURCEC	13 44 16	35.9	233.7	2.8		29.5	18	5303	01 52 40
01 54 10	---	13 45 47	35.7	234.1	2.8		29.6	90	5327	01 52 41
01 54 50	1100+122	13 46 27	37.6	233.5	2.7		29.6	19	5327	01 54 50
01 58 50	---	13 50 27	37.2	234.6	2.8		30.0	240	5389	01 54 51

Schedule for TORUN (Code Tr) Page 10

Are g-ray blazars associated with neutrinos? The case of IC 200109A

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 1 Mar 2020 Day 61 ---										
01 59 35	SOURCEB1	13 51 13	38.9	232.0	2.6		29.0	25	5389	01 59 35
02 01 05	---	13 52 43	38.7	232.4	2.6		29.1	90	5412	01 59 36
02 01 50	1100+122	13 53 28	36.8	235.4	2.8		30.3	24	5412	02 01 50
02 05 50	---	13 57 29	36.3	236.4	2.9		30.7	240	5474	02 01 51
02 06 35	SOURCEB2	13 58 14	38.0	233.9	2.7		29.8	24	5474	02 06 35
02 08 05	---	13 59 44	37.8	234.3	2.7		30.0	90	5497	02 06 36
02 08 50	1100+122	14 00 29	35.9	237.2	2.9		31.1	24	5497	02 08 50
02 12 50	---	14 04 30	35.4	238.2	3.0		31.4	240	5559	02 08 51
02 13 30	SOURCEC	14 05 10	33.3	239.1	3.1		31.6	18	5559	02 13 30
02 15 00	---	14 06 40	33.1	239.5	3.1		31.7	90	5582	02 13 31
02 15 40	1100+122	14 07 20	35.0	239.0	3.1		31.7	19	5582	02 15 40
02 19 40	---	14 11 21	34.5	240.0	3.1		32.1	240	5644	02 15 41
02 21 25	1156+295	14 13 06	55.9	238.5	2.2		35.9	11	5644	02 21 25
02 24 25	---	14 16 07	55.6	239.4	2.3		36.3	180	5690	02 21 26
02 25 55	1100+122	14 17 37	33.7	241.5	3.2		32.6	-6	5690	02 25 55
02 33 55	---	14 25 38	32.6	243.5	3.4		33.3	474	5814	02 25 56
02 34 00	1100+122	14 25 43	32.6	243.5	3.4		33.3	-1	5814	No stop
02 36 00	---	14 27 44	32.3	244.0	3.4		33.5	119	5846	02 33 56
02 36 40	SOURCEB1	14 28 24	34.2	241.7	3.2		32.8	19	5846	02 36 40
02 38 10	---	14 29 54	34.0	242.0	3.2		32.9	90	5869	02 36 41
02 38 50	1100+122	14 30 34	32.0	244.7	3.4		33.7	19	5869	02 38 50
02 42 50	---	14 34 35	31.4	245.7	3.5		34.0	240	5931	02 38 51
02 43 30	SOURCEB2	14 35 15	33.3	243.4	3.3		33.3	19	5931	02 43 30
02 45 00	---	14 36 45	33.1	243.8	3.4		33.5	90	5954	02 43 31
02 45 40	1100+122	14 37 25	31.0	246.3	3.6		34.2	19	5954	02 45 40
02 49 40	---	14 41 26	30.5	247.3	3.6		34.5	240	6016	02 45 41
02 50 20	SOURCEC	14 42 06	28.3	247.9	3.7		34.5	18	6016	02 50 20
02 51 50	---	14 43 36	28.1	248.3	3.8		34.6	90	6039	02 50 21
02 52 30	1100+122	14 44 16	30.1	247.9	3.7		34.7	19	6039	02 52 30
02 56 30	---	14 48 17	29.5	248.9	3.7		34.9	240	6101	02 52 31

Schedule for TORUN (Code Tr) Page 11

Are g-ray blazars associated with neutrinos? The case of IC 200109A

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 1 Mar 2020 Day 61 ---										
02 57 10	SOURCEB1	14 48 57	31.4	246.6	3.6		34.4	19	6101	02 57 10
02 58 40	---	14 50 27	31.2	247.0	3.6		34.5	90	6124	02 57 11
02 59 20	1100+122	14 51 07	29.1	249.5	3.8		35.1	18	6124	02 59 20
03 03 20	---	14 55 08	28.5	250.4	3.9		35.3	240	6186	02 59 21
03 04 00	SOURCEB2	14 55 48	30.5	248.3	3.7		34.8	19	6186	03 04 00
03 05 30	---	14 57 18	30.3	248.6	3.7		34.9	90	6209	03 04 01
03 06 10	1100+122	14 57 59	28.1	251.1	3.9		35.5	18	6209	03 06 10
03 10 10	---	15 01 59	27.6	252.0	4.0		35.7	240	6271	03 06 11
03 10 50	SOURCEC	15 02 39	25.4	252.6	4.1		35.6	18	6271	03 10 50
03 12 20	---	15 04 10	25.2	252.9	4.1		35.7	90	6294	03 10 51
03 13 00	1100+122	15 04 50	27.2	252.6	4.0		35.8	18	6294	03 13 00
03 17 00	---	15 08 50	26.6	253.5	4.1		36.0	240	6356	03 13 01
03 17 40	SOURCEB1	15 09 30	28.5	251.4	3.9		35.6	19	6356	03 17 40
03 19 10	---	15 11 01	28.3	251.7	3.9		35.7	90	6379	03 17 41
03 19 50	1100+122	15 11 41	26.2	254.1	4.1		36.2	18	6379	03 19 50
03 23 50	---	15 15 41	25.6	255.0	4.2		36.4	240	6441	03 19 51
03 24 30	SOURCEB2	15 16 22	27.6	253.0	4.0		36.0	19	6441	03 24 30
03 26 00	---	15 17 52	27.3	253.3	4.0		36.1	90	6464	03 24 31
03 26 40	1100+122	15 18 32	25.2	255.6	4.2		36.5	18	6464	03 26 40
03 30 40	---	15 22 33	24.6	256.5	4.3		36.6	240	6526	03 26 41
03 31 20	SOURCEC	15 23 13	22.4	257.0	4.4		36.5	18	6526	03 31 20
03 32 50	---	15 24 43	22.2	257.4	4.4		36.6	90	6549	03 31 21
03 33 30	1100+122	15 25 23	24.2	257.1	4.4		36.7	18	6549	03 33 30
03 37 30	---	15 29 24	23.6	258.0	4.4		36.9	240	6611	03 33 31
03 39 25	1156+295	15 31 19	45.0	259.3	3.5		42.5	21	6611	03 39 25
03 42 25	---	15 34 19	44.6	260.0	3.6		42.6	180	6657	03 39 26
03 44 15	1100+122	15 36 10	22.6	259.4	4.5		37.1	14	6657	03 44 15
03 50 15	---	15 42 11	21.7	260.7	4.6		37.3	360	6750	03 44 16
03 50 55	SOURCEB1	15 42 51	23.7	258.7	4.5		37.1	18	6750	03 50 55
03 52 25	---	15 44 21	23.5	259.0	4.5		37.1	90	6773	03 50 56

Schedule for TORUN (Code Tr) Page 12

Are g-ray blazars associated with neutrinos? The case of IC 200109A

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 1 Mar 2020 Day 61 ---										
03 53 05	1100+122	15 45 01	21.3	261.3	4.7		37.3	18	6773	03 53 05
03 57 05	---	15 49 02	20.7	262.1	4.7		37.4	240	6835	03 53 06
03 57 45	SOURCEB2	15 49 42	22.7	260.2	4.6		37.3	18	6835	03 57 45
03 59 15	---	15 51 12	22.5	260.5	4.6		37.3	90	6858	03 57 46
03 59 55	1100+122	15 51 52	20.3	262.7	4.8		37.5	18	6858	03 59 55
04 03 55	---	15 55 53	19.7	263.5	4.9		37.6	240	6920	03 59 56
04 04 35	SOURCEC	15 56 33	17.5	264.0	5.0		37.4	18	6920	04 04 35
04 06 05	---	15 58 03	17.3	264.3	5.0		37.4	90	6943	04 04 36
04 06 45	1100+122	15 58 43	19.3	264.1	4.9		37.6	18	6943	04 06 45
04 10 45	---	16 02 44	18.7	264.9	5.0		37.7	240	7005	04 06 46
04 11 25	SOURCEB1	16 03 24	20.7	263.0	4.8		37.6	18	7005	04 11 25
04 12 55	---	16 04 54	20.4	263.3	4.8		37.6	90	7028	04 11 26
04 13 35	1100+122	16 05 35	18.2	265.5	5.0		37.7	18	7028	04 13 35
04 17 35	---	16 09 35	17.6	266.3	5.1		37.8	240	7090	04 13 36
04 18 15	SOURCEB2	16 10 15	19.6	264.5	4.9		37.7	18	7090	04 18 15
04 19 45	---	16 11 46	19.4	264.8	4.9		37.7	90	7113	04 18 16
04 20 25	1100+122	16 12 26	17.2	266.9	5.1		37.8	18	7113	04 20 25
04 24 25	---	16 16 26	16.6	267.7	5.2		37.8	240	7175	04 20 26
04 25 05	SOURCEC	16 17 06	14.4	268.2	5.3		37.6	18	7175	04 25 05
04 26 35	---	16 18 37	14.2	268.5	5.3		37.6	90	7198	04 25 06
04 27 15	1100+122	16 19 17	16.2	268.3	5.3		37.8	18	7198	04 27 15
04 31 15	---	16 23 17	15.6	269.1	5.3		37.8	240	7260	04 27 16
04 31 55	SOURCEB1	16 23 58	17.6	267.2	5.1		37.9	18	7260	04 31 55
04 33 25	---	16 25 28	17.4	267.5	5.2		37.9	90	7283	04 31 56
04 34 05	1100+122	16 26 08	15.1	269.7	5.4		37.8	18	7283	04 34 05
04 38 05	---	16 30 09	14.5	270.5	5.4		37.8	240	7345	04 34 06
04 38 45	SOURCEB2	16 30 49	16.6	268.6	5.3		37.9	18	7345	04 38 45
04 40 15	---	16 32 19	16.3	268.9	5.3		37.9	90	7368	04 38 46
04 40 55	1100+122	16 32 59	14.1	271.0	5.5		37.8	18	7368	04 40 55
04 44 55	---	16 37 00	13.5	271.8	5.5		37.8	240	7430	04 40 56

Schedule for TORUN (Code Tr) Page 13

Are g-ray blazars associated with neutrinos? The case of IC 200109A

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 1 Mar 2020 Day 61 ---										
04 45 35	SOURCEC	16 37 40	11.3	272.3	5.7		37.6	18	7430	04 45 35
04 47 05	---	16 39 10	11.1	272.6	5.7		37.6	90	7453	04 45 36
04 47 45	1100+122	16 39 50	13.1	272.4	5.6		37.8	18	7453	04 47 45
04 51 45	---	16 43 51	12.5	273.2	5.7		37.8	240	7515	04 47 46
04 53 30	1156+295	16 45 36	33.9	274.7	4.8		43.2	11	7515	04 53 30
04 56 30	---	16 48 37	33.5	275.3	4.8		43.2	180	7562	04 53 31
04 58 20	1100+122	16 50 27	11.5	274.5	5.8		37.7	14	7562	04 58 20
05 04 30	---	16 56 38	10.6	275.7	5.9		37.6	370	7657	04 58 21
05 05 10	SOURCEB1	16 57 18	12.6	273.9	5.7		37.8	18	7657	05 05 10
05 06 40	---	16 58 48	12.4	274.2	5.7		37.8	90	7680	05 05 11
05 07 20	1100+122	16 59 28	10.2	276.3	5.9		37.6	18	7680	05 07 20
05 11 20	---	17 03 29	9.6	277.1	6.0		37.5	240	7742	05 07 21
05 12 00	SOURCEB2	17 04 09	11.6	275.3	5.8		37.7	18	7742	05 12 00
05 13 30	---	17 05 39	11.3	275.5	5.8		37.7	90	7765	05 12 01
05 14 10	1100+122	17 06 20	9.1	277.6	6.0		37.5	18	7765	05 14 10
05 18 10	---	17 10 20	8.5	278.4	6.1		37.4	240	7827	05 14 11
05 18 50	SOURCEC	17 11 00	6.3	278.9	6.2		37.1	18	7827	05 18 50
05 20 20	---	17 12 31	6.1	279.2	6.2		37.1	90	7850	05 18 51
05 21 00	1100+122	17 13 11	8.1	279.0	6.2		37.3	18	7850	05 21 00
05 25 00	---	17 17 11	7.5	279.8	6.2		37.2	240	7912	05 21 01
05 25 40	SOURCEB1	17 17 51	9.5	277.9	6.0		37.5	18	7912	05 25 40
05 27 10	---	17 19 22	9.3	278.2	6.1		37.5	90	7935	05 25 41
05 27 50	1100+122	17 20 02	7.1	280.3	6.3		37.1	18	7935	05 27 50
05 31 50	---	17 24 02	6.5	281.1	6.3		37.0	240	7997	05 27 51
05 32 30	SOURCEB2	17 24 43	8.5	279.3	6.2		37.3	18	7997	05 32 30
05 34 00	---	17 26 13	8.3	279.6	6.2		37.3	90	8020	05 32 31
05 34 40	1100+122	17 26 53	6.1	281.7	6.4		36.9	18	8020	05 34 40
05 38 40	---	17 30 54	5.5	282.5	6.4		36.8	240	8082	05 34 41
05 39 20	SOURCEC	17 31 34	3.3	282.9	6.6		36.5	18	8082	05 39 20
05 40 50	---	17 33 04	3.1	283.2	6.6		36.5	90	8105	05 39 21

```
Schedule for TORUN     (Code Tr )                                  Page  14
              Are g-ray blazars associated with neutrinos? The case of IC 200109A
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   1 Mar 2020   Day  61 ---

05 41 30  1100+122     17 33 44   5.1 283.0  6.5      36.7    18     8105   05 41 30
05 45 30  ---          17 37 45   4.5 283.8  6.6      36.6   240     8167   05 41 31

05 47 20  1156+295     17 39 35  25.9 284.7  5.7      41.7    16     8167   05 47 20
05 52 55  ---          17 45 11  25.1 285.7  5.7      41.4   335     8253   05 47 21

05 54 45  OQ208        17 47 01  43.2 260.5  3.7      42.3    28     8253   05 54 45
06 00 20  ---          17 52 37  42.4 261.7  3.7      42.5   335     8340   05 54 46

06 02 10  1156+295     17 54 27  23.8 287.4  5.9      41.0    27     8340   06 02 10
06 07 45  ---          18 00 03  23.0 288.4  6.0      40.7   335     8426   06 02 11

06 09 35  OQ208        18 01 54  41.0 263.7  3.9      42.7    28     8426   06 09 35
06 15 10  ---          18 07 30  40.2 264.9  4.0      42.8   335     8512   06 09 36

06 17 00  1156+295     18 09 20  21.7 290.1  6.1      40.2    27     8512   06 17 00
06 22 35  ---          18 14 56  20.9 291.1  6.2      39.9   335     8599   06 17 01

06 24 25  OQ208        18 16 46  38.8 266.9  4.1      42.9    29     8599   06 24 25
06 30 00  ---          18 22 22  37.9 268.0  4.2      43.0   335     8685   06 24 26



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


 ======== Setup file: sess120.C2048

   Setup group:    9         Station: TORUN            Total bit rate:  2048
   Format: VDIF              Bits per sample: 2        Sample rate: 64.000
   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         9         1         9         2        10         2        10
                  3        11         3        11         4        12         4        12
  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  Setup file default.  Used with PCAL = off
  LO sum=   4830.49  4830.49  4830.49  4830.49  4894.49  4894.49  4894.49  4894.49
            4958.49  4958.49  4958.49  4958.49  5022.49  5022.49  5022.49  5022.49
  BBC fr=    630.49   630.49   630.49   630.49   694.49   694.49   694.49   694.49
             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
              32.00    32.00    32.00    32.00    32.00    32.00    32.00    32.00
   Matching frequency sets:   5

  Track assignments are:
   track1=   1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15, 16
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

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

* SOURCEB1          11 12 00.228909   * 11 14 37.003840     11 15 40.405868       0.00
                    12 43 34.48321    * 12 27 13.17350      12 20 34.91362        0.00
                    from VLASS JMFIT

* SOURCEB2          11 11 52.947675   * 11 14 29.733790     11 15 33.140353       0.00
                    12 44 24.66534    * 12 28 03.46310      12 21 25.24568        0.00
                    from VLASS JMFIT

* SOURCEC           10 54 10.544300   * 10 56 47.786000     10 57 51.382445       0.00
                    10 46 30.80319    * 10 30 28.20000      10 23 57.43613        0.00
                    TXS 1054+107; from SDSS through NED

* 1100+122          11 00 26.171569   * 11 03 03.529837     11 04 07.170151       0.04
  J1103+1158        12 14 26.46477    * 11 58 16.62448      11 51 42.95561        0.08
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,    493 observations.

* 1156+295          11 56 57.786211   * 11 59 31.833912     12 00 34.165666       0.00
  J1159+2914        29 31 25.73880    * 29 14 43.82690      29 07 56.09691        0.00
  J1159+29          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,  78215 observations.

* OQ208             14 04 45.615156   * 14 07 00.394415     14 07 54.664800       0.24
  J1407+2827        28 41 29.23515    * 28 27 14.69019      28 21 23.08750        0.35
```

```
1404+286          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
J1407+28          GSFC 2016a X/S astro solution,  68278 observations.
```

n20k1tr

Network Monitoring Experiment

PI: *Dhanya G.Nair*

```
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
-------------------------------------------------------------------------------------------
 --- Mon   2 Mar 2020   Day  62 ---
 Next scan frequencies:  22187.49  22187.49  22187.49  22187.49  22219.49  22219.49  22219.49  22219.4
                         22251.49  22251.49  22251.49  22251.49  22283.49  22283.49  22283.49  22283.4
 Next BBC frequencies:     687.49    687.49    687.49    687.49    719.49    719.49    719.49    719.4
                           751.49    751.49    751.49    751.49    783.49    783.49    783.49    783.4
 Next scan bandwidths:      16.00     16.00     16.00     16.00     16.00     16.00     16.00     16.0
                            16.00     16.00     16.00     16.00     16.00     16.00     16.00     16.0

10 00 00  J0205+3212   21 56 53  41.5  89.5 -4.2     -45.3     0        0   10 00 00
10 05 00  =0202+319    22 01 54  42.3  90.5 -4.1     -45.3   300       39   10 00 01

10 07 00  J0205+3212   22 03 54  42.6  90.9 -4.0     -45.3   114       39   10 07 00
10 20 00  =0202+319    22 16 56  44.5  93.5 -3.8     -45.2   780      139   10 07 01

10 22 45  J0205+3212   22 19 42  44.9  94.1 -3.8     -45.1   158      139   10 22 45
10 25 00  =0202+319    22 21 57  45.3  94.6 -3.7     -45.1   135      157   10 22 46

10 27 00  J0205+3212   22 23 57  45.6  95.0 -3.7     -45.0   114      157   10 27 00
10 40 00  =0202+319    22 37 00  47.5  97.9 -3.5     -44.7   780      257   10 27 01

10 42 45  J0205+3212   22 39 45  47.9  98.5 -3.4     -44.6   158      257   10 42 45
10 45 00  =0202+319    22 42 00  48.3  99.0 -3.4     -44.6   135      274   10 42 46

10 47 00  J0205+3212   22 44 01  48.6  99.4 -3.4     -44.5   114      274   10 47 00
11 00 00  =0202+319    22 57 03  50.5 102.5 -3.2     -43.9   780      375   10 47 01

11 02 00  J0205+3212   22 59 03  50.8 103.0 -3.1     -43.8   114      375   11 02 00
11 05 00  =0202+319    23 02 04  51.2 103.7 -3.1     -43.6   180      398   11 02 01

11 07 00  J0238+1636   23 04 04  34.6 109.8 -3.6     -36.2    44      398   11 07 00
11 20 00  =0235+164    23 17 06  36.5 112.9 -3.4     -35.3   780      499   11 07 01

11 22 05  J0238+1636   23 19 12  36.8 113.4 -3.3     -35.1   119      499   11 22 05
11 25 00  =0235+164    23 22 07  37.2 114.1 -3.3     -34.9   175      521   11 22 06

11 27 00  J0238+1636   23 24 07  37.4 114.6 -3.3     -34.7   114      521   11 27 00
11 40 00  =0235+164    23 37 09  39.2 117.9 -3.0     -33.6   780      622   11 27 01

11 42 00  J0238+1636   23 39 10  39.5 118.4 -3.0     -33.5   114      622   11 42 00
11 45 00  =0235+164    23 42 10  39.9 119.2 -3.0     -33.2   180      645   11 42 01

11 47 00  0234+285     23 44 11  50.0 109.6 -2.9     -40.2    69      645   11 47 00
12 00 00  ---          23 57 13  51.8 113.1 -2.7     -39.1   780      745   11 47 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
-----------------------------------------------------------------------------------------
 --- Mon   2 Mar 2020   Day  62 ---
12 02 00  0234+285     23 59 13  52.1 113.7 -2.7     -38.9   113      745   12 02 00
12 05 00  ---          00 02 14  52.5 114.5 -2.6     -38.6   180      768   12 02 01

12 07 00  0234+285     00 04 14  52.8 115.1 -2.6     -38.4   113      768   12 07 00
12 20 00  ---          00 17 16  54.6 118.9 -2.4     -36.9   780      869   12 07 01

12 22 00  0234+285     00 19 16  54.8 119.5 -2.3     -36.6   113      869   12 22 00
12 25 00  ---          00 22 17  55.2 120.4 -2.3     -36.3   180      892   12 22 01

12 27 00  0234+285     00 24 17  55.5 121.1 -2.2     -36.0   113      892   12 27 00
12 40 00  ---          00 37 19  57.1 125.3 -2.0     -34.1   780      993   12 27 01

12 42 00  0234+285     00 39 20  57.3 125.9 -2.0     -33.7   113      993   12 42 00
12 45 00  ---          00 42 20  57.7 127.0 -1.9     -33.2   180     1016   12 42 01

12 47 00  0234+285     00 44 20  58.0 127.7 -1.9     -32.9   113     1016   12 47 00
13 00 00  ---          00 57 23  59.5 132.3 -1.7     -30.5   780     1116   12 47 01



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


 ======== Setup file: sess120.K1024

   Setup group:    9         Station: TORUN            Total bit rate:  1024
   Format: VDIF              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=  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00
           21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00
  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         9         1         9         2        10         2        10
                  3        11         3        11         4        12         4        12
  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=   22187.49  22187.49  22187.49  22187.49  22219.49  22219.49  22219.49  22219.49
            22251.49  22251.49  22251.49  22251.49  22283.49  22283.49  22283.49  22283.49
  BBC fr=     687.49    687.49    687.49    687.49    719.49    719.49    719.49    719.49
              751.49    751.49    751.49    751.49    783.49    783.49    783.49    783.49
  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=   1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15, 16
   barrel=roll_off


POSITIONS OF SOURCES USED IN RECORDING SCANS

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

  0202+319          02 02 09.652800   * 02 05 04.925362     02 06 13.714633       0.00
* J0205+3212        31 58 10.39522    * 32 12 30.09544      32 18 10.65415        0.00
  J0205+32          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,  49141 observations.

* 0234+285          02 34 55.589590   * 02 37 52.405677     02 39 01.986830       0.00
  J0237+2848        28 35 11.40773    * 28 48 08.98999      28 53 16.22933        0.00
  J0237+28          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,  58420 observations.

  0235+164          02 35 52.630214   * 02 38 38.930106     02 39 44.342468       0.12
* J0238+1636        16 24 04.01612    * 16 36 59.27454      16 42 01.81891        0.16
  J0238+16          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,  64441 observations.
```

ek044tr

M87 HIGH-RESOLUTION JET IMAGING

PI: *Evgeniya Kravchenko*

Address: INAF Instituto di Radioastronomia

Observing mode:

```
Schedule for TORUN     (Code Tr )                                   Page   2
               M87 high-resolution jet imaging
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   2 Mar 2020   Day  62 ---
 Next scan frequencies:  22187.49  22187.49  22187.49  22187.49  22219.49  22219.49  22219.49  22219.4
                         22251.49  22251.49  22251.49  22251.49  22283.49  22283.49  22283.49  22283.4
 Next BBC frequencies:     687.49    687.49    687.49    687.49    719.49    719.49    719.49    719.4
                           751.49    751.49    751.49    751.49    783.49    783.49    783.49    783.4
 Next scan bandwidths:      16.00     16.00     16.00     16.00     16.00     16.00     16.00     16.0
                            16.00     16.00     16.00     16.00     16.00     16.00     16.00     16.0

18 45 12  M87          06 43 31  11.5  84.9 -5.8     -37.7     0        0   18 45 12
18 54 52  ---          06 53 13  13.0  86.8 -5.6     -37.8   580       75   18 45 13

18 55 12  M87          06 53 33  13.0  86.8 -5.6     -37.9    14       75   18 55 12
19 04 52  ---          07 03 14  14.5  88.8 -5.5     -37.9   580      149   18 55 13

19 05 12  M87          07 03 34  14.5  88.8 -5.5     -37.9    14      149   19 05 12
19 14 52  ---          07 13 16  16.0  90.8 -5.3     -37.9   580      224   19 05 13

19 15 12  M87          07 13 36  16.0  90.8 -5.3     -37.9    14      224   19 15 12
19 24 52  ---          07 23 17  17.5  92.8 -5.1     -37.9   580      299   19 15 13

19 25 12  M87          07 23 38  17.5  92.8 -5.1     -37.9    14      299   19 25 12
19 34 52  ---          07 33 19  19.0  94.8 -5.0     -37.8   580      374   19 25 13

19 35 12  M87          07 33 39  19.0  94.9 -5.0     -37.8    14      374   19 35 12
19 44 52  ---          07 43 21  20.5  96.9 -4.8     -37.6   580      448   19 35 13

19 45 12  M87          07 43 41  20.5  96.9 -4.8     -37.6    14      448   19 45 12
19 54 52  ---          07 53 22  22.0  99.0 -4.6     -37.4   580      523   19 45 13

19 55 12  M87          07 53 43  22.0  99.0 -4.6     -37.4    15      523   19 55 12
20 04 52  ---          08 03 25  23.5 101.1 -4.5     -37.1   580      598   19 55 13

20 05 13  M87          08 03 46  23.5 101.2 -4.5     -37.1    15      598   20 05 13
20 14 53  ---          08 13 27  24.9 103.2 -4.3     -36.7   580      672   20 05 14

20 15 14  M87          08 13 48  25.0 103.3 -4.3     -36.7    15      672   20 15 14
20 24 54  ---          08 23 29  26.4 105.4 -4.1     -36.3   580      747   20 15 15

20 25 14  M87          08 23 50  26.5 105.5 -4.1     -36.3    15      747   20 25 14
20 34 54  ---          08 33 32  27.9 107.6 -4.0     -35.8   580      822   20 25 15

20 35 15  M87          08 33 53  27.9 107.7 -4.0     -35.8    15      822   20 35 15
20 44 55  ---          08 43 34  29.3 109.9 -3.8     -35.3   580      897   20 35 16
```

Schedule for TORUN (Code Tr) Page 3

M87 high-resolution jet imaging

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 2 Mar 2020 Day 62 ---										
20 45 16	M87	08 43 55	29.3	110.0	-3.8		-35.3	15	897	20 45 16
20 54 56	---	08 53 37	30.7	112.2	-3.6		-34.7	580	971	20 45 17
21 02 56	M87	09 01 38	31.8	114.1	-3.5		-34.1	473	971	21 02 56
21 12 36	---	09 11 19	33.1	116.5	-3.3		-33.4	580	1046	21 02 57
21 12 57	M87	09 11 40	33.2	116.5	-3.3		-33.4	15	1046	21 12 57
21 22 37	---	09 21 22	34.4	118.9	-3.2		-32.5	580	1121	21 12 58
21 22 57	M87	09 21 43	34.5	119.0	-3.2		-32.5	15	1121	21 22 57
21 32 37	---	09 31 24	35.7	121.5	-3.0		-31.6	580	1195	21 22 58
21 32 58	M87	09 31 45	35.8	121.6	-3.0		-31.6	15	1195	21 32 58
21 42 38	---	09 41 27	37.0	124.1	-2.8		-30.6	580	1270	21 32 59
21 42 59	M87	09 41 47	37.1	124.2	-2.8		-30.6	15	1270	21 42 59
21 52 39	---	09 51 29	38.2	126.8	-2.7		-29.5	580	1345	21 43 00
21 52 59	M87	09 51 50	38.3	126.9	-2.7		-29.5	15	1345	21 52 59
22 02 39	---	10 01 31	39.4	129.5	-2.5		-28.3	580	1420	21 53 00
22 03 00	M87	10 01 52	39.5	129.6	-2.5		-28.3	15	1420	22 03 00
22 12 40	---	10 11 34	40.6	132.3	-2.3		-27.0	580	1494	22 03 01
22 13 01	M87	10 11 54	40.6	132.4	-2.3		-27.0	15	1494	22 13 01
22 22 41	---	10 21 36	41.6	135.3	-2.2		-25.6	580	1569	22 13 02
22 23 45	3C273	10 22 40	32.5	141.3	-2.1		-22.1	15	1569	22 23 45
22 29 45	---	10 28 41	33.0	142.9	-2.0		-21.2	360	1615	22 23 46
22 30 49	M87	10 29 46	42.5	137.7	-2.0		-24.4	16	1615	22 30 49
22 40 29	---	10 39 27	43.4	140.7	-1.9		-22.9	580	1690	22 30 50
22 40 50	M87	10 39 48	43.5	140.8	-1.9		-22.9	15	1690	22 40 50
22 50 30	---	10 49 30	44.4	143.8	-1.7		-21.3	580	1765	22 40 51
22 50 51	M87	10 49 50	44.4	143.9	-1.7		-21.2	15	1765	22 50 51
23 00 31	---	10 59 32	45.2	147.1	-1.5		-19.5	580	1840	22 50 52
23 00 52	M87	10 59 53	45.3	147.2	-1.5		-19.5	15	1840	23 00 52
23 10 32	---	11 09 34	46.0	150.4	-1.4		-17.7	580	1914	23 00 53
23 18 32	M87	11 17 36	46.6	153.1	-1.2		-16.1	472	1914	23 18 32
23 28 12	---	11 27 17	47.2	156.4	-1.1		-14.2	580	1989	23 18 33
23 28 32	M87	11 27 38	47.2	156.6	-1.1		-14.2	15	1989	23 28 32
23 38 12	---	11 37 20	47.8	160.0	-0.9		-12.2	580	2064	23 28 33

Schedule for TORUN (Code Tr) Page 4

M87 high-resolution jet imaging

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 2 Mar 2020 Day 62 ---										
23 38 33	M87	11 37 40	47.8	160.1	-0.9		-12.1	14	2064	23 38 33
23 48 13	---	11 47 22	48.2	163.6	-0.7		-10.0	580	2138	23 38 34
23 48 34	M87	11 47 43	48.2	163.7	-0.7		-9.9	14	2138	23 48 34
23 58 14	---	11 57 24	48.6	167.2	-0.6		-7.8	580	2213	23 48 35
--- Start: Mon 2 Mar 2020 Day 62 -- Stop: Tue 3 Mar 2020 Day 63 ---										
23 58 34	M87	11 57 45	48.6	167.3	-0.6		-7.7	14	2213	23 58 34
00 08 14	---	12 07 27	48.9	170.9	-0.4		-5.6	580	2288	23 58 35
00 08 35	M87	12 07 48	48.9	171.0	-0.4		-5.5	14	2288	00 08 35
00 18 15	---	12 17 29	49.1	174.6	-0.2		-3.3	580	2363	00 08 36
00 18 36	M87	12 17 50	49.1	174.8	-0.2		-3.2	14	2363	00 18 36
00 28 16	---	12 27 31	49.2	178.4	-0.1		-1.0	580	2437	00 18 37
00 28 37	M87	12 27 52	49.2	178.5	-0.1		-0.9	14	2437	00 28 37
00 38 17	---	12 37 34	49.2	182.1	0.1		1.3	580	2512	00 28 38
00 38 37	M87	12 37 55	49.2	182.3	0.1		1.4	14	2512	00 38 37
00 48 17	---	12 47 36	49.1	185.9	0.3		3.6	580	2587	00 38 38
00 48 38	M87	12 47 57	49.1	186.0	0.3		3.7	14	2587	00 48 38
00 58 18	---	12 57 39	48.9	189.6	0.4		5.9	580	2661	00 48 39
00 59 29	3C273	12 58 50	38.5	189.2	0.5		5.5	18	2661	00 59 29
01 05 29	---	13 04 51	38.3	191.1	0.6		6.6	360	2708	00 59 30
01 06 40	M87	13 06 02	48.6	192.7	0.6		7.8	19	2708	01 06 40
01 16 20	---	13 15 44	48.3	196.2	0.7		9.9	580	2782	01 06 41
01 24 20	M87	13 23 45	47.9	199.1	0.9		11.6	472	2782	01 24 20
01 34 00	---	13 33 26	47.4	202.5	1.0		13.6	580	2857	01 24 21
01 34 21	M87	13 33 47	47.4	202.6	1.0		13.7	15	2857	01 34 21
01 44 01	---	13 43 29	46.8	206.0	1.2		15.6	580	2932	01 34 22
01 44 21	M87	13 43 50	46.7	206.1	1.2		15.7	15	2932	01 44 21
01 54 01	---	13 53 31	46.0	209.4	1.4		17.6	580	3007	01 44 22
01 54 22	M87	13 53 52	46.0	209.5	1.4		17.6	15	3007	01 54 22
02 04 02	---	14 03 34	45.3	212.7	1.5		19.4	580	3081	01 54 23

Schedule for TORUN (Code Tr) Page 5

M87 high-resolution jet imaging

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

--- Tue 3 Mar 2020 Day 63 ---

Start UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
02 04 23	M87	14 03 54	45.2	212.9	1.5		19.5	15	3081	02 04 23
02 14 03	---	14 13 36	44.4	216.0	1.7		21.2	580	3156	02 04 24
02 14 24	M87	14 13 57	44.4	216.1	1.7		21.2	15	3156	02 14 24
02 24 04	---	14 23 38	43.5	219.1	1.9		22.8	580	3231	02 14 25
02 32 04	M87	14 31 40	42.7	221.6	2.0		24.1	473	3231	02 32 04
02 41 44	---	14 41 21	41.7	224.5	2.2		25.5	580	3305	02 32 05
02 42 04	M87	14 41 42	41.7	224.6	2.2		25.6	15	3305	02 42 04
02 51 44	---	14 51 24	40.6	227.4	2.3		26.9	580	3380	02 42 05
02 52 05	M87	14 51 44	40.6	227.5	2.3		27.0	15	3380	02 52 05
03 01 45	---	15 01 26	39.5	230.3	2.5		28.2	580	3455	02 52 06
03 02 06	M87	15 01 47	39.5	230.4	2.5		28.3	15	3455	03 02 06
03 11 46	---	15 11 28	38.3	233.0	2.7		29.4	580	3530	03 02 07
03 12 06	M87	15 11 49	38.3	233.1	2.7		29.5	15	3530	03 12 06
03 21 46	---	15 21 31	37.1	235.7	2.8		30.5	580	3604	03 12 07
03 22 07	M87	15 21 51	37.1	235.8	2.8		30.6	15	3604	03 22 07
03 31 47	---	15 31 33	35.8	238.3	3.0		31.5	580	3679	03 22 08
03 32 08	M87	15 31 54	35.8	238.4	3.0		31.6	15	3679	03 32 08
03 41 48	---	15 41 35	34.5	240.9	3.2		32.5	580	3754	03 32 09
03 49 48	M87	15 49 37	33.5	242.9	3.3		33.2	473	3754	03 49 48
03 59 28	---	15 59 18	32.2	245.2	3.5		33.9	580	3829	03 49 49
03 59 49	M87	15 59 39	32.1	245.3	3.5		33.9	15	3829	03 59 49
04 09 29	---	16 09 21	30.8	247.6	3.6		34.6	580	3903	03 59 50
04 09 49	M87	16 09 41	30.7	247.7	3.6		34.6	15	3903	04 09 49
04 19 29	---	16 19 23	29.4	249.9	3.8		35.3	580	3978	04 09 50
04 19 50	M87	16 19 44	29.3	250.0	3.8		35.3	15	3978	04 19 50
04 29 30	---	16 29 25	28.0	252.2	4.0		35.8	580	4053	04 19 51
04 29 51	M87	16 29 46	27.9	252.3	4.0		35.8	15	4053	04 29 51
04 39 31	---	16 39 28	26.5	254.4	4.1		36.3	580	4127	04 29 52
04 39 51	M87	16 39 48	26.5	254.5	4.1		36.3	15	4127	04 39 51
04 49 31	---	16 49 30	25.1	256.6	4.3		36.7	580	4202	04 39 52

```
Schedule for TORUN     (Code Tr )                                  Page   6
               M87 high-resolution jet imaging
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   3 Mar 2020   Day  63 ---

04 49 51  M87          16 49 50  25.0 256.7  4.3      36.7    14     4202   04 49 51
04 59 31  ---          16 59 32  23.6 258.8  4.5      37.1   580     4277   04 49 52

04 59 51  M87          16 59 52  23.5 258.8  4.5      37.1    14     4277   04 59 51
05 09 31  ---          17 09 33  22.1 260.9  4.6      37.4   580     4352   04 59 52

05 09 51  M87          17 09 53  22.1 261.0  4.6      37.4    14     4352   05 09 51
05 19 31  ---          17 19 35  20.6 263.0  4.8      37.6   580     4426   05 09 52

05 19 51  M87          17 19 55  20.6 263.0  4.8      37.6    14     4426   05 19 51
05 29 31  ---          17 29 37  19.1 265.0  5.0      37.8   580     4501   05 19 52



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


 ======== Setup file: sess120.K1024

   Setup group:    9         Station: TORUN            Total bit rate:  1024
   Format: VDIF              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=  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00
           21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00
  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         9         1         9         2        10         2        10
                  3        11         3        11         4        12         4        12
  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=   22187.49  22187.49  22187.49  22187.49  22219.49  22219.49  22219.49  22219.49
            22251.49  22251.49  22251.49  22251.49  22283.49  22283.49  22283.49  22283.49
  BBC fr=     687.49    687.49    687.49    687.49    719.49    719.49    719.49    719.49
              751.49    751.49    751.49    751.49    783.49    783.49    783.49    783.49
  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:  10

  Track assignments are:
   track1=   1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15, 16
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

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

  3C273B            12 26 33.245835   * 12 29 06.699731     12 30 08.712091       1.03
  J1229+0203        02 19 43.30570    * 02 03 08.59820      01 56 26.28114        1.38
* 3C273             /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
  1226+023          GSFC 2016a X/S astro solution,  32136 observations.
  J1229+02

  3C274             12 28 17.569280   * 12 30 49.423383     12 31 50.782693       0.00
  J1230+1223        12 40 01.74892    * 12 23 28.04374      12 16 44.69064        0.00
  1228+126          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
  J1230+12          GSFC 2016a X/S astro solution,  68465 observations.
* M87
```

ek046gtr

Resolving the mystery of large VLBI-Gaia offsets

PI: *Yuri Kovalev*

```
Address:  Lebedev Physical Institute

Observing mode: continuum

Schedule for TORUN     (Code Tr )                                    Page   2
               Resolving the mystery of large VLBI-Gaia offsets
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   3 Mar 2020   Day  63 ---
 Next scan frequencies:  22139.49  22139.49  22139.49  22139.49  22203.49  22203.49  22203.49  22203.4
                         22267.49  22267.49  22267.49  22267.49  22331.49  22331.49  22331.49  22331.4
 Next BBC frequencies:     639.49    639.49    639.49    639.49    703.49    703.49    703.49    703.4
                           767.49    767.49    767.49    767.49    831.49    831.49    831.49    831.4
 Next scan bandwidths:      32.00     32.00     32.00     32.00     32.00     32.00     32.00     32.0
                            32.00     32.00     32.00     32.00     32.00     32.00     32.00     32.0

06 00 00  J1740+4506   18 00 10  81.4 203.6  0.3      19.9     0        0   06 00 00
06 03 30  =1738+451    18 03 41  81.2 207.4  0.4      23.1   210       54   06 00 01

06 06 10  J1759+2343   18 06 21  60.6 183.0  0.1       2.0    69       54   06 05 40
06 09 40  =1756+237    18 09 52  60.6 184.7  0.2       3.1   210      116   06 05 41

06 17 31  J1632+8232   18 17 44  59.6 353.3  1.8     147.6   118      116   06 17 31
06 21 01  =1637+826    18 21 14  59.6 353.1  1.8     146.6   210      170   06 17 32

06 23 33  J1824+5651   18 23 47  86.2 361.4 -0.0    -178.5    39      170   06 23 33
06 27 03  =1823+568    18 27 18  86.2 354.1  0.0     173.5   210      224   06 23 34

06 29 07  J1806+6949   18 29 22  73.1 353.3  0.4     168.2    60      224   06 29 07
06 32 37  =1807+698    18 32 52  73.0 352.3  0.4     166.4   210      278   06 29 08

06 33 45  J1849+6705   18 34 00  75.9 366.1 -0.3    -170.6    25      278   06 33 45
06 37 15  =1849+670    18 37 31  75.9 364.7 -0.2    -172.8   210      332   06 33 46

06 37 58  J2009+7229   18 38 14  68.2 378.3 -1.5    -141.0     0      332   06 37 58
06 41 28  =2010+723    18 41 45  68.4 377.8 -1.5    -142.4   210      386   06 37 59

06 48 41  J1759+2343   18 48 59  59.2 202.4  0.8      14.5    67      386   06 48 41
06 52 11  =1756+237    18 52 30  59.0 203.9  0.9      15.4   210      441   06 48 42

06 56 28  J2253+1608   18 56 48  31.1 105.0 -4.0     -37.2    44      441   06 56 28
06 59 58  =2251+158    19 00 18  31.6 105.8 -3.9     -37.0   210      495   06 56 29

07 01 28  J2216+3518   19 01 48  51.8  97.5 -3.3     -46.9     0      495   07 01 28
07 04 58  =2214+350    19 05 19  52.3  98.3 -3.2     -46.8   210      549   07 01 29

07 05 51  J2244+4057   19 06 12  51.9  85.7 -3.6     -52.6    13      549   07 05 51
07 09 21  =2241+406    19 09 43  52.4  86.4 -3.6     -52.6   210      603   07 05 52

07 12 41  J2356+8152   19 13 03  55.0  13.3 -4.7     -98.2    39      603   07 12 41
07 16 11  =2353+816    19 16 34  55.1  13.2 -4.7     -99.1   210      657   07 12 42
```

Schedule for TORUN (Code Tr) Page 3

Resolving the mystery of large VLBI-Gaia offsets

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 3 Mar 2020 Day 63 ---										
07 17 22	J0011+7045	19 17 45	54.2	32.5	-4.9		-79.9	17	657	07 17 22
07 20 52	=0008+704	19 21 15	54.4	32.6	-4.9		-80.6	210	711	07 17 23
07 21 47	J0157+7442	19 22 11	48.3	22.9	-6.6		-62.9	19	711	07 21 47
07 25 17	=0153+744	19 25 42	48.5	23.0	-6.6		-63.6	210	765	07 21 48
07 28 10	J0005+3820	19 28 35	41.4	78.1	-4.6		-48.6	48	765	07 28 10
07 31 40	=0003+380	19 32 05	41.9	78.7	-4.6		-48.7	210	819	07 28 11
07 32 38	J0048+3157	19 33 03	31.3	77.0	-5.3		-43.7	4	819	07 32 38
07 36 08	=0046+316	19 36 34	31.8	77.7	-5.2		-43.8	210	873	07 32 39
07 37 14	J0052+4402	19 37 40	39.8	66.3	-5.3		-50.1	22	873	07 37 14
07 40 44	=0049+437	19 41 10	40.2	66.9	-5.2		-50.3	210	927	07 37 15
07 45 06	J2129-1538	19 45 33	17.7	153.5	-1.7		-16.2	75	927	07 45 06
07 48 36	=2126-158	19 49 04	18.0	154.4	-1.7		-15.7	210	982	07 45 07
07 52 27	J2131-1207	19 52 56	21.5	153.7	-1.7		-15.8	205	982	07 52 27
07 55 57	=2128-123	19 56 26	21.7	154.6	-1.6		-15.3	210	1036	07 52 28
---------- >>> Pointing gap 1: all telescopes which need it <<< ----------										
08 09 37	J1740+4506	20 10 09	64.6	266.9	2.5		58.2	585	1036	08 09 37
08 13 07	=1738+451	20 13 39	64.1	267.6	2.5		58.2	210	1090	08 09 38
08 15 22	J1759+2343	20 15 55	51.0	234.5	2.3		32.3	53	1090	08 15 22
08 18 52	=1756+237	20 19 25	50.6	235.6	2.3		32.8	210	1144	08 15 23
08 22 56	J1824+5651	20 23 30	72.7	294.4	2.0		89.9	111	1144	08 22 56
08 26 26	=1823+568	20 27 00	72.2	294.4	2.0		89.1	210	1198	08 22 57
08 28 21	J1806+6949	20 28 56	66.8	329.4	2.4		117.6	30	1198	08 28 21
08 31 51	=1807+698	20 32 26	66.5	329.1	2.4		116.5	210	1252	08 28 22
08 32 39	J1849+6705	20 33 14	71.2	328.1	1.7		125.3	16	1252	08 32 39
08 36 09	=1849+670	20 36 45	70.9	327.5	1.8		123.9	210	1306	08 32 40
08 37 36	J2009+7229	20 38 12	70.3	353.6	0.5		167.2	20	1306	08 37 36
08 41 06	=2010+723	20 41 43	70.3	352.9	0.5		165.7	210	1360	08 37 37
08 48 21	J2129-1538	20 48 59	20.8	169.4	-0.7		-6.6	53	1360	08 48 21
08 51 51	=2126-158	20 52 30	20.9	170.3	-0.6		-6.1	210	1414	08 48 22
08 52 25	J2131-1207	20 53 04	24.3	169.4	-0.7		-6.5	7	1414	08 52 25
08 55 55	=2128-123	20 56 35	24.4	170.3	-0.6		-5.9	210	1469	08 52 26

Schedule for TORUN (Code Tr) Page 4

Resolving the mystery of large VLBI-Gaia offsets

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 3 Mar 2020 Day 63 ---										
08 58 01	J2253+1608	20 58 41	46.7	137.2	-1.9		-25.2	29	1469	08 58 01
09 01 31	=2251+158	21 02 11	47.0	138.3	-1.9		-24.6	210	1523	08 58 02
09 03 04	J2216+3518	21 03 44	68.1	136.5	-1.2		-30.5	0	1523	09 03 04
09 06 34	=2214+350	21 07 15	68.4	138.2	-1.2		-29.4	210	1577	09 03 05
09 07 41	J2244+4057	21 08 22	69.8	116.7	-1.6		-45.3	8	1577	09 07 41
09 11 11	=2241+406	21 11 52	70.2	118.1	-1.6		-44.6	210	1631	09 07 42
09 18 58	J1740+4506	21 19 41	54.2	279.8	3.7		57.0	129	1631	09 18 58
09 22 28	=1738+451	21 23 11	53.7	280.4	3.7		56.8	210	1685	09 18 59
09 24 33	J1759+2343	21 25 17	41.7	253.2	3.4		38.9	56	1685	09 24 33
09 28 03	=1756+237	21 28 48	41.2	254.1	3.5		39.1	210	1739	09 24 34
09 31 46	J2129-1538	21 32 31	21.3	180.6	0.0		0.4	60	1739	09 31 46
09 35 16	=2126-158	21 36 02	21.3	181.5	0.1		0.9	210	1793	09 31 47
09 35 50	J2131-1207	21 36 36	24.9	181.1	0.1		0.7	7	1793	09 35 50
09 39 20	=2128-123	21 40 06	24.9	182.0	0.1		1.2	210	1847	09 35 51
09 47 07	J2356+8152	21 47 54	59.6	8.5	-2.2		-140.6	104	1847	09 47 07
09 50 37	=2353+816	21 51 25	59.7	8.3	-2.1		-141.6	210	1901	09 47 08
09 52 02	J0011+7045	21 52 50	66.5	28.0	-2.3		-120.6	31	1901	09 52 02
09 55 32	=0008+704	21 56 21	66.7	27.7	-2.3		-121.7	210	1955	09 52 03
09 56 18	J0157+7442	21 57 07	58.1	25.6	-4.0		-98.2	0	1955	09 56 18
09 59 48	=0153+744	22 00 38	58.3	25.5	-4.0		-99.1	210	2010	09 56 19
10 03 30	J0005+3820	22 04 20	64.4	112.5	-2.0		-45.1	33	2010	10 03 30
10 07 00	=0003+380	22 07 51	64.9	113.6	-2.0		-44.6	210	2064	10 03 31
10 07 53	J0048+3157	22 08 44	54.4	109.9	-2.7		-41.8	0	2064	10 07 53
10 11 23	=0046+316	22 12 15	54.9	110.9	-2.6		-41.5	210	2118	10 07 54
10 12 33	J0052+4402	22 13 24	62.5	92.6	-2.7		-56.7	18	2118	10 12 33
10 16 03	=0049+437	22 16 55	63.0	93.4	-2.6		-56.7	210	2172	10 12 34
10 17 14	J0152+3350	22 18 06	47.7	94.7	-3.6		-46.2	0	2172	10 17 14
10 20 44	=0149+335	22 21 37	48.3	95.5	-3.5		-46.1	210	2226	10 17 15
10 22 17	J0231+1322	22 23 10	27.2	104.3	-4.2		-36.7	0	2226	10 22 17
10 25 47	=0229+131	22 26 41	27.7	105.1	-4.1		-36.6	210	2280	10 22 18

```
Schedule for TORUN     (Code Tr )                                  Page   5
              Resolving the mystery of large VLBI-Gaia offsets
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   3 Mar 2020   Day  63 ---

10 27 27  J0251+4315   22 28 21  46.5  75.1 -4.4     -52.9    16     2280   10 27 27
10 30 57  =0248+430    22 31 52  47.0  75.7 -4.3     -53.1   210     2334   10 27 28

10 36 57  J2131-1207   22 37 52  23.4 197.4  1.1      10.6   102     2334   10 36 57
10 40 27  =2128-123    22 41 23  23.2 198.3  1.1      11.1   210     2388   10 36 58

10 41 01  J2129-1538   22 41 57  19.6 198.3  1.2      11.3     7     2388   10 41 01
10 44 31  =2126-158    22 45 28  19.5 199.2  1.3      11.8   210     2442   10 41 02

10 51 35  J1632+8232   22 52 34  51.7 347.9  6.4      74.8   113     2442   10 51 35
10 55 05  =1637+826    22 56 04  51.6 347.9  6.4      74.0   210     2497   10 51 36

 ---------- >>> Pointing gap 2: all telescopes which need it <<< ----------

11 06 15  J1740+4506   23 07 16  38.9 296.2  5.4      49.8   549     2497   11 06 15
11 09 45  =1738+451    23 10 47  38.4 296.7  5.5      49.5   210     2551   11 06 16

11 11 22  J1759+2343   23 12 24  25.8 275.8  5.2      40.7    36     2551   11 11 22
11 14 52  =1756+237    23 15 54  25.2 276.5  5.3      40.7   210     2605   11 11 23

11 16 57  J1824+5651   23 17 59  49.8 305.8  4.9      63.0    19     2605   11 16 57
11 20 27  =1823+568    23 21 30  49.3 306.1  5.0      62.5   210     2659   11 16 58

11 22 00  J1806+6949   23 23 03  52.2 326.5  5.3      74.0    37     2659   11 22 00
11 25 30  =1807+698    23 26 34  51.9 326.6  5.3      73.3   210     2713   11 22 01

11 26 07  J1849+6705   23 27 11  54.9 320.7  4.6      78.2    10     2713   11 26 07
11 29 37  =1849+670    23 30 42  54.6 320.8  4.7      77.5   210     2767   11 26 08

11 35 09  J2129-1538   23 36 14  16.2 211.6  2.1      19.1    97     2767   11 35 09
11 38 39  =2126-158    23 39 44  15.9 212.4  2.2      19.5   210     2821   11 35 10

11 39 13  J2131-1207   23 40 19  19.4 213.2  2.1      19.7     7     2821   11 39 13
11 42 43  =2128-123    23 43 49  19.1 214.1  2.2      20.1   210     2875   11 39 14

11 44 59  J2253+1608   23 46 06  51.8 200.1  0.9      12.4     0     2875   11 44 59
11 48 29  =2251+158    23 49 37  51.6 201.4  0.9      13.2   210     2929   11 45 00

11 49 50  J2216+3518   23 50 58  65.8 232.4  1.6      35.7     4     2929   11 49 50
11 53 20  =2214+350    23 54 29  65.4 233.8  1.6      36.5   210     2983   11 49 51

11 54 44  J2244+4057   23 55 53  73.1 231.9  1.2      38.8    41     2983   11 54 44
11 58 14  =2241+406    23 59 23  72.6 233.6  1.2      39.9   210     3038   11 54 45
```

Schedule for TORUN (Code Tr) Page 6

Resolving the mystery of large VLBI-Gaia offsets

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

--- Tue 3 Mar 2020 Day 63 ---

---------- >>> Pointing gap 3: all telescopes which need it <<< ----------

Start UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
12 10 04	J0005+3820	00 11 15	75.3	183.3	0.1		2.5	579	3038	12 10 04
12 13 34	=0003+380	00 14 46	75.3	186.0	0.1		4.6	210	3092	12 10 05
12 14 40	J0048+3157	00 15 52	68.1	160.4	-0.6		-13.8	0	3092	12 14 40
12 18 10	=0046+316	00 19 23	68.3	162.3	-0.5		-12.4	210	3146	12 14 41
12 19 36	J0052+4402	00 20 48	79.6	145.7	-0.5		-28.2	29	3146	12 19 36
12 23 06	=0049+437	00 24 19	79.9	148.8	-0.5		-25.7	210	3200	12 19 37
12 24 15	J0152+3350	00 25 28	65.3	131.9	-1.5		-32.6	0	3200	12 24 15
12 27 45	=0149+335	00 28 58	65.6	133.4	-1.4		-31.7	210	3254	12 24 16
12 29 21	J0231+1322	00 30 35	43.6	137.0	-2.0		-24.9	0	3254	12 29 21
12 32 51	=0229+131	00 34 06	43.9	138.0	-2.0		-24.4	210	3308	12 29 22
12 34 52	J0251+4315	00 36 07	65.5	99.6	-2.3		-54.5	26	3308	12 34 52
12 38 22	=0248+430	00 39 38	66.0	100.5	-2.2		-54.3	210	3362	12 34 53
12 40 19	J0542+4951	00 41 35	45.0	62.1	-5.0		-55.4	24	3362	12 40 19
12 43 49	=0538+498	00 45 05	45.5	62.5	-5.0		-55.7	210	3416	12 40 20
12 49 49	J1740+4506	00 51 07	26.0	-48.5	7.2		39.5	123	3416	12 49 49
12 53 19	=1738+451	00 54 37	25.6	-47.9	7.2		39.2	210	3470	12 49 50
12 54 22	J1824+5651	00 55 40	38.7	-43.9	6.5		49.6	0	3470	12 54 22
12 57 52	=1823+568	00 59 11	38.3	-43.5	6.6		49.2	210	3524	12 54 23
12 59 19	J2009+7229	01 00 38	54.7	-29.7	4.8		83.0	12	3524	12 59 19
13 02 59	=2010+723	01 04 19	54.4	-29.7	4.9		82.2	220	3581	12 59 20
13 08 19	J2253+1608	01 09 39	44.7	228.5	2.2		27.9	-214	3581	13 08 19
13 11 59	=2251+158	01 13 20	44.3	229.6	2.3		28.5	6	3638	13 08 20
13 13 58	J2216+3518	01 15 20	54.3	258.5	3.0		46.2	47	3638	13 13 58
13 17 38	=2214+350	01 19 00	53.8	259.3	3.0		46.4	220	3695	13 13 59
13 18 21	J2244+4057	01 19 43	61.5	260.8	2.6		51.8	0	3695	13 18 21
13 22 01	=2241+406	01 23 24	60.9	261.7	2.6		52.0	220	3751	13 18 22
13 26 46	J2356+8152	01 28 10	60.3	353.8	1.5		152.0	86	3751	13 26 46
13 30 26	=2353+816	01 31 50	60.3	353.5	1.6		150.9	220	3808	13 26 47

Schedule for TORUN (Code Tr) Page 7

Resolving the mystery of large VLBI-Gaia offsets

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 3 Mar 2020 Day 63 ---										
13 31 40	J0011+7045	01 33 04	70.1	340.7	1.3		142.6	23	3808	13 31 40
13 35 20	=0008+704	01 36 45	69.9	340.0	1.4		141.1	220	3865	13 31 41
13 36 33	J0157+7442	01 37 58	68.2	363.8	-0.4		-171.3	10	3865	13 36 33
13 40 13	=0153+744	01 41 39	68.2	363.1	-0.3		-172.8	220	3921	13 36 34
13 46 43	J0005+3820	01 48 10	67.3	240.1	1.7		41.6	127	3921	13 46 43
13 50 23	=0003+380	01 51 50	66.8	241.4	1.7		42.3	220	3978	13 46 44
13 52 09	J0048+3157	01 53 37	66.0	215.0	1.1		24.0	38	3978	13 52 09
13 55 49	=0046+316	01 57 18	65.7	216.7	1.1		25.1	220	4035	13 52 10
---------- >>> Pointing gap 4: all telescopes which need it <<< ----------										
14 05 24	J0052+4402	02 06 54	75.0	240.8	1.2		46.9	521	4035	14 05 24
14 09 04	=0049+437	02 10 35	74.5	242.5	1.3		47.9	220	4091	14 05 25
14 12 09	J0152+3350	02 13 40	70.5	192.5	0.3		9.0	69	4091	14 12 09
14 15 49	=0149+335	02 17 21	70.4	194.7	0.4		10.6	220	4148	14 12 10
14 17 19	J0231+1322	02 18 51	50.3	174.7	-0.2		-3.3	0	4148	14 17 19
14 20 59	=0229+131	02 22 31	50.3	176.1	-0.2		-2.4	220	4205	14 17 20
14 23 19	J0251+4315	02 24 52	79.2	151.8	-0.5		-23.0	18	4205	14 23 19
14 26 59	=0248+430	02 28 32	79.4	155.1	-0.4		-20.3	220	4261	14 23 20
14 29 51	J0542+4951	02 31 25	60.4	76.5	-3.2		-64.9	0	4261	14 29 51
14 33 31	=0538+498	02 35 05	60.9	77.0	-3.2		-65.2	220	4318	14 29 52
14 37 37	J1632+8232	02 39 13	46.3	-5.1	10.1		23.9	67	4318	14 37 37
14 41 17	=1637+826	02 42 53	46.3	-4.9	10.2		23.1	220	4375	14 37 38
14 43 18	J1824+5651	02 44 55	28.7	-30.7	8.3		34.1	42	4375	14 43 18
14 46 58	=1823+568	02 48 35	28.5	-30.2	8.4		33.5	220	4431	14 43 19
14 48 04	J1806+6949	02 49 41	38.0	-19.4	8.7		35.2	16	4431	14 48 04
14 51 44	=1807+698	02 53 22	37.8	-19.0	8.8		34.6	220	4488	14 48 05
14 52 25	J1849+6705	02 54 03	38.0	-25.0	8.1		40.7	14	4488	14 52 25
14 56 05	=1849+670	02 57 44	37.8	-24.6	8.1		40.0	220	4545	14 52 26
15 07 05	J2216+3518	03 08 45	37.4	281.3	4.9		46.2	33	4545	15 07 05
15 10 45	=2214+350	03 12 26	36.8	282.0	4.9		46.1	220	4601	15 07 06

```
Schedule for TORUN     (Code Tr )                                  Page   8
              Resolving the mystery of large VLBI-Gaia offsets
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   3 Mar 2020   Day  63 ---

15 11 28  J2244+4057   03 13 09  44.6 282.9  4.5      50.9     0     4601   15 11 28
15 15 08  =2241+406    03 16 49  44.1 283.5  4.5      50.7   220     4658   15 11 29

15 17 04  J0052+4402   03 18 46  64.7 264.1  2.4      56.4    25     4658   15 17 04
15 20 44  =0049+437    03 22 27  64.2 264.9  2.5      56.5   220     4715   15 17 05

15 23 22  J0152+3350   03 25 05  64.9 229.4  1.5      33.3    70     4715   15 23 22
15 27 02  =0149+335    03 28 45  64.5 230.9  1.6      34.2   220     4771   15 23 23

15 28 21  J0231+1322   03 30 05  48.8 201.4  1.0      13.0     5     4771   15 28 21
15 32 01  =0229+131    03 33 45  48.6 202.7  1.0      13.8   220     4828   15 28 22

15 34 05  J0251+4315   03 35 50  77.9 220.4  0.7      32.3     0     4828   15 34 05
15 37 45  =0248+430    03 39 30  77.6 223.0  0.8      34.3   220     4885   15 34 06

15 42 31  J0542+4951   03 44 17  71.2  87.8 -2.0     -68.6     0     4885   15 42 31
15 46 11  =0538+498    03 47 57  71.8  88.5 -1.9     -68.6   220     4942   15 42 32

15 51 41  J2009+7229   03 53 29  43.2 -21.7  7.7      47.7    95     4942   15 51 41
15 55 21  =2010+723    03 57 09  43.0 -21.4  7.8      47.0   220     4998   15 51 42

 ---------- >>> Pointing gap 5: all telescopes which need it <<< ----------

16 06 21  J1632+8232   04 08 11  45.6  -1.0 11.6       4.8   605     4998   16 06 21
16 10 01  =1637+826    04 11 52  45.6  -0.9 11.7       4.0   220     5055   16 06 22

16 10 55  J2356+8152   04 12 46  56.0 -12.9  4.3     105.6     1     5055   16 10 55
16 14 35  =2353+816    04 16 26  55.8 -13.0  4.3     104.6   220     5112   16 10 56

16 15 57  J0011+7045   04 17 48  58.2 -33.1  4.1      91.1    26     5112   16 15 57
16 19 37  =0008+704    04 21 29  57.9 -33.1  4.1      90.2   220     5168   16 15 58

16 20 54  J0157+7442   04 22 46  64.1 -20.5  2.4     126.5    37     5168   16 20 54
16 24 34  =0153+744    04 26 27  63.9 -20.9  2.5     125.3   220     5225   16 20 55

16 34 36  J0048+3157   04 36 30  44.8 265.7  3.8      45.0    14     5225   16 34 36
16 38 16  =0046+316    04 40 11  44.2 266.4  3.8      45.0   220     5282   16 34 37

16 39 38  J0152+3350   04 41 33  54.8 254.1  2.8      44.1    28     5282   16 39 38
16 43 18  =0149+335    04 45 13  54.2 255.0  2.9      44.4   220     5338   16 39 39

16 44 34  J0251+4315   04 46 30  68.9 254.0  1.9      52.5     8     5338   16 44 34
16 48 14  =0248+430    04 50 11  68.4 255.1  2.0      52.9   220     5395   16 44 35
```

```
Schedule for TORUN     (Code Tr )                                  Page   9
              Resolving the mystery of large VLBI-Gaia offsets
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   3 Mar 2020   Day  63 ---

16 54 57  J0542+4951   04 56 55  82.0 109.0 -0.8     -61.7    94     5395   16 54 57
16 58 37  =0538+498    05 00 36  82.5 111.2 -0.7     -60.3   220     5452   16 54 58

17 04 21  J1849+6705   05 06 21  31.8 -11.4 10.3      17.8    84     5452   17 04 21
17 08 01  =1849+670    05 10 01  31.6 -11.0 10.3      17.2   220     5508   17 04 22

17 08 44  J2009+7229   05 10 44  39.4 -15.9  9.0      33.2     0     5508   17 08 44
17 12 24  =2010+723    05 14 25  39.3 -15.6  9.1      32.5   220     5565   17 08 45

17 13 48  J1632+8232   05 15 49  45.7   2.1-11.2      -9.7    33     5565   17 13 48
17 17 28  =1637+826    05 19 29  45.7   2.3-11.2     -10.5   220     5622   17 13 49

17 18 29  J1806+6949   05 20 30  33.2  -4.7 11.2       8.2     0     5622   17 18 29
17 22 09  =1807+698    05 24 11  33.2  -4.4 11.3       7.6   220     5678   17 18 30

17 23 38  J2356+8152   05 25 41  53.4 -13.4  5.5      87.1     0     5678   17 23 38
17 27 18  =2353+816    05 29 22  53.3 -13.4  5.5      86.2   220     5735   17 23 39

17 28 42  J0011+7045   05 30 45  52.3 -31.8  5.3      74.9    32     5735   17 28 42
17 32 22  =0008+704    05 34 26  52.0 -31.7  5.4      74.2   220     5792   17 28 43

17 33 25  J0157+7442   05 35 30  59.8 -24.9  3.6     105.1    20     5792   17 33 25
17 37 05  =0153+744    05 39 10  59.5 -25.0  3.7     104.1   220     5848   17 33 26

17 43 18  J0542+4951   05 45 23  86.8 183.5  0.0       3.3   -65     5848   17 42 28
17 46 58  =0538+498    05 49 04  86.7 193.8  0.1      12.8   155     5918   17 42 29

17 56 16  J0231+1322   05 58 24  33.4 245.6  3.4      34.2   348     5918   17 56 16
17 59 56  =0229+131    06 02 04  32.9 246.4  3.5      34.5   220     5975   17 56 17



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


 ======== Setup file: sess120.K2048

   Setup group:    9         Station: TORUN            Total bit rate:  2048
   Format: VDIF              Bits per sample: 2        Sample rate: 64.000
   Number of channels: 16    DBE type: DBBC_DDC        Speedup factor:   1.00

   Disk used to record data.
```

```
  1st LO=  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00
           21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00
  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         9         1         9         2        10         2        10
                  3        11         3        11         4        12         4        12
  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 = 1MHz
  LO sum=   22139.49  22139.49  22139.49  22139.49  22203.49  22203.49  22203.49  22203.49
            22267.49  22267.49  22267.49  22267.49  22331.49  22331.49  22331.49  22331.49
  BBC fr=     639.49    639.49    639.49    639.49    703.49    703.49    703.49    703.49
              767.49    767.49    767.49    767.49    831.49    831.49    831.49    831.49
  Bandwd=      32.00     32.00     32.00     32.00     32.00     32.00     32.00     32.00
               32.00     32.00     32.00     32.00     32.00     32.00     32.00     32.00
   Matching frequency sets:   6

  Track assignments are:
   track1=   1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15, 16
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

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

  0003+380          00 03 22.335504   * 00 05 57.175393     00 06 57.269173       0.13
* J0005+3820        38 03 33.40997    * 38 20 15.14904      38 26 50.71943        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  1840 observations

  0008+704          00 08 49.693643   * 00 11 31.902797     00 12 33.380088       0.56
* J0011+7045        70 28 50.79210    * 70 45 31.62634      70 52 12.97815        0.22
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  176 observations

  0046+316          00 46 04.857322   * 00 48 47.141480     00 49 50.417782       0.12
* J0048+3157        31 41 04.49533    * 31 57 25.08484      32 03 52.15807        0.11
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  1080 observations

  0049+437          00 49 39.848494   * 00 52 27.825867     00 53 33.243813       0.18
* J0052+4402        43 46 37.37207    * 44 02 54.51597      44 09 23.02751        0.15
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  255 observations

  0149+335          01 49 40.036701   * 01 52 34.576408     01 53 42.997123       0.18
* J0152+3350        33 35 46.68972    * 33 50 33.15880      33 56 24.53342        0.18
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  151 observations
```

```
  0153+744          01 53 04.337075   * 01 57 34.964939     01 59 20.938938       0.44
* J0157+7442        74 28 05.62189    * 74 42 43.22953      74 48 40.61066        0.11
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  1126 observations

  0229+131          02 29 02.524214   * 02 31 45.894061     02 32 50.099348       0.10
* J0231+1322        13 09 40.78819    * 13 22 54.71634      13 28 03.65864        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  109449 observations

  0248+430          02 48 18.485707   * 02 51 34.536750     02 52 51.795578       0.14
* J0251+4315        43 02 56.98557    * 43 15 15.82919      43 20 12.08478        0.11
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  1308 observations

  0538+498          05 38 43.517524   * 05 42 36.137901     05 44 09.012102       0.16
* J0542+4951        49 49 42.83716    * 49 51 07.23379      49 51 44.80619        0.11
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  2002 observations

  1637+826          16 37 56.926910   * 16 32 31.969878     16 30 26.512818       0.78
* J1632+8232        82 38 18.49826    * 82 32 16.39990      82 29 26.94415        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  10135 observations

  1738+451          17 38 39.409580   * 17 40 06.372611     17 40 40.416419       0.21
* J1740+4506        45 08 20.31720    * 45 06 50.37091      45 05 58.05150        0.20
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  123 observations

  1756+237          17 56 55.937405   * 17 59 00.358089     17 59 49.254234       0.19
* J1759+2343        23 43 55.77917    * 23 43 46.95383      23 43 31.81358        0.21
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  181 observations

  1807+698          18 07 18.543587   * 18 06 50.680645     18 06 38.255076       0.29
* J1806+6949        69 48 57.10467    * 69 49 28.10852      69 49 20.65164        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  146554 observations

  1823+568          18 23 14.951492   * 18 24 07.068370     18 24 26.712726       0.18
* J1824+5651        56 49 18.07202    * 56 51 01.49083      56 51 25.10036        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  11370 observations

  1849+670          18 49 16.505869   * 18 49 16.072281     18 49 14.045875       0.26
* J1849+6705        67 02 07.88053    * 67 05 41.68027      67 06 48.72797        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  47097 observations

  2010+723          20 10 16.209308   * 20 09 52.303853     20 09 38.985242       0.41
* J2009+7229        72 20 20.74085    * 72 29 19.35053      72 32 39.26266        0.12
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  438 observations

  2126-158          21 26 26.777532   * 21 29 12.175899     21 30 16.430362       0.10
* J2129-1538       -15 51 50.34808    *-15 38 41.04191     -15 33 31.61052        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  14782 observations

  2128-123          21 28 52.676060   * 21 31 35.261752     21 32 38.429543       0.10
* J2131-1207       -12 20 20.53571    *-12 07 04.79610     -12 01 53.38188        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
```

```
                    rfc_2018a Petrov and Kovalev, in preparation  16909 observations

  2214+350          22 14 07.014327   * 22 16 20.009902     22 17 11.287124       0.12
* J2216+3518        35 03 15.09223    * 35 18 14.17996      35 24 04.64471        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  30582 observations

  2241+406          22 41 57.956930   * 22 44 12.731148     22 45 04.621486       0.23
* J2244+4057        40 41 27.56069    * 40 57 13.62048      41 03 24.24748        0.22
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  85 observations

  2251+158          22 51 29.519743   * 22 53 57.747942     22 54 55.259581       0.10
* J2253+1608        15 52 54.34805    * 16 08 53.56088      16 15 07.88648        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  41804 observations

  2353+816          23 53 58.676764   * 23 56 22.793915     23 57 12.708414       0.72
* J2356+8152        81 36 10.67120    * 81 52 52.25510      81 59 34.76279        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  3111 observations
```

en006btr

EN006B

PI: *Nimmo*

```
Address:  API

Observing mode: evn
Schedule for TORUN     (Code Tr )                                   Page   2
               EN006B
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   3 Mar 2020   Day  63 ---
 Next scan frequencies:  22139.49  22139.49  22139.49  22139.49  22203.49  22203.49  22203.49  22203.4
                         22267.49  22267.49  22267.49  22267.49  22331.49  22331.49  22331.49  22331.4
 Next BBC frequencies:     639.49    639.49    639.49    639.49    703.49    703.49    703.49    703.4
                           767.49    767.49    767.49    767.49    831.49    831.49    831.49    831.4
 Next scan bandwidths:      32.00     32.00     32.00     32.00     32.00     32.00     32.00     32.0
                            32.00     32.00     32.00     32.00     32.00     32.00     32.00     32.0

21 00 00  J1159+2914   09 02 38  49.8 108.6 -3.0     -40.7     0        0   21 00 00
21 04 00  =1156+295    09 06 39  50.3 109.6 -2.9     -40.4   240       62   21 00 01

21 06 00  J1305-1033   09 08 39   8.7 121.1 -4.0     -31.6   -50       62   21 06 00
21 07 30  =1302-102    09 10 09   8.9 121.4 -3.9     -31.4    40       85   21 06 01

21 07 30  J1254-1053   09 10 09  10.0 123.9 -3.8     -30.5   -19       85   No stop
21 09 00  ---          09 11 40  10.2 124.2 -3.7     -30.4    71      108   21 07 31

21 09 00  J1305-1033   09 11 40   9.1 121.7 -3.9     -31.3   -19      108   No stop
21 10 00  =1302-102    09 12 40   9.2 121.9 -3.9     -31.2    41      124   21 09 01

21 10 00  SN2012AU     09 12 40  10.8 124.0 -3.7     -30.4   -20      124   No stop
21 11 20  ---          09 14 00  11.0 124.3 -3.7     -30.3    60      144   21 10 01

21 11 20  J1305-1033   09 14 00   9.4 122.2 -3.9     -31.1   -19      144   No stop
21 12 20  =1302-102    09 15 00   9.5 122.4 -3.9     -31.1    41      160   21 11 21

21 12 20  SN2012AU     09 15 00  11.1 124.6 -3.7     -30.2   -20      160   No stop
21 13 40  ---          09 16 20  11.3 124.8 -3.7     -30.1    60      180   21 12 21

21 14 20  J1305-1033   09 17 00   9.8 122.8 -3.8     -30.9    21      180   21 14 20
21 15 10  =1302-102    09 17 51   9.9 123.0 -3.8     -30.8    50      193   21 14 21

21 15 10  SN2012AU     09 17 51  11.5 125.2 -3.6     -29.9   -20      193   No stop
21 16 30  ---          09 19 11  11.6 125.5 -3.6     -29.8    60      214   21 15 11

21 16 30  J1305-1033   09 19 11  10.1 123.3 -3.8     -30.7   -19      214   No stop
21 17 30  =1302-102    09 20 11  10.2 123.5 -3.8     -30.6    41      229   21 16 31

21 17 30  J1303-1051   09 20 11  10.2 124.2 -3.7     -30.4   -12      229   No stop
21 18 30  =1300-105    09 21 11  10.3 124.4 -3.7     -30.3    48      245   21 17 31

21 19 10  J1305-1033   09 21 51  10.4 123.9 -3.7     -30.5    28      245   21 19 10
21 20 00  =1302-102    09 22 41  10.5 124.1 -3.7     -30.4    50      258   21 19 11

21 20 00  SN2012AU     09 22 41  12.1 126.2 -3.6     -29.5   -20      258   No stop
21 21 20  ---          09 24 02  12.2 126.5 -3.5     -29.4    60      278   21 20 01
```

Schedule for TORUN (Code Tr) Page 3
EN006B

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 3 Mar 2020 Day 63 ---										
21 21 20	J1305-1033	09 24 02	10.7	124.4	-3.7		-30.3	-19	278	No stop
21 22 20	=1302-102	09 25 02	10.8	124.6	-3.7		-30.2	41	294	21 21 21
21 22 20	SN2012AU	09 25 02	12.4	126.7	-3.5		-29.3	-20	294	No stop
21 23 40	---	09 26 22	12.5	127.0	-3.5		-29.2	60	314	21 22 21
21 24 20	J1305-1033	09 27 02	11.0	125.0	-3.7		-30.0	21	314	21 24 20
21 25 10	=1302-102	09 27 52	11.1	125.2	-3.6		-30.0	50	327	21 24 21
21 25 10	SN2012AU	09 27 52	12.7	127.4	-3.5		-29.0	-20	327	No stop
21 26 30	---	09 29 12	12.9	127.7	-3.4		-28.9	60	348	21 25 11
21 26 30	J1305-1033	09 29 12	11.3	125.5	-3.6		-29.8	-19	348	No stop
21 27 30	=1302-102	09 30 13	11.4	125.7	-3.6		-29.8	41	363	21 26 31
21 27 30	J1303-1051	09 30 13	11.4	126.4	-3.6		-29.5	-12	363	No stop
21 28 30	=1300-105	09 31 13	11.6	126.6	-3.6		-29.4	48	379	21 27 31
21 29 10	J1305-1033	09 31 53	11.6	126.1	-3.6		-29.6	28	379	21 29 10
21 30 00	=1302-102	09 32 43	11.7	126.2	-3.6		-29.5	50	392	21 29 11
21 30 00	SN2012AU	09 32 43	13.3	128.4	-3.4		-28.6	-19	392	No stop
21 31 20	---	09 34 03	13.4	128.7	-3.4		-28.4	61	412	21 30 01
21 31 20	J1305-1033	09 34 03	11.9	126.5	-3.5		-29.4	-19	412	No stop
21 32 20	=1302-102	09 35 03	12.0	126.8	-3.5		-29.3	41	428	21 31 21
21 32 20	SN2012AU	09 35 03	13.5	129.0	-3.3		-28.3	-19	428	No stop
21 33 40	---	09 36 24	13.7	129.3	-3.3		-28.2	61	448	21 32 21
21 34 20	J1305-1033	09 37 04	12.3	127.2	-3.5		-29.1	21	448	21 34 20
21 35 10	=1302-102	09 37 54	12.4	127.4	-3.5		-29.0	50	461	21 34 21
21 35 10	SN2012AU	09 37 54	13.9	129.6	-3.3		-28.1	-19	461	No stop
21 36 30	---	09 39 14	14.0	129.9	-3.3		-27.9	61	482	21 35 11
21 36 30	J1305-1033	09 39 14	12.5	127.7	-3.5		-28.9	-19	482	No stop
21 37 30	=1302-102	09 40 14	12.6	127.9	-3.4		-28.8	41	497	21 36 31
21 37 30	J1303-1051	09 40 14	12.6	128.6	-3.4		-28.6	-12	497	No stop
21 38 30	=1300-105	09 41 14	12.8	128.8	-3.4		-28.5	48	513	21 37 31
21 39 10	J1305-1033	09 41 54	12.8	128.3	-3.4		-28.7	28	513	21 39 10
21 40 00	=1302-102	09 42 45	12.9	128.4	-3.4		-28.6	50	526	21 39 11

Schedule for TORUN (Code Tr) Page 4

EN006B

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 3 Mar 2020 Day 63 ---										
21 40 00	SN2012AU	09 42 45	14.4	130.7	-3.2		-27.6	-19	526	No stop
21 41 20	---	09 44 05	14.6	131.0	-3.2		-27.4	61	546	21 40 01
21 41 20	J1305-1033	09 44 05	13.1	128.7	-3.4		-28.5	-19	546	No stop
21 42 20	=1302-102	09 45 05	13.2	129.0	-3.4		-28.4	41	562	21 41 21
21 42 20	SN2012AU	09 45 05	14.7	131.2	-3.2		-27.3	-19	562	No stop
21 43 40	---	09 46 25	14.8	131.5	-3.2		-27.2	61	582	21 42 21
21 44 20	J1305-1033	09 47 05	13.4	129.4	-3.3		-28.2	21	582	21 44 20
21 45 10	=1302-102	09 47 55	13.5	129.6	-3.3		-28.1	50	595	21 44 21
21 45 10	SN2012AU	09 47 55	15.0	131.9	-3.1		-27.0	-19	595	No stop
21 46 30	---	09 49 16	15.2	132.2	-3.1		-26.9	61	616	21 45 11
21 46 30	J1305-1033	09 49 16	13.7	129.9	-3.3		-28.0	-19	616	No stop
21 47 30	=1302-102	09 50 16	13.8	130.1	-3.3		-27.9	41	631	21 46 31
21 47 30	J1303-1051	09 50 16	13.8	130.8	-3.2		-27.6	-12	631	No stop
21 48 30	=1300-105	09 51 16	13.9	131.0	-3.2		-27.5	48	647	21 47 31
21 49 10	J1305-1033	09 51 56	14.0	130.5	-3.2		-27.7	28	647	21 49 10
21 50 00	=1302-102	09 52 46	14.1	130.7	-3.2		-27.6	50	660	21 49 11
21 50 00	SN2012AU	09 52 46	15.6	133.0	-3.1		-26.5	-19	660	No stop
21 51 20	---	09 54 06	15.7	133.3	-3.0		-26.4	61	680	21 50 01
21 51 20	J1305-1033	09 54 06	14.2	131.0	-3.2		-27.5	-19	680	No stop
21 52 20	=1302-102	09 55 07	14.4	131.2	-3.2		-27.4	41	696	21 51 21
21 52 20	SN2012AU	09 55 07	15.8	133.5	-3.0		-26.3	-19	696	No stop
21 53 40	---	09 56 27	16.0	133.8	-3.0		-26.1	61	716	21 52 21
21 54 20	J1305-1033	09 57 07	14.6	131.7	-3.2		-27.2	21	716	21 54 20
21 55 10	=1302-102	09 57 57	14.7	131.8	-3.1		-27.1	50	729	21 54 21
21 55 10	SN2012AU	09 57 57	16.1	134.1	-3.0		-26.0	-19	729	No stop
21 56 30	---	09 59 17	16.3	134.4	-2.9		-25.8	61	750	21 55 11
21 56 30	J1305-1033	09 59 17	14.8	132.1	-3.1		-26.9	-19	750	No stop
21 57 30	=1302-102	10 00 17	14.9	132.4	-3.1		-26.8	41	765	21 56 31
21 57 30	J1303-1051	10 00 17	14.9	133.0	-3.1		-26.6	-12	765	No stop
21 58 30	=1300-105	10 01 18	15.0	133.3	-3.0		-26.4	48	781	21 57 31

Schedule for TORUN (Code Tr) Page 5
EN006B

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 3 Mar 2020 Day 63 ---										
21 59 10	J1305-1033	10 01 58	15.1	132.8	-3.1		-26.7	28	781	21 59 10
22 00 00	=1302-102	10 02 48	15.2	132.9	-3.1		-26.6	50	794	21 59 11
22 00 00	SN2012AU	10 02 48	16.6	135.3	-2.9		-25.4	-19	794	No stop
22 01 20	---	10 04 08	16.8	135.6	-2.9		-25.3	61	814	22 00 01
22 01 20	J1305-1033	10 04 08	15.4	133.3	-3.0		-26.4	-19	814	No stop
22 02 20	=1302-102	10 05 08	15.5	133.5	-3.0		-26.3	41	830	22 01 21
22 02 20	SN2012AU	10 05 08	16.9	135.8	-2.8		-25.2	-19	830	No stop
22 03 40	---	10 06 28	17.0	136.1	-2.8		-25.0	61	850	22 02 21
22 04 20	J1305-1033	10 07 09	15.7	133.9	-3.0		-26.1	21	850	22 04 20
22 05 10	=1302-102	10 07 59	15.8	134.1	-3.0		-26.0	50	863	22 04 21
22 05 10	SN2012AU	10 07 59	17.2	136.5	-2.8		-24.9	-19	863	No stop
22 06 30	---	10 09 19	17.3	136.8	-2.8		-24.7	61	884	22 05 11
22 06 30	J1305-1033	10 09 19	15.9	134.4	-3.0		-25.9	-19	884	No stop
22 07 30	=1302-102	10 10 19	16.0	134.7	-2.9		-25.8	41	899	22 06 31
22 07 30	J1303-1051	10 10 19	16.0	135.3	-2.9		-25.5	-12	899	No stop
22 08 30	=1300-105	10 11 19	16.1	135.6	-2.9		-25.4	48	915	22 07 31
22 09 10	J1305-1033	10 11 59	16.2	135.1	-2.9		-25.6	28	915	22 09 10
22 10 00	=1302-102	10 12 50	16.3	135.2	-2.9		-25.5	50	927	22 09 11
22 10 00	SN2012AU	10 12 50	17.7	137.6	-2.7		-24.3	-19	927	No stop
22 11 20	---	10 14 10	17.8	137.9	-2.7		-24.1	61	948	22 10 01
22 11 20	J1305-1033	10 14 10	16.4	135.6	-2.9		-25.3	-19	948	No stop
22 12 20	=1302-102	10 15 10	16.5	135.8	-2.9		-25.2	41	964	22 11 21
22 12 20	SN2012AU	10 15 10	17.9	138.2	-2.7		-24.0	-19	964	No stop
22 13 40	---	10 16 30	18.0	138.5	-2.7		-23.9	61	984	22 12 21
22 14 20	J1305-1033	10 17 10	16.7	136.3	-2.8		-25.0	21	984	22 14 20
22 15 10	=1302-102	10 18 00	16.8	136.4	-2.8		-24.9	50	997	22 14 21
22 15 10	SN2012AU	10 18 00	18.2	138.8	-2.6		-23.7	-19	997	No stop
22 16 30	---	10 19 21	18.3	139.1	-2.6		-23.5	61	1018	22 15 11
22 16 30	J1305-1033	10 19 21	17.0	136.8	-2.8		-24.7	-19	1018	No stop
22 17 30	=1302-102	10 20 21	17.1	137.0	-2.8		-24.6	41	1033	22 16 31

Schedule for TORUN (Code Tr) Page 6
EN006B

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 3 Mar 2020 Day 63 ---										
22 17 30	J1303-1051	10 20 21	17.0	137.7	-2.7		-24.3	-12	1033	No stop
22 18 30	=1300-105	10 21 21	17.1	137.9	-2.7		-24.2	48	1049	22 17 31
22 19 10	J1305-1033	10 22 01	17.2	137.4	-2.7		-24.4	28	1049	22 19 10
22 20 00	=1302-102	10 22 51	17.3	137.6	-2.7		-24.3	50	1061	22 19 11
22 20 00	SN2012AU	10 22 51	18.7	140.0	-2.6		-23.1	-19	1061	No stop
22 21 20	---	10 24 11	18.8	140.3	-2.5		-23.0	61	1082	22 20 01
22 21 20	J1305-1033	10 24 11	17.5	137.9	-2.7		-24.2	-19	1082	No stop
22 22 20	=1302-102	10 25 12	17.6	138.1	-2.7		-24.1	41	1098	22 21 21
22 22 20	J1254-1053	10 25 12	18.3	140.8	-2.5		-22.7	-20	1098	No stop
22 23 20	---	10 26 12	18.4	141.1	-2.5		-22.6	40	1113	22 22 21
22 23 20	J1305-1033	10 26 12	17.7	138.4	-2.7		-24.0	-20	1113	No stop
22 24 20	=1302-102	10 27 12	17.8	138.6	-2.7		-23.8	40	1128	22 23 21
22 24 20	SN2012AU	10 27 12	19.1	141.0	-2.5		-22.6	-19	1128	No stop
22 25 40	---	10 28 32	19.2	141.3	-2.5		-22.4	61	1149	22 24 21
22 26 20	J1305-1033	10 29 12	18.0	139.1	-2.6		-23.6	21	1149	22 26 20
22 27 10	=1302-102	10 30 02	18.0	139.3	-2.6		-23.5	50	1162	22 26 21
22 27 10	SN2012AU	10 30 02	19.3	141.7	-2.4		-22.2	-19	1162	No stop
22 28 30	---	10 31 23	19.5	142.0	-2.4		-22.1	61	1183	22 27 11
22 28 30	J1305-1033	10 31 23	18.2	139.6	-2.6		-23.3	-19	1183	No stop
22 29 30	=1302-102	10 32 23	18.3	139.8	-2.6		-23.2	41	1198	22 28 31
22 29 30	J1303-1051	10 32 23	18.2	140.5	-2.5		-22.9	-13	1198	No stop
22 30 30	=1300-105	10 33 23	18.3	140.7	-2.5		-22.8	47	1213	22 29 31
22 31 10	J1305-1033	10 34 03	18.4	140.2	-2.5		-23.0	28	1213	22 31 10
22 32 00	=1302-102	10 34 53	18.5	140.4	-2.5		-22.9	50	1226	22 31 11
22 32 00	SN2012AU	10 34 53	19.8	142.9	-2.4		-21.6	-19	1226	No stop
22 33 20	---	10 36 13	19.9	143.2	-2.3		-21.4	61	1247	22 32 01
22 33 20	J1305-1033	10 36 13	18.6	140.7	-2.5		-22.7	-19	1247	No stop
22 34 20	=1302-102	10 37 14	18.7	141.0	-2.5		-22.6	41	1262	22 33 21
22 34 20	SN2012AU	10 37 14	20.0	143.4	-2.3		-21.3	-19	1262	No stop
22 35 40	---	10 38 34	20.1	143.8	-2.3		-21.1	61	1283	22 34 21

Schedule for TORUN (Code Tr) Page 7
EN006B

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 3 Mar 2020 Day 63 ---										
22 36 20	J1305-1033	10 39 14	18.9	141.5	-2.5		-22.4	21	1283	22 36 20
22 37 10	=1302-102	10 40 04	19.0	141.7	-2.4		-22.3	50	1296	22 36 21
22 37 10	SN2012AU	10 40 04	20.3	144.1	-2.3		-21.0	-19	1296	No stop
22 38 30	---	10 41 24	20.4	144.5	-2.2		-20.8	61	1317	22 37 11
22 38 30	J1305-1033	10 41 24	19.1	142.0	-2.4		-22.1	-19	1317	No stop
22 39 30	=1302-102	10 42 24	19.2	142.2	-2.4		-22.0	41	1332	22 38 31
22 39 30	J1303-1051	10 42 24	19.2	142.9	-2.4		-21.6	-13	1332	No stop
22 40 30	=1300-105	10 43 25	19.2	143.2	-2.3		-21.5	47	1347	22 39 31
22 41 10	J1305-1033	10 44 05	19.4	142.6	-2.4		-21.8	28	1347	22 41 10
22 42 00	=1302-102	10 44 55	19.4	142.8	-2.4		-21.7	50	1360	22 41 11
22 42 00	SN2012AU	10 44 55	20.7	145.3	-2.2		-20.3	-19	1360	No stop
22 43 20	---	10 46 15	20.8	145.7	-2.2		-20.1	61	1381	22 42 01
22 43 20	J1305-1033	10 46 15	19.6	143.2	-2.3		-21.5	-19	1381	No stop
22 44 20	=1302-102	10 47 15	19.7	143.4	-2.3		-21.4	41	1396	22 43 21
22 44 20	SN2012AU	10 47 15	20.9	145.9	-2.1		-20.0	-19	1396	No stop
22 45 40	---	10 48 35	21.0	146.2	-2.1		-19.8	61	1417	22 44 21
22 46 20	J1305-1033	10 49 15	19.8	143.9	-2.3		-21.1	21	1417	22 46 20
22 47 10	=1302-102	10 50 06	19.9	144.1	-2.3		-21.0	50	1430	22 46 21
22 47 10	SN2012AU	10 50 06	21.1	146.6	-2.1		-19.6	-19	1430	No stop
22 48 30	---	10 51 26	21.2	146.9	-2.1		-19.4	61	1451	22 47 11
22 48 30	J1305-1033	10 51 26	20.0	144.4	-2.3		-20.8	-19	1451	No stop
22 49 30	=1302-102	10 52 26	20.1	144.7	-2.2		-20.7	41	1466	22 48 31
22 49 30	J1303-1051	10 52 26	20.0	145.3	-2.2		-20.4	-13	1466	No stop
22 50 30	=1300-105	10 53 26	20.1	145.6	-2.2		-20.2	47	1481	22 49 31
22 51 10	J1305-1033	10 54 06	20.3	145.1	-2.2		-20.5	28	1481	22 51 10
22 52 00	=1302-102	10 54 56	20.3	145.3	-2.2		-20.4	50	1494	22 51 11
22 52 00	SN2012AU	10 54 56	21.5	147.8	-2.0		-19.0	-19	1494	No stop
22 53 20	---	10 56 17	21.6	148.2	-2.0		-18.8	61	1515	22 52 01
22 53 20	J1305-1033	10 56 17	20.4	145.6	-2.2		-20.2	-19	1515	No stop
22 54 20	=1302-102	10 57 17	20.5	145.9	-2.2		-20.1	41	1530	22 53 21

Schedule for TORUN (Code Tr) Page 8
EN006B

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 3 Mar 2020 Day 63 ---										
22 54 20	SN2012AU	10 57 17	21.7	148.4	-2.0		-18.7	-19	1530	No stop
22 55 40	---	10 58 37	21.8	148.7	-2.0		-18.5	61	1551	22 54 21
22 56 20	J1305-1033	10 59 17	20.7	146.4	-2.1		-19.8	21	1551	22 56 20
22 57 10	=1302-102	11 00 07	20.8	146.6	-2.1		-19.7	50	1564	22 56 21
22 57 10	SN2012AU	11 00 07	21.9	149.1	-1.9		-18.3	-19	1564	No stop
22 58 30	---	11 01 27	22.0	149.5	-1.9		-18.1	61	1584	22 57 11
22 58 30	J1305-1033	11 01 27	20.9	146.9	-2.1		-19.5	-19	1584	No stop
22 59 30	=1302-102	11 02 28	21.0	147.1	-2.1		-19.4	41	1600	22 58 31
22 59 30	J1303-1051	11 02 28	20.9	147.8	-2.0		-19.0	-13	1600	No stop
23 00 30	=1300-105	11 03 28	20.9	148.1	-2.0		-18.9	47	1615	22 59 31
23 01 10	J1305-1033	11 04 08	21.1	147.6	-2.0		-19.1	28	1615	23 01 10
23 02 00	=1302-102	11 04 58	21.2	147.8	-2.0		-19.0	50	1628	23 01 11
23 02 00	SN2012AU	11 04 58	22.3	150.3	-1.8		-17.6	-20	1628	No stop
23 03 20	---	11 06 18	22.4	150.7	-1.8		-17.4	60	1649	23 02 01
23 03 20	J1305-1033	11 06 18	21.3	148.1	-2.0		-18.8	-19	1649	No stop
23 04 20	=1302-102	11 07 18	21.3	148.3	-2.0		-18.7	41	1664	23 03 21
23 04 20	SN2012AU	11 07 18	22.4	150.9	-1.8		-17.2	-20	1664	No stop
23 05 40	---	11 08 39	22.5	151.3	-1.8		-17.1	60	1685	23 04 21
23 06 20	J1305-1033	11 09 19	21.5	148.8	-2.0		-18.4	21	1685	23 06 20
23 07 10	=1302-102	11 10 09	21.6	149.1	-1.9		-18.3	50	1698	23 06 21
23 07 10	SN2012AU	11 10 09	22.7	151.7	-1.8		-16.8	-20	1698	No stop
23 08 30	---	11 11 29	22.7	152.0	-1.7		-16.7	60	1718	23 07 11
23 08 30	J1305-1033	11 11 29	21.7	149.4	-1.9		-18.1	-19	1718	No stop
23 09 30	=1302-102	11 12 29	21.7	149.6	-1.9		-18.0	41	1734	23 08 31
23 09 30	J1303-1051	11 12 29	21.6	150.3	-1.9		-17.6	-13	1734	No stop
23 10 30	=1300-105	11 13 29	21.7	150.6	-1.8		-17.5	47	1749	23 09 31
23 11 10	J1305-1033	11 14 10	21.9	150.1	-1.9		-17.8	28	1749	23 11 10
23 12 00	=1302-102	11 15 00	21.9	150.3	-1.9		-17.6	50	1762	23 11 11
23 12 00	SN2012AU	11 15 00	23.0	152.9	-1.7		-16.1	-20	1762	No stop
23 13 20	---	11 16 20	23.1	153.2	-1.7		-16.0	60	1783	23 12 01

Schedule for TORUN (Code Tr) Page 9

EN006B

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 3 Mar 2020 Day 63 ---										
23 13 20	J1305-1033	11 16 20	22.0	150.6	-1.8		-17.4	-19	1783	No stop
23 14 20	=1302-102	11 17 20	22.1	150.9	-1.8		-17.3	41	1798	23 13 21
23 14 20	SN2012AU	11 17 20	23.1	153.5	-1.6		-15.8	-20	1798	No stop
23 15 40	---	11 18 40	23.2	153.8	-1.6		-15.6	60	1819	23 14 21
23 16 20	J1305-1033	11 19 20	22.3	151.4	-1.8		-17.0	21	1819	23 16 20
23 17 10	=1302-102	11 20 11	22.3	151.6	-1.8		-16.9	50	1832	23 16 21
23 17 10	SN2012AU	11 20 11	23.3	154.2	-1.6		-15.4	-20	1832	No stop
23 18 30	---	11 21 31	23.4	154.6	-1.6		-15.2	60	1852	23 17 11
23 18 30	J1305-1033	11 21 31	22.4	151.9	-1.8		-16.7	-19	1852	No stop
23 19 30	=1302-102	11 22 31	22.5	152.2	-1.7		-16.6	41	1868	23 18 31
23 19 30	J1303-1051	11 22 31	22.4	152.9	-1.7		-16.2	-13	1868	No stop
23 20 30	=1300-105	11 23 31	22.4	153.1	-1.7		-16.1	47	1883	23 19 31
23 21 10	J1305-1033	11 24 11	22.6	152.6	-1.7		-16.3	28	1883	23 21 10
23 22 00	=1302-102	11 25 01	22.7	152.8	-1.7		-16.2	50	1896	23 21 11
23 22 00	SN2012AU	11 25 01	23.6	155.5	-1.5		-14.7	-20	1896	No stop
23 23 20	---	11 26 22	23.7	155.8	-1.5		-14.5	60	1917	23 22 01
23 23 20	J1305-1033	11 26 22	22.7	153.2	-1.7		-16.0	-19	1917	No stop
23 24 20	=1302-102	11 27 22	22.8	153.4	-1.7		-15.9	41	1932	23 23 21
23 24 20	SN2012AU	11 27 22	23.8	156.1	-1.5		-14.3	-20	1932	No stop
23 25 40	---	11 28 42	23.9	156.4	-1.5		-14.1	60	1953	23 24 21
23 26 20	J1305-1033	11 29 22	22.9	153.9	-1.6		-15.6	21	1953	23 26 20
23 27 10	=1302-102	11 30 12	23.0	154.2	-1.6		-15.4	50	1966	23 26 21
23 27 10	SN2012AU	11 30 12	24.0	156.8	-1.4		-13.9	-20	1966	No stop
23 28 30	---	11 31 32	24.0	157.2	-1.4		-13.7	60	1986	23 27 11
23 28 30	J1305-1033	11 31 32	23.1	154.5	-1.6		-15.3	-19	1986	No stop
23 29 30	=1302-102	11 32 33	23.2	154.8	-1.6		-15.1	41	2002	23 28 31
23 29 30	J1303-1051	11 32 33	23.0	155.4	-1.5		-14.7	-13	2002	No stop
23 30 30	=1300-105	11 33 33	23.1	155.7	-1.5		-14.6	47	2017	23 29 31
23 31 10	J1305-1033	11 34 13	23.3	155.2	-1.5		-14.9	28	2017	23 31 10
23 32 00	=1302-102	11 35 03	23.3	155.4	-1.5		-14.7	50	2030	23 31 11

Schedule for TORUN (Code Tr) Page 10
EN006B

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 3 Mar 2020 Day 63 ---										
23 32 00	SN2012AU	11 35 03	24.2	158.1	-1.3		-13.2	-20	2030	No stop
23 33 20	---	11 36 23	24.3	158.5	-1.3		-13.0	60	2051	23 32 01
23 33 20	J1305-1033	11 36 23	23.4	155.8	-1.5		-14.5	-20	2051	No stop
23 34 20	=1302-102	11 37 23	23.5	156.0	-1.5		-14.4	40	2066	23 33 21
23 34 20	SN2012AU	11 37 23	24.4	158.7	-1.3		-12.8	-20	2066	No stop
23 35 40	---	11 38 44	24.4	159.1	-1.3		-12.6	60	2087	23 34 21
23 36 20	J1305-1033	11 39 24	23.6	156.5	-1.5		-14.1	20	2087	23 36 20
23 37 10	=1302-102	11 40 14	23.6	156.7	-1.4		-14.0	50	2100	23 36 21
23 37 10	SN2012AU	11 40 14	24.5	159.5	-1.3		-12.4	-20	2100	No stop
23 38 30	---	11 41 34	24.6	159.8	-1.2		-12.2	60	2120	23 37 11
23 38 30	J1305-1033	11 41 34	23.7	157.1	-1.4		-13.8	-20	2120	No stop
23 39 30	=1302-102	11 42 34	23.8	157.4	-1.4		-13.6	40	2136	23 38 31
23 39 30	J1303-1051	11 42 34	23.6	158.0	-1.4		-13.2	-13	2136	No stop
23 40 30	=1300-105	11 43 34	23.7	158.3	-1.3		-13.1	47	2151	23 39 31
23 41 10	J1305-1033	11 44 15	23.9	157.8	-1.4		-13.4	28	2151	23 41 10
23 42 00	=1302-102	11 45 05	23.9	158.0	-1.4		-13.2	50	2164	23 41 11
23 42 00	SN2012AU	11 45 05	24.8	160.8	-1.2		-11.6	-20	2164	No stop
23 43 20	---	11 46 25	24.8	161.1	-1.2		-11.4	60	2185	23 42 01
23 43 20	J1305-1033	11 46 25	24.0	158.4	-1.3		-13.0	-20	2185	No stop
23 44 20	=1302-102	11 47 25	24.0	158.6	-1.3		-12.9	40	2200	23 43 21
23 44 20	SN2012AU	11 47 25	24.9	161.4	-1.1		-11.2	-20	2200	No stop
23 45 40	---	11 48 45	24.9	161.7	-1.1		-11.0	60	2221	23 44 21
23 46 20	J1305-1033	11 49 25	24.1	159.2	-1.3		-12.6	20	2221	23 46 20
23 47 10	=1302-102	11 50 15	24.2	159.4	-1.3		-12.4	50	2234	23 46 21
23 47 10	SN2012AU	11 50 15	25.0	162.1	-1.1		-10.8	-20	2234	No stop
23 48 30	---	11 51 36	25.1	162.5	-1.1		-10.6	60	2254	23 47 11
23 48 30	J1305-1033	11 51 36	24.3	159.7	-1.3		-12.2	-20	2254	No stop
23 49 30	=1302-102	11 52 36	24.3	160.0	-1.2		-12.1	40	2270	23 48 31
23 49 30	J1303-1051	11 52 36	24.1	160.7	-1.2		-11.7	-13	2270	No stop
23 50 30	=1300-105	11 53 36	24.2	160.9	-1.2		-11.5	47	2285	23 49 31

Schedule for TORUN (Code Tr) Page 11

EN006B

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 3 Mar 2020 Day 63 ---										
23 51 10	J1305-1033	11 54 16	24.4	160.4	-1.2		-11.8	28	2285	23 51 10
23 52 00	=1302-102	11 55 06	24.4	160.7	-1.2		-11.7	50	2298	23 51 11
23 52 00	SN2012AU	11 55 06	25.2	163.4	-1.0		-10.0	-20	2298	No stop
23 53 20	---	11 56 27	25.3	163.8	-1.0		-9.8	60	2319	23 52 01
23 53 20	J1305-1033	11 56 27	24.5	161.0	-1.2		-11.5	-20	2319	No stop
23 54 20	=1302-102	11 57 27	24.6	161.3	-1.2		-11.3	40	2334	23 53 21
23 54 20	SN2012AU	11 57 27	25.3	164.1	-1.0		-9.7	-20	2334	No stop
23 55 40	---	11 58 47	25.4	164.4	-1.0		-9.4	60	2355	23 54 21
23 56 20	J1305-1033	11 59 27	24.6	161.8	-1.1		-11.0	20	2355	23 56 20
23 57 10	=1302-102	12 00 17	24.7	162.0	-1.1		-10.9	50	2368	23 56 21
23 57 10	SN2012AU	12 00 17	25.4	164.8	-0.9		-9.2	-20	2368	No stop
23 58 30	---	12 01 37	25.5	165.2	-0.9		-9.0	60	2388	23 57 11
23 58 30	J1305-1033	12 01 37	24.7	162.4	-1.1		-10.7	-20	2388	No stop
23 59 30	=1302-102	12 02 38	24.8	162.6	-1.1		-10.5	40	2404	23 58 31
--- Start: Tue 3 Mar 2020 Day 63 -- Stop: Wed 4 Mar 2020 Day 64 ---										
23 59 30	J1303-1051	12 02 38	24.6	163.3	-1.0		-10.1	-13	2404	No stop
00 00 30	=1300-105	12 03 38	24.6	163.6	-1.0		-10.0	47	2419	23 59 31
00 01 10	J1305-1033	12 04 18	24.9	163.1	-1.0		-10.2	28	2419	00 01 10
00 02 00	=1302-102	12 05 08	24.9	163.3	-1.0		-10.1	50	2432	00 01 11
00 02 00	SN2012AU	12 05 08	25.6	166.1	-0.8		-8.4	-20	2432	No stop
00 03 20	---	12 06 28	25.7	166.5	-0.8		-8.2	60	2453	00 02 01
00 03 20	J1305-1033	12 06 28	25.0	163.7	-1.0		-9.9	-20	2453	No stop
00 04 20	=1302-102	12 07 28	25.0	163.9	-1.0		-9.7	40	2468	00 03 21
00 04 20	SN2012AU	12 07 28	25.7	166.8	-0.8		-8.0	-20	2468	No stop
00 05 40	---	12 08 49	25.8	167.1	-0.8		-7.8	60	2489	00 04 21
00 06 20	J1305-1033	12 09 29	25.1	164.5	-1.0		-9.4	20	2489	00 06 20
00 07 10	=1302-102	12 10 19	25.1	164.7	-0.9		-9.3	50	2502	00 06 21
00 07 10	SN2012AU	12 10 19	25.8	167.5	-0.8		-7.6	-20	2502	No stop
00 08 30	---	12 11 39	25.8	167.9	-0.7		-7.4	60	2522	00 07 11

Schedule for TORUN (Code Tr) Page 12
EN006B

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
00 08 30	J1305-1033	12 11 39	25.2	165.1	-0.9		-9.1	-20	2522	No stop
00 09 30	=1302-102	12 12 39	25.2	165.3	-0.9		-8.9	40	2538	00 08 31
00 09 30	J1303-1051	12 12 39	25.0	166.0	-0.9		-8.5	-13	2538	No stop
00 10 30	=1300-105	12 13 39	25.0	166.3	-0.8		-8.4	47	2553	00 09 31
00 11 10	J1305-1033	12 14 19	25.3	165.8	-0.9		-8.6	28	2553	00 11 10
00 12 00	=1302-102	12 15 10	25.3	166.0	-0.9		-8.5	50	2566	00 11 11
00 12 00	SN2012AU	12 15 10	26.0	168.8	-0.7		-6.8	-20	2566	No stop
00 14 30	---	12 17 40	26.0	169.5	-0.6		-6.4	130	2605	00 12 01
00 14 30	J1305-1033	12 17 40	25.4	166.7	-0.8		-8.1	-20	2605	No stop
00 16 00	=1302-102	12 19 10	25.4	167.1	-0.8		-7.9	70	2628	00 14 31
00 16 00	J1254-1053	12 19 10	25.4	170.0	-0.6		-6.1	-21	2628	No stop
00 17 00	---	12 20 10	25.4	170.3	-0.6		-5.9	39	2643	00 16 01
00 17 30	J1305-1033	12 20 40	25.5	167.5	-0.8		-7.6	10	2643	00 17 30
00 19 00	=1302-102	12 22 11	25.5	167.9	-0.7		-7.4	90	2667	00 17 31
00 20 00	J1159+2914	12 23 11	65.7	192.1	0.4		8.3	-104	2667	00 20 00
00 24 00	=1156+295	12 27 12	65.5	194.2	0.4		9.7	136	2728	00 20 01
00 26 00	B0950+08	12 29 12	35.0	229.2	2.6		27.3	-9	2728	00 26 00
00 30 00	---	12 33 13	34.5	230.2	2.6		27.8	231	2790	00 26 01

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

======== Setup file: sess120.K2048

Setup group: 9 Station: TORUN Total bit rate: 2048
Format: VDIF Bits per sample: 2 Sample rate: 64.000
Number of channels: 16 DBE type: DBBC_DDC Speedup factor: 1.00

Disk used to record data.

```
  1st LO=  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00
           21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00
  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         9         1         9         2        10         2        10
                  3        11         3        11         4        12         4        12
  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=   22139.49  22139.49  22139.49  22139.49  22203.49  22203.49  22203.49  22203.49
            22267.49  22267.49  22267.49  22267.49  22331.49  22331.49  22331.49  22331.49
  BBC fr=     639.49    639.49    639.49    639.49    703.49    703.49    703.49    703.49
              767.49    767.49    767.49    767.49    831.49    831.49    831.49    831.49
  Bandwd=      32.00     32.00     32.00     32.00     32.00     32.00     32.00     32.00
               32.00     32.00     32.00     32.00     32.00     32.00     32.00     32.00
   Matching frequency sets:   6

  Track assignments are:
   track1=   1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15, 16
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

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

* SN2012AU           12 52 15.654500   * 12 54 52.180000     12 55 55.442434       0.00
                    -09 58 35.28501    *-10 14 50.20000     -10 21 22.11692        0.00

* B0950+08           09 50 30.550681   * 09 53 09.309700     09 54 13.495309       0.00
                     08 09 45.15217    * 07 55 35.75000      07 49 49.60753        0.00

* J1254-1053         12 52 10.577414   * 12 54 47.280000     12 55 50.618050       0.00
                    -10 37 36.29701    *-10 53 51.30000     -11 00 23.12067        0.00

  1156+295           11 56 57.786211   * 11 59 31.833912     12 00 34.214834       0.00
* J1159+2914         29 31 25.73880    * 29 14 43.82690      29 07 56.32060        0.00
  J1159+29           /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                     GSFC 2016a X/S astro solution,  78215 observations.

  1300-105           13 00 36.725045   * 13 03 13.867939     13 04 17.356297       0.05
* J1303-1051        -10 35 11.31901    *-10 51 17.12904     -10 57 45.07257        0.12
                     /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                     GSFC 2016a X/S astro solution,    288 observations.

  1302-102           13 02 55.848549   * 13 05 33.015034     13 06 36.503515       0.03
* J1305-1033        -10 17 16.37568    *-10 33 19.42812     -10 39 46.27812        0.06
  J1305-10           /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                     GSFC 2016a X/S astro solution,    978 observations.
```

ec071dtr

EVN 5 GHz and 22 GHz study of 43 compact radio sources

PI: *Carolina Casadio*

```
Address:  MPIfR

Observing mode: Continuum
Schedule for TORUN     (Code Tr )                                   Page   2
               EVN 5 GHz and 22 GHz study of 43 compact radio sources
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   4 Mar 2020   Day  64 ---
 Next scan frequencies:  22139.49  22139.49  22139.49  22139.49  22203.49  22203.49  22203.49  22203.4
                         22267.49  22267.49  22267.49  22267.49  22331.49  22331.49  22331.49  22331.4
 Next BBC frequencies:     639.49    639.49    639.49    639.49    703.49    703.49    703.49    703.4
                           767.49    767.49    767.49    767.49    831.49    831.49    831.49    831.4
 Next scan bandwidths:      32.00     32.00     32.00     32.00     32.00     32.00     32.00     32.0
                            32.00     32.00     32.00     32.00     32.00     32.00     32.00     32.0

01 00 00  J0927+3902   13 03 17  51.2 270.9  3.6      50.5     0        0   01 00 00
01 02 00  ---          13 05 18  50.9 271.3  3.6      50.5   120       31   01 00 01

01 06 20  J1310+3220   13 09 38  69.1 178.9 -0.0      -0.8    59       31   01 06 20
01 09 20  ---          13 12 39  69.1 180.7  0.0       0.5   180       77   01 06 21

01 11 20  J1148+1840   13 14 39  51.7 213.7  1.4      20.6    40       77   01 11 20
01 12 50  ---          13 16 10  51.6 214.2  1.4      20.9    90      100   01 11 21

01 12 50  J1143+1834   13 16 10  51.1 216.0  1.5      21.8   -17      100   No stop
01 14 30  ---          13 17 50  50.9 216.6  1.6      22.2    83      126   01 12 51

01 15 10  J1148+1840   13 18 30  51.4 215.0  1.5      21.3    23      126   01 15 10
01 16 30  ---          13 19 50  51.3 215.5  1.5      21.6    80      147   01 15 11

01 16 30  J1143+1834   13 19 50  50.7 217.3  1.6      22.5   -17      147   No stop
01 18 10  ---          13 21 30  50.6 217.9  1.6      22.9    83      173   01 16 31

01 18 10  J1148+1840   13 21 30  51.1 216.1  1.5      21.9   -17      173   No stop
01 19 50  ---          13 23 11  51.0 216.7  1.6      22.2    83      198   01 18 11

01 19 50  J1143+1834   13 23 11  50.4 218.4  1.6      23.2   -17      198   No stop
01 21 30  ---          13 24 51  50.3 219.0  1.7      23.5    83      224   01 19 51

01 21 30  J1148+1840   13 24 51  50.8 217.3  1.6      22.6   -17      224   No stop
01 23 10  ---          13 26 31  50.7 217.9  1.6      22.9    83      250   01 21 31

01 23 10  J1143+1834   13 26 31  50.1 219.6  1.7      23.8   -17      250   No stop
01 24 50  ---          13 28 12  50.0 220.1  1.7      24.1    83      276   01 23 11

01 25 30  J1148+1840   13 28 52  50.5 218.7  1.7      23.3    24      276   01 25 30
01 26 50  ---          13 30 12  50.3 219.1  1.7      23.6    80      296   01 25 31

01 26 50  J1143+1834   13 30 12  49.8 220.8  1.8      24.4   -17      296   No stop
01 28 30  ---          13 31 52  49.6 221.4  1.8      24.7    83      322   01 26 51
```

Schedule for TORUN (Code Tr) Page 3

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
01 28 30	J1148+1840	13 31 52	50.2	219.7	1.7		23.9	-16	322	No stop
01 30 10	---	13 33 32	50.0	220.2	1.7		24.2	84	348	01 28 31
01 30 10	J1143+1834	13 33 32	49.4	221.9	1.8		25.0	-17	348	No stop
01 31 50	---	13 35 13	49.3	222.5	1.8		25.3	83	374	01 30 11
01 31 50	J1148+1840	13 35 13	49.9	220.8	1.8		24.5	-16	374	No stop
01 33 30	---	13 36 53	49.7	221.4	1.8		24.7	84	399	01 31 51
01 33 30	J1143+1834	13 36 53	49.1	223.0	1.9		25.6	-17	399	No stop
01 35 10	---	13 38 33	48.9	223.6	1.9		25.9	83	425	01 33 31
01 35 10	J1148+1840	13 38 33	49.5	221.9	1.8		25.0	-16	425	No stop
01 36 50	---	13 40 14	49.4	222.5	1.8		25.3	84	451	01 35 11
01 36 50	J1143+1834	13 40 14	48.7	224.1	1.9		26.1	-17	451	No stop
01 38 30	---	13 41 54	48.6	224.6	2.0		26.4	83	477	01 36 51
01 39 10	J1148+1840	13 42 34	49.1	223.2	1.9		25.7	24	477	01 39 10
01 40 30	---	13 43 54	49.0	223.7	1.9		25.9	80	497	01 39 11
01 40 30	J1143+1834	13 43 54	48.4	225.3	2.0		26.7	-17	497	No stop
01 42 10	---	13 45 34	48.2	225.8	2.0		27.0	83	523	01 40 31
01 42 10	J1148+1840	13 45 34	48.8	224.2	1.9		26.2	-16	523	No stop
01 43 50	---	13 47 15	48.6	224.7	2.0		26.5	84	549	01 42 11
01 43 50	J1143+1834	13 47 15	48.0	226.3	2.0		27.3	-16	549	No stop
01 45 30	---	13 48 55	47.8	226.9	2.1		27.5	84	575	01 43 51
01 46 10	J1148+1840	13 49 35	48.4	225.5	2.0		26.9	24	575	01 46 10
01 47 30	---	13 50 55	48.2	225.9	2.0		27.1	80	595	01 46 11
01 47 30	J1143+1834	13 50 55	47.6	227.5	2.1		27.8	-16	595	No stop
01 49 10	---	13 52 36	47.4	228.0	2.1		28.1	84	621	01 47 31
01 49 10	J1148+1840	13 52 36	48.1	226.4	2.0		27.3	-16	621	No stop
01 50 50	---	13 54 16	47.9	227.0	2.1		27.6	84	647	01 49 11
01 50 50	J1143+1834	13 54 16	47.2	228.5	2.2		28.3	-16	647	No stop
01 52 30	---	13 55 56	47.0	229.0	2.2		28.6	84	672	01 50 51
01 52 30	J1148+1840	13 55 56	47.7	227.5	2.1		27.8	-16	672	No stop
01 54 10	---	13 57 36	47.5	228.0	2.1		28.1	84	698	01 52 31
01 54 10	J1143+1834	13 57 36	46.8	229.5	2.2		28.8	-16	698	No stop
01 55 50	---	13 59 17	46.6	230.0	2.2		29.0	84	724	01 54 11

Schedule for TORUN (Code Tr) Page 4

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
01 56 30	J1148+1840	13 59 57	47.2	228.7	2.2		28.4	24	724	01 56 30
01 57 50	---	14 01 17	47.1	229.1	2.2		28.6	80	745	01 56 31
01 57 50	J1143+1834	14 01 17	46.4	230.7	2.3		29.3	-16	745	No stop
01 59 30	---	14 02 57	46.2	231.2	2.3		29.5	84	770	01 57 51
01 59 30	J1148+1840	14 02 57	46.9	229.7	2.2		28.9	-16	770	No stop
02 01 10	---	14 04 38	46.7	230.2	2.2		29.1	84	796	01 59 31
02 01 10	J1143+1834	14 04 38	46.0	231.6	2.3		29.8	-16	796	No stop
02 02 50	---	14 06 18	45.8	232.1	2.4		30.0	84	822	02 01 11
02 03 30	J1148+1840	14 06 58	46.4	230.9	2.3		29.4	24	822	02 03 30
02 04 50	---	14 08 18	46.3	231.3	2.3		29.6	80	842	02 03 31
02 04 50	J1143+1834	14 08 18	45.6	232.7	2.4		30.3	-16	842	No stop
02 06 30	---	14 09 58	45.4	233.2	2.4		30.5	84	868	02 04 51
02 06 30	J1148+1840	14 09 58	46.1	231.8	2.3		29.8	-16	868	No stop
02 08 10	---	14 11 39	45.9	232.3	2.4		30.1	84	894	02 06 31
02 16 10	J1308+0401	14 19 40	38.7	202.7	1.2		13.5	402	894	02 16 10
02 17 50	---	14 21 20	38.6	203.3	1.2		13.8	100	920	02 16 11
02 17 50	J1306+0341	14 21 20	38.2	203.8	1.2		14.0	-13	920	No stop
02 19 30	---	14 23 01	38.1	204.3	1.3		14.3	87	946	02 17 51
02 19 30	J1308+0401	14 23 01	38.5	203.8	1.2		14.0	-13	946	No stop
02 21 10	---	14 24 41	38.4	204.3	1.3		14.3	87	971	02 19 31
02 21 10	J1306+0341	14 24 41	38.0	204.8	1.3		14.6	-13	971	No stop
02 22 50	---	14 26 21	37.9	205.3	1.3		14.9	87	997	02 21 11
02 22 50	J1308+0401	14 26 21	38.3	204.8	1.3		14.6	-13	997	No stop
02 24 30	---	14 28 01	38.2	205.3	1.3		14.9	87	1023	02 22 51
02 24 30	J1306+0341	14 28 01	37.8	205.8	1.3		15.2	-13	1023	No stop
02 26 10	---	14 29 42	37.7	206.3	1.4		15.5	87	1049	02 24 31
02 26 50	J1308+0401	14 30 22	38.1	206.0	1.4		15.3	27	1049	02 26 50
02 28 20	---	14 31 52	38.0	206.5	1.4		15.6	90	1072	02 26 51
02 28 20	J1306+0341	14 31 52	37.5	207.0	1.4		15.8	-13	1072	No stop
02 30 00	---	14 33 32	37.4	207.5	1.4		16.1	87	1098	02 28 21

Schedule for TORUN (Code Tr) Page 5

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
02 30 00	J1308+0401	14 33 32	37.9	207.0	1.4		15.9	-13	1098	No stop
02 31 40	---	14 35 13	37.7	207.5	1.4		16.1	87	1123	02 30 01
02 31 40	J1306+0341	14 35 13	37.3	208.0	1.5		16.4	-13	1123	No stop
02 33 20	---	14 36 53	37.2	208.5	1.5		16.7	87	1149	02 31 41
02 33 20	J1308+0401	14 36 53	37.6	208.0	1.5		16.4	-13	1149	No stop
02 35 00	---	14 38 33	37.5	208.5	1.5		16.7	87	1175	02 33 21
02 35 00	J1306+0341	14 38 33	37.0	209.0	1.5		17.0	-13	1175	No stop
02 36 40	---	14 40 13	36.9	209.5	1.5		17.2	87	1201	02 35 01
02 36 40	J1308+0401	14 40 13	37.4	209.0	1.5		17.0	-13	1201	No stop
02 38 20	---	14 41 54	37.3	209.5	1.5		17.3	87	1226	02 36 41
02 38 20	J1306+0341	14 41 54	36.8	210.0	1.6		17.5	-13	1226	No stop
02 40 00	---	14 43 34	36.7	210.5	1.6		17.8	87	1252	02 38 21
02 40 40	J1308+0401	14 44 14	37.1	210.2	1.6		17.6	27	1252	02 40 40
02 42 10	---	14 45 44	37.0	210.7	1.6		17.9	90	1275	02 40 41
02 42 10	J1306+0341	14 45 44	36.5	211.1	1.6		18.1	-13	1275	No stop
02 43 50	---	14 47 25	36.4	211.6	1.7		18.4	87	1301	02 42 11
02 43 50	J1308+0401	14 47 25	36.8	211.2	1.6		18.2	-13	1301	No stop
02 45 30	---	14 49 05	36.7	211.7	1.7		18.4	87	1327	02 43 51
02 45 30	J1306+0341	14 49 05	36.2	212.1	1.7		18.7	-13	1327	No stop
02 47 10	---	14 50 45	36.1	212.6	1.7		18.9	87	1353	02 45 31
02 47 10	J1308+0401	14 50 45	36.6	212.2	1.7		18.7	-13	1353	No stop
02 48 50	---	14 52 25	36.4	212.6	1.7		18.9	87	1378	02 47 11
02 48 50	J1306+0341	14 52 25	36.0	213.1	1.8		19.2	-13	1378	No stop
02 50 30	---	14 54 06	35.8	213.6	1.8		19.4	87	1404	02 48 51
02 51 10	J1308+0401	14 54 46	36.2	213.3	1.8		19.3	27	1404	02 51 10
02 52 40	---	14 56 16	36.1	213.8	1.8		19.5	90	1427	02 51 11
02 52 40	J1306+0341	14 56 16	35.7	214.2	1.8		19.8	-13	1427	No stop
02 54 20	---	14 57 56	35.5	214.7	1.8		20.0	87	1453	02 52 41
02 54 20	J1308+0401	14 57 56	36.0	214.3	1.8		19.8	-13	1453	No stop
02 56 00	---	14 59 37	35.8	214.7	1.8		20.1	87	1479	02 54 21

Schedule for TORUN (Code Tr) Page 6

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
02 56 00	J1306+0341	14 59 37	35.4	215.2	1.9		20.3	-13	1479	No stop
02 57 40	---	15 01 17	35.2	215.7	1.9		20.5	87	1505	02 56 01
02 58 20	J1308+0401	15 01 57	35.6	215.4	1.9		20.4	27	1505	02 58 20
02 59 50	---	15 03 27	35.5	215.8	1.9		20.6	90	1528	02 58 21
02 59 50	J1306+0341	15 03 27	35.0	216.3	1.9		20.9	-13	1528	No stop
03 01 30	---	15 05 07	34.9	216.7	2.0		21.1	87	1554	02 59 51
03 01 30	J1308+0401	15 05 07	35.4	216.3	1.9		20.9	-13	1554	No stop
03 03 10	---	15 06 48	35.2	216.8	2.0		21.1	87	1579	03 01 31
03 03 10	J1306+0341	15 06 48	34.7	217.2	2.0		21.3	-13	1579	No stop
03 04 50	---	15 08 28	34.6	217.7	2.0		21.6	87	1605	03 03 11
03 04 50	J1308+0401	15 08 28	35.1	217.3	2.0		21.4	-13	1605	No stop
03 06 30	---	15 10 08	34.9	217.7	2.0		21.6	87	1631	03 04 51
03 06 30	J1306+0341	15 10 08	34.4	218.2	2.0		21.8	-13	1631	No stop
03 08 10	---	15 11 49	34.3	218.6	2.1		22.1	87	1657	03 06 31
03 08 50	J1308+0401	15 12 29	34.7	218.4	2.1		22.0	27	1657	03 08 50
03 10 20	---	15 13 59	34.5	218.8	2.1		22.2	90	1680	03 08 51
03 10 20	J1306+0341	15 13 59	34.1	219.2	2.1		22.4	-13	1680	No stop
03 12 00	---	15 15 39	33.9	219.7	2.1		22.6	87	1706	03 10 21
03 12 00	J1308+0401	15 15 39	34.4	219.3	2.1		22.4	-13	1706	No stop
03 13 40	---	15 17 19	34.2	219.8	2.1		22.6	87	1731	03 12 01
03 21 40	J1148+1840	15 25 21	36.1	251.6	3.6		36.9	405	1731	03 21 40
03 23 00	---	15 26 41	35.9	251.9	3.6		37.0	80	1752	03 21 41
03 23 00	J1143+1834	15 26 41	35.1	253.0	3.7		37.3	-16	1752	No stop
03 24 40	---	15 28 21	34.9	253.4	3.7		37.4	84	1778	03 23 01
03 25 10	J1148+1840	15 28 51	35.6	252.4	3.7		37.1	15	1778	03 25 10
03 26 30	---	15 30 12	35.4	252.7	3.7		37.2	80	1798	03 25 11
03 26 30	J1143+1834	15 30 12	34.6	253.8	3.8		37.4	-16	1798	No stop
03 28 10	---	15 31 52	34.4	254.2	3.8		37.5	84	1824	03 26 31
03 28 40	J1148+1840	15 32 22	35.1	253.2	3.7		37.3	15	1824	03 28 40
03 30 00	---	15 33 42	34.9	253.5	3.7		37.4	80	1845	03 28 41

Schedule for TORUN (Code Tr) Page 7

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
03 30 00	J1143+1834	15 33 42	34.1	254.6	3.8		37.6	-16	1845	No stop
03 31 40	---	15 35 22	33.9	255.0	3.8		37.7	84	1870	03 30 01
03 32 10	J1148+1840	15 35 52	34.6	254.0	3.8		37.5	15	1870	03 32 10
03 33 30	---	15 37 13	34.4	254.3	3.8		37.6	80	1891	03 32 11
03 33 30	J1143+1834	15 37 13	33.6	255.4	3.9		37.8	-16	1891	No stop
03 35 10	---	15 38 53	33.4	255.8	3.9		37.9	84	1917	03 33 31
03 35 40	J1148+1840	15 39 23	34.1	254.8	3.8		37.7	15	1917	03 35 40
03 37 00	---	15 40 43	33.9	255.1	3.9		37.7	80	1937	03 35 41
03 37 00	J1143+1834	15 40 43	33.1	256.2	3.9		37.9	-16	1937	No stop
03 38 40	---	15 42 24	32.9	256.6	4.0		38.0	84	1963	03 37 01
03 39 10	J1148+1840	15 42 54	33.6	255.6	3.9		37.8	15	1963	03 39 10
03 40 30	---	15 44 14	33.4	255.9	3.9		37.9	80	1984	03 39 11
03 40 30	J1143+1834	15 44 14	32.6	257.0	4.0		38.1	-16	1984	No stop
03 42 10	---	15 45 54	32.3	257.4	4.0		38.1	84	2010	03 40 31
03 42 40	J1148+1840	15 46 24	33.1	256.4	3.9		38.0	15	2010	03 42 40
03 44 10	---	15 47 54	32.9	256.7	4.0		38.1	90	2033	03 42 41
03 44 10	J1143+1834	15 47 54	32.0	257.8	4.1		38.2	-16	2033	No stop
03 45 50	---	15 49 35	31.8	258.2	4.1		38.3	84	2059	03 44 11
03 46 20	J1148+1840	15 50 05	32.6	257.2	4.0		38.1	15	2059	03 46 20
03 47 50	---	15 51 35	32.3	257.5	4.0		38.2	90	2082	03 46 21
03 47 50	J1143+1834	15 51 35	31.5	258.6	4.1		38.4	-16	2082	No stop
03 49 30	---	15 53 15	31.3	259.0	4.1		38.4	84	2107	03 47 51
03 50 00	J1148+1840	15 53 45	32.0	258.0	4.1		38.3	15	2107	03 50 00
03 51 30	---	15 55 16	31.8	258.3	4.1		38.3	90	2131	03 50 01
03 51 30	J1143+1834	15 55 16	31.0	259.4	4.2		38.5	-16	2131	No stop
03 53 10	---	15 56 56	30.7	259.8	4.2		38.5	84	2156	03 51 31
03 53 40	J1148+1840	15 57 26	31.5	258.8	4.1		38.4	15	2156	03 53 40
03 55 10	---	15 58 56	31.3	259.1	4.2		38.5	90	2180	03 53 41
03 55 10	J1143+1834	15 58 56	30.4	260.2	4.2		38.6	-16	2180	No stop
03 56 50	---	16 00 37	30.2	260.5	4.3		38.6	84	2205	03 55 11

Schedule for TORUN (Code Tr) Page 8

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
03 57 20	J1148+1840	16 01 07	30.9	259.6	4.2		38.5	15	2205	03 57 20
03 58 50	---	16 02 37	30.7	259.9	4.2		38.6	90	2229	03 57 21
03 58 50	J1143+1834	16 02 37	29.9	261.0	4.3		38.7	-16	2229	No stop
04 00 30	---	16 04 17	29.6	261.3	4.3		38.7	84	2254	03 58 51
04 01 00	J1148+1840	16 04 47	30.4	260.4	4.3		38.6	15	2254	04 01 00
04 02 30	---	16 06 17	30.2	260.7	4.3		38.7	90	2278	04 01 01
04 02 30	J1143+1834	16 06 17	29.3	261.8	4.4		38.8	-16	2278	No stop
04 04 10	---	16 07 58	29.1	262.1	4.4		38.8	84	2303	04 02 31
04 04 40	J1148+1840	16 08 28	29.9	261.2	4.3		38.8	15	2303	04 04 40
04 06 10	---	16 09 58	29.6	261.5	4.3		38.8	90	2326	04 04 41
04 06 10	J1143+1834	16 09 58	28.8	262.5	4.4		38.9	-16	2326	No stop
04 07 50	---	16 11 38	28.5	262.9	4.5		38.9	84	2352	04 06 11
04 08 20	J1148+1840	16 12 08	29.3	262.0	4.4		38.8	15	2352	04 08 20
04 09 50	---	16 13 39	29.1	262.3	4.4		38.9	90	2375	04 08 21
04 09 50	J1143+1834	16 13 39	28.2	263.3	4.5		39.0	-16	2375	No stop
04 11 30	---	16 15 19	28.0	263.7	4.5		39.0	84	2401	04 09 51
04 12 00	J1148+1840	16 15 49	28.8	262.7	4.4		38.9	15	2401	04 12 00
04 13 30	---	16 17 19	28.5	263.1	4.5		39.0	90	2424	04 12 01
04 13 30	J1143+1834	16 17 19	27.7	264.1	4.5		39.0	-16	2424	No stop
04 15 10	---	16 19 00	27.4	264.4	4.6		39.1	84	2450	04 13 31
04 15 40	J1148+1840	16 19 30	28.2	263.5	4.5		39.0	15	2450	04 15 40
04 17 10	---	16 21 00	28.0	263.8	4.5		39.0	90	2473	04 15 41
04 25 10	J1308+0401	16 29 01	26.1	238.2	3.3		30.8	410	2473	04 25 10
04 26 40	---	16 30 31	25.9	238.6	3.4		30.9	90	2497	04 25 11
04 26 40	J1306+0341	16 30 31	25.4	238.9	3.4		31.0	-14	2497	No stop
04 28 20	---	16 32 12	25.2	239.3	3.4		31.1	86	2522	04 26 41
04 28 50	J1308+0401	16 32 42	25.6	239.1	3.4		31.1	17	2522	04 28 50
04 30 20	---	16 34 12	25.4	239.5	3.4		31.2	90	2545	04 28 51
04 30 20	J1306+0341	16 34 12	24.9	239.8	3.4		31.3	-14	2545	No stop
04 32 00	---	16 35 52	24.7	240.2	3.5		31.5	86	2571	04 30 21

Schedule for TORUN (Code Tr) Page 9

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
04 32 30	J1308+0401	16 36 22	25.2	240.0	3.5		31.4	17	2571	04 32 30
04 34 00	---	16 37 53	25.0	240.3	3.5		31.5	90	2594	04 32 31
04 34 00	J1306+0341	16 37 53	24.4	240.6	3.5		31.6	-14	2594	No stop
04 35 40	---	16 39 33	24.2	241.0	3.5		31.8	86	2620	04 34 01
04 36 10	J1308+0401	16 40 03	24.7	240.9	3.5		31.7	17	2620	04 36 10
04 37 40	---	16 41 33	24.5	241.2	3.5		31.8	90	2643	04 36 11
04 37 40	J1306+0341	16 41 33	24.0	241.5	3.6		31.9	-14	2643	No stop
04 39 20	---	16 43 13	23.7	241.9	3.6		32.0	86	2669	04 37 41
04 39 50	J1308+0401	16 43 44	24.2	241.7	3.6		32.0	17	2669	04 39 50
04 41 20	---	16 45 14	24.0	242.1	3.6		32.1	90	2692	04 39 51
04 41 20	J1306+0341	16 45 14	23.5	242.3	3.6		32.2	-14	2692	No stop
04 43 00	---	16 46 54	23.2	242.7	3.7		32.3	86	2718	04 41 21
04 43 30	J1308+0401	16 47 24	23.7	242.6	3.6		32.3	17	2718	04 43 30
04 45 00	---	16 48 54	23.5	242.9	3.7		32.4	90	2741	04 43 31
04 45 00	J1306+0341	16 48 54	23.0	243.2	3.7		32.5	-14	2741	No stop
04 46 50	---	16 50 45	22.7	243.6	3.7		32.6	96	2770	04 45 01
04 47 20	J1308+0401	16 51 15	23.2	243.4	3.7		32.6	17	2770	04 47 20
04 49 00	---	16 52 55	23.0	243.8	3.7		32.7	100	2795	04 47 21
04 49 00	J1306+0341	16 52 55	22.4	244.1	3.8		32.8	-14	2795	No stop
04 50 50	---	16 54 45	22.2	244.5	3.8		32.9	96	2824	04 49 01
04 51 20	J1308+0401	16 55 15	22.7	244.4	3.8		32.9	17	2824	04 51 20
04 53 00	---	16 56 56	22.4	244.7	3.8		33.0	100	2849	04 51 21
04 53 00	J1306+0341	16 56 56	21.9	245.0	3.8		33.0	-14	2849	No stop
04 54 50	---	16 58 46	21.6	245.4	3.9		33.2	96	2878	04 53 01
04 55 20	J1308+0401	16 59 16	22.1	245.3	3.8		33.1	17	2878	04 55 20
04 57 00	---	17 00 56	21.9	245.6	3.9		33.2	100	2904	04 55 21
04 57 00	J1306+0341	17 00 56	21.3	245.9	3.9		33.3	-14	2904	No stop
04 58 50	---	17 02 47	21.1	246.3	3.9		33.4	96	2932	04 57 01
04 59 20	J1308+0401	17 03 17	21.6	246.2	3.9		33.4	17	2932	04 59 20
05 01 00	---	17 04 57	21.3	246.5	3.9		33.5	100	2958	04 59 21

Schedule for TORUN (Code Tr) Page 10

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
05 01 00	J1306+0341	17 04 57	20.8	246.8	4.0		33.6	-14	2958	No stop
05 02 50	---	17 06 47	20.5	247.2	4.0		33.7	96	2986	05 01 01
05 03 20	J1308+0401	17 07 17	21.0	247.1	4.0		33.7	17	2986	05 03 20
05 05 00	---	17 08 58	20.8	247.4	4.0		33.8	100	3012	05 03 21
05 05 00	J1306+0341	17 08 58	20.2	247.7	4.0		33.8	-14	3012	No stop
05 06 50	---	17 10 48	20.0	248.1	4.1		33.9	96	3040	05 05 01
05 07 20	J1308+0401	17 11 18	20.5	247.9	4.0		33.9	17	3040	05 07 20
05 09 00	---	17 12 58	20.2	248.3	4.1		34.0	100	3066	05 07 21
05 09 00	J1306+0341	17 12 58	19.7	248.6	4.1		34.1	-14	3066	No stop
05 10 50	---	17 14 49	19.4	249.0	4.1		34.2	96	3094	05 09 01
05 11 20	J1308+0401	17 15 19	19.9	248.8	4.1		34.1	17	3094	05 11 20
05 13 00	---	17 16 59	19.7	249.2	4.1		34.2	100	3120	05 11 21
05 13 00	J1306+0341	17 16 59	19.1	249.4	4.2		34.3	-14	3120	No stop
05 14 50	---	17 18 49	18.9	249.8	4.2		34.4	96	3148	05 13 01
05 15 20	J1308+0401	17 19 19	19.3	249.7	4.2		34.4	17	3148	05 15 20
05 17 00	---	17 21 00	19.1	250.1	4.2		34.5	100	3174	05 15 21
05 17 00	J1306+0341	17 21 00	18.5	250.3	4.2		34.5	-14	3174	No stop
05 18 50	---	17 22 50	18.3	250.7	4.3		34.6	96	3202	05 17 01
05 19 20	J1308+0401	17 23 20	18.8	250.6	4.2		34.6	17	3202	05 19 20
05 21 00	---	17 25 00	18.5	250.9	4.3		34.7	100	3228	05 19 21
05 21 00	J1306+0341	17 25 00	18.0	251.2	4.3		34.7	-14	3228	No stop
05 22 50	---	17 26 51	17.7	251.6	4.3		34.8	96	3257	05 21 01
05 23 20	J1308+0401	17 27 21	18.2	251.4	4.3		34.8	17	3257	05 23 20
05 25 00	---	17 29 01	18.0	251.8	4.3		34.9	100	3282	05 23 21
05 27 00	J1148+1840	17 31 01	17.5	277.8	5.7		38.9	53	3282	05 27 00
05 28 20	---	17 32 22	17.3	278.1	5.7		38.8	80	3303	05 27 01
05 28 20	J1143+1834	17 32 22	16.5	279.0	5.8		38.7	-16	3303	No stop
05 30 00	---	17 34 02	16.2	279.3	5.8		38.7	84	3329	05 28 21
05 30 30	J1148+1840	17 34 32	17.0	278.5	5.7		38.8	15	3329	05 30 30
05 32 00	---	17 36 02	16.8	278.8	5.8		38.8	90	3352	05 30 31

Schedule for TORUN (Code Tr) Page 11

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
05 32 00	J1143+1834	17 36 02	15.9	279.7	5.9		38.6	-16	3352	No stop
05 33 40	---	17 37 42	15.7	280.0	5.9		38.6	84	3378	05 32 01
05 34 10	J1148+1840	17 38 12	16.4	279.2	5.8		38.7	15	3378	05 34 10
05 35 40	---	17 39 43	16.2	279.5	5.8		38.7	90	3401	05 34 11
05 35 40	J1143+1834	17 39 43	15.4	280.4	5.9		38.5	-16	3401	No stop
05 37 20	---	17 41 23	15.1	280.7	5.9		38.5	84	3427	05 35 41
05 37 50	J1148+1840	17 41 53	15.9	279.9	5.9		38.6	15	3427	05 37 50
05 39 20	---	17 43 23	15.7	280.2	5.9		38.6	90	3450	05 37 51
05 39 20	J1143+1834	17 43 23	14.8	281.1	6.0		38.4	-16	3450	No stop
05 41 00	---	17 45 04	14.6	281.4	6.0		38.4	84	3476	05 39 21
05 41 30	J1148+1840	17 45 34	15.3	280.6	5.9		38.5	15	3476	05 41 30
05 43 00	---	17 47 04	15.1	280.9	6.0		38.5	90	3499	05 41 31
05 43 00	J1143+1834	17 47 04	14.3	281.8	6.0		38.3	-16	3499	No stop
05 44 40	---	17 48 44	14.0	282.2	6.1		38.2	84	3524	05 43 01
05 45 10	J1148+1840	17 49 14	14.8	281.3	6.0		38.4	15	3524	05 45 10
05 46 40	---	17 50 45	14.6	281.6	6.0		38.4	90	3548	05 45 11
05 46 40	J1143+1834	17 50 45	13.8	282.5	6.1		38.2	-16	3548	No stop
05 48 20	---	17 52 25	13.5	282.9	6.1		38.1	84	3573	05 46 41
05 48 50	J1148+1840	17 52 55	14.3	282.0	6.1		38.3	15	3573	05 48 50
05 50 10	---	17 54 15	14.1	282.3	6.1		38.2	80	3594	05 48 51
05 50 10	J1143+1834	17 54 15	13.2	283.2	6.2		38.0	-16	3594	No stop
05 51 50	---	17 55 55	13.0	283.5	6.2		38.0	84	3620	05 50 11
05 52 20	J1148+1840	17 56 25	13.8	282.7	6.1		38.2	15	3620	05 52 20
05 53 40	---	17 57 46	13.6	282.9	6.1		38.1	80	3640	05 52 21
05 53 40	J1143+1834	17 57 46	12.7	283.9	6.2		37.9	-16	3640	No stop
05 55 20	---	17 59 26	12.5	284.2	6.2		37.9	84	3666	05 53 41
05 55 50	J1148+1840	17 59 56	13.2	283.4	6.2		38.0	15	3666	05 55 50
05 57 10	---	18 01 16	13.0	283.6	6.2		38.0	80	3687	05 55 51
05 57 10	J1143+1834	18 01 16	12.2	284.6	6.3		37.8	-16	3687	No stop
05 58 50	---	18 02 57	12.0	284.9	6.3		37.7	84	3713	05 57 11

Schedule for TORUN (Code Tr) Page 12

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
05 59 20	J1148+1840	18 03 27	12.7	284.0	6.2		37.9	15	3713	05 59 20
06 00 40	---	18 04 47	12.5	284.3	6.3		37.9	80	3733	05 59 21
06 00 40	J1143+1834	18 04 47	11.7	285.2	6.3		37.6	-16	3733	No stop
06 02 20	---	18 06 27	11.5	285.6	6.4		37.6	84	3759	06 00 41
06 02 50	J1148+1840	18 06 57	12.2	284.7	6.3		37.8	15	3759	06 02 50
06 04 10	---	18 08 17	12.0	285.0	6.3		37.7	80	3780	06 02 51
06 04 10	J1143+1834	18 08 17	11.2	285.9	6.4		37.5	-16	3780	No stop
06 05 50	---	18 09 58	11.0	286.2	6.4		37.4	84	3805	06 04 11
06 06 20	J1148+1840	18 10 28	11.7	285.4	6.3		37.6	15	3805	06 06 20
06 07 40	---	18 11 48	11.5	285.6	6.4		37.6	80	3826	06 06 21
06 15 40	J1308+0401	18 19 49	10.5	262.4	5.2		36.6	416	3826	06 15 40
06 17 10	---	18 21 20	10.3	262.7	5.2		36.7	90	3849	06 15 41
06 17 10	J1306+0341	18 21 20	9.8	262.9	5.2		36.7	-14	3849	No stop
06 18 50	---	18 23 00	9.5	263.3	5.3		36.7	86	3875	06 17 11
06 19 20	J1308+0401	18 23 30	10.0	263.2	5.2		36.7	17	3875	06 19 20
06 21 00	---	18 25 10	9.7	263.5	5.3		36.7	100	3901	06 19 21
06 21 00	J1306+0341	18 25 10	9.2	263.7	5.3		36.7	-14	3901	No stop
06 22 40	---	18 26 50	8.9	264.0	5.3		36.8	86	3926	06 21 01
06 23 10	J1308+0401	18 27 21	9.4	263.9	5.3		36.8	17	3926	06 23 10
06 24 50	---	18 29 01	9.2	264.3	5.3		36.8	100	3952	06 23 11
06 24 50	J1306+0341	18 29 01	8.6	264.5	5.4		36.8	-14	3952	No stop
06 26 30	---	18 30 41	8.4	264.8	5.4		36.8	86	3978	06 24 51
06 27 00	J1308+0401	18 31 11	8.8	264.7	5.4		36.8	17	3978	06 27 00
06 28 40	---	18 32 51	8.6	265.1	5.4		36.8	100	4004	06 27 01
06 28 40	J1306+0341	18 32 51	8.0	265.3	5.4		36.8	-14	4004	No stop
06 30 20	---	18 34 32	7.8	265.6	5.5		36.9	86	4029	06 28 41
06 30 50	J1308+0401	18 35 02	8.3	265.5	5.4		36.9	17	4029	06 30 50
06 32 30	---	18 36 42	8.0	265.8	5.5		36.9	100	4055	06 30 51
06 32 30	J1306+0341	18 36 42	7.5	266.0	5.5		36.9	-14	4055	No stop
06 34 10	---	18 38 22	7.2	266.4	5.5		36.9	86	4081	06 32 31

Schedule for TORUN (Code Tr) Page 13

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
06 34 40	J1308+0401	18 38 52	7.7	266.3	5.5		36.9	17	4081	06 34 40
06 36 20	---	18 40 33	7.4	266.6	5.5		36.9	100	4107	06 34 41
06 36 50	J1306+0341	18 41 03	6.8	266.9	5.6		36.9	16	4107	06 36 50
06 38 20	---	18 42 33	6.6	267.2	5.6		36.9	90	4130	06 36 51
06 38 50	J1308+0401	18 43 03	7.1	267.1	5.6		36.9	17	4130	06 38 50
06 40 20	---	18 44 33	6.8	267.4	5.6		37.0	90	4153	06 38 51
06 40 50	J1306+0341	18 45 03	6.2	267.7	5.6		37.0	16	4153	06 40 50
06 42 20	---	18 46 34	6.0	268.0	5.7		37.0	90	4176	06 40 51
06 42 50	J1308+0401	18 47 04	6.5	267.9	5.6		37.0	17	4176	06 42 50
06 44 20	---	18 48 34	6.2	268.2	5.7		37.0	90	4200	06 42 51
06 44 50	J1306+0341	18 49 04	5.6	268.5	5.7		37.0	16	4200	06 44 50
06 46 20	---	18 50 34	5.4	268.8	5.7		37.0	90	4223	06 44 51
06 46 50	J1308+0401	18 51 04	5.9	268.7	5.7		37.0	17	4223	06 46 50
06 48 20	---	18 52 35	5.6	269.0	5.7		37.0	90	4246	06 46 51
06 48 50	J1306+0341	18 53 05	5.0	269.3	5.8		37.0	16	4246	06 48 50
06 50 20	---	18 54 35	4.8	269.6	5.8		37.0	90	4269	06 48 51
06 50 50	J1308+0401	18 55 05	5.3	269.5	5.8		37.0	17	4269	06 50 50
06 52 20	---	18 56 35	5.0	269.8	5.8		37.0	90	4292	06 50 51
06 52 50	J1306+0341	18 57 05	4.4	270.1	5.8		37.0	16	4292	06 52 50
06 54 20	---	18 58 36	4.2	270.4	5.9		37.0	90	4315	06 52 51
06 54 50	J1308+0401	18 59 06	4.7	270.3	5.8		37.0	17	4315	06 54 50
06 56 20	---	19 00 36	4.4	270.6	5.9		37.0	90	4339	06 54 51
06 57 30	J1310+3220	19 01 46	26.6	289.0	5.8		42.1	-27	4339	06 57 30
07 00 00	---	19 04 17	26.3	289.5	5.9		42.0	123	4377	06 57 31

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

======== Setup file: sess120.K2048

Setup group: 9 Station: TORUN Total bit rate: 2048
Format: VDIF Bits per sample: 2 Sample rate: 64.000
Number of channels: 16 DBE type: DBBC_DDC Speedup factor: 1.00

Disk used to record data.

```
  1st LO=  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00
           21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00
  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         9         1         9         2        10         2        10
                  3        11         3        11         4        12         4        12
  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  Setup file default.  Used with PCAL = off
  LO sum=   22139.49  22139.49  22139.49  22139.49  22203.49  22203.49  22203.49  22203.49
            22267.49  22267.49  22267.49  22267.49  22331.49  22331.49  22331.49  22331.49
  BBC fr=     639.49    639.49    639.49    639.49    703.49    703.49    703.49    703.49
              767.49    767.49    767.49    767.49    831.49    831.49    831.49    831.49
  Bandwd=      32.00     32.00     32.00     32.00     32.00     32.00     32.00     32.00
               32.00     32.00     32.00     32.00     32.00     32.00     32.00     32.00
   Matching frequency sets:   5

  Track assignments are:
   track1=   1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15, 16
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* J1143+1834	11 40 50.579123	* 11 43 26.100000	11 44 29.030195	0.00
	18 51 16.95576	* 18 34 38.00000	18 27 52.30340	0.00
* J1306+0341	13 03 43.483483	* 13 06 16.000000	13 07 17.572712	0.00
	03 57 40.04903	* 03 41 38.00000	03 35 08.63311	0.00
* J1148+1840	11 46 02.761062	* 11 48 37.776789	11 49 40.501036	0.00
	18 56 49.43689	* 18 40 08.96963	18 33 22.61520	0.00
* J1308+0401	13 05 43.183380	* 13 08 15.553073	13 09 17.060890	0.00
	04 17 08.92278	* 04 01 09.35140	03 54 40.92565	0.00
* J1310+3220	13 08 07.556269	* 13 10 28.660000	13 11 25.773663	0.00
	32 36 40.23602	* 32 20 43.78000	32 14 12.42588	0.00
* J0927+3902	09 23 55.315268	* 09 27 03.010000	09 28 18.795020	0.00
	39 15 23.56442	* 39 02 20.85000	38 57 05.54633	0.00

ec071etr

EVN 5 GHz and 22 GHz study of 43 compact radio sources

PI: *Carolina Casadio*

```
Address:  MPIfR

Observing mode: Continuum
Schedule for TORUN     (Code Tr )                                    Page   2
               EVN 5 GHz and 22 GHz study of 43 compact radio sources
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   4 Mar 2020   Day  64 ---
 Next scan frequencies:  22139.49  22139.49  22139.49  22139.49  22203.49  22203.49  22203.49  22203.4
                         22267.49  22267.49  22267.49  22267.49  22331.49  22331.49  22331.49  22331.4
 Next BBC frequencies:     639.49    639.49    639.49    639.49    703.49    703.49    703.49    703.4
                           767.49    767.49    767.49    767.49    831.49    831.49    831.49    831.4
 Next scan bandwidths:      32.00     32.00     32.00     32.00     32.00     32.00     32.00     32.0
                            32.00     32.00     32.00     32.00     32.00     32.00     32.00     32.0

13 00 00  J0927+3902   01 05 16  13.3  40.4 -8.4     -30.0     0        0   13 00 00
13 02 00  ---          01 07 16  13.5  40.8 -8.4     -30.3   120       31   13 00 01

13 03 10  J1038+4244   01 08 26  11.0  27.0 -9.5     -21.7    27       31   13 03 10
13 04 50  ---          01 10 07  11.1  27.3 -9.5     -21.9   100       57   13 03 11

13 04 50  J1037+4335   01 10 07  11.9  27.1 -9.5     -22.1   -16       57   No stop
13 06 30  ---          01 11 47  12.0  27.4 -9.4     -22.4    84       82   13 04 51

13 06 30  J1038+4244   01 11 47  11.2  27.5 -9.5     -22.2   -16       82   No stop
13 08 00  ---          01 13 17  11.3  27.8 -9.4     -22.4    74      106   13 06 31

13 08 00  J1037+4335   01 13 17  12.1  27.6 -9.4     -22.6   -16      106   No stop
13 09 40  ---          01 14 57  12.3  27.9 -9.4     -22.8    84      131   13 08 01

13 09 40  J1038+4244   01 14 57  11.4  28.1 -9.4     -22.6   -16      131   No stop
13 11 10  ---          01 16 28  11.5  28.4 -9.4     -22.8    74      155   13 09 41

13 11 10  J1037+4335   01 16 28  12.4  28.2 -9.4     -23.0   -16      155   No stop
13 12 50  ---          01 18 08  12.5  28.5 -9.3     -23.2    84      180   13 11 11

13 13 20  J1038+4244   01 18 38  11.7  28.7 -9.3     -23.1    14      180   13 13 20
13 14 20  ---          01 19 38  11.7  28.9 -9.3     -23.2    60      196   13 13 21

13 14 20  J1037+4335   01 19 38  12.6  28.7 -9.3     -23.4   -16      196   No stop
13 16 00  ---          01 21 18  12.7  29.0 -9.3     -23.7    84      222   13 14 21

13 16 00  J1038+4244   01 21 18  11.9  29.2 -9.3     -23.5   -16      222   No stop
13 17 30  ---          01 22 49  12.0  29.4 -9.3     -23.7    74      245   13 16 01

13 17 30  J1037+4335   01 22 49  12.8  29.3 -9.3     -23.9   -16      245   No stop
13 19 10  ---          01 24 29  12.9  29.6 -9.2     -24.1    84      271   13 17 31

13 19 10  J1038+4244   01 24 29  12.1  29.7 -9.3     -23.9   -16      271   No stop
13 20 40  ---          01 25 59  12.2  30.0 -9.2     -24.1    74      294   13 19 11

13 20 40  J1037+4335   01 25 59  13.0  29.8 -9.2     -24.3   -16      294   No stop
13 22 20  ---          01 27 39  13.2  30.1 -9.2     -24.5    84      319   13 20 41
```

Schedule for TORUN (Code Tr) Page 3

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
13 22 50	J1038+4244	01 28 09	12.4	30.4	-9.2		-24.4	14	319	13 22 50
13 23 50	---	01 29 10	12.4	30.5	-9.2		-24.5	60	335	13 22 51
13 23 50	J1037+4335	01 29 10	13.3	30.3	-9.2		-24.7	-16	335	No stop
13 25 30	---	01 30 50	13.4	30.6	-9.1		-24.9	84	361	13 23 51
13 25 30	J1038+4244	01 30 50	12.6	30.8	-9.1		-24.7	-15	361	No stop
13 27 00	---	01 32 20	12.7	31.1	-9.1		-24.9	75	384	13 25 31
13 27 00	J1037+4335	01 32 20	13.5	30.9	-9.1		-25.1	-16	384	No stop
13 28 40	---	01 34 00	13.7	31.2	-9.1		-25.4	84	410	13 27 01
13 28 40	J1038+4244	01 34 00	12.8	31.4	-9.1		-25.1	-15	410	No stop
13 30 10	---	01 35 31	12.9	31.6	-9.1		-25.3	75	433	13 28 41
13 30 10	J1037+4335	01 35 31	13.8	31.4	-9.1		-25.6	-16	433	No stop
13 31 50	---	01 37 11	13.9	31.7	-9.0		-25.8	84	459	13 30 11
13 32 20	J1038+4244	01 37 41	13.1	32.0	-9.0		-25.6	15	459	13 32 20
13 33 20	---	01 38 41	13.2	32.2	-9.0		-25.8	60	474	13 32 21
13 33 20	J1037+4335	01 38 41	14.0	32.0	-9.0		-26.0	-16	474	No stop
13 35 00	---	01 40 21	14.2	32.2	-9.0		-26.2	84	500	13 33 21
13 35 00	J1038+4244	01 40 21	13.3	32.5	-9.0		-26.0	-15	500	No stop
13 36 30	---	01 41 52	13.4	32.7	-9.0		-26.2	75	523	13 35 01
13 36 30	J1037+4335	01 41 52	14.3	32.5	-8.9		-26.4	-16	523	No stop
13 38 10	---	01 43 32	14.4	32.8	-8.9		-26.6	84	549	13 36 31
13 38 40	J1038+4244	01 44 02	13.6	33.1	-8.9		-26.5	15	549	13 38 40
13 39 40	---	01 45 02	13.7	33.2	-8.9		-26.6	60	564	13 38 41
13 39 40	J1037+4335	01 45 02	14.5	33.0	-8.9		-26.8	-16	564	No stop
13 41 20	---	01 46 43	14.7	33.3	-8.9		-27.0	84	590	13 39 41
13 41 20	J1038+4244	01 46 43	13.8	33.5	-8.9		-26.8	-15	590	No stop
13 42 50	---	01 48 13	14.0	33.8	-8.9		-27.0	75	613	13 41 21
13 42 50	J1037+4335	01 48 13	14.8	33.5	-8.8		-27.2	-16	613	No stop
13 44 30	---	01 49 53	14.9	33.8	-8.8		-27.4	84	639	13 42 51
13 44 30	J1038+4244	01 49 53	14.1	34.1	-8.8		-27.2	-15	639	No stop
13 46 00	---	01 51 23	14.2	34.3	-8.8		-27.4	75	662	13 44 31

Schedule for TORUN (Code Tr) Page 4

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
13 46 00	J1037+4335	01 51 23	15.1	34.1	-8.8		-27.6	-16	662	No stop
13 47 40	---	01 53 04	15.2	34.4	-8.8		-27.8	84	688	13 46 01
13 48 10	J1038+4244	01 53 34	14.4	34.7	-8.8		-27.7	15	688	13 48 10
13 49 10	---	01 54 34	14.5	34.9	-8.7		-27.8	60	703	13 48 11
13 49 10	J1037+4335	01 54 34	15.3	34.6	-8.7		-28.0	-16	703	No stop
13 50 50	---	01 56 14	15.5	34.9	-8.7		-28.2	84	729	13 49 11
13 50 50	J1038+4244	01 56 14	14.7	35.1	-8.7		-28.0	-15	729	No stop
13 52 20	---	01 57 44	14.8	35.4	-8.7		-28.2	75	752	13 50 51
13 52 20	J1037+4335	01 57 44	15.6	35.1	-8.7		-28.4	-16	752	No stop
13 54 00	---	01 59 25	15.8	35.4	-8.7		-28.7	84	778	13 52 21
13 54 30	J1038+4244	01 59 55	15.0	35.7	-8.7		-28.5	15	778	13 54 30
13 55 30	---	02 00 55	15.1	35.9	-8.6		-28.6	60	794	13 54 31
13 55 30	J1037+4335	02 00 55	15.9	35.7	-8.6		-28.8	-16	794	No stop
13 57 10	---	02 02 35	16.0	35.9	-8.6		-29.1	84	819	13 55 31
13 57 10	J1038+4244	02 02 35	15.2	36.2	-8.6		-28.8	-15	819	No stop
13 58 40	---	02 04 05	15.3	36.4	-8.6		-29.0	75	842	13 57 11
13 58 40	J1037+4335	02 04 05	16.2	36.2	-8.6		-29.2	-16	842	No stop
14 00 20	---	02 05 46	16.3	36.5	-8.5		-29.5	84	868	13 58 41
14 00 20	J1038+4244	02 05 46	15.5	36.7	-8.6		-29.2	-15	868	No stop
14 01 50	---	02 07 16	15.6	37.0	-8.5		-29.4	75	891	14 00 21
14 01 50	J1037+4335	02 07 16	16.4	36.7	-8.5		-29.6	-16	891	No stop
14 03 30	---	02 08 56	16.6	37.0	-8.5		-29.9	84	917	14 01 51
14 04 00	J1038+4244	02 09 26	15.8	37.3	-8.5		-29.7	15	917	14 04 00
14 05 00	---	02 10 26	15.9	37.5	-8.5		-29.8	60	933	14 04 01
14 05 00	J1037+4335	02 10 26	16.7	37.2	-8.5		-30.0	-16	933	No stop
14 06 40	---	02 12 07	16.9	37.5	-8.4		-30.3	84	958	14 05 01
14 06 40	J1038+4244	02 12 07	16.1	37.8	-8.5		-30.0	-15	958	No stop
14 08 10	---	02 13 37	16.2	38.0	-8.4		-30.2	75	982	14 06 41
14 08 10	J1037+4335	02 13 37	17.0	37.7	-8.4		-30.4	-16	982	No stop
14 09 50	---	02 15 17	17.2	38.0	-8.4		-30.6	84	1007	14 08 11

Schedule for TORUN (Code Tr) Page 5

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
14 10 20	J1038+4244	02 15 47	16.4	38.4	-8.4		-30.5	15	1007	14 10 20
14 11 20	---	02 16 47	16.5	38.6	-8.4		-30.6	60	1023	14 10 21
14 11 20	J1037+4335	02 16 47	17.3	38.3	-8.4		-30.8	-16	1023	No stop
14 13 00	---	02 18 28	17.5	38.5	-8.3		-31.0	84	1049	14 11 21
14 13 00	J1038+4244	02 18 28	16.7	38.8	-8.4		-30.8	-15	1049	No stop
14 14 30	---	02 19 58	16.8	39.1	-8.3		-31.0	75	1072	14 13 01
14 14 30	J1037+4335	02 19 58	17.6	38.8	-8.3		-31.2	-16	1072	No stop
14 16 10	---	02 21 38	17.8	39.1	-8.3		-31.4	84	1098	14 14 31
14 16 10	J1038+4244	02 21 38	17.0	39.4	-8.3		-31.2	-15	1098	No stop
14 17 40	---	02 23 08	17.1	39.6	-8.3		-31.4	75	1121	14 16 11
14 17 40	J1037+4335	02 23 08	17.9	39.3	-8.3		-31.6	-16	1121	No stop
14 19 20	---	02 24 49	18.1	39.6	-8.2		-31.8	84	1146	14 17 41
14 19 50	J1038+4244	02 25 19	17.3	40.0	-8.2		-31.6	15	1146	14 19 50
14 20 50	---	02 26 19	17.4	40.1	-8.2		-31.7	60	1162	14 19 51
14 20 50	J1037+4335	02 26 19	18.2	39.8	-8.2		-32.0	-15	1162	No stop
14 22 30	---	02 27 59	18.4	40.1	-8.2		-32.2	85	1188	14 20 51
14 22 30	J1038+4244	02 27 59	17.6	40.4	-8.2		-31.9	-15	1188	No stop
14 24 00	---	02 29 30	17.7	40.6	-8.2		-32.1	75	1211	14 22 31
14 30 30	J1125+5000	02 36 01	20.5	30.4	-8.8		-28.1	353	1211	14 30 30
14 31 30	---	02 37 01	20.5	30.5	-8.8		-28.3	60	1226	14 30 31
14 31 30	J1132+5100	02 37 01	20.9	28.9	-8.9		-27.4	-16	1226	No stop
14 33 00	---	02 38 31	21.0	29.2	-8.9		-27.6	74	1250	14 31 31
14 33 00	J1125+5000	02 38 31	20.6	30.8	-8.8		-28.5	-16	1250	No stop
14 34 30	---	02 40 01	20.8	31.0	-8.8		-28.7	74	1273	14 33 01
14 34 30	J1132+5100	02 40 01	21.1	29.4	-8.9		-27.8	-16	1273	No stop
14 36 00	---	02 41 32	21.2	29.6	-8.9		-28.0	74	1296	14 34 31
14 36 30	J1125+5000	02 42 02	20.9	31.3	-8.7		-29.0	14	1296	14 36 30
14 37 30	---	02 43 02	21.0	31.4	-8.7		-29.1	60	1311	14 36 31
14 37 30	J1132+5100	02 43 02	21.3	29.8	-8.8		-28.3	-16	1311	No stop
14 39 00	---	02 44 32	21.4	30.0	-8.8		-28.5	74	1335	14 37 31

Schedule for TORUN (Code Tr) Page 6

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
14 39 00	J1125+5000	02 44 32	21.1	31.7	-8.7		-29.3	-16	1335	No stop
14 40 30	---	02 46 02	21.2	31.9	-8.7		-29.5	74	1358	14 39 01
14 40 30	J1132+5100	02 46 02	21.5	30.3	-8.8		-28.7	-16	1358	No stop
14 42 00	---	02 47 32	21.7	30.5	-8.8		-28.9	74	1381	14 40 31
14 42 00	J1125+5000	02 47 32	21.4	32.1	-8.7		-29.7	-16	1381	No stop
14 43 30	---	02 49 03	21.5	32.3	-8.6		-29.9	74	1404	14 42 01
14 43 30	J1132+5100	02 49 03	21.8	30.7	-8.7		-29.1	-16	1404	No stop
14 45 00	---	02 50 33	21.9	30.9	-8.7		-29.3	74	1427	14 43 31
14 45 00	J1125+5000	02 50 33	21.6	32.6	-8.6		-30.1	-17	1427	No stop
14 46 30	---	02 52 03	21.7	32.8	-8.6		-30.3	73	1451	14 45 01
14 46 30	J1132+5100	02 52 03	22.0	31.2	-8.7		-29.5	-16	1451	No stop
14 48 00	---	02 53 33	22.1	31.4	-8.7		-29.7	74	1474	14 46 31
14 48 30	J1125+5000	02 54 04	21.9	33.1	-8.5		-30.6	13	1474	14 48 30
14 49 30	---	02 55 04	22.0	33.2	-8.5		-30.7	60	1489	14 48 31
14 49 30	J1132+5100	02 55 04	22.2	31.6	-8.6		-29.9	-16	1489	No stop
14 51 00	---	02 56 34	22.4	31.8	-8.6		-30.1	74	1512	14 49 31
14 51 00	J1125+5000	02 56 34	22.1	33.5	-8.5		-30.9	-17	1512	No stop
14 52 30	---	02 58 04	22.2	33.7	-8.5		-31.1	73	1536	14 51 01
14 52 30	J1132+5100	02 58 04	22.5	32.1	-8.6		-30.3	-16	1536	No stop
14 54 00	---	02 59 34	22.6	32.3	-8.6		-30.6	74	1559	14 52 31
14 54 00	J1125+5000	02 59 34	22.3	33.9	-8.5		-31.3	-17	1559	No stop
14 55 30	---	03 01 05	22.5	34.1	-8.4		-31.5	73	1582	14 54 01
14 55 30	J1132+5100	03 01 05	22.7	32.5	-8.5		-30.8	-16	1582	No stop
14 57 00	---	03 02 35	22.8	32.7	-8.5		-31.0	74	1605	14 55 31
14 57 30	J1125+5000	03 03 05	22.6	34.4	-8.4		-31.8	13	1605	14 57 30
14 58 30	---	03 04 05	22.7	34.6	-8.4		-31.9	60	1621	14 57 31
14 58 30	J1132+5100	03 04 05	23.0	32.9	-8.5		-31.2	-16	1621	No stop
15 00 00	---	03 05 35	23.1	33.2	-8.5		-31.4	74	1644	14 58 31
15 00 00	J1125+5000	03 05 35	22.8	34.8	-8.4		-32.1	-17	1644	No stop
15 01 30	---	03 07 06	23.0	35.0	-8.3		-32.3	73	1667	15 00 01

Schedule for TORUN (Code Tr) Page 7

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
15 01 30	J1132+5100	03 07 06	23.2	33.4	-8.4		-31.6	-16	1667	No stop
15 03 00	---	03 08 36	23.3	33.6	-8.4		-31.8	74	1690	15 01 31
15 03 30	J1125+5000	03 09 06	23.1	35.3	-8.3		-32.6	13	1690	15 03 30
15 04 30	---	03 10 06	23.2	35.5	-8.3		-32.7	60	1706	15 03 31
15 04 30	J1132+5100	03 10 06	23.5	33.8	-8.4		-32.0	-16	1706	No stop
15 06 00	---	03 11 36	23.6	34.0	-8.4		-32.2	74	1729	15 04 31
15 06 00	J1125+5000	03 11 36	23.4	35.7	-8.3		-32.9	-17	1729	No stop
15 07 30	---	03 13 07	23.5	35.9	-8.2		-33.1	73	1752	15 06 01
15 07 30	J1132+5100	03 13 07	23.7	34.3	-8.3		-32.4	-16	1752	No stop
15 09 00	---	03 14 37	23.8	34.5	-8.3		-32.6	74	1775	15 07 31
15 09 00	J1125+5000	03 14 37	23.6	36.1	-8.2		-33.3	-17	1775	No stop
15 10 30	---	03 16 07	23.8	36.4	-8.2		-33.5	73	1798	15 09 01
15 10 30	J1132+5100	03 16 07	24.0	34.7	-8.3		-32.8	-16	1798	No stop
15 12 00	---	03 17 37	24.1	34.9	-8.3		-33.0	74	1822	15 10 31
15 12 30	J1125+5000	03 18 07	23.9	36.7	-8.1		-33.8	13	1822	15 12 30
15 13 30	---	03 19 08	24.0	36.8	-8.1		-33.9	60	1837	15 12 31
15 13 30	J1132+5100	03 19 08	24.2	35.1	-8.2		-33.2	-16	1837	No stop
15 15 00	---	03 20 38	24.4	35.3	-8.2		-33.4	74	1860	15 13 31
15 15 00	J1125+5000	03 20 38	24.2	37.0	-8.1		-34.1	-17	1860	No stop
15 16 30	---	03 22 08	24.3	37.2	-8.1		-34.3	73	1883	15 15 01
15 16 30	J1132+5100	03 22 08	24.5	35.6	-8.2		-33.6	-16	1883	No stop
15 18 00	---	03 23 38	24.6	35.8	-8.2		-33.8	74	1907	15 16 31
15 18 30	J1125+5000	03 24 08	24.5	37.5	-8.0		-34.6	13	1907	15 18 30
15 19 30	---	03 25 09	24.6	37.7	-8.0		-34.7	60	1922	15 18 31
15 19 30	J1132+5100	03 25 09	24.7	36.0	-8.1		-34.0	-17	1922	No stop
15 21 00	---	03 26 39	24.9	36.2	-8.1		-34.2	73	1945	15 19 31
15 21 00	J1125+5000	03 26 39	24.7	37.9	-8.0		-34.9	-17	1945	No stop
15 22 30	---	03 28 09	24.9	38.1	-8.0		-35.1	73	1968	15 21 01
15 22 30	J1132+5100	03 28 09	25.0	36.4	-8.1		-34.4	-17	1968	No stop
15 24 00	---	03 29 39	25.2	36.6	-8.1		-34.6	73	1992	15 22 31

Schedule for TORUN (Code Tr) Page 8

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
15 24 00	J1125+5000	03 29 39	25.0	38.3	-7.9		-35.3	-17	1992	No stop
15 25 30	---	03 31 10	25.1	38.6	-7.9		-35.5	73	2015	15 24 01
15 25 30	J1132+5100	03 31 10	25.3	36.9	-8.0		-34.8	-17	2015	No stop
15 27 00	---	03 32 40	25.4	37.1	-8.0		-35.0	73	2038	15 25 31
15 27 30	J1125+5000	03 33 10	25.3	38.8	-7.9		-35.8	13	2038	15 27 30
15 28 30	---	03 34 10	25.4	39.0	-7.9		-35.9	60	2053	15 27 31
15 28 30	J1132+5100	03 34 10	25.6	37.3	-8.0		-35.2	-17	2053	No stop
15 30 00	---	03 35 40	25.7	37.5	-8.0		-35.4	73	2077	15 28 31
15 30 00	J1125+5000	03 35 40	25.6	39.2	-7.8		-36.1	-17	2077	No stop
15 31 30	---	03 37 11	25.7	39.4	-7.8		-36.3	73	2100	15 30 01
15 31 30	J1132+5100	03 37 11	25.8	37.7	-7.9		-35.6	-17	2100	No stop
15 33 00	---	03 38 41	26.0	37.9	-7.9		-35.8	73	2123	15 31 31
15 33 30	J1125+5000	03 39 11	25.9	39.7	-7.8		-36.5	13	2123	15 33 30
15 34 30	---	03 40 11	26.0	39.9	-7.8		-36.7	60	2138	15 33 31
15 34 30	J1132+5100	03 40 11	26.1	38.1	-7.9		-36.0	-17	2138	No stop
15 36 00	---	03 41 41	26.3	38.4	-7.9		-36.2	73	2162	15 34 31
15 36 00	J1125+5000	03 41 41	26.1	40.1	-7.7		-36.9	-17	2162	No stop
15 37 30	---	03 43 12	26.3	40.3	-7.7		-37.1	73	2185	15 36 01
15 37 30	J1132+5100	03 43 12	26.4	38.6	-7.8		-36.4	-17	2185	No stop
15 39 00	---	03 44 42	26.5	38.8	-7.8		-36.6	73	2208	15 37 31
15 39 00	J1125+5000	03 44 42	26.4	40.5	-7.7		-37.3	-17	2208	No stop
15 40 30	---	03 46 12	26.6	40.7	-7.7		-37.4	73	2231	15 39 01
15 40 30	J1132+5100	03 46 12	26.7	39.0	-7.8		-36.8	-17	2231	No stop
15 42 00	---	03 47 42	26.8	39.2	-7.8		-37.0	73	2254	15 40 31
15 42 30	J1125+5000	03 48 12	26.8	41.0	-7.6		-37.7	13	2254	15 42 30
15 43 30	---	03 49 13	26.9	41.1	-7.6		-37.8	60	2270	15 42 31
15 43 30	J1132+5100	03 49 13	27.0	39.4	-7.7		-37.2	-17	2270	No stop
15 45 00	---	03 50 43	27.1	39.6	-7.7		-37.4	73	2293	15 43 31
15 45 00	J1125+5000	03 50 43	27.0	41.4	-7.6		-38.0	-17	2293	No stop
15 46 30	---	03 52 13	27.2	41.6	-7.6		-38.2	73	2316	15 45 01

Schedule for TORUN (Code Tr) Page 9

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
15 46 30	J1132+5100	03 52 13	27.2	39.8	-7.7		-37.6	-17	2316	No stop
15 48 00	---	03 53 43	27.4	40.1	-7.7		-37.8	73	2339	15 46 31
15 48 30	J1125+5000	03 54 13	27.4	41.9	-7.5		-38.5	13	2339	15 48 30
15 49 30	---	03 55 14	27.5	42.0	-7.5		-38.6	60	2355	15 48 31
15 49 30	J1132+5100	03 55 14	27.5	40.3	-7.6		-38.0	-17	2355	No stop
15 51 00	---	03 56 44	27.7	40.5	-7.6		-38.2	73	2378	15 49 31
15 51 00	J1125+5000	03 56 44	27.6	42.2	-7.5		-38.8	-17	2378	No stop
15 52 30	---	03 58 14	27.8	42.4	-7.5		-39.0	73	2401	15 51 01
15 52 30	J1132+5100	03 58 14	27.8	40.7	-7.6		-38.4	-17	2401	No stop
15 54 00	---	03 59 44	28.0	40.9	-7.6		-38.6	73	2424	15 52 31
15 54 00	J1125+5000	03 59 44	27.9	42.6	-7.4		-39.2	-17	2424	No stop
15 55 30	---	04 01 15	28.1	42.9	-7.4		-39.3	73	2448	15 54 01
15 55 30	J1132+5100	04 01 15	28.1	41.1	-7.5		-38.8	-17	2448	No stop
15 57 00	---	04 02 45	28.3	41.3	-7.5		-38.9	73	2471	15 55 31
15 57 30	J1125+5000	04 03 15	28.3	43.1	-7.4		-39.6	13	2471	15 57 30
15 58 30	---	04 04 15	28.4	43.3	-7.4		-39.7	60	2486	15 57 31
15 58 30	J1132+5100	04 04 15	28.4	41.5	-7.5		-39.1	-17	2486	No stop
16 00 00	---	04 05 45	28.6	41.7	-7.5		-39.3	73	2509	15 58 31
16 00 00	J1125+5000	04 05 45	28.5	43.5	-7.3		-39.9	-17	2509	No stop
16 01 30	---	04 07 16	28.7	43.7	-7.3		-40.1	73	2533	16 00 01
16 01 30	J1132+5100	04 07 16	28.7	41.9	-7.4		-39.5	-17	2533	No stop
16 03 00	---	04 08 46	28.9	42.2	-7.4		-39.7	73	2556	16 01 31
16 03 30	J1125+5000	04 09 16	28.9	44.0	-7.3		-40.3	13	2556	16 03 30
16 04 30	---	04 10 16	29.0	44.1	-7.3		-40.5	60	2571	16 03 31
16 04 30	J1132+5100	04 10 16	29.0	42.4	-7.4		-39.9	-17	2571	No stop
16 06 00	---	04 11 46	29.2	42.6	-7.4		-40.1	73	2594	16 04 31
16 06 00	J1125+5000	04 11 46	29.2	44.3	-7.2		-40.6	-17	2594	No stop
16 07 30	---	04 13 17	29.3	44.5	-7.2		-40.8	73	2618	16 06 01
16 07 30	J1132+5100	04 13 17	29.3	42.8	-7.3		-40.3	-17	2618	No stop
16 09 00	---	04 14 47	29.5	43.0	-7.3		-40.5	73	2641	16 07 31

Schedule for TORUN (Code Tr) Page 10

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
16 09 00	J1125+5000	04 14 47	29.5	44.8	-7.2		-41.0	-17	2641	No stop
16 10 30	---	04 16 17	29.7	45.0	-7.2		-41.2	73	2664	16 09 01
16 10 30	J1132+5100	04 16 17	29.6	43.2	-7.3		-40.7	-17	2664	No stop
16 12 00	---	04 17 47	29.8	43.4	-7.3		-40.9	73	2687	16 10 31
16 12 30	J1125+5000	04 18 17	29.9	45.2	-7.1		-41.4	13	2687	16 12 30
16 13 30	---	04 19 18	30.0	45.4	-7.1		-41.6	60	2703	16 12 31
16 13 30	J1132+5100	04 19 18	30.0	43.6	-7.2		-41.0	-17	2703	No stop
16 15 00	---	04 20 48	30.1	43.8	-7.2		-41.2	73	2726	16 13 31
16 15 00	J1125+5000	04 20 48	30.1	45.6	-7.1		-41.7	-17	2726	No stop
16 16 30	---	04 22 18	30.3	45.8	-7.1		-41.9	73	2749	16 15 01
16 16 30	J1132+5100	04 22 18	30.3	44.0	-7.2		-41.4	-17	2749	No stop
16 18 00	---	04 23 48	30.4	44.2	-7.2		-41.6	73	2772	16 16 31
16 18 30	J1125+5000	04 24 18	30.5	46.1	-7.0		-42.2	13	2772	16 18 30
16 19 30	---	04 25 19	30.6	46.2	-7.0		-42.3	60	2788	16 18 31
16 19 30	J1132+5100	04 25 19	30.6	44.4	-7.1		-41.8	-17	2788	No stop
16 21 00	---	04 26 49	30.7	44.6	-7.1		-42.0	73	2811	16 19 31
16 21 00	J1125+5000	04 26 49	30.8	46.4	-7.0		-42.5	-17	2811	No stop
16 22 30	---	04 28 19	30.9	46.6	-7.0		-42.7	73	2834	16 21 01
16 22 30	J1132+5100	04 28 19	30.9	44.8	-7.1		-42.2	-17	2834	No stop
16 24 00	---	04 29 49	31.1	45.0	-7.1		-42.4	73	2857	16 22 31
16 24 00	J1125+5000	04 29 49	31.1	46.8	-6.9		-42.8	-17	2857	No stop
16 25 30	---	04 31 19	31.3	47.0	-6.9		-43.0	73	2880	16 24 01
16 25 30	J1132+5100	04 31 19	31.2	45.2	-7.0		-42.5	-17	2880	No stop
16 27 00	---	04 32 50	31.4	45.5	-7.0		-42.7	73	2904	16 25 31
16 27 30	J1125+5000	04 33 20	31.5	47.3	-6.9		-43.3	13	2904	16 27 30
16 28 30	---	04 34 20	31.6	47.5	-6.9		-43.4	60	2919	16 27 31
16 28 30	J1132+5100	04 34 20	31.5	45.7	-7.0		-42.9	-17	2919	No stop
16 30 00	---	04 35 50	31.7	45.9	-7.0		-43.1	73	2942	16 28 31
16 30 00	J1125+5000	04 35 50	31.8	47.7	-6.8		-43.6	-17	2942	No stop
16 31 30	---	04 37 20	31.9	47.9	-6.8		-43.7	73	2965	16 30 01

Schedule for TORUN (Code Tr) Page 11

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
16 31 30	J1132+5100	04 37 20	31.9	46.1	-6.9		-43.3	-17	2965	No stop
16 33 00	---	04 38 51	32.0	46.3	-6.9		-43.5	73	2989	16 31 31
16 33 30	J1125+5000	04 39 21	32.2	48.1	-6.8		-44.0	13	2989	16 33 30
16 34 30	---	04 40 21	32.3	48.3	-6.8		-44.1	60	3004	16 33 31
16 34 30	J1132+5100	04 40 21	32.2	46.5	-6.9		-43.6	-17	3004	No stop
16 36 00	---	04 41 51	32.4	46.7	-6.9		-43.8	73	3027	16 34 31
16 36 00	J1125+5000	04 41 51	32.4	48.5	-6.7		-44.3	-17	3027	No stop
16 37 30	---	04 43 21	32.6	48.7	-6.7		-44.4	73	3050	16 36 01
16 37 30	J1132+5100	04 43 21	32.5	46.9	-6.8		-44.0	-17	3050	No stop
16 39 00	---	04 44 52	32.7	47.1	-6.8		-44.2	73	3074	16 37 31
16 39 00	J1125+5000	04 44 52	32.8	48.9	-6.7		-44.6	-17	3074	No stop
16 40 30	---	04 46 22	33.0	49.1	-6.7		-44.8	73	3097	16 39 01
16 40 30	J1132+5100	04 46 22	32.8	47.3	-6.8		-44.4	-17	3097	No stop
16 42 00	---	04 47 52	33.0	47.5	-6.8		-44.6	73	3120	16 40 31
16 42 30	J1125+5000	04 48 22	33.2	49.4	-6.6		-45.0	13	3120	16 42 30
16 43 30	---	04 49 22	33.3	49.5	-6.6		-45.2	60	3135	16 42 31
16 43 30	J1132+5100	04 49 22	33.2	47.7	-6.7		-44.7	-17	3135	No stop
16 45 00	---	04 50 53	33.3	47.9	-6.7		-44.9	73	3159	16 43 31
16 45 00	J1125+5000	04 50 53	33.5	49.7	-6.6		-45.3	-17	3159	No stop
16 46 30	---	04 52 23	33.6	49.9	-6.6		-45.5	73	3182	16 45 01
16 47 40	J1038+4244	04 53 33	34.7	63.2	-5.8		-46.8	29	3182	16 47 40
16 49 20	---	04 55 13	34.9	63.5	-5.7		-46.9	100	3208	16 47 41
16 49 20	J1037+4335	04 55 13	35.6	62.9	-5.7		-47.4	-15	3208	No stop
16 51 00	---	04 56 54	35.8	63.1	-5.7		-47.6	85	3233	16 49 21
16 51 00	J1038+4244	04 56 54	35.1	63.7	-5.7		-47.0	-15	3233	No stop
16 52 30	---	04 58 24	35.3	64.0	-5.7		-47.2	75	3257	16 51 01
16 52 30	J1037+4335	04 58 24	36.0	63.3	-5.7		-47.7	-15	3257	No stop
16 54 10	---	05 00 04	36.2	63.6	-5.6		-47.8	85	3282	16 52 31
16 54 10	J1038+4244	05 00 04	35.5	64.2	-5.7		-47.3	-15	3282	No stop
16 55 40	---	05 01 34	35.7	64.4	-5.6		-47.4	75	3306	16 54 11

Schedule for TORUN (Code Tr) Page 12

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
16 55 40	J1037+4335	05 01 34	36.4	63.8	-5.6		-48.0	-15	3306	No stop
16 57 20	---	05 03 15	36.7	64.1	-5.6		-48.1	85	3331	16 55 41
16 57 50	J1038+4244	05 03 45	36.0	64.8	-5.6		-47.6	16	3331	16 57 50
16 58 50	---	05 04 45	36.2	64.9	-5.6		-47.7	60	3347	16 57 51
16 58 50	J1037+4335	05 04 45	36.9	64.3	-5.6		-48.2	-15	3347	No stop
17 00 30	---	05 06 25	37.1	64.6	-5.5		-48.4	85	3372	16 58 51
17 00 30	J1038+4244	05 06 25	36.4	65.2	-5.6		-47.8	-14	3372	No stop
17 02 00	---	05 07 55	36.6	65.4	-5.5		-47.9	76	3396	17 00 31
17 02 00	J1037+4335	05 07 55	37.3	64.8	-5.5		-48.5	-15	3396	No stop
17 03 40	---	05 09 36	37.5	65.0	-5.5		-48.6	85	3421	17 02 01
17 03 40	J1038+4244	05 09 36	36.8	65.7	-5.5		-48.1	-14	3421	No stop
17 05 10	---	05 11 06	37.0	65.9	-5.5		-48.2	76	3445	17 03 41
17 05 10	J1037+4335	05 11 06	37.7	65.3	-5.5		-48.7	-15	3445	No stop
17 06 50	---	05 12 46	38.0	65.5	-5.4		-48.9	85	3470	17 05 11
17 07 20	J1038+4244	05 13 16	37.3	66.2	-5.4		-48.3	16	3470	17 07 20
17 08 20	---	05 14 17	37.5	66.4	-5.4		-48.4	60	3486	17 07 21
17 08 20	J1037+4335	05 14 17	38.2	65.7	-5.4		-49.0	-15	3486	No stop
17 10 00	---	05 15 57	38.4	66.0	-5.4		-49.1	85	3512	17 08 21
17 10 00	J1038+4244	05 15 57	37.7	66.6	-5.4		-48.5	-14	3512	No stop
17 11 30	---	05 17 27	37.9	66.9	-5.4		-48.7	76	3535	17 10 01
17 11 30	J1037+4335	05 17 27	38.6	66.2	-5.4		-49.2	-15	3535	No stop
17 13 10	---	05 19 07	38.8	66.5	-5.3		-49.4	85	3561	17 11 31
17 13 10	J1038+4244	05 19 07	38.1	67.1	-5.3		-48.8	-14	3561	No stop
17 14 40	---	05 20 38	38.4	67.4	-5.3		-48.9	76	3584	17 13 11
17 14 40	J1037+4335	05 20 38	39.0	66.7	-5.3		-49.5	-15	3584	No stop
17 16 20	---	05 22 18	39.3	67.0	-5.3		-49.6	85	3610	17 14 41
17 16 50	J1038+4244	05 22 48	38.7	67.7	-5.3		-49.0	16	3610	17 16 50
17 17 50	---	05 23 48	38.8	67.9	-5.3		-49.1	60	3625	17 16 51
17 17 50	J1037+4335	05 23 48	39.5	67.2	-5.2		-49.7	-15	3625	No stop
17 19 30	---	05 25 28	39.7	67.4	-5.2		-49.8	85	3651	17 17 51

Schedule for TORUN (Code Tr) Page 13

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
17 19 30	J1038+4244	05 25 28	39.0	68.1	-5.2		-49.2	-14	3651	No stop
17 21 00	---	05 26 59	39.2	68.4	-5.2		-49.4	76	3674	17 19 31
17 25 30	J0840-0648	05 31 29	17.9	129.8	-3.2		-27.7	133	3674	17 25 30
17 26 30	---	05 32 30	18.0	130.1	-3.1		-27.6	60	3689	17 25 31
17 27 00	J0847-0703	05 33 00	17.0	128.5	-3.3		-28.3	13	3689	17 27 00
17 28 00	---	05 34 00	17.1	128.7	-3.2		-28.2	60	3705	17 27 01
17 28 30	J0900-0652	05 34 30	15.8	126.0	-3.4		-29.3	10	3705	17 28 30
17 29 30	---	05 35 30	16.0	126.2	-3.4		-29.2	60	3720	17 28 31
17 30 30	J0840-0648	05 36 30	18.5	131.0	-3.1		-27.2	36	3720	17 30 30
17 31 30	---	05 37 30	18.6	131.2	-3.1		-27.1	60	3736	17 30 31
17 32 00	J0847-0703	05 38 00	17.5	129.6	-3.2		-27.8	13	3736	17 32 00
17 33 00	---	05 39 01	17.7	129.9	-3.2		-27.7	60	3751	17 32 01
17 33 30	J0900-0652	05 39 31	16.4	127.1	-3.4		-28.9	10	3751	17 33 30
17 34 30	---	05 40 31	16.6	127.3	-3.3		-28.8	60	3767	17 33 31
17 35 00	J0840-0648	05 41 01	19.0	132.0	-3.0		-26.7	6	3767	17 35 00
17 36 00	---	05 42 01	19.1	132.3	-3.0		-26.6	60	3782	17 35 01
17 36 30	J0847-0703	05 42 31	18.1	130.7	-3.1		-27.3	13	3782	17 36 30
17 37 30	---	05 43 31	18.2	130.9	-3.1		-27.2	60	3798	17 36 31
17 38 00	J0900-0652	05 44 01	17.0	128.1	-3.3		-28.4	10	3798	17 38 00
17 39 00	---	05 45 02	17.1	128.3	-3.3		-28.3	60	3813	17 38 01
17 39 30	J0840-0648	05 45 32	19.5	133.1	-2.9		-26.2	6	3813	17 39 30
17 40 30	---	05 46 32	19.6	133.3	-2.9		-26.1	60	3829	17 39 31
17 41 00	J0847-0703	05 47 02	18.6	131.7	-3.0		-26.8	13	3829	17 41 00
17 42 00	---	05 48 02	18.7	132.0	-3.0		-26.7	60	3844	17 41 01
17 42 30	J0900-0652	05 48 32	17.5	129.2	-3.2		-28.0	10	3844	17 42 30
17 43 30	---	05 49 32	17.6	129.4	-3.2		-27.9	60	3859	17 42 31
17 44 00	J0840-0648	05 50 02	20.0	134.2	-2.9		-25.7	6	3859	17 44 00
17 45 00	---	05 51 03	20.1	134.4	-2.8		-25.6	60	3875	17 44 01
17 45 30	J0847-0703	05 51 33	19.1	132.8	-3.0		-26.4	13	3875	17 45 30
17 46 30	---	05 52 33	19.2	133.0	-2.9		-26.3	60	3890	17 45 31

Schedule for TORUN (Code Tr) Page 14

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
17 47 00	J0900-0652	05 53 03	18.0	130.2	-3.1		-27.5	10	3890	17 47 00
17 48 00	---	05 54 03	18.1	130.4	-3.1		-27.4	60	3906	17 47 01
17 48 30	J0840-0648	05 54 33	20.5	135.3	-2.8		-25.2	5	3906	17 48 30
17 49 30	---	05 55 33	20.6	135.5	-2.8		-25.1	60	3921	17 48 31
17 50 00	J0847-0703	05 56 03	19.6	133.8	-2.9		-25.9	13	3921	17 50 00
17 51 00	---	05 57 04	19.7	134.1	-2.9		-25.8	60	3937	17 50 01
17 51 30	J0900-0652	05 57 34	18.5	131.2	-3.1		-27.1	10	3937	17 51 30
17 52 30	---	05 58 34	18.7	131.5	-3.0		-27.0	60	3952	17 51 31
17 53 30	J0840-0648	05 59 34	21.0	136.5	-2.7		-24.6	35	3952	17 53 30
17 54 30	---	06 00 34	21.1	136.7	-2.7		-24.5	60	3968	17 53 31
17 55 00	J0847-0703	06 01 04	20.1	135.0	-2.8		-25.3	13	3968	17 55 00
17 56 00	---	06 02 04	20.2	135.3	-2.8		-25.2	60	3983	17 55 01
17 56 30	J0900-0652	06 02 34	19.1	132.4	-3.0		-26.5	10	3983	17 56 30
17 57 30	---	06 03 35	19.2	132.6	-3.0		-26.4	60	3999	17 56 31
17 58 00	J0840-0648	06 04 05	21.5	137.6	-2.6		-24.1	5	3999	17 58 00
17 59 00	---	06 05 05	21.6	137.8	-2.6		-24.0	60	4014	17 58 01
17 59 30	J0847-0703	06 05 35	20.6	136.1	-2.7		-24.8	13	4014	17 59 30
18 00 30	---	06 06 35	20.7	136.4	-2.7		-24.7	60	4029	17 59 31
18 01 00	J0900-0652	06 07 05	19.6	133.5	-2.9		-26.0	10	4029	18 01 00
18 02 00	---	06 08 05	19.7	133.7	-2.9		-25.9	60	4045	18 01 01
18 02 30	J0840-0648	06 08 35	21.9	138.7	-2.5		-23.6	5	4045	18 02 30
18 03 30	---	06 09 36	22.0	138.9	-2.5		-23.4	60	4060	18 02 31
18 04 00	J0847-0703	06 10 06	21.0	137.2	-2.6		-24.3	13	4060	18 04 00
18 05 00	---	06 11 06	21.1	137.5	-2.6		-24.2	60	4076	18 04 01
18 05 30	J0900-0652	06 11 36	20.1	134.5	-2.8		-25.5	10	4076	18 05 30
18 06 30	---	06 12 36	20.2	134.8	-2.8		-25.4	60	4091	18 05 31
18 07 00	J0840-0648	06 13 06	22.3	139.8	-2.5		-23.0	5	4091	18 07 00
18 08 00	---	06 14 06	22.4	140.0	-2.4		-22.9	60	4107	18 07 01
18 08 30	J0847-0703	06 14 36	21.5	138.3	-2.6		-23.7	13	4107	18 08 30
18 09 30	---	06 15 37	21.6	138.6	-2.6		-23.6	60	4122	18 08 31

Schedule for TORUN (Code Tr) Page 15

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
18 10 00	J0900-0652	06 16 07	20.6	135.6	-2.8		-25.0	10	4122	18 10 00
18 11 00	---	06 17 07	20.7	135.9	-2.7		-24.9	60	4138	18 10 01
18 13 00	J0923+2815	06 19 07	47.9	107.5	-3.1		-40.5	4	4138	18 13 00
18 14 10	---	06 20 17	48.1	107.8	-3.1		-40.4	70	4156	18 13 01
18 14 10	J0918+2650	06 20 17	47.7	110.5	-3.0		-39.0	-20	4156	No stop
18 15 40	---	06 21 48	47.9	110.9	-3.0		-38.9	70	4179	18 14 11
18 16 10	J0923+2815	06 22 18	48.4	108.3	-3.0		-40.3	11	4179	18 16 10
18 17 20	---	06 23 28	48.5	108.6	-3.0		-40.2	70	4197	18 16 11
18 17 50	J0918+2650	06 23 58	48.2	111.5	-2.9		-38.7	10	4197	18 17 50
18 19 00	---	06 25 08	48.4	111.8	-2.9		-38.7	70	4215	18 17 51
18 19 30	J0923+2815	06 25 38	48.8	109.2	-3.0		-40.0	10	4215	18 19 30
18 20 40	---	06 26 48	49.0	109.5	-3.0		-40.0	70	4233	18 19 31
18 21 10	J0918+2650	06 27 18	48.7	112.3	-2.9		-38.5	10	4233	18 21 10
18 22 20	---	06 28 29	48.9	112.6	-2.9		-38.4	70	4251	18 21 11
18 22 50	J0923+2815	06 28 59	49.3	110.0	-2.9		-39.8	10	4251	18 22 50
18 24 00	---	06 30 09	49.5	110.3	-2.9		-39.7	70	4269	18 22 51
18 24 30	J0918+2650	06 30 39	49.2	113.2	-2.8		-38.2	10	4269	18 24 30
18 25 40	---	06 31 49	49.3	113.5	-2.8		-38.1	70	4287	18 24 31
18 26 10	J0923+2815	06 32 19	49.8	110.9	-2.9		-39.5	10	4287	18 26 10
18 27 20	---	06 33 30	49.9	111.2	-2.9		-39.4	70	4305	18 26 11
18 27 50	J0918+2650	06 34 00	49.6	114.1	-2.8		-37.9	10	4305	18 27 50
18 29 00	---	06 35 10	49.8	114.4	-2.7		-37.7	70	4323	18 27 51
18 29 30	J0923+2815	06 35 40	50.2	111.8	-2.8		-39.2	10	4323	18 29 30
18 30 40	---	06 36 50	50.4	112.1	-2.8		-39.1	70	4341	18 29 31
18 31 10	J0918+2650	06 37 20	50.1	115.0	-2.7		-37.5	10	4341	18 31 10
18 32 20	---	06 38 30	50.2	115.4	-2.7		-37.4	70	4359	18 31 11
18 32 50	J0923+2815	06 39 00	50.7	112.7	-2.8		-38.9	10	4359	18 32 50
18 34 00	---	06 40 11	50.9	113.0	-2.7		-38.8	70	4377	18 32 51
18 34 30	J0918+2650	06 40 41	50.5	116.0	-2.7		-37.2	10	4377	18 34 30
18 35 40	---	06 41 51	50.7	116.3	-2.6		-37.1	70	4395	18 34 31

Schedule for TORUN (Code Tr) Page 16

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
18 36 10	J0923+2815	06 42 21	51.2	113.6	-2.7		-38.6	10	4395	18 36 10
18 37 20	---	06 43 31	51.3	113.9	-2.7		-38.5	70	4413	18 36 11
18 37 50	J0918+2650	06 44 01	51.0	116.9	-2.6		-36.8	10	4413	18 37 50
18 39 00	---	06 45 11	51.1	117.2	-2.6		-36.7	70	4431	18 37 51
18 39 30	J0923+2815	06 45 42	51.6	114.5	-2.7		-38.3	10	4431	18 39 30
18 40 40	---	06 46 52	51.8	114.9	-2.6		-38.2	70	4449	18 39 31
18 41 10	J0918+2650	06 47 22	51.4	117.9	-2.5		-36.5	10	4449	18 41 10
18 42 20	---	06 48 32	51.6	118.2	-2.5		-36.3	70	4467	18 41 11
18 42 50	J0923+2815	06 49 02	52.1	115.5	-2.6		-37.9	10	4467	18 42 50
18 44 00	---	06 50 12	52.2	115.8	-2.6		-37.8	70	4485	18 42 51
18 44 30	J0918+2650	06 50 42	51.9	118.8	-2.5		-36.1	10	4485	18 44 30
18 45 40	---	06 51 53	52.0	119.2	-2.5		-36.0	70	4504	18 44 31
18 45 40	J0923+2815	06 51 53	52.5	116.3	-2.6		-37.6	-20	4504	No stop
18 47 10	---	06 53 23	52.7	116.7	-2.5		-37.5	70	4527	18 45 41
18 47 40	J0918+2650	06 53 53	52.3	119.8	-2.4		-35.7	10	4527	18 47 40
18 48 50	---	06 55 03	52.4	120.1	-2.4		-35.6	70	4545	18 47 41
18 49 20	J0923+2815	06 55 33	53.0	117.3	-2.5		-37.2	10	4545	18 49 20
18 50 30	---	06 56 43	53.1	117.7	-2.5		-37.1	70	4563	18 49 21
18 51 00	J0918+2650	06 57 13	52.7	120.8	-2.4		-35.3	9	4563	18 51 00
18 52 10	---	06 58 24	52.9	121.1	-2.4		-35.1	70	4581	18 51 01
18 52 40	J0923+2815	06 58 54	53.4	118.3	-2.4		-36.8	10	4581	18 52 40
18 53 50	---	07 00 04	53.6	118.7	-2.4		-36.7	70	4599	18 52 41
18 54 20	J0918+2650	07 00 34	53.2	121.8	-2.3		-34.9	9	4599	18 54 20
18 55 30	---	07 01 44	53.3	122.1	-2.3		-34.7	70	4617	18 54 21
18 56 00	J0923+2815	07 02 14	53.8	119.3	-2.4		-36.4	10	4617	18 56 00
18 57 10	---	07 03 24	54.0	119.7	-2.4		-36.3	70	4635	18 56 01
18 57 40	J0918+2650	07 03 54	53.6	122.8	-2.3		-34.4	9	4635	18 57 40
18 58 50	---	07 05 05	53.7	123.2	-2.2		-34.3	70	4653	18 57 41
18 59 20	J0923+2815	07 05 35	54.3	120.3	-2.3		-36.0	10	4653	18 59 20
19 00 30	---	07 06 45	54.4	120.7	-2.3		-35.9	70	4671	18 59 21

Schedule for TORUN (Code Tr) Page 17

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
19 01 00	J0918+2650	07 07 15	54.0	123.9	-2.2		-33.9	9	4671	19 01 00
19 02 10	---	07 08 25	54.1	124.2	-2.2		-33.8	70	4689	19 01 01
19 02 10	J0923+2815	07 08 25	54.6	121.2	-2.3		-35.6	-20	4689	No stop
19 03 40	---	07 09 55	54.8	121.7	-2.3		-35.4	70	4712	19 02 11
19 04 10	J0918+2650	07 10 26	54.4	124.9	-2.2		-33.5	9	4712	19 04 10
19 05 20	---	07 11 36	54.5	125.2	-2.1		-33.3	70	4730	19 04 11
19 05 50	J0923+2815	07 12 06	55.1	122.4	-2.2		-35.1	10	4730	19 05 50
19 07 00	---	07 13 16	55.3	122.7	-2.2		-35.0	70	4748	19 05 51
19 07 30	J0918+2650	07 13 46	54.8	125.9	-2.1		-33.0	9	4748	19 07 30
19 08 40	---	07 14 56	54.9	126.3	-2.1		-32.8	70	4766	19 07 31
19 09 10	J0923+2815	07 15 26	55.5	123.4	-2.2		-34.6	10	4766	19 09 10
19 10 20	---	07 16 37	55.7	123.8	-2.1		-34.5	70	4784	19 09 11
19 10 50	J0918+2650	07 17 07	55.2	127.0	-2.0		-32.5	9	4784	19 10 50
19 12 00	---	07 18 17	55.3	127.4	-2.0		-32.3	70	4802	19 10 51
19 12 30	J0923+2815	07 18 47	55.9	124.5	-2.1		-34.2	9	4802	19 12 30
19 13 40	---	07 19 57	56.1	124.9	-2.1		-34.0	70	4820	19 12 31
19 14 10	J0918+2650	07 20 27	55.6	128.2	-2.0		-31.9	9	4820	19 14 10
19 15 20	---	07 21 37	55.7	128.5	-2.0		-31.7	70	4838	19 14 11
19 15 50	J0923+2815	07 22 07	56.4	125.6	-2.0		-33.6	9	4838	19 15 50
19 17 00	---	07 23 18	56.5	126.0	-2.0		-33.4	70	4856	19 15 51
19 17 30	J0918+2650	07 23 48	56.0	129.3	-1.9		-31.4	9	4856	19 17 30
19 18 40	---	07 24 58	56.1	129.7	-1.9		-31.2	70	4875	19 17 31
19 18 40	J0923+2815	07 24 58	56.7	126.5	-2.0		-33.2	-21	4875	No stop
19 20 10	---	07 26 28	56.9	127.1	-2.0		-32.9	69	4898	19 18 41
20 06 50	1413+135	08 13 16	10.0	81.2	-6.1		-37.6	2586	4898	20 06 50
20 21 50	---	08 28 18	12.2	84.2	-5.8		-37.9	900	5130	20 06 51
20 31 50	J1310+3220	08 38 20	37.9	84.9	-4.6		-45.0	494	5130	20 31 50
20 34 50	---	08 41 20	38.4	85.5	-4.5		-45.0	180	5176	20 31 51
20 39 50	J0847-0703	08 46 21	29.8	179.3	-0.0		-0.4	98	5176	20 39 50
20 40 50	---	08 47 21	29.8	179.5	-0.0		-0.3	60	5191	20 39 51

Schedule for TORUN (Code Tr) Page 18

EVN 5 GHz and 22 GHz study of 43 compact radio sources

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

--- Wed 4 Mar 2020 Day 64 ---

Start UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
20 40 50	J0840-0648	08 47 21	30.0	181.8	0.1		1.1	-19	5191	No stop
20 42 20	---	08 48 52	30.0	182.2	0.1		1.3	71	5215	20 40 51
20 42 50	J0847-0703	08 49 22	29.8	180.1	0.0		0.1	12	5215	20 42 50
20 43 50	---	08 50 22	29.8	180.4	0.0		0.2	60	5230	20 42 51
20 44 20	J0900-0652	08 50 52	29.9	177.0	-0.2		-1.8	8	5230	20 44 20
20 45 20	---	08 51 52	29.9	177.3	-0.2		-1.6	60	5246	20 44 21
20 46 20	J0840-0648	08 52 52	30.0	183.4	0.2		2.0	33	5246	20 46 20
20 47 20	---	08 53 53	30.0	183.7	0.2		2.2	60	5261	20 46 21
20 47 50	J0847-0703	08 54 23	29.8	181.6	0.1		0.9	12	5261	20 47 50
20 48 50	---	08 55 23	29.8	181.8	0.1		1.1	60	5276	20 47 51
20 49 20	J0900-0652	08 55 53	29.9	178.5	-0.1		-0.9	8	5276	20 49 20
20 50 20	---	08 56 53	29.9	178.8	-0.1		-0.7	60	5292	20 49 21
20 50 50	J0840-0648	08 57 23	29.9	184.7	0.3		2.8	3	5292	20 50 50
20 51 50	---	08 58 23	29.9	185.0	0.3		3.0	60	5307	20 50 51
20 52 20	J0847-0703	08 58 53	29.7	182.8	0.2		1.7	12	5307	20 52 20
20 53 20	---	08 59 53	29.7	183.1	0.2		1.9	60	5323	20 52 21
20 53 50	J0900-0652	09 00 24	30.0	179.8	-0.0		-0.1	8	5323	20 53 50
20 54 50	---	09 01 24	30.0	180.1	0.0		0.0	60	5338	20 53 51
20 55 20	J0840-0648	09 01 54	29.9	186.0	0.3		3.6	3	5338	20 55 20
20 56 20	---	09 02 54	29.8	186.2	0.4		3.8	60	5354	20 55 21
20 56 50	J0847-0703	09 03 24	29.7	184.1	0.2		2.5	12	5354	20 56 50
20 57 50	---	09 04 24	29.7	184.4	0.3		2.7	60	5369	20 56 51
20 58 20	J0900-0652	09 04 54	29.9	181.1	0.1		0.6	8	5369	20 58 20
20 59 20	---	09 05 54	29.9	181.4	0.1		0.8	60	5385	20 58 21
20 59 50	J0840-0648	09 06 25	29.8	187.2	0.4		4.4	3	5385	20 59 50
21 00 50	---	09 07 25	29.8	187.5	0.4		4.5	60	5400	20 59 51
21 01 20	J0847-0703	09 07 55	29.6	185.4	0.3		3.3	12	5400	21 01 20
21 02 20	---	09 08 55	29.6	185.7	0.3		3.4	60	5416	21 01 21
21 02 50	J0900-0652	09 09 25	29.9	182.4	0.1		1.4	8	5416	21 02 50
21 03 50	---	09 10 25	29.9	182.6	0.2		1.6	60	5431	21 02 51

Schedule for TORUN (Code Tr) Page 19

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
21 04 20	J0840-0648	09 10 55	29.7	188.5	0.5		5.1	3	5431	21 04 20
21 05 50	---	09 12 26	29.6	189.0	0.5		5.4	90	5454	21 04 21
21 06 20	J0847-0703	09 12 56	29.6	186.8	0.4		4.1	12	5454	21 06 20
21 07 50	---	09 14 26	29.5	187.3	0.4		4.4	90	5477	21 06 21
21 08 20	J0900-0652	09 14 56	29.9	183.9	0.2		2.4	9	5477	21 08 20
21 09 50	---	09 16 26	29.9	184.4	0.3		2.6	90	5501	21 08 21
21 10 50	J0840-0648	09 17 26	29.5	190.4	0.6		6.3	33	5501	21 10 50
21 12 20	---	09 18 57	29.5	190.8	0.6		6.5	90	5524	21 10 51
21 12 50	J0847-0703	09 19 27	29.4	188.7	0.5		5.2	12	5524	21 12 50
21 14 20	---	09 20 57	29.4	189.1	0.5		5.5	90	5547	21 12 51
21 14 50	J0900-0652	09 21 27	29.8	185.8	0.3		3.5	9	5547	21 14 50
21 16 20	---	09 22 57	29.8	186.2	0.4		3.8	90	5570	21 14 51
21 16 50	J0840-0648	09 23 27	29.3	192.1	0.7		7.3	3	5570	21 16 50
21 18 20	---	09 24 58	29.3	192.5	0.7		7.5	90	5593	21 16 51
21 18 50	J0847-0703	09 25 28	29.3	190.4	0.6		6.3	12	5593	21 18 50
21 20 20	---	09 26 58	29.2	190.8	0.6		6.5	90	5617	21 18 51
21 20 50	J0900-0652	09 27 28	29.7	187.5	0.4		4.5	9	5617	21 20 50
21 22 20	---	09 28 58	29.7	187.9	0.5		4.8	90	5640	21 20 51
21 22 50	J0840-0648	09 29 28	29.1	193.8	0.8		8.3	3	5640	21 22 50
21 24 20	---	09 30 59	29.1	194.2	0.8		8.5	90	5663	21 22 51
21 24 50	J0847-0703	09 31 29	29.1	192.1	0.7		7.3	12	5663	21 24 50
21 26 20	---	09 32 59	29.1	192.5	0.7		7.5	90	5686	21 24 51
21 26 50	J0840-0648	09 33 29	29.0	194.9	0.9		9.0	11	5686	21 26 50
21 28 20	---	09 34 59	28.9	195.3	0.9		9.2	90	5709	21 26 51
21 28 50	J0847-0703	09 35 29	29.0	193.2	0.8		8.0	12	5709	21 28 50
21 30 20	---	09 37 00	28.9	193.6	0.8		8.2	90	5732	21 28 51
21 30 50	J0900-0652	09 37 30	29.5	190.4	0.6		6.2	9	5732	21 30 50
21 32 20	---	09 39 00	29.4	190.8	0.6		6.5	90	5756	21 30 51
21 33 20	J0840-0648	09 40 00	28.7	196.7	1.0		10.0	33	5756	21 33 20
21 34 50	---	09 41 30	28.7	197.1	1.0		10.3	90	5779	21 33 21

Schedule for TORUN (Code Tr) Page 20

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
21 35 20	J0847-0703	09 42 00	28.7	195.1	0.9		9.0	12	5779	21 35 20
21 36 50	---	09 43 31	28.7	195.5	0.9		9.3	90	5802	21 35 21
21 37 20	J0900-0652	09 44 01	29.3	192.2	0.7		7.3	9	5802	21 37 20
21 38 50	---	09 45 31	29.2	192.6	0.7		7.6	90	5825	21 37 21
21 39 20	J0840-0648	09 46 01	28.5	198.4	1.1		11.0	4	5825	21 39 20
21 40 50	---	09 47 31	28.4	198.8	1.1		11.2	90	5848	21 39 21
21 41 20	J0847-0703	09 48 01	28.5	196.7	1.0		10.0	12	5848	21 41 20
21 42 50	---	09 49 32	28.4	197.1	1.0		10.3	90	5872	21 41 21
21 43 20	J0900-0652	09 50 02	29.1	193.9	0.8		8.4	9	5872	21 43 20
21 44 50	---	09 51 32	29.0	194.3	0.8		8.6	90	5895	21 43 21
21 45 20	J0840-0648	09 52 02	28.2	200.1	1.2		12.0	4	5895	21 45 20
21 46 50	---	09 53 32	28.1	200.5	1.2		12.2	90	5918	21 45 21
21 47 20	J0847-0703	09 54 02	28.2	198.4	1.1		11.0	12	5918	21 47 20
21 48 50	---	09 55 33	28.1	198.8	1.1		11.3	90	5941	21 47 21
21 49 20	J0840-0648	09 56 03	27.9	201.2	1.2		12.6	11	5941	21 49 20
21 50 50	---	09 57 33	27.9	201.6	1.3		12.9	90	5964	21 49 21
21 51 20	J0847-0703	09 58 03	28.0	199.5	1.2		11.7	12	5964	21 51 20
21 52 50	---	09 59 33	27.9	199.9	1.2		11.9	90	5988	21 51 21
21 53 20	J0900-0652	10 00 03	28.7	196.7	1.0		10.0	9	5988	21 53 20
21 54 50	---	10 01 34	28.6	197.1	1.0		10.3	90	6011	21 53 21
21 55 50	J0840-0648	10 02 34	27.6	202.9	1.4		13.6	34	6011	21 55 50
21 57 20	---	10 04 04	27.5	203.4	1.4		13.9	90	6034	21 55 51
21 57 50	J0847-0703	10 04 34	27.7	201.3	1.3		12.7	12	6034	21 57 50
21 59 20	---	10 06 04	27.6	201.7	1.3		12.9	90	6057	21 57 51
21 59 50	J0900-0652	10 06 34	28.4	198.5	1.1		11.1	9	6057	21 59 50
22 01 20	---	10 08 05	28.3	198.9	1.1		11.3	90	6080	21 59 51
22 01 50	J0840-0648	10 08 35	27.2	204.6	1.5		14.6	4	6080	22 01 50
22 03 20	---	10 10 05	27.1	205.0	1.5		14.8	90	6103	22 01 51
22 03 50	J0847-0703	10 10 35	27.3	202.9	1.4		13.6	12	6103	22 03 50
22 05 20	---	10 12 05	27.2	203.3	1.4		13.9	90	6127	22 03 51

Schedule for TORUN (Code Tr) Page 21

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
22 05 50	J0900-0652	10 12 35	28.1	200.2	1.2		12.0	9	6127	22 05 50
22 07 20	---	10 14 06	28.0	200.6	1.2		12.3	90	6150	22 05 51
22 07 50	J0840-0648	10 14 36	26.8	206.2	1.6		15.5	4	6150	22 07 50
22 09 20	---	10 16 06	26.7	206.6	1.6		15.7	90	6173	22 07 51
22 09 50	J0847-0703	10 16 36	27.0	204.6	1.5		14.6	12	6173	22 09 50
22 11 20	---	10 18 06	26.9	205.0	1.5		14.8	90	6196	22 09 51
22 11 50	J0840-0648	10 18 36	26.6	207.3	1.6		16.1	12	6196	22 11 50
22 13 20	---	10 20 07	26.5	207.7	1.7		16.3	90	6219	22 11 51
22 13 50	J0847-0703	10 20 37	26.7	205.6	1.5		15.2	12	6219	22 13 50
22 15 20	---	10 22 07	26.6	206.0	1.6		15.4	90	6243	22 13 51
22 15 50	J0900-0652	10 22 37	27.5	202.9	1.4		13.6	9	6243	22 15 50
22 17 20	---	10 24 07	27.4	203.3	1.4		13.9	90	6266	22 15 51
22 18 20	J0840-0648	10 25 07	26.1	209.0	1.7		17.1	34	6266	22 18 20
22 19 50	---	10 26 38	26.0	209.4	1.8		17.3	90	6289	22 18 21
22 20 20	J0847-0703	10 27 08	26.3	207.4	1.6		16.2	12	6289	22 20 20
22 21 50	---	10 28 38	26.2	207.8	1.7		16.4	90	6312	22 20 21
22 22 20	J0900-0652	10 29 08	27.1	204.7	1.5		14.6	9	6312	22 22 20
22 23 50	---	10 30 38	27.0	205.1	1.5		14.9	90	6335	22 22 21
22 24 20	J0840-0648	10 31 08	25.6	210.6	1.8		17.9	4	6335	22 24 20
22 25 50	---	10 32 39	25.5	211.0	1.9		18.1	90	6359	22 24 21
22 26 20	J0847-0703	10 33 09	25.9	209.0	1.7		17.0	12	6359	22 26 20
22 27 50	---	10 34 39	25.7	209.4	1.8		17.3	90	6382	22 26 21
22 28 20	J0900-0652	10 35 09	26.7	206.3	1.6		15.5	9	6382	22 28 20
22 29 50	---	10 36 39	26.6	206.7	1.6		15.8	90	6405	22 28 21
22 30 20	J0840-0648	10 37 09	25.2	212.1	1.9		18.8	4	6405	22 30 20
22 31 50	---	10 38 40	25.1	212.5	2.0		19.0	90	6428	22 30 21
22 32 20	J0847-0703	10 39 10	25.4	210.5	1.8		17.9	12	6428	22 32 20
22 33 50	---	10 40 40	25.3	210.9	1.9		18.1	90	6451	22 32 21
22 34 20	J0840-0648	10 41 10	24.9	213.2	2.0		19.3	12	6451	22 34 20
22 35 50	---	10 42 40	24.7	213.6	2.0		19.5	90	6474	22 34 21

Schedule for TORUN (Code Tr) Page 22

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
22 36 20	J0847-0703	10 43 10	25.1	211.6	1.9		18.5	12	6474	22 36 20
22 37 50	---	10 44 41	25.0	212.0	1.9		18.7	90	6498	22 36 21
22 38 20	J0900-0652	10 45 11	26.0	209.0	1.7		17.0	9	6498	22 38 20
22 39 50	---	10 46 41	25.9	209.4	1.8		17.3	90	6521	22 38 21
22 40 50	J0840-0648	10 47 41	24.3	214.9	2.1		20.2	34	6521	22 40 50
22 42 20	---	10 49 11	24.2	215.2	2.1		20.4	90	6544	22 40 51
22 42 50	J0847-0703	10 49 41	24.6	213.3	2.0		19.4	12	6544	22 42 50
22 44 20	---	10 51 12	24.4	213.7	2.0		19.6	90	6567	22 42 51
22 44 50	J0900-0652	10 51 42	25.6	210.7	1.8		18.0	9	6567	22 44 50
22 46 20	---	10 53 12	25.4	211.1	1.9		18.2	90	6590	22 44 51
22 46 50	J0840-0648	10 53 42	23.8	216.4	2.2		21.0	4	6590	22 46 50
22 48 20	---	10 55 12	23.6	216.8	2.2		21.2	90	6614	22 46 51
22 48 50	J0847-0703	10 55 42	24.1	214.8	2.1		20.2	12	6614	22 48 50
22 50 20	---	10 57 13	23.9	215.2	2.1		20.4	90	6637	22 48 51
22 50 50	J0900-0652	10 57 43	25.1	212.2	1.9		18.8	9	6637	22 50 50
22 52 20	---	10 59 13	25.0	212.6	2.0		19.0	90	6660	22 50 51
22 52 50	J0840-0648	10 59 43	23.2	217.9	2.3		21.8	5	6660	22 52 50
22 54 20	---	11 01 13	23.1	218.3	2.3		22.0	90	6683	22 52 51
22 54 50	J0847-0703	11 01 43	23.5	216.3	2.2		21.0	12	6683	22 54 50
22 56 20	---	11 03 14	23.4	216.7	2.2		21.2	90	6706	22 54 51
22 56 50	J0840-0648	11 03 44	22.9	218.9	2.4		22.3	12	6706	22 56 50
22 58 20	---	11 05 14	22.7	219.3	2.4		22.5	90	6730	22 56 51
22 58 50	J0847-0703	11 05 44	23.2	217.3	2.3		21.5	12	6730	22 58 50
23 00 20	---	11 07 14	23.0	217.7	2.3		21.7	90	6753	22 58 51
23 00 50	J0900-0652	11 07 44	24.2	214.8	2.1		20.2	10	6753	23 00 50
23 02 20	---	11 09 15	24.1	215.2	2.1		20.4	90	6776	23 00 51
23 03 20	J0840-0648	11 10 15	22.2	220.5	2.5		23.1	35	6776	23 03 20
23 04 50	---	11 11 45	22.1	220.9	2.5		23.3	90	6799	23 03 21
23 05 20	J0847-0703	11 12 15	22.6	219.0	2.4		22.4	12	6799	23 05 20
23 06 50	---	11 13 45	22.4	219.3	2.4		22.6	90	6822	23 05 21

Schedule for TORUN (Code Tr) Page 23

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
23 07 20	J0900-0652	11 14 16	23.7	216.5	2.2		21.1	10	6822	23 07 20
23 08 50	---	11 15 46	23.5	216.9	2.2		21.3	90	6845	23 07 21
23 09 20	J0840-0648	11 16 16	21.6	222.0	2.6		23.9	5	6845	23 09 20
23 10 50	---	11 17 46	21.5	222.4	2.6		24.1	90	6869	23 09 21
23 11 20	J0847-0703	11 18 16	22.0	220.5	2.5		23.1	12	6869	23 11 20
23 12 50	---	11 19 46	21.8	220.8	2.5		23.3	90	6892	23 11 21
23 13 20	J0900-0652	11 20 16	23.1	218.0	2.3		21.9	10	6892	23 13 20
23 14 50	---	11 21 47	23.0	218.4	2.3		22.1	90	6915	23 13 21
23 15 20	J0840-0648	11 22 17	21.0	223.5	2.7		24.6	5	6915	23 15 20
23 16 50	---	11 23 47	20.9	223.8	2.7		24.8	90	6938	23 15 21
23 17 20	J0847-0703	11 24 17	21.4	221.9	2.6		23.9	12	6938	23 17 20
23 18 50	---	11 25 47	21.2	222.3	2.6		24.0	90	6961	23 17 21
23 19 20	J0900-0652	11 26 17	22.6	219.5	2.4		22.6	10	6961	23 19 20
23 20 50	---	11 27 48	22.4	219.9	2.4		22.8	90	6985	23 19 21
23 21 20	J0840-0648	11 28 18	20.4	224.9	2.8		25.3	5	6985	23 21 20
23 22 50	---	11 29 48	20.2	225.3	2.8		25.4	90	7008	23 21 21
23 23 20	J0847-0703	11 30 18	20.8	223.4	2.7		24.6	13	7008	23 23 20
23 24 50	---	11 31 48	20.6	223.8	2.7		24.7	90	7031	23 23 21
23 25 20	J0900-0652	11 32 18	22.0	221.0	2.5		23.4	10	7031	23 25 20
23 26 50	---	11 33 49	21.8	221.4	2.5		23.6	90	7054	23 25 21
23 37 50	J0918+2650	11 44 51	52.4	240.0	2.4		35.6	527	7054	23 37 50
23 38 50	---	11 45 51	52.3	240.3	2.4		35.7	60	7070	23 37 51
23 39 20	J0923+2815	11 46 21	54.0	240.2	2.4		36.2	10	7070	23 39 20
23 40 20	---	11 47 21	53.9	240.5	2.4		36.4	60	7085	23 39 21
23 40 50	J0918+2650	11 47 51	52.0	240.8	2.5		36.0	9	7085	23 40 50
23 41 50	---	11 48 51	51.9	241.1	2.5		36.1	60	7101	23 40 51
23 42 20	J0923+2815	11 49 21	53.6	241.1	2.4		36.6	10	7101	23 42 20
23 43 20	---	11 50 21	53.5	241.4	2.4		36.7	60	7116	23 42 21
23 43 50	J0918+2650	11 50 51	51.6	241.7	2.5		36.3	9	7116	23 43 50
23 44 50	---	11 51 52	51.5	242.0	2.5		36.4	60	7131	23 43 51

Schedule for TORUN (Code Tr) Page 24

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 4 Mar 2020 Day 64 ---										
23 45 20	J0923+2815	11 52 22	53.2	242.0	2.5		37.0	10	7131	23 45 20
23 46 20	---	11 53 22	53.1	242.3	2.5		37.1	60	7147	23 45 21
23 46 50	J0918+2650	11 53 52	51.2	242.6	2.6		36.7	9	7147	23 46 50
23 47 50	---	11 54 52	51.1	242.9	2.6		36.8	60	7162	23 46 51
23 48 20	J0923+2815	11 55 22	52.8	242.9	2.5		37.3	10	7162	23 48 20
23 49 20	---	11 56 22	52.7	243.2	2.5		37.4	60	7178	23 48 21
23 49 50	J0918+2650	11 56 52	50.8	243.4	2.6		37.0	9	7178	23 49 50
23 50 50	---	11 57 53	50.7	243.7	2.6		37.1	60	7193	23 49 51
23 51 20	J0923+2815	11 58 23	52.4	243.8	2.6		37.7	10	7193	23 51 20
23 52 20	---	11 59 23	52.3	244.0	2.6		37.8	60	7209	23 51 21
23 52 50	J0918+2650	11 59 53	50.4	244.3	2.7		37.3	9	7209	23 52 50
23 53 50	---	12 00 53	50.3	244.6	2.7		37.4	60	7224	23 52 51
23 54 20	J0923+2815	12 01 23	52.0	244.6	2.6		38.0	10	7224	23 54 20
23 55 20	---	12 02 23	51.9	244.9	2.6		38.1	60	7240	23 54 21
23 55 50	J0918+2650	12 02 53	50.0	245.1	2.7		37.6	9	7240	23 55 50
23 56 50	---	12 03 54	49.9	245.4	2.7		37.7	60	7255	23 55 51
23 57 20	J0923+2815	12 04 24	51.6	245.5	2.7		38.3	10	7255	23 57 20
23 58 20	---	12 05 24	51.5	245.7	2.7		38.4	60	7271	23 57 21
23 58 50	J0918+2650	12 05 54	49.6	245.9	2.8		37.9	9	7271	23 58 50
23 59 50	---	12 06 54	49.5	246.2	2.8		38.0	60	7286	23 58 51
--- Thu 5 Mar 2020 Day 65 ---										
00 00 20	J0923+2815	12 07 24	51.2	246.3	2.7		38.6	10	7286	00 00 20
00 01 20	---	12 08 24	51.1	246.6	2.7		38.7	60	7301	00 00 21
00 01 50	J0918+2650	12 08 54	49.2	246.8	2.8		38.2	9	7301	00 01 50
00 02 50	---	12 09 55	49.0	247.0	2.8		38.3	60	7317	00 01 51
00 03 20	J0923+2815	12 10 25	50.8	247.1	2.8		38.9	10	7317	00 03 20
00 04 20	---	12 11 25	50.7	247.4	2.8		39.0	60	7332	00 03 21
00 04 50	J0918+2650	12 11 55	48.8	247.6	2.9		38.4	9	7332	00 04 50
00 05 50	---	12 12 55	48.6	247.8	2.9		38.5	60	7348	00 04 51

Schedule for TORUN (Code Tr) Page 25

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 5 Mar 2020 Day 65 ---										
00 06 20	J0923+2815	12 13 25	50.4	247.9	2.8		39.1	10	7348	00 06 20
00 07 20	---	12 14 25	50.2	248.2	2.8		39.2	60	7363	00 06 21
00 07 50	J0918+2650	12 14 55	48.3	248.4	2.9		38.7	9	7363	00 07 50
00 08 50	---	12 15 56	48.2	248.6	2.9		38.8	60	7379	00 07 51
00 09 20	J0923+2815	12 16 26	50.0	248.7	2.9		39.4	10	7379	00 09 20
00 10 20	---	12 17 26	49.8	249.0	2.9		39.5	60	7394	00 09 21
00 10 50	J0918+2650	12 17 56	47.9	249.1	3.0		38.9	9	7394	00 10 50
00 11 50	---	12 18 56	47.8	249.4	3.0		39.0	60	7410	00 10 51
00 12 20	J0923+2815	12 19 26	49.5	249.5	2.9		39.7	10	7410	00 12 20
00 13 20	---	12 20 26	49.4	249.8	2.9		39.7	60	7425	00 12 21
00 13 50	J0918+2650	12 20 56	47.5	249.9	3.0		39.2	9	7425	00 13 50
00 14 50	---	12 21 57	47.4	250.2	3.0		39.2	60	7441	00 13 51
00 15 20	J0923+2815	12 22 27	49.1	250.3	3.0		39.9	10	7441	00 15 20
00 16 20	---	12 23 27	49.0	250.6	3.0		40.0	60	7456	00 15 21
00 16 50	J0918+2650	12 23 57	47.1	250.7	3.1		39.4	9	7456	00 16 50
00 17 50	---	12 24 57	46.9	250.9	3.1		39.5	60	7472	00 16 51
00 18 20	J0923+2815	12 25 27	48.7	251.1	3.0		40.1	10	7472	00 18 20
00 19 20	---	12 26 27	48.5	251.3	3.0		40.2	60	7487	00 18 21
00 19 50	J0918+2650	12 26 57	46.6	251.4	3.1		39.6	9	7487	00 19 50
00 20 50	---	12 27 58	46.5	251.7	3.1		39.7	60	7502	00 19 51
00 21 20	J0923+2815	12 28 28	48.3	251.8	3.1		40.3	10	7502	00 21 20
00 22 20	---	12 29 28	48.1	252.1	3.1		40.4	60	7518	00 21 21
00 22 50	J0918+2650	12 29 58	46.2	252.2	3.2		39.8	9	7518	00 22 50
00 23 50	---	12 30 58	46.1	252.4	3.2		39.9	60	7533	00 22 51
00 24 20	J0923+2815	12 31 28	47.8	252.6	3.1		40.5	10	7533	00 24 20
00 25 20	---	12 32 28	47.7	252.8	3.1		40.6	60	7549	00 24 21
00 25 50	J0918+2650	12 32 58	45.8	252.9	3.2		40.0	9	7549	00 25 50
00 26 50	---	12 33 59	45.6	253.2	3.2		40.1	60	7564	00 25 51
00 27 20	J0923+2815	12 34 29	47.4	253.3	3.2		40.7	10	7564	00 27 20
00 28 20	---	12 35 29	47.3	253.6	3.2		40.8	60	7580	00 27 21

Schedule for TORUN (Code Tr) Page 26

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 5 Mar 2020 Day 65 ---										
00 28 50	J0918+2650	12 35 59	45.4	253.7	3.3		40.2	9	7580	00 28 50
00 29 50	---	12 36 59	45.2	253.9	3.3		40.3	60	7595	00 28 51
00 30 20	J0923+2815	12 37 29	47.0	254.1	3.2		40.9	10	7595	00 30 20
00 31 20	---	12 38 29	46.8	254.3	3.2		41.0	60	7611	00 30 21
00 31 50	J0918+2650	12 38 59	44.9	254.4	3.3		40.4	9	7611	00 31 50
00 32 50	---	12 40 00	44.8	254.6	3.3		40.4	60	7626	00 31 51
00 33 20	J0923+2815	12 40 30	46.5	254.8	3.3		41.1	10	7626	00 33 20
00 34 20	---	12 41 30	46.4	255.1	3.3		41.2	60	7642	00 33 21
00 34 50	J0918+2650	12 42 00	44.5	255.1	3.4		40.5	9	7642	00 34 50
00 35 50	---	12 43 00	44.3	255.3	3.4		40.6	60	7657	00 34 51
00 36 20	J0923+2815	12 43 30	46.1	255.5	3.3		41.3	10	7657	00 36 20
00 37 20	---	12 44 30	45.9	255.8	3.3		41.3	60	7672	00 36 21
00 40 20	J1218-2159	12 47 31	14.6	186.6	0.5		4.3	26	7672	00 40 20
00 41 50	---	12 49 01	14.6	186.9	0.5		4.5	90	7696	00 40 21
00 42 20	J1209-2032	12 49 31	15.8	189.5	0.7		6.1	11	7696	00 42 20
00 43 20	---	12 50 31	15.7	189.8	0.7		6.3	60	7711	00 42 21
00 43 50	J1218-2159	12 51 01	14.5	187.4	0.5		4.8	11	7711	00 43 50
00 44 50	---	12 52 02	14.5	187.7	0.5		5.0	60	7727	00 43 51
00 45 20	J1209-2032	12 52 32	15.7	190.3	0.7		6.6	11	7727	00 45 20
00 46 20	---	12 53 32	15.7	190.5	0.7		6.7	60	7742	00 45 21
00 46 50	J1218-2159	12 54 02	14.5	188.1	0.6		5.3	11	7742	00 46 50
00 47 50	---	12 55 02	14.4	188.4	0.6		5.4	60	7758	00 46 51
00 48 20	J1209-2032	12 55 32	15.6	191.0	0.8		7.0	11	7758	00 48 20
00 49 20	---	12 56 32	15.6	191.2	0.8		7.2	60	7773	00 48 21
00 49 50	J1218-2159	12 57 02	14.4	188.8	0.6		5.7	11	7773	00 49 50
00 50 50	---	12 58 03	14.4	189.1	0.6		5.9	60	7788	00 49 51
00 51 20	J1209-2032	12 58 33	15.5	191.7	0.8		7.5	11	7788	00 51 20
00 52 20	---	12 59 33	15.5	192.0	0.8		7.6	60	7804	00 51 21
00 52 50	J1218-2159	13 00 03	14.3	189.6	0.7		6.2	11	7804	00 52 50
00 53 50	---	13 01 03	14.3	189.8	0.7		6.3	60	7819	00 52 51

Schedule for TORUN (Code Tr) Page 27

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 5 Mar 2020 Day 65 ---										
00 54 20	J1209-2032	13 01 33	15.4	192.4	0.9		7.9	11	7819	00 54 20
00 55 20	---	13 02 33	15.4	192.7	0.9		8.1	60	7835	00 54 21
00 55 50	J1218-2159	13 03 03	14.2	190.3	0.7		6.6	11	7835	00 55 50
00 57 20	---	13 04 34	14.2	190.6	0.7		6.9	90	7858	00 55 51
00 57 50	J1209-2032	13 05 04	15.3	193.3	0.9		8.5	11	7858	00 57 50
00 59 20	---	13 06 34	15.2	193.6	0.9		8.7	90	7881	00 57 51
00 59 50	J1218-2159	13 07 04	14.1	191.2	0.8		7.2	11	7881	00 59 50
01 01 20	---	13 08 34	14.1	191.6	0.8		7.5	90	7904	00 59 51
01 01 50	J1209-2032	13 09 04	15.2	194.2	1.0		9.1	11	7904	01 01 50
01 03 20	---	13 10 35	15.1	194.6	1.0		9.3	90	7928	01 01 51
01 03 50	J1218-2159	13 11 05	14.0	192.2	0.9		7.9	11	7928	01 03 50
01 05 20	---	13 12 35	14.0	192.5	0.9		8.1	90	7951	01 03 51
01 05 50	J1209-2032	13 13 05	15.0	195.2	1.0		9.7	11	7951	01 05 50
01 07 20	---	13 14 35	14.9	195.6	1.1		9.9	90	7974	01 05 51
01 07 50	J1218-2159	13 15 05	13.9	193.1	0.9		8.5	11	7974	01 07 50
01 09 20	---	13 16 36	13.8	193.5	0.9		8.7	90	7997	01 07 51
01 09 50	J1209-2032	13 17 06	14.8	196.2	1.1		10.3	11	7997	01 09 50
01 11 20	---	13 18 36	14.8	196.5	1.1		10.5	90	8020	01 09 51
01 11 50	J1218-2159	13 19 06	13.7	194.1	1.0		9.1	11	8020	01 11 50
01 13 20	---	13 20 36	13.7	194.4	1.0		9.3	90	8043	01 11 51
01 13 50	J1209-2032	13 21 06	14.7	197.1	1.2		10.9	11	8043	01 13 50
01 15 20	---	13 22 37	14.6	197.5	1.2		11.1	90	8067	01 13 51
01 15 50	J1218-2159	13 23 07	13.6	195.0	1.1		9.7	11	8067	01 15 50
01 17 20	---	13 24 37	13.5	195.4	1.1		9.9	90	8090	01 15 51
01 17 50	J1209-2032	13 25 07	14.5	198.1	1.2		11.5	10	8090	01 17 50
01 19 20	---	13 26 37	14.4	198.4	1.3		11.7	90	8113	01 17 51
01 19 50	J1218-2159	13 27 07	13.4	196.0	1.1		10.3	11	8113	01 19 50
01 21 20	---	13 28 38	13.4	196.3	1.1		10.5	90	8136	01 19 51
01 21 50	J1209-2032	13 29 08	14.3	199.0	1.3		12.1	10	8136	01 21 50
01 23 20	---	13 30 38	14.2	199.4	1.3		12.3	90	8159	01 21 51

Schedule for TORUN (Code Tr) Page 28

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 5 Mar 2020 Day 65 ---										
01 23 50	J1218-2159	13 31 08	13.2	196.9	1.2		10.9	11	8159	01 23 50
01 25 20	---	13 32 38	13.2	197.2	1.2		11.1	90	8183	01 23 51
01 25 50	J1209-2032	13 33 08	14.1	200.0	1.4		12.6	10	8183	01 25 50
01 27 20	---	13 34 39	14.0	200.3	1.4		12.9	90	8206	01 25 51
01 27 50	J1218-2159	13 35 09	13.1	197.8	1.3		11.4	11	8206	01 27 50
01 29 20	---	13 36 39	13.0	198.2	1.3		11.7	90	8229	01 27 51
01 29 50	J1209-2032	13 37 09	13.9	200.9	1.4		13.2	10	8229	01 29 50
01 31 20	---	13 38 39	13.8	201.2	1.5		13.4	90	8252	01 29 51
01 31 50	J1218-2159	13 39 09	12.9	198.8	1.3		12.0	11	8252	01 31 50
01 33 20	---	13 40 39	12.8	199.1	1.3		12.3	90	8275	01 31 51
01 33 50	J1209-2032	13 41 10	13.7	201.8	1.5		13.8	10	8275	01 33 50
01 35 20	---	13 42 40	13.6	202.2	1.5		14.0	90	8299	01 33 51
01 35 50	J1218-2159	13 43 10	12.7	199.7	1.4		12.6	11	8299	01 35 50
01 37 20	---	13 44 40	12.6	200.0	1.4		12.8	90	8322	01 35 51
01 37 50	J1209-2032	13 45 10	13.4	202.8	1.6		14.4	10	8322	01 37 50
01 39 20	---	13 46 40	13.3	203.1	1.6		14.6	90	8345	01 37 51
01 39 50	J1218-2159	13 47 11	12.5	200.6	1.5		13.2	11	8345	01 39 50
01 41 20	---	13 48 41	12.4	201.0	1.5		13.4	90	8368	01 39 51
01 41 50	J1209-2032	13 49 11	13.2	203.7	1.6		14.9	10	8368	01 41 50
01 43 20	---	13 50 41	13.1	204.0	1.7		15.2	90	8391	01 41 51
01 43 50	J1218-2159	13 51 11	12.3	201.5	1.5		13.8	11	8391	01 43 50
01 45 20	---	13 52 41	12.2	201.9	1.5		14.0	90	8414	01 43 51
01 45 50	J1209-2032	13 53 12	13.0	204.6	1.7		15.5	10	8414	01 45 50
01 47 20	---	13 54 42	12.9	205.0	1.7		15.7	90	8438	01 45 51
01 47 50	J1218-2159	13 55 12	12.0	202.5	1.6		14.3	11	8438	01 47 50
01 49 20	---	13 56 42	11.9	202.8	1.6		14.6	90	8461	01 47 51
01 49 50	J1209-2032	13 57 12	12.7	205.6	1.8		16.1	10	8461	01 49 50
01 51 20	---	13 58 42	12.6	205.9	1.8		16.3	90	8484	01 49 51
01 51 50	J1218-2159	13 59 13	11.8	203.4	1.7		14.9	11	8484	01 51 50
01 53 20	---	14 00 43	11.7	203.7	1.7		15.1	90	8507	01 51 51

Schedule for TORUN (Code Tr) Page 29

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 5 Mar 2020 Day 65 ---										
01 53 50	J1209-2032	14 01 13	12.4	206.5	1.8		16.6	10	8507	01 53 50
01 55 20	---	14 02 43	12.3	206.8	1.9		16.8	90	8530	01 53 51
01 55 50	J1218-2159	14 03 13	11.6	204.3	1.7		15.5	11	8530	01 55 50
01 57 20	---	14 04 43	11.5	204.6	1.7		15.7	90	8554	01 55 51
01 57 50	J1209-2032	14 05 14	12.2	207.4	1.9		17.2	10	8554	01 57 50
01 59 20	---	14 06 44	12.1	207.7	1.9		17.4	90	8577	01 57 51
01 59 50	J1218-2159	14 07 14	11.3	205.2	1.8		16.0	11	8577	01 59 50
02 01 20	---	14 08 44	11.2	205.6	1.8		16.2	90	8600	01 59 51
02 01 50	J1209-2032	14 09 14	11.9	208.3	2.0		17.7	10	8600	02 01 50
02 03 20	---	14 10 44	11.8	208.7	2.0		17.9	90	8623	02 01 51
02 03 50	J1218-2159	14 11 14	11.0	206.1	1.9		16.6	11	8623	02 03 50
02 05 20	---	14 12 45	10.9	206.5	1.9		16.8	90	8646	02 03 51
02 05 50	J1209-2032	14 13 15	11.6	209.2	2.0		18.3	10	8646	02 05 50
02 07 20	---	14 14 45	11.5	209.6	2.1		18.5	90	8670	02 05 51
02 07 50	J1218-2159	14 15 15	10.8	207.0	1.9		17.1	11	8670	02 07 50
02 09 20	---	14 16 45	10.7	207.4	1.9		17.3	90	8693	02 07 51
02 09 50	J1209-2032	14 17 15	11.3	210.1	2.1		18.8	10	8693	02 09 50
02 11 20	---	14 18 46	11.2	210.5	2.1		19.0	90	8716	02 09 51
02 11 50	J1218-2159	14 19 16	10.5	207.9	2.0		17.7	11	8716	02 11 50
02 13 20	---	14 20 46	10.4	208.3	2.0		17.9	90	8739	02 11 51
02 13 50	J1209-2032	14 21 16	11.0	211.0	2.2		19.3	10	8739	02 13 50
02 15 20	---	14 22 46	10.9	211.4	2.2		19.5	90	8762	02 13 51
02 15 50	J1218-2159	14 23 16	10.2	208.8	2.1		18.2	11	8762	02 15 50
02 17 20	---	14 24 47	10.1	209.2	2.1		18.4	90	8785	02 15 51
02 17 50	J1209-2032	14 25 17	10.7	211.9	2.2		19.8	10	8785	02 17 50
02 19 20	---	14 26 47	10.5	212.3	2.3		20.0	90	8809	02 17 51
02 19 50	J1218-2159	14 27 17	9.9	209.7	2.1		18.7	11	8809	02 19 50
02 21 20	---	14 28 47	9.8	210.1	2.1		18.9	90	8832	02 19 51
02 21 50	J1209-2032	14 29 17	10.3	212.8	2.3		20.4	10	8832	02 21 50
02 23 20	---	14 30 48	10.2	213.2	2.3		20.6	90	8855	02 21 51

Schedule for TORUN (Code Tr) Page 30

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 5 Mar 2020 Day 65 ---										
02 23 50	J1218-2159	14 31 18	9.6	210.6	2.2		19.3	11	8855	02 23 50
02 25 20	---	14 32 48	9.5	211.0	2.2		19.5	90	8878	02 23 51
02 25 50	J1209-2032	14 33 18	10.0	213.7	2.4		20.9	10	8878	02 25 50
02 27 20	---	14 34 48	9.9	214.1	2.4		21.1	90	8901	02 25 51
02 27 50	J1218-2159	14 35 18	9.3	211.5	2.3		19.8	11	8901	02 27 50
02 29 20	---	14 36 49	9.2	211.8	2.3		20.0	90	8925	02 27 51
02 29 50	J1209-2032	14 37 19	9.7	214.6	2.5		21.4	10	8925	02 29 50
02 31 20	---	14 38 49	9.5	214.9	2.5		21.6	90	8948	02 29 51
02 31 50	J1218-2159	14 39 19	9.0	212.4	2.3		20.3	11	8948	02 31 50
02 33 20	---	14 40 49	8.9	212.7	2.3		20.5	90	8971	02 31 51
02 33 50	J1209-2032	14 41 19	9.3	215.5	2.5		21.9	10	8971	02 33 50
02 35 20	---	14 42 50	9.2	215.8	2.5		22.1	90	8994	02 33 51
02 45 20	J1343-1747	14 52 51	17.5	197.0	1.1		10.6	543	8994	02 45 20
02 46 20	---	14 53 51	17.4	197.2	1.2		10.8	60	9010	02 45 21
02 46 20	J1344-1739	14 53 51	17.6	197.2	1.1		10.7	-10	9010	No stop
02 47 50	---	14 55 22	17.5	197.5	1.2		10.9	80	9033	02 46 21
02 48 20	J1343-1747	14 55 52	17.4	197.7	1.2		11.1	20	9033	02 48 20
02 49 50	---	14 57 22	17.3	198.1	1.2		11.3	90	9056	02 48 21
02 50 20	J1344-1739	14 57 52	17.4	198.1	1.2		11.3	20	9056	02 50 20
02 51 50	---	14 59 22	17.4	198.5	1.2		11.5	90	9079	02 50 21
02 52 20	J1343-1747	14 59 52	17.2	198.7	1.3		11.7	20	9079	02 52 20
02 53 50	---	15 01 23	17.1	199.1	1.3		11.9	90	9102	02 52 21
02 54 20	J1344-1739	15 01 53	17.2	199.1	1.3		11.9	20	9102	02 54 20
02 55 50	---	15 03 23	17.2	199.5	1.3		12.1	90	9126	02 54 21
02 56 20	J1343-1747	15 03 53	17.0	199.7	1.3		12.3	20	9126	02 56 20
02 57 50	---	15 05 23	16.9	200.1	1.3		12.5	90	9149	02 56 21
02 58 20	J1344-1739	15 05 53	17.0	200.1	1.3		12.5	20	9149	02 58 20
02 59 50	---	15 07 24	17.0	200.5	1.4		12.7	90	9172	02 58 21
03 00 20	J1343-1747	15 07 54	16.8	200.7	1.4		12.9	20	9172	03 00 20
03 01 50	---	15 09 24	16.7	201.0	1.4		13.1	90	9195	03 00 21

Schedule for TORUN (Code Tr) Page 31

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 5 Mar 2020 Day 65 ---										
03 02 20	J1344-1739	15 09 54	16.8	201.1	1.4		13.1	20	9195	03 02 20
03 03 50	---	15 11 24	16.7	201.4	1.4		13.3	90	9218	03 02 21
03 04 20	J1343-1747	15 11 54	16.5	201.6	1.5		13.5	20	9218	03 04 20
03 05 50	---	15 13 25	16.5	202.0	1.5		13.7	90	9242	03 04 21
03 06 20	J1344-1739	15 13 55	16.6	202.0	1.5		13.7	20	9242	03 06 20
03 07 50	---	15 15 25	16.5	202.4	1.5		13.9	90	9265	03 06 21
03 08 20	J1343-1747	15 15 55	16.3	202.6	1.5		14.0	20	9265	03 08 20
03 09 50	---	15 17 25	16.2	203.0	1.5		14.2	90	9288	03 08 21
03 10 20	J1344-1739	15 17 55	16.4	203.0	1.5		14.3	20	9288	03 10 20
03 11 50	---	15 19 26	16.3	203.4	1.6		14.5	90	9311	03 10 21
03 12 20	J1343-1747	15 19 56	16.1	203.6	1.6		14.6	20	9311	03 12 20
03 13 50	---	15 21 26	16.0	203.9	1.6		14.8	90	9334	03 12 21
03 14 20	J1344-1739	15 21 56	16.1	204.0	1.6		14.8	20	9334	03 14 20
03 15 50	---	15 23 26	16.0	204.3	1.6		15.1	90	9357	03 14 21
03 16 20	J1343-1747	15 23 56	15.8	204.5	1.7		15.2	20	9357	03 16 20
03 17 50	---	15 25 27	15.7	204.9	1.7		15.4	90	9381	03 16 21
03 18 20	J1344-1739	15 25 57	15.9	204.9	1.7		15.4	20	9381	03 18 20
03 19 50	---	15 27 27	15.8	205.3	1.7		15.6	90	9404	03 18 21
03 20 20	J1343-1747	15 27 57	15.6	205.5	1.7		15.7	20	9404	03 20 20
03 21 50	---	15 29 27	15.5	205.8	1.7		16.0	90	9427	03 20 21
03 22 20	J1344-1739	15 29 57	15.6	205.9	1.7		16.0	20	9427	03 22 20
03 23 50	---	15 31 28	15.5	206.2	1.8		16.2	90	9450	03 22 21
03 24 20	J1343-1747	15 31 58	15.3	206.4	1.8		16.3	20	9450	03 24 20
03 25 50	---	15 33 28	15.2	206.8	1.8		16.5	90	9473	03 24 21
03 26 20	J1344-1739	15 33 58	15.4	206.8	1.8		16.5	20	9473	03 26 20
03 27 50	---	15 35 28	15.3	207.2	1.8		16.7	90	9497	03 26 21
03 28 20	J1343-1747	15 35 58	15.0	207.4	1.9		16.9	20	9497	03 28 20
03 29 50	---	15 37 29	14.9	207.7	1.9		17.1	90	9520	03 28 21
03 30 20	J1344-1739	15 37 59	15.1	207.8	1.9		17.1	20	9520	03 30 20
03 31 50	---	15 39 29	15.0	208.1	1.9		17.3	90	9543	03 30 21

Schedule for TORUN (Code Tr) Page 32

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 5 Mar 2020 Day 65 ---										
03 32 20	J1343-1747	15 39 59	14.8	208.3	1.9		17.4	20	9543	03 32 20
03 33 50	---	15 41 29	14.7	208.7	1.9		17.6	90	9566	03 32 21
03 34 20	J1344-1739	15 41 59	14.8	208.7	1.9		17.6	20	9566	03 34 20
03 35 50	---	15 43 30	14.7	209.1	2.0		17.8	90	9589	03 34 21
03 36 20	J1343-1747	15 44 00	14.5	209.3	2.0		18.0	20	9589	03 36 20
03 37 50	---	15 45 30	14.4	209.6	2.0		18.2	90	9613	03 36 21
03 38 20	J1344-1739	15 46 00	14.5	209.7	2.0		18.2	20	9613	03 38 20
03 39 50	---	15 47 30	14.4	210.0	2.0		18.4	90	9636	03 38 21
03 40 20	J1343-1747	15 48 00	14.2	210.2	2.1		18.5	20	9636	03 40 20
03 41 50	---	15 49 31	14.1	210.5	2.1		18.7	90	9659	03 40 21
03 42 20	J1344-1739	15 50 01	14.2	210.6	2.1		18.7	20	9659	03 42 20
03 43 50	---	15 51 31	14.1	211.0	2.1		18.9	90	9682	03 42 21
03 44 20	J1343-1747	15 52 01	13.9	211.1	2.1		19.0	20	9682	03 44 20
03 45 50	---	15 53 31	13.8	211.5	2.1		19.2	90	9705	03 44 21
03 46 20	J1344-1739	15 54 01	13.9	211.5	2.1		19.3	20	9705	03 46 20
03 47 50	---	15 55 32	13.8	211.9	2.2		19.5	90	9728	03 46 21
03 48 20	J1343-1747	15 56 02	13.6	212.0	2.2		19.6	20	9728	03 48 20
03 49 50	---	15 57 32	13.4	212.4	2.2		19.8	90	9752	03 48 21
03 50 20	J1344-1739	15 58 02	13.6	212.5	2.2		19.8	20	9752	03 50 20
03 51 50	---	15 59 32	13.4	212.8	2.2		20.0	90	9775	03 50 21
03 52 20	J1343-1747	16 00 02	13.2	213.0	2.3		20.1	20	9775	03 52 20
03 53 50	---	16 01 33	13.1	213.3	2.3		20.3	90	9798	03 52 21
03 54 20	J1344-1739	16 02 03	13.2	213.4	2.3		20.3	20	9798	03 54 20
03 55 50	---	16 03 33	13.1	213.7	2.3		20.5	90	9821	03 54 21
03 56 20	J1343-1747	16 04 03	12.9	213.9	2.3		20.6	20	9821	03 56 20
03 57 50	---	16 05 33	12.8	214.2	2.3		20.8	90	9844	03 56 21
03 58 20	J1344-1739	16 06 03	12.9	214.3	2.3		20.8	20	9844	03 58 20
03 59 50	---	16 07 34	12.8	214.6	2.4		21.0	90	9868	03 58 21
04 00 20	J1343-1747	16 08 04	12.6	214.8	2.4		21.1	20	9868	04 00 20
04 01 50	---	16 09 34	12.4	215.1	2.4		21.3	90	9891	04 00 21

Schedule for TORUN (Code Tr) Page 33

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 5 Mar 2020 Day 65 ---										
04 02 20	J1344-1739	16 10 04	12.6	215.2	2.4		21.3	20	9891	04 02 20
04 03 50	---	16 11 34	12.4	215.6	2.4		21.5	90	9914	04 02 21
04 04 20	J1343-1747	16 12 04	12.2	215.7	2.5		21.6	20	9914	04 04 20
04 05 50	---	16 13 35	12.1	216.1	2.5		21.8	90	9937	04 04 21
04 06 20	J1344-1739	16 14 05	12.2	216.1	2.5		21.8	20	9937	04 06 20
04 07 50	---	16 15 35	12.1	216.5	2.5		22.0	90	9960	04 06 21
04 08 20	J1343-1747	16 16 05	11.9	216.6	2.5		22.1	20	9960	04 08 20
04 09 50	---	16 17 35	11.7	217.0	2.5		22.3	90	9984	04 08 21
04 10 20	J1344-1739	16 18 05	11.9	217.0	2.5		22.3	20	9984	04 10 20
04 11 50	---	16 19 36	11.7	217.4	2.6		22.5	90	10007	04 10 21
04 12 20	J1343-1747	16 20 06	11.5	217.5	2.6		22.6	20	10007	04 12 20
04 13 50	---	16 21 36	11.4	217.9	2.6		22.8	90	10030	04 12 21
04 14 20	J1344-1739	16 22 06	11.5	217.9	2.6		22.8	20	10030	04 14 20
04 15 50	---	16 23 36	11.3	218.3	2.6		23.0	90	10053	04 14 21
04 16 20	J1343-1747	16 24 06	11.1	218.4	2.7		23.1	20	10053	04 16 20
04 17 50	---	16 25 37	11.0	218.8	2.7		23.3	90	10076	04 16 21
04 18 20	J1344-1739	16 26 07	11.1	218.8	2.7		23.3	20	10076	04 18 20
04 19 50	---	16 27 37	11.0	219.2	2.7		23.5	90	10099	04 18 21
04 20 20	J1343-1747	16 28 07	10.7	219.3	2.7		23.6	20	10099	04 20 20
04 21 50	---	16 29 37	10.6	219.6	2.7		23.7	90	10123	04 20 21
04 22 20	J1344-1739	16 30 07	10.7	219.7	2.7		23.8	20	10123	04 22 20
04 23 50	---	16 31 37	10.6	220.1	2.8		23.9	90	10146	04 22 21
04 24 20	J1343-1747	16 32 08	10.4	220.2	2.8		24.0	20	10146	04 24 20
04 25 50	---	16 33 38	10.2	220.5	2.8		24.2	90	10169	04 24 21
04 26 20	J1344-1739	16 34 08	10.3	220.6	2.8		24.2	20	10169	04 26 20
04 27 50	---	16 35 38	10.2	220.9	2.8		24.4	90	10192	04 26 21
04 28 20	J1343-1747	16 36 08	10.0	221.1	2.9		24.5	20	10192	04 28 20
04 29 50	---	16 37 38	9.8	221.4	2.9		24.7	90	10215	04 28 21
04 30 20	J1344-1739	16 38 09	9.9	221.5	2.9		24.7	20	10215	04 30 20
04 31 50	---	16 39 39	9.8	221.8	2.9		24.9	90	10239	04 30 21

Schedule for TORUN (Code Tr) Page 34

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 5 Mar 2020 Day 65 ---										
04 32 20	J1343-1747	16 40 09	9.6	222.0	2.9		25.0	20	10239	04 32 20
04 33 50	---	16 41 39	9.4	222.3	2.9		25.1	90	10262	04 32 21
04 34 20	J1344-1739	16 42 09	9.5	222.4	3.0		25.1	20	10262	04 34 20
04 35 50	---	16 43 39	9.4	222.7	3.0		25.3	90	10285	04 34 21
04 36 20	J1343-1747	16 44 10	9.2	222.8	3.0		25.4	20	10285	04 36 20
04 37 50	---	16 45 40	9.0	223.2	3.0		25.6	90	10308	04 36 21
04 38 20	J1344-1739	16 46 10	9.1	223.2	3.0		25.6	20	10308	04 38 20
04 39 50	---	16 47 40	9.0	223.6	3.0		25.8	90	10331	04 38 21
04 40 20	J1343-1747	16 48 10	8.8	223.7	3.1		25.9	20	10331	04 40 20
04 41 50	---	16 49 40	8.6	224.0	3.1		26.0	90	10355	04 40 21
04 42 20	J1344-1739	16 50 11	8.7	224.1	3.1		26.0	20	10355	04 42 20
04 43 50	---	16 51 41	8.6	224.4	3.1		26.2	90	10378	04 42 21
04 44 20	J1343-1747	16 52 11	8.3	224.6	3.1		26.3	20	10378	04 44 20
04 45 50	---	16 53 41	8.2	224.9	3.1		26.4	90	10401	04 44 21
04 46 20	J1344-1739	16 54 11	8.3	225.0	3.2		26.5	20	10401	04 46 20
04 47 50	---	16 55 41	8.1	225.3	3.2		26.6	90	10424	04 46 21
04 48 20	J1343-1747	16 56 12	7.9	225.4	3.2		26.7	20	10424	04 48 20
04 49 50	---	16 57 42	7.7	225.8	3.2		26.9	90	10447	04 48 21
04 50 20	J1344-1739	16 58 12	7.9	225.8	3.2		26.9	20	10447	04 50 20
04 51 50	---	16 59 42	7.7	226.2	3.2		27.1	90	10470	04 50 21
04 52 20	J1343-1747	17 00 12	7.5	226.3	3.3		27.1	20	10470	04 52 20
04 53 50	---	17 01 42	7.3	226.6	3.3		27.3	90	10494	04 52 21
04 54 20	J1344-1739	17 02 13	7.4	226.7	3.3		27.3	20	10494	04 54 20
04 55 50	---	17 03 43	7.3	227.0	3.3		27.5	90	10517	04 54 21
04 56 20	J1343-1747	17 04 13	7.0	227.2	3.3		27.6	20	10517	04 56 20
04 57 50	---	17 05 43	6.9	227.5	3.3		27.7	90	10540	04 56 21
04 58 20	J1344-1739	17 06 13	7.0	227.6	3.4		27.7	20	10540	04 58 20
04 59 50	---	17 07 43	6.8	227.9	3.4		27.9	90	10563	04 58 21
05 00 20	J1343-1747	17 08 13	6.6	228.0	3.4		28.0	20	10563	05 00 20
05 01 50	---	17 09 44	6.4	228.3	3.4		28.1	90	10586	05 00 21

Schedule for TORUN (Code Tr) Page 35

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 5 Mar 2020 Day 65 ---										
05 02 20	J1344-1739	17 10 14	6.5	228.4	3.4		28.1	20	10586	05 02 20
05 03 50	---	17 11 44	6.4	228.7	3.4		28.3	90	10610	05 02 21
05 04 20	J1343-1747	17 12 14	6.1	228.8	3.5		28.4	20	10610	05 04 20
05 05 50	---	17 13 44	6.0	229.2	3.5		28.5	90	10633	05 04 21
05 06 20	J1344-1739	17 14 14	6.1	229.2	3.5		28.5	20	10633	05 06 20
05 07 50	---	17 15 45	5.9	229.6	3.5		28.7	90	10656	05 06 21
05 08 20	J1343-1747	17 16 15	5.7	229.7	3.5		28.8	20	10656	05 08 20
05 09 50	---	17 17 45	5.5	230.0	3.6		28.9	90	10679	05 08 21
05 10 20	J1344-1739	17 18 15	5.6	230.1	3.6		28.9	20	10679	05 10 20
05 11 50	---	17 19 45	5.5	230.4	3.6		29.1	90	10702	05 10 21
05 12 20	J1343-1747	17 20 15	5.2	230.5	3.6		29.2	20	10702	05 12 20
05 13 50	---	17 21 46	5.0	230.8	3.6		29.3	90	10726	05 12 21
05 14 20	J1344-1739	17 22 16	5.2	230.9	3.6		29.3	20	10726	05 14 20
05 15 50	---	17 23 46	5.0	231.2	3.6		29.4	90	10749	05 14 21
05 16 20	J1343-1747	17 24 16	4.8	231.4	3.7		29.5	20	10749	05 16 20
05 17 50	---	17 25 46	4.6	231.7	3.7		29.7	90	10772	05 16 21
05 18 20	J1344-1739	17 26 16	4.7	231.8	3.7		29.7	20	10772	05 18 20
05 19 50	---	17 27 47	4.5	232.1	3.7		29.8	90	10795	05 18 21
05 20 20	J1343-1747	17 28 17	4.3	232.2	3.7		29.9	20	10795	05 20 20
05 21 50	---	17 29 47	4.1	232.5	3.8		30.0	90	10818	05 20 21
05 22 20	J1344-1739	17 30 17	4.2	232.6	3.8		30.1	20	10818	05 22 20
05 23 50	---	17 31 47	4.0	232.9	3.8		30.2	90	10841	05 22 21
05 24 20	J1343-1747	17 32 17	3.8	233.0	3.8		30.3	20	10841	05 24 20
05 25 50	---	17 33 48	3.6	233.3	3.8		30.4	90	10865	05 24 21
05 26 20	J1344-1739	17 34 18	3.7	233.4	3.8		30.4	20	10865	05 26 20
05 27 50	---	17 35 48	3.6	233.7	3.8		30.6	90	10888	05 26 21
05 28 20	J1343-1747	17 36 18	3.3	233.8	3.9		30.6	20	10888	05 28 20
05 29 50	---	17 37 48	3.1	234.2	3.9		30.8	90	10911	05 28 21
05 30 20	J1344-1739	17 38 18	3.3	234.2	3.9		30.8	20	10911	05 30 20
05 31 50	---	17 39 49	3.1	234.6	3.9		30.9	90	10934	05 30 21

Schedule for TORUN (Code Tr) Page 36

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 5 Mar 2020 Day 65 ---										
05 55 50	J1038+4244	18 03 53	22.5	312.0	7.4		37.3	1277	10934	05 55 50
05 56 50	---	18 04 53	22.4	312.2	7.4		37.2	60	10950	05 55 51
05 56 50	J1037+4335	18 04 53	22.9	312.9	7.4		37.3	-14	10950	No stop
05 58 20	---	18 06 23	22.8	313.1	7.5		37.2	76	10973	05 56 51
05 58 50	J1038+4244	18 06 53	22.2	312.5	7.5		37.0	16	10973	05 58 50
05 59 50	---	18 07 53	22.1	312.7	7.5		36.9	60	10988	05 58 51
06 00 20	J1037+4335	18 08 23	22.6	313.4	7.5		36.9	16	10988	06 00 20
06 01 20	---	18 09 24	22.5	313.6	7.5		36.8	60	11004	06 00 21
06 01 50	J1038+4244	18 09 54	21.8	313.0	7.5		36.7	16	11004	06 01 50
06 02 50	---	18 10 54	21.7	313.1	7.5		36.6	60	11019	06 01 51
06 03 20	J1037+4335	18 11 24	22.2	313.9	7.5		36.6	16	11019	06 03 20
06 04 20	---	18 12 24	22.1	314.1	7.6		36.5	60	11035	06 03 21
06 04 50	J1038+4244	18 12 54	21.5	313.5	7.6		36.3	16	11035	06 04 50
06 05 50	---	18 13 54	21.4	313.6	7.6		36.2	60	11050	06 04 51
06 06 20	J1037+4335	18 14 24	21.9	314.4	7.6		36.3	16	11050	06 06 20
06 07 20	---	18 15 24	21.8	314.5	7.6		36.1	60	11066	06 06 21
06 07 50	J1038+4244	18 15 55	21.2	313.9	7.6		36.0	16	11066	06 07 50
06 08 50	---	18 16 55	21.1	314.1	7.6		35.9	60	11081	06 07 51
06 09 20	J1037+4335	18 17 25	21.6	314.9	7.6		35.9	16	11081	06 09 20
06 10 20	---	18 18 25	21.5	315.0	7.7		35.8	60	11097	06 09 21
06 10 50	J1038+4244	18 18 55	20.9	314.4	7.7		35.7	16	11097	06 10 50
06 11 50	---	18 19 55	20.7	314.6	7.7		35.6	60	11112	06 10 51
06 12 20	J1037+4335	18 20 25	21.3	315.3	7.7		35.6	16	11112	06 12 20
06 13 20	---	18 21 25	21.2	315.5	7.7		35.5	60	11127	06 12 21
06 13 50	J1038+4244	18 21 56	20.5	314.9	7.7		35.3	16	11127	06 13 50
06 14 50	---	18 22 56	20.4	315.1	7.7		35.2	60	11143	06 13 51
06 15 20	J1037+4335	18 23 26	21.0	315.8	7.7		35.2	16	11143	06 15 20
06 16 20	---	18 24 26	20.9	316.0	7.8		35.1	60	11158	06 15 21
06 16 50	J1038+4244	18 24 56	20.2	315.4	7.8		35.0	16	11158	06 16 50
06 17 50	---	18 25 56	20.1	315.5	7.8		34.9	60	11174	06 16 51

Schedule for TORUN (Code Tr) Page 37

EVN 5 GHz and 22 GHz study of 43 compact radio sources

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 5 Mar 2020 Day 65 ---										
06 18 20	J1037+4335	18 26 26	20.6	316.3	7.8		34.9	16	11174	06 18 20
06 19 20	---	18 27 26	20.5	316.5	7.8		34.8	60	11189	06 18 21
06 19 50	J1038+4244	18 27 57	19.9	315.9	7.8		34.6	16	11189	06 19 50
06 20 50	---	18 28 57	19.8	316.0	7.8		34.5	60	11205	06 19 51
06 21 20	J1037+4335	18 29 27	20.3	316.8	7.8		34.5	16	11205	06 21 20
06 22 20	---	18 30 27	20.2	316.9	7.9		34.4	60	11220	06 21 21
06 22 50	J1038+4244	18 30 57	19.6	316.3	7.9		34.3	16	11220	06 22 50
06 23 50	---	18 31 57	19.5	316.5	7.9		34.2	60	11236	06 22 51
06 24 20	J1037+4335	18 32 27	20.0	317.3	7.9		34.2	16	11236	06 24 20
06 25 20	---	18 33 27	19.9	317.4	7.9		34.1	60	11251	06 24 21
06 25 50	J1038+4244	18 33 58	19.3	316.8	7.9		33.9	16	11251	06 25 50
06 26 50	---	18 34 58	19.2	317.0	7.9		33.8	60	11267	06 25 51
06 28 50	J1310+3220	18 36 58	30.2	284.7	5.4		43.4	40	11267	06 28 50
06 31 50	---	18 39 59	29.7	285.2	5.5		43.2	180	11313	06 28 51
06 33 20	1413+135	18 41 29	24.8	258.7	4.4		37.2	22	11313	06 33 20
06 43 50	---	18 52 00	23.3	261.0	4.6		37.5	630	11475	06 33 21
06 44 20	1413+135	18 52 31	23.2	261.1	4.6		37.5	24	11475	06 44 20
06 54 20	---	19 02 32	21.7	263.2	4.8		37.8	600	11630	06 44 21
06 57 20	3C345	19 05 33	62.5	255.4	2.4		49.1	13	11630	06 57 20
07 00 00	---	19 08 13	62.2	256.1	2.4		49.3	160	11671	06 57 21

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

======== Setup file: sess120.K2048

Setup group: 9 Station: TORUN Total bit rate: 2048
Format: VDIF Bits per sample: 2 Sample rate: 64.000
Number of channels: 16 DBE type: DBBC_DDC Speedup factor: 1.00

Disk used to record data.

```
  1st LO=  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00
           21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00
  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         9         1         9         2        10         2        10
                  3        11         3        11         4        12         4        12
  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  Setup file default.  Used with PCAL = off
  LO sum=   22139.49  22139.49  22139.49  22139.49  22203.49  22203.49  22203.49  22203.49
            22267.49  22267.49  22267.49  22267.49  22331.49  22331.49  22331.49  22331.49
  BBC fr=     639.49    639.49    639.49    639.49    703.49    703.49    703.49    703.49
              767.49    767.49    767.49    767.49    831.49    831.49    831.49    831.49
  Bandwd=      32.00     32.00     32.00     32.00     32.00     32.00     32.00     32.00
               32.00     32.00     32.00     32.00     32.00     32.00     32.00     32.00
   Matching frequency sets:   5

  Track assignments are:
   track1=   1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15, 16
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* J0840-0648	08 37 37.915419	* 08 40 05.600000	08 41 05.276464	0.00
	-06 38 12.67079	*-06 48 53.00000	-06 53 18.69659	0.00
* J0900-0652	08 57 43.189190	* 09 00 11.300000	09 01 11.201740	0.00
	-06 40 26.63498	*-06 52 12.00000	-06 57 03.15088	0.00
* J0918+2650	09 15 41.599983	* 09 18 37.500000	09 19 48.478737	0.00
	27 03 20.51255	* 26 50 41.00000	26 45 33.23377	0.00
* J1037+4335	10 34 22.618877	* 10 37 19.300000	10 38 30.888632	0.00
	43 50 50.11347	* 43 35 15.00000	43 28 57.28639	0.00
* J1132+5100	11 30 06.350802	* 11 32 50.400000	11 33 57.163556	0.00
	51 16 54.10719	* 51 00 20.00000	50 53 37.05021	0.00
* J1218-2159	12 16 22.874190	* 12 18 58.700000	12 20 01.907919	0.00
	-21 42 06.75084	*-21 58 46.00000	-22 05 26.77449	0.00
* J1344-1739	13 41 20.487767	* 13 44 03.400000	13 45 09.116780	0.00
	-17 24 02.73936	*-17 39 06.00000	-17 45 06.33191	0.00
* 1413+135	14 13 33.904120	* 14 15 58.810800	14 16 57.118741	0.00
	13 34 17.29303	* 13 20 23.60100	13 14 43.37190	0.00

```
* J0847-0703        08 45 29.085085   * 08 47 56.737247    08 48 56.424671       0.00
                   -06 52 10.54042    *-07 03 16.90286    -07 07 52.82490       0.00

* J0923+2815        09 20 54.881885   * 09 23 51.523414    09 25 02.815981       0.00
                    28 28 19.23745    * 28 15 25.02211     28 10 11.53212        0.00

* J1038+4244        10 35 22.424586   * 10 38 18.190525    10 39 29.401663       0.00
                    43 00 19.42047    * 42 44 42.76087     42 38 24.31315        0.00

* J1125+5000        11 22 43.717857   * 11 25 29.949300    11 26 37.551811       0.00
                    50 16 43.14435    * 50 00 13.53800     49 53 32.65018        0.00

* J1209-2032        12 06 39.987259   * 12 09 14.610976    12 10 17.339644       0.00
                   -20 15 57.37320    *-20 32 38.99012    -20 39 21.36645       0.00

* J1343-1747        13 40 54.456598   * 13 43 37.414200    13 44 43.152190       0.00
                   -17 32 51.36588    *-17 47 55.44700    -17 53 56.07918       0.00

* J1310+3220        13 08 07.556269   * 13 10 28.660000    13 11 25.787080       0.00
                    32 36 40.23602    * 32 20 43.78000     32 14 12.44964        0.00

* J0927+3902        09 23 55.315268   * 09 27 03.010000    09 28 18.796748       0.00
                    39 15 23.56442    * 39 02 20.85000     38 57 05.60539        0.00

* 3C345             16 41 17.606162   * 16 42 58.809900    16 43 39.002024       0.00
                    39 54 10.81394    * 39 48 36.99300     39 46 08.40055        0.00
```

n20m1tr

Network Monitoring Experiment

PI: *Katharina Immer*

```
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   5 Mar 2020   Day  65 ---
 Next scan frequencies:  6655.49  6655.49  6655.49  6655.49  6663.49  6663.49  6663.49  6663.49
                         6671.49  6671.49  6671.49  6671.49  6679.49  6679.49  6679.49  6679.49
 Next BBC frequencies:    755.49   755.49   755.49   755.49   763.49   763.49   763.49   763.49
                          771.49   771.49   771.49   771.49   779.49   779.49   779.49   779.49
 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

12 00 00  J0238+1636   00 09 02  43.2 126.5 -2.5     -30.2     0        0   12 00 00
12 05 00  =0235+164    00 14 03  43.8 128.0 -2.4     -29.6   300       10   12 00 01

12 07 00  J0238+1636   00 16 04  44.1 128.5 -2.4     -29.4   113       10   12 07 00
12 20 00  =0235+164    00 29 06  45.6 132.4 -2.2     -27.6   780       35   12 07 01

12 22 00  J0238+1636   00 31 06  45.8 133.0 -2.1     -27.3   113       35   12 22 00
12 25 00  =0235+164    00 34 07  46.1 133.9 -2.1     -26.8   180       41   12 22 01

12 27 00  J0238+1636   00 36 07  46.3 134.6 -2.1     -26.5   113       41   12 27 00
12 40 00  =0235+164    00 49 09  47.7 138.7 -1.8     -24.4   780       66   12 27 01

12 42 00  J0238+1636   00 51 09  47.9 139.4 -1.8     -24.1   113       66   12 42 00
12 45 00  =0235+164    00 54 10  48.2 140.3 -1.8     -23.6   180       71   12 42 01

12 47 00  J0238+1636   00 56 10  48.3 141.0 -1.7     -23.2   113       71   12 47 00
13 00 00  =0235+164    01 09 12  49.5 145.4 -1.5     -20.9   780       97   12 47 01

13 02 00  J0238+1636   01 11 13  49.7 146.1 -1.5     -20.5   113       97   13 02 00
13 05 00  =0235+164    01 14 13  49.9 147.1 -1.4     -19.9   180      102   13 02 01

13 08 00  3C84         01 17 14  66.3 106.5 -2.1     -50.3    83      102   13 08 00
13 20 00  ---          01 29 16  68.0 110.3 -1.9     -48.8   720      126   13 08 01

13 22 00  3C84         01 31 16  68.3 111.0 -1.8     -48.6   113      126   13 22 00
13 25 00  ---          01 34 16  68.7 112.0 -1.8     -48.1   180      131   13 22 01

13 27 00  3C84         01 36 17  69.0 112.7 -1.7     -47.8   113      131   13 27 00
13 40 00  ---          01 49 19  70.8 117.6 -1.5     -45.4   780      157   13 27 01

13 42 00  3C84         01 51 19  71.1 118.4 -1.5     -44.9   113      157   13 42 00
13 45 00  ---          01 54 20  71.5 119.6 -1.4     -44.3   180      162   13 42 01

13 47 00  3C84         01 56 20  71.7 120.5 -1.4     -43.8   113      162   13 47 00
14 00 00  ---          02 09 22  73.3 126.5 -1.2     -40.2   780      187   13 47 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   5 Mar 2020   Day  65 ---
14 02 00  3C84         02 11 22  73.6 127.5 -1.2     -39.5   113      187   14 02 00
14 05 00  ---          02 14 23  73.9 129.1 -1.1     -38.5   180      193   14 02 01

14 07 00  3C84         02 16 23  74.2 130.2 -1.1     -37.8   112      193   14 07 00
14 20 00  ---          02 29 25  75.6 137.8 -0.9     -32.6   780      218   14 07 01

 Next scan frequencies:  6476.49  6476.49  6476.49  6476.49  6604.49  6604.49  6604.49  6604.49
                         6732.49  6732.49  6732.49  6732.49  6860.49  6860.49  6860.49  6860.49
 Next BBC frequencies:    576.49   576.49   576.49   576.49   704.49   704.49   704.49   704.49
                          832.49   832.49   832.49   832.49   960.49   960.49   960.49   960.49
 Next scan bandwidths:     64.00    64.00    64.00    64.00    64.00    64.00    64.00    64.00
                           64.00    64.00    64.00    64.00    64.00    64.00    64.00    64.00

14 25 00  3C84         02 34 26  76.1 141.1 -0.8     -30.3   291      218   14 25 00
14 28 00  ---          02 37 27  76.4 143.1 -0.7     -28.8   180      311   14 25 25

14 30 00  3C84         02 39 27  76.5 144.5 -0.7     -27.8   112      311   14 30 00
14 37 00  ---          02 46 28  77.1 149.7 -0.6     -23.9   420      528   14 30 01

14 43 00  3C84         02 52 29  77.5 154.5 -0.5     -20.3   351      528   14 43 00
14 46 00  ---          02 55 30  77.7 156.9 -0.4     -18.3   180      620   14 43 01

14 48 00  3C84         02 57 30  77.8 158.6 -0.4     -17.0   111      620   14 48 00
14 55 00  ---          03 04 31  78.2 164.7 -0.3     -12.2   420      837   14 48 01



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


 ======== Setup file: sess120.M256nme

   Setup group:    6         Station: TORUN            Total bit rate:   256
   Format: VDIF              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         9         1         9         2        10         2        10
                 3        11         3        11         4        12         4        12
 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=   6655.49  6655.49  6655.49  6655.49  6663.49  6663.49  6663.49  6663.49
           6671.49  6671.49  6671.49  6671.49  6679.49  6679.49  6679.49  6679.49
 BBC fr=    755.49   755.49   755.49   755.49   763.49   763.49   763.49   763.49
            771.49   771.49   771.49   771.49   779.49   779.49   779.49   779.49
 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:   6

 Track assignments are:
  track1=   1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15, 16
  barrel=roll_off


======== Setup file: sess120.M4096_64

 Setup group:   20         Station: TORUN            Total bit rate:  4096
 Format: VDIF              Bits per sample: 2        Sample rate:128.000
 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         9         1         9         2        10         2        10
                  3        11         3        11         4        12         4        12
  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:  20  Setup file default.  Used with PCAL = off
  LO sum=   6476.49  6476.49  6476.49  6476.49  6604.49  6604.49  6604.49  6604.49
            6732.49  6732.49  6732.49  6732.49  6860.49  6860.49  6860.49  6860.49
  BBC fr=    576.49   576.49   576.49   576.49   704.49   704.49   704.49   704.49
             832.49   832.49   832.49   832.49   960.49   960.49   960.49   960.49
  Bandwd=     64.00    64.00    64.00    64.00    64.00    64.00    64.00    64.00
              64.00    64.00    64.00    64.00    64.00    64.00    64.00    64.00
   Matching frequency sets:  20

  Track assignments are:
   track1=   1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15, 16
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

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

  0235+164          02 35 52.630214   * 02 38 38.930106     02 39 44.319071       0.12
* J0238+1636        16 24 04.01612    * 16 36 59.27454      16 42 01.71522        0.16
  J0238+16          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,  64441 observations.

* 3C84              03 16 29.567265   * 03 19 48.160096     03 21 06.575438       1.50
  J0319+4130        41 19 51.91692    * 41 30 42.10404      41 35 02.71165        2.86
  0316+413          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
  J0319+41          GSFC 2016a X/S astro solution,  10291 observations.
```

eo016ctr

Relative motions and evolution of periodic maser

PI: *Mateusz Olech*

```
Address:  Torun Centre for Astronomy

Observing mode: MKV, 256Mb/s

Schedule for TORUN     (Code Tr )                                   Page   2
               Relative motions and evolution of periodic maser
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   6 Mar 2020   Day  66 ---
 ---------- G107.29 ----------

 Next scan frequencies:  6655.27  6655.27  6655.27  6655.27  6663.27  6663.27  6663.27  6663.27
                         6671.27  6671.27  6671.27  6671.27  6679.27  6679.27  6679.27  6679.27
 Next BBC frequencies:    755.27   755.27   755.27   755.27   763.27   763.27   763.27   763.27
                          771.27   771.27   771.27   771.27   779.27   779.27   779.27   779.27
 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

00 00 00  J2223+6249   12 11 01  27.9  13.4-10.2     -17.8     0        0   00 00 00
00 01 45  =2221+625    12 12 46  28.0  13.6-10.2     -18.1   105        3   00 00 01

00 01 45  G107.29      12 12 46  29.0  13.5-10.2     -18.6   -17        3   No stop
00 05 00  ---          12 16 02  29.1  13.9-10.1     -19.1   178       10   00 01 46

00 05 00  J2223+6249   12 16 02  28.1  14.0-10.1     -18.7   -17       10   No stop
00 06 45  =2221+625    12 17 47  28.1  14.2-10.1     -18.9    88       13   00 05 01

00 06 45  G107.29      12 17 47  29.2  14.1-10.1     -19.4   -17       13   No stop
00 10 00  ---          12 21 02  29.3  14.5-10.0     -20.0   178       19   00 06 46

00 10 15  J2223+6249   12 21 17  28.3  14.7-10.0     -19.5    -2       19   00 10 15
00 12 00  =2221+625    12 23 03  28.3  14.9-10.0     -19.8   103       23   00 10 16

00 12 00  G107.29      12 23 03  29.4  14.7-10.0     -20.3   -17       23   No stop
00 15 15  ---          12 26 18  29.5  15.1 -9.9     -20.9   178       29   00 12 01

00 15 15  J2223+6249   12 26 18  28.5  15.3-10.0     -20.3   -17       29   No stop
00 17 00  =2221+625    12 28 04  28.5  15.5 -9.9     -20.6    88       32   00 15 16

00 17 00  G107.29      12 28 04  29.6  15.3 -9.9     -21.2   -17       32   No stop
00 20 15  ---          12 31 19  29.7  15.7 -9.8     -21.7   178       39   00 17 01

00 20 30  J2223+6249   12 31 34  28.7  15.9 -9.9     -21.2    -2       39   00 20 30
00 22 15  =2221+625    12 33 19  28.8  16.1 -9.8     -21.5   103       42   00 20 31

 ---------- G108.76 ----------

00 22 15  J2258+5719   12 33 19  22.2  13.3-10.4     -14.9   -39       42   No stop
00 24 00  =2256+570    12 35 05  22.2  13.6-10.4     -15.2    66       45   00 22 16

00 24 00  G108.76      12 35 05  23.6  13.2-10.4     -15.4   -19       45   No stop
00 27 15  ---          12 38 20  23.7  13.6-10.4     -15.9   176       52   00 24 01
```

```
Schedule for TORUN     (Code Tr )                                  Page   3
              Relative motions and evolution of periodic maser
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   6 Mar 2020   Day  66 ---
00 27 15  J2258+5719   12 38 20  22.3  14.0-10.4     -15.7   -19       52   No stop
00 29 00  =2256+570    12 40 05  22.4  14.3-10.3     -16.0    86       55   00 27 16

00 29 00  G108.76      12 40 05  23.8  13.9-10.3     -16.2   -19       55   No stop
00 32 15  ---          12 43 21  23.9  14.3-10.3     -16.7   176       61   00 29 01

00 32 30  J2258+5719   12 43 36  22.5  14.8-10.3     -16.5    -4       61   00 32 30
00 34 15  =2256+570    12 45 21  22.6  15.0-10.2     -16.8   101       65   00 32 31

00 34 15  G108.76      12 45 21  24.0  14.6-10.2     -17.0   -19       65   No stop
00 37 30  ---          12 48 37  24.1  15.0-10.2     -17.5   176       71   00 34 16

00 37 30  J2258+5719   12 48 37  22.7  15.5-10.2     -17.3   -18       71   No stop
00 39 15  =2256+570    12 50 22  22.8  15.7-10.2     -17.6    87       74   00 37 31

00 39 15  G108.76      12 50 22  24.2  15.3-10.2     -17.8   -19       74   No stop
00 42 30  ---          12 53 38  24.3  15.7-10.1     -18.3   176       81   00 39 16

00 42 45  J2258+5719   12 53 53  22.9  16.2-10.1     -18.1    -3       81   00 42 45
00 44 30  =2256+570    12 55 38  23.0  16.5-10.1     -18.4   102       84   00 42 46

00 44 30  G108.76      12 55 38  24.4  16.0-10.1     -18.6   -19       84   No stop
00 47 45  ---          12 58 54  24.5  16.4-10.0     -19.2   176       90   00 44 31

00 47 45  J2258+5719   12 58 54  23.2  16.9-10.0     -18.9   -18       90   No stop
00 49 30  =2256+570    13 00 39  23.2  17.2-10.0     -19.2    87       94   00 47 46

 ---------- Fringe finder ----------

00 54 30  3C345        13 05 40  51.2  87.5 -3.6     -51.3   145       94   00 54 30
00 58 30  ---          13 09 40  51.8  88.3 -3.6     -51.3   240      101   00 54 31

 Next scan frequencies:  6654.23  6654.23  6654.23  6654.23  6662.23  6662.23  6662.23  6662.23
                         6670.23  6670.23  6670.23  6670.23  6678.23  6678.23  6678.23  6678.23
 Next BBC frequencies:    754.23   754.23   754.23   754.23   762.23   762.23   762.23   762.23
                          770.23   770.23   770.23   770.23   778.23   778.23   778.23   778.23

00 59 15  3C345        13 10 25  51.9  88.4 -3.6     -51.3    39      101   00 59 15
01 03 15  ---          13 14 26  52.5  89.2 -3.5     -51.4   240      109   00 59 16
```

```
Schedule for TORUN     (Code Tr )                                  Page   4
              Relative motions and evolution of periodic maser
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   6 Mar 2020   Day  66 ---

 ---------- G107.29 ----------

 Next scan frequencies:  6655.27  6655.27  6655.27  6655.27  6663.27  6663.27  6663.27  6663.27
                         6671.27  6671.27  6671.27  6671.27  6679.27  6679.27  6679.27  6679.27
 Next BBC frequencies:    755.27   755.27   755.27   755.27   763.27   763.27   763.27   763.27
                          771.27   771.27   771.27   771.27   779.27   779.27   779.27   779.27

01 07 30  J2223+6249   13 18 42  31.0  21.5 -9.1     -28.9   104      109   01 07 30
01 09 15  =2221+625    13 20 27  31.1  21.7 -9.1     -29.2   105      113   01 07 31

01 09 15  G107.29      13 20 27  32.1  21.3 -9.0     -29.8   -17      113   No stop
01 12 30  ---          13 23 43  32.2  21.7 -9.0     -30.4   178      119   01 09 16

01 12 30  J2223+6249   13 23 43  31.2  22.1 -9.0     -29.7   -16      119   No stop
01 14 15  =2221+625    13 25 28  31.3  22.3 -9.0     -30.0    89      122   01 12 31

01 14 15  G107.29      13 25 28  32.3  21.9 -8.9     -30.7   -17      122   No stop
01 17 30  ---          13 28 43  32.5  22.3 -8.9     -31.2   178      128   01 14 16

01 17 45  J2223+6249   13 28 58  31.5  22.7 -8.9     -30.6    -1      128   01 17 45
01 19 30  =2221+625    13 30 44  31.6  22.9 -8.9     -30.9   104      132   01 17 46

01 19 30  G107.29      13 30 44  32.6  22.5 -8.9     -31.5   -17      132   No stop
01 22 45  ---          13 33 59  32.8  22.8 -8.8     -32.1   178      138   01 19 31

01 22 45  J2223+6249   13 33 59  31.8  23.3 -8.8     -31.4   -16      138   No stop
01 24 30  =2221+625    13 35 45  31.9  23.5 -8.8     -31.7    89      142   01 22 46

01 24 30  G107.29      13 35 45  32.9  23.0 -8.8     -32.4   -17      142   No stop
01 27 45  ---          13 39 00  33.1  23.4 -8.7     -32.9   178      148   01 24 31

01 28 00  J2223+6249   13 39 15  32.1  23.9 -8.7     -32.3    -1      148   01 28 00
01 29 45  =2221+625    13 41 00  32.3  24.1 -8.7     -32.6   104      151   01 28 01

 ---------- G108.76 ----------

01 29 45  J2258+5719   13 41 00  25.3  22.7 -9.3     -25.4   -40      151   No stop
01 31 30  =2256+570    13 42 46  25.4  22.9 -9.3     -25.7    65      155   01 29 46

01 31 30  G108.76      13 42 46  26.7  22.2 -9.3     -26.0   -18      155   No stop
01 34 45  ---          13 46 01  26.9  22.6 -9.2     -26.5   177      161   01 31 31

01 34 45  J2258+5719   13 46 01  25.6  23.3 -9.2     -26.2   -18      161   No stop
01 36 30  =2256+570    13 47 47  25.7  23.6 -9.2     -26.5    87      164   01 34 46
```

Schedule for TORUN (Code Tr) Page 5

Relative motions and evolution of periodic maser

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 6 Mar 2020 Day 66 ---										
01 36 30	G108.76	13 47 47	27.0	22.9	-9.2		-26.8	-18	164	No stop
01 39 45	---	13 51 02	27.2	23.3	-9.1		-27.3	177	171	01 36 31
01 40 00	J2258+5719	13 51 17	25.9	24.0	-9.1		-27.0	-3	171	01 40 00
01 41 45	=2256+570	13 53 02	26.0	24.3	-9.1		-27.3	102	174	01 40 01
01 41 45	G108.76	13 53 02	27.3	23.5	-9.1		-27.6	-18	174	No stop
01 45 00	---	13 56 18	27.5	24.0	-9.1		-28.1	177	180	01 41 46
01 45 00	J2258+5719	13 56 18	26.2	24.7	-9.1		-27.8	-18	180	No stop
01 46 45	=2256+570	13 58 03	26.3	24.9	-9.0		-28.0	87	184	01 45 01
01 46 45	G108.76	13 58 03	27.6	24.2	-9.0		-28.4	-18	184	No stop
01 50 00	---	14 01 19	27.8	24.6	-9.0		-28.9	177	190	01 46 46
01 50 15	J2258+5719	14 01 34	26.6	25.4	-9.0		-28.6	-3	190	01 50 15
01 52 00	=2256+570	14 03 19	26.7	25.6	-8.9		-28.8	102	193	01 50 16
01 52 00	G108.76	14 03 19	27.9	24.9	-8.9		-29.2	-18	193	No stop
01 55 15	---	14 06 35	28.1	25.3	-8.9		-29.7	177	200	01 52 01
01 55 15	J2258+5719	14 06 35	26.9	26.1	-8.9		-29.3	-18	200	No stop
01 57 00	=2256+570	14 08 20	27.0	26.3	-8.9		-29.6	87	203	01 55 16
---------- G59.63 ----------										
Next scan frequencies:		6654.23	6654.23	6654.23	6654.23		6662.23	6662.23	6662.23	6662.23
		6670.23	6670.23	6670.23	6670.23		6678.23	6678.23	6678.23	6678.23
Next BBC frequencies:		754.23	754.23	754.23	754.23		762.23	762.23	762.23	762.23
		770.23	770.23	770.23	770.23		778.23	778.23	778.23	778.23
02 00 00	J1946+2300	14 11 20	21.8	80.3	-5.6		-40.0	57	203	02 00 00
02 01 45	=1943+228	14 13 06	22.1	80.6	-5.6		-40.1	105	206	02 00 01
02 01 45	G59.63	14 13 06	22.8	80.7	-5.5		-40.3	-15	206	No stop
02 05 00	---	14 16 21	23.3	81.3	-5.5		-40.3	180	213	02 01 46
02 05 00	J1946+2300	14 16 21	22.6	81.2	-5.5		-40.2	-14	213	No stop
02 06 45	=1943+228	14 18 07	22.8	81.6	-5.5		-40.2	91	216	02 05 01
02 06 45	G59.63	14 18 07	23.5	81.7	-5.4		-40.4	-15	216	No stop
02 10 00	---	14 21 22	24.0	82.3	-5.4		-40.5	180	222	02 06 46
02 10 15	J1946+2300	14 21 37	23.3	82.2	-5.4		-40.3	1	222	02 10 15
02 12 00	=1943+228	14 23 22	23.6	82.6	-5.4		-40.3	105	226	02 10 16

```
Schedule for TORUN     (Code Tr )                                  Page   6
              Relative motions and evolution of periodic maser
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   6 Mar 2020   Day  66 ---

02 12 00  G59.63       14 23 22  24.3  82.7 -5.4     -40.5   -15      226   No stop
02 15 15  ---          14 26 38  24.8  83.3 -5.3     -40.6   180      232   02 12 01

02 15 15  J1946+2300   14 26 38  24.1  83.2 -5.3     -40.4   -14      232   No stop
02 17 00  =1943+228    14 28 23  24.4  83.5 -5.3     -40.4    91      235   02 15 16

02 17 00  G59.63       14 28 23  25.1  83.6 -5.3     -40.6   -15      235   No stop
02 20 15  ---          14 31 39  25.5  84.2 -5.2     -40.7   180      242   02 17 01

02 20 30  J1946+2300   14 31 54  24.9  84.2 -5.3     -40.5     0      242   02 20 30
02 22 15  =1943+228    14 33 39  25.1  84.5 -5.2     -40.5   105      245   02 20 31

02 22 15  G59.63       14 33 39  25.8  84.6 -5.2     -40.7   -15      245   No stop
02 25 30  ---          14 36 55  26.3  85.3 -5.1     -40.7   180      251   02 22 16

02 25 45  J1946+2300   14 37 10  25.7  85.2 -5.2     -40.6     0      251   02 25 45
02 27 30  =1943+228    14 38 55  25.9  85.6 -5.1     -40.6   105      255   02 25 46

 ---------- G45.473 ----------

02 27 30  J1905+0952   14 38 55  21.7 102.8 -4.5     -36.5   -50      255   No stop
02 29 15  =1903+097    14 40 40  21.9 103.2 -4.4     -36.4    55      258   02 27 31

02 29 15  G45.473      14 40 40  21.8 100.5 -4.6     -37.0   -19      258   No stop
02 32 30  ---          14 43 56  22.2 101.2 -4.5     -36.9   176      264   02 29 16

02 32 30  J1905+0952   14 43 56  22.4 103.9 -4.4     -36.3   -20      264   No stop
02 34 15  =1903+097    14 45 41  22.7 104.2 -4.3     -36.2    85      268   02 32 31

02 34 15  G45.473      14 45 41  22.5 101.6 -4.5     -36.9   -19      268   No stop
02 37 30  ---          14 48 57  23.0 102.3 -4.4     -36.7   176      274   02 34 16

02 38 10  J1905+0952   14 49 37  23.2 105.1 -4.3     -36.1    20      274   02 38 10
02 39 55  =1903+097    14 51 22  23.5 105.5 -4.3     -36.0   105      277   02 38 11

02 39 55  G45.473      14 51 22  23.3 102.8 -4.4     -36.7   -20      277   No stop
02 43 10  ---          14 54 38  23.8 103.5 -4.3     -36.5   175      284   02 39 56

02 43 10  J1905+0952   14 54 38  24.0 106.2 -4.2     -35.8   -20      284   No stop
02 44 55  =1903+097    14 56 23  24.2 106.6 -4.2     -35.8    85      287   02 43 11

02 44 55  G45.473      14 56 23  24.1 103.9 -4.3     -36.5   -20      287   No stop
02 48 10  ---          14 59 38  24.5 104.6 -4.3     -36.3   175      293   02 44 56
```

Schedule for TORUN (Code Tr) Page 7

Relative motions and evolution of periodic maser

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 6 Mar 2020 Day 66 ---										
02 48 50	J1905+0952	15 00 18	24.8	107.4	-4.1		-35.6	20	293	02 48 50
02 50 35	=1903+097	15 02 04	25.0	107.8	-4.1		-35.5	105	297	02 48 51
02 50 35	G45.473	15 02 04	24.9	105.1	-4.2		-36.2	-20	297	No stop
02 53 50	---	15 05 19	25.4	105.8	-4.2		-36.1	175	303	02 50 36
02 54 30	J1905+0952	15 05 59	25.6	108.7	-4.0		-35.3	20	303	02 54 30
02 56 15	=1903+097	15 07 45	25.8	109.1	-4.0		-35.2	105	306	02 54 31
---------- G59.63 ----------										
02 56 15	J1946+2300	15 07 45	30.3	91.3	-4.7		-40.7	-50	306	No stop
02 58 00	=1943+228	15 09 30	30.5	91.6	-4.6		-40.7	55	310	02 56 16
02 58 00	G59.63	15 09 30	31.2	91.7	-4.6		-40.9	-15	310	No stop
03 01 15	---	15 12 45	31.7	92.4	-4.5		-40.9	180	316	02 58 01
03 01 15	J1946+2300	15 12 45	31.0	92.3	-4.6		-40.7	-14	316	No stop
03 03 00	=1943+228	15 14 31	31.3	92.6	-4.5		-40.7	91	319	03 01 16
03 03 00	G59.63	15 14 31	32.0	92.7	-4.5		-40.9	-15	319	No stop
03 06 15	---	15 17 46	32.5	93.4	-4.4		-40.8	180	326	03 03 01
03 06 50	J1946+2300	15 18 21	31.8	93.4	-4.5		-40.6	20	326	03 06 50
03 08 35	=1943+228	15 20 07	32.1	93.8	-4.4		-40.6	105	329	03 06 51
03 08 35	G59.63	15 20 07	32.8	93.9	-4.4		-40.8	-15	329	No stop
03 11 50	---	15 23 22	33.3	94.6	-4.4		-40.8	180	335	03 08 36
03 11 50	J1946+2300	15 23 22	32.6	94.5	-4.4		-40.6	-14	335	No stop
03 13 35	=1943+228	15 25 08	32.9	94.8	-4.4		-40.6	91	339	03 11 51
03 13 35	G59.63	15 25 08	33.6	94.9	-4.3		-40.7	-15	339	No stop
03 16 50	---	15 28 23	34.0	95.6	-4.3		-40.7	180	345	03 13 36
03 17 25	J1946+2300	15 28 58	33.4	95.6	-4.3		-40.5	20	345	03 17 25
03 19 10	=1943+228	15 30 43	33.7	96.0	-4.3		-40.5	105	348	03 17 26
03 19 10	G59.63	15 30 43	34.4	96.1	-4.2		-40.6	-15	348	No stop
03 22 25	---	15 33 59	34.9	96.8	-4.2		-40.6	180	355	03 19 11
03 23 00	J1946+2300	15 34 34	34.3	96.8	-4.2		-40.4	20	355	03 23 00
03 24 45	=1943+228	15 36 19	34.5	97.2	-4.2		-40.4	105	358	03 23 01

```
Schedule for TORUN     (Code Tr )                                  Page   8
              Relative motions and evolution of periodic maser
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   6 Mar 2020   Day  66 ---

 ---------- G45.473 ----------

03 24 45  J1905+0952   15 36 19  29.8 115.6 -3.5     -33.3   -52      358   No stop
03 26 30  =1903+097    15 38 05  30.0 116.1 -3.5     -33.2    53      361   03 24 46

03 26 30  G45.473      15 38 05  30.0 113.2 -3.6     -34.2   -20      361   No stop
03 29 45  ---          15 41 20  30.4 114.0 -3.6     -34.0   175      368   03 26 31

03 29 45  J1905+0952   15 41 20  30.5 116.8 -3.4     -32.9   -20      368   No stop
03 31 30  =1903+097    15 43 05  30.7 117.3 -3.4     -32.8    85      371   03 29 46

03 31 30  G45.473      15 43 05  30.7 114.4 -3.5     -33.9   -20      371   No stop
03 34 45  ---          15 46 21  31.1 115.2 -3.5     -33.6   175      377   03 31 31

03 35 25  J1905+0952   15 47 01  31.2 118.2 -3.3     -32.5    20      377   03 35 25
03 37 10  =1903+097    15 48 46  31.5 118.6 -3.3     -32.3   105      381   03 35 26

03 37 10  G45.473      15 48 46  31.5 115.7 -3.4     -33.5   -20      381   No stop
03 40 25  ---          15 52 02  31.9 116.5 -3.4     -33.2   175      387   03 37 11

03 40 25  J1905+0952   15 52 02  31.9 119.4 -3.2     -32.1   -20      387   No stop
03 42 10  =1903+097    15 53 47  32.1 119.9 -3.2     -31.9    85      390   03 40 26

03 42 10  G45.473      15 53 47  32.1 117.0 -3.4     -33.1   -20      390   No stop
03 45 25  ---          15 57 03  32.6 117.7 -3.3     -32.8   175      397   03 42 11

03 46 05  J1905+0952   15 57 43  32.6 120.8 -3.1     -31.6    20      397   03 46 05
03 47 50  =1903+097    15 59 28  32.9 121.3 -3.1     -31.4   105      400   03 46 06

03 47 50  G45.473      15 59 28  32.9 118.3 -3.3     -32.6   -20      400   No stop
03 51 05  ---          16 02 44  33.3 119.1 -3.2     -32.3   175      406   03 47 51

03 51 45  J1905+0952   16 03 24  33.4 122.3 -3.1     -31.0    19      406   03 51 45
03 53 30  =1903+097    16 05 09  33.6 122.7 -3.0     -30.9   105      410   03 51 46

 ---------- G22.36, Ef out for pointing ----------

03 54 00  J1825-0737   16 05 39  22.3 141.8 -2.4     -22.0   -26      410   03 54 00
03 55 45  =1822-076    16 07 24  22.5 142.2 -2.3     -21.8    79      413   03 54 01

03 55 45  G22.36       16 07 24  20.3 141.4 -2.4     -22.3   -22      413   No stop
03 59 00  ---          16 10 40  20.6 142.2 -2.4     -21.9   173      419   03 55 46

03 59 00  J1825-0737   16 10 40  22.8 143.0 -2.3     -21.4   -22      419   No stop
04 00 45  =1822-076    16 12 25  23.0 143.5 -2.2     -21.1    83      423   03 59 01
```

```
Schedule for TORUN     (Code Tr )                                  Page   9
              Relative motions and evolution of periodic maser
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   6 Mar 2020   Day  66 ---

04 00 45  G22.36       16 12 25  20.8 142.6 -2.3     -21.7   -22      423   No stop
04 04 00  ---          16 15 41  21.1 143.4 -2.3     -21.3   173      429   04 00 46

 ---------- Ef back ----------

04 04 40  J1825-0737   16 16 21  23.3 144.5 -2.2     -20.6    18      429   04 04 40
04 06 25  =1822-076    16 18 06  23.5 144.9 -2.1     -20.4   105      432   04 04 41

04 06 25  G22.36       16 18 06  21.3 144.0 -2.2     -20.9   -22      432   No stop
04 09 40  ---          16 21 22  21.6 144.8 -2.2     -20.5   173      439   04 06 26

04 09 40  J1825-0737   16 21 22  23.7 145.7 -2.1     -19.9   -22      439   No stop
04 11 25  =1822-076    16 23 07  23.9 146.2 -2.1     -19.7    83      442   04 09 41

04 11 25  G22.36       16 23 07  21.7 145.3 -2.2     -20.3   -22      442   No stop
04 14 40  ---          16 26 23  22.0 146.1 -2.1     -19.8   173      448   04 11 26

04 15 20  J1825-0737   16 27 03  24.2 147.2 -2.0     -19.2    18      448   04 15 20
04 17 05  =1822-076    16 28 48  24.3 147.6 -2.0     -18.9   105      452   04 15 21

04 17 05  G22.36       16 28 48  22.2 146.7 -2.1     -19.5   -22      452   No stop
04 20 20  ---          16 32 03  22.5 147.5 -2.0     -19.1   173      458   04 17 06

04 20 20  J1825-0737   16 32 03  24.6 148.5 -1.9     -18.5   -22      458   No stop
04 22 05  =1822-076    16 33 49  24.7 148.9 -1.9     -18.2    83      461   04 20 21

04 22 05  G22.36       16 33 49  22.6 148.0 -2.0     -18.8   -22      461   No stop
04 25 20  ---          16 37 04  22.9 148.8 -1.9     -18.4   173      468   04 22 06

04 26 00  J1825-0737   16 37 44  25.0 150.0 -1.8     -17.7    18      468   04 26 00
04 27 45  =1822-076    16 39 30  25.2 150.4 -1.8     -17.4   105      471   04 26 01

04 27 45  G22.36       16 39 30  23.1 149.4 -1.9     -18.0   -22      471   No stop
04 31 00  ---          16 42 45  23.3 150.2 -1.8     -17.6   173      477   04 27 46

04 31 00  J1825-0737   16 42 45  25.4 151.3 -1.7     -16.9   -22      477   No stop
04 32 45  =1822-076    16 44 31  25.5 151.7 -1.7     -16.7    83      481   04 31 01
```

```
Schedule for TORUN     (Code Tr )                                  Page  10
              Relative motions and evolution of periodic maser
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   6 Mar 2020   Day  66 ---

 ---------- G108.76 ----------

 Next scan frequencies:  6655.27  6655.27  6655.27  6655.27  6663.27  6663.27  6663.27  6663.27
                         6671.27  6671.27  6671.27  6671.27  6679.27  6679.27  6679.27  6679.27
 Next BBC frequencies:    755.27   755.27   755.27   755.27   763.27   763.27   763.27   763.27
                          771.27   771.27   771.27   771.27   779.27   779.27   779.27   779.27

04 36 15  J2258+5719   16 48 01  41.1  45.5 -6.2     -52.7   -17      481   04 36 15
04 38 00  =2256+570    16 49 46  41.3  45.7 -6.2     -53.0    88      484   04 36 16

04 38 00  G108.76      16 49 46  42.1  44.2 -6.2     -54.0   -16      484   No stop
04 41 15  ---          16 53 02  42.5  44.5 -6.1     -54.5   179      490   04 38 01

04 41 15  J2258+5719   16 53 02  41.6  46.1 -6.1     -53.4   -16      490   No stop
04 43 00  =2256+570    16 54 47  41.8  46.2 -6.1     -53.7    89      494   04 41 16

04 43 00  G108.76      16 54 47  42.7  44.7 -6.1     -54.7   -16      494   No stop
04 46 15  ---          16 58 03  43.0  45.0 -6.0     -55.2   179      500   04 43 01

04 46 35  J2258+5719   16 58 23  42.2  46.6 -6.0     -54.2     4      500   04 46 35
04 48 20  =2256+570    17 00 08  42.4  46.8 -6.0     -54.4   105      503   04 46 36

04 48 20  G108.76      17 00 08  43.2  45.2 -6.0     -55.5   -16      503   No stop
04 51 35  ---          17 03 24  43.6  45.6 -5.9     -56.0   179      510   04 48 21

04 51 35  J2258+5719   17 03 24  42.8  47.2 -5.9     -54.9   -16      510   No stop
04 53 20  =2256+570    17 05 09  43.0  47.3 -5.9     -55.1    89      513   04 51 36

04 53 20  G108.76      17 05 09  43.8  45.7 -5.9     -56.2   -16      513   No stop
04 56 35  ---          17 08 24  44.1  46.1 -5.9     -56.7   179      519   04 53 21

04 56 55  J2258+5719   17 08 44  43.4  47.7 -5.9     -55.6     3      519   04 56 55
04 58 40  =2256+570    17 10 30  43.5  47.9 -5.8     -55.9   105      523   04 56 56

04 58 40  G108.76      17 10 30  44.4  46.3 -5.8     -57.0   -16      523   No stop
05 01 55  ---          17 13 45  44.7  46.6 -5.8     -57.5   179      529   04 58 41

05 02 15  J2258+5719   17 14 05  44.0  48.3 -5.8     -56.4     3      529   05 02 15
05 04 00  =2256+570    17 15 51  44.1  48.5 -5.7     -56.6   105      532   05 02 16

 ---------- G107.29 ----------

05 04 00  J2223+6249   17 15 51  50.7  44.4 -5.1     -67.4   -39      532   No stop
05 05 45  =2221+625    17 17 36  50.8  44.5 -5.1     -67.7    66      536   05 04 01
```

```
Schedule for TORUN     (Code Tr )                                  Page  11
              Relative motions and evolution of periodic maser
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   6 Mar 2020   Day  66 ---

05 05 45  G107.29      17 17 36  51.4  43.1 -5.1     -69.2   -16      536   No stop
05 09 00  ---          17 20 51  51.8  43.3 -5.0     -69.8   179      542   05 05 46

05 09 00  J2223+6249   17 20 51  51.2  44.7 -5.1     -68.2   -16      542   No stop
05 10 45  =2221+625    17 22 37  51.4  44.9 -5.0     -68.5    89      545   05 09 01

05 10 45  G107.29      17 22 37  51.9  43.4 -5.0     -70.1   -16      545   No stop
05 14 00  ---          17 25 52  52.3  43.6 -4.9     -70.7   179      552   05 10 46

05 14 25  J2223+6249   17 26 17  51.8  45.1 -5.0     -69.2     9      552   05 14 25
05 16 10  =2221+625    17 28 03  52.0  45.2 -4.9     -69.5   105      555   05 14 26

05 16 10  G107.29      17 28 03  52.5  43.7 -4.9     -71.0   -16      555   No stop
05 19 25  ---          17 31 18  52.8  43.9 -4.8     -71.6   179      561   05 16 11

05 19 25  J2223+6249   17 31 18  52.3  45.4 -4.9     -70.0   -16      561   No stop
05 21 10  =2221+625    17 33 03  52.5  45.5 -4.8     -70.3    89      565   05 19 26

05 21 10  G107.29      17 33 03  53.0  44.0 -4.8     -71.9   -16      565   No stop
05 24 25  ---          17 36 19  53.4  44.2 -4.8     -72.5   179      571   05 21 11

05 24 50  J2223+6249   17 36 44  52.9  45.8 -4.8     -71.0     9      571   05 24 50
05 26 35  =2221+625    17 38 29  53.1  45.9 -4.8     -71.3   105      574   05 24 51

05 26 35  G107.29      17 38 29  53.6  44.3 -4.7     -72.9   -16      574   No stop
05 29 50  ---          17 41 45  53.9  44.5 -4.7     -73.5   179      581   05 26 36

05 29 50  J2223+6249   17 41 45  53.4  46.1 -4.7     -71.8   -16      581   No stop
05 31 35  =2221+625    17 43 30  53.6  46.2 -4.7     -72.1    89      584   05 29 51

 ---------- G22.36 ----------

 Next scan frequencies:  6654.23  6654.23  6654.23  6654.23  6662.23  6662.23  6662.23  6662.23
                         6670.23  6670.23  6670.23  6670.23  6678.23  6678.23  6678.23  6678.23
 Next BBC frequencies:    754.23   754.23   754.23   754.23   762.23   762.23   762.23   762.23
                          770.23   770.23   770.23   770.23   778.23   778.23   778.23   778.23

05 35 05  J1825-0737   17 47 01  28.7 168.8 -0.7      -6.8   -51      584   05 35 05
05 36 50  =1822-076    17 48 46  28.8 169.3 -0.6      -6.5    54      587   05 35 06

05 36 50  G22.36       17 48 46  26.8 167.8 -0.7      -7.4   -21      587   No stop
05 40 05  ---          17 52 02  26.9 168.7 -0.7      -6.8   174      594   05 36 51

05 40 05  J1825-0737   17 52 02  28.8 170.2 -0.6      -5.9   -21      594   No stop
05 41 50  =1822-076    17 53 47  28.9 170.7 -0.5      -5.6    84      597   05 40 06
```

Schedule for TORUN (Code Tr) Page 12

Relative motions and evolution of periodic maser

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 6 Mar 2020 Day 66 ---										
05 41 50	G22.36	17 53 47	27.0	169.2	-0.7		-6.6	-21	597	No stop
05 45 05	---	17 57 02	27.1	170.1	-0.6		-6.0	174	603	05 41 51
05 45 45	J1825-0737	17 57 43	29.0	171.8	-0.5		-5.0	19	603	05 45 45
05 47 30	=1822-076	17 59 28	29.0	172.3	-0.5		-4.7	105	607	05 45 46
05 47 30	G22.36	17 59 28	27.1	170.7	-0.6		-5.6	-21	607	No stop
05 50 45	---	18 02 43	27.2	171.6	-0.5		-5.1	174	613	05 47 31
05 50 45	J1825-0737	18 02 43	29.1	173.2	-0.4		-4.1	-21	613	No stop
05 52 30	=1822-076	18 04 29	29.1	173.7	-0.4		-3.8	84	616	05 50 46
05 52 30	G22.36	18 04 29	27.3	172.1	-0.5		-4.8	-21	616	No stop
05 55 45	---	18 07 44	27.3	173.0	-0.4		-4.2	174	623	05 52 31
05 56 25	J1825-0737	18 08 24	29.2	174.8	-0.3		-3.1	19	623	05 56 25
05 58 10	=1822-076	18 10 10	29.2	175.3	-0.3		-2.8	105	626	05 56 26
05 58 10	G22.36	18 10 10	27.4	173.7	-0.4		-3.8	-21	626	No stop
06 01 25	---	18 13 25	27.4	174.6	-0.3		-3.3	174	632	05 58 11
06 01 25	J1825-0737	18 13 25	29.2	176.2	-0.2		-2.3	-21	632	No stop
06 03 10	=1822-076	18 15 10	29.2	176.7	-0.2		-2.0	84	636	06 01 26
06 03 10	G22.36	18 15 10	27.4	175.1	-0.3		-3.0	-21	636	No stop
06 06 25	---	18 18 26	27.5	176.0	-0.2		-2.4	174	642	06 03 11
06 07 05	J1825-0737	18 19 06	29.3	177.8	-0.1		-1.3	20	642	06 07 05
06 08 50	=1822-076	18 20 51	29.3	178.3	-0.1		-1.0	105	645	06 07 06
06 08 50	G22.36	18 20 51	27.5	176.7	-0.2		-2.0	-20	645	No stop
06 12 05	---	18 24 07	27.5	177.6	-0.1		-1.5	175	652	06 08 51
06 12 05	J1825-0737	18 24 07	29.3	179.3	-0.0		-0.4	-20	652	No stop
06 13 50	=1822-076	18 25 52	29.3	179.8	-0.0		-0.1	85	655	06 12 06
06 13 50	G22.36	18 25 52	27.5	178.1	-0.1		-1.2	-20	655	No stop
06 17 05	---	18 29 08	27.5	179.0	-0.1		-0.6	175	661	06 13 51
06 17 45	J1825-0737	18 29 48	29.3	180.9	0.1		0.5	20	661	06 17 45
06 19 30	=1822-076	18 31 33	29.3	181.4	0.1		0.8	105	665	06 17 46
06 19 30	G22.36	18 31 33	27.5	179.6	-0.0		-0.2	-20	665	No stop
06 22 45	---	18 34 49	27.5	180.6	0.0		0.3	175	671	06 19 31

Schedule for TORUN (Code Tr) Page 13

Relative motions and evolution of periodic maser

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 6 Mar 2020 Day 66 ---										
06 22 45	J1825-0737	18 34 49	29.3	182.3	0.1		1.4	-20	671	No stop
06 24 30	=1822-076	18 36 34	29.3	182.8	0.2		1.7	85	674	06 22 46
06 24 30	G22.36	18 36 34	27.5	181.0	0.1		0.6	-20	674	No stop
06 27 45	---	18 39 49	27.5	181.9	0.1		1.2	175	681	06 24 31
06 28 25	J1825-0737	18 40 30	29.2	183.9	0.2		2.4	20	681	06 28 25
06 30 10	=1822-076	18 42 15	29.2	184.4	0.3		2.7	105	684	06 28 26
---------- G45.473 ----------										
06 30 10	J1905+0952	18 42 15	46.5	171.3	-0.4		-5.3	-79	684	No stop
06 31 55	=1903+097	18 44 00	46.6	171.9	-0.4		-4.9	26	687	06 30 11
06 31 55	G45.473	18 44 00	47.7	168.7	-0.5		-6.9	-21	687	No stop
06 35 10	---	18 47 16	47.8	169.8	-0.5		-6.2	174	694	06 31 56
06 35 10	J1905+0952	18 47 16	46.6	173.1	-0.3		-4.2	-21	694	No stop
06 36 55	=1903+097	18 49 01	46.7	173.7	-0.3		-3.8	84	697	06 35 11
06 36 55	G45.473	18 49 01	47.8	170.5	-0.4		-5.8	-21	697	No stop
06 40 10	---	18 52 16	47.9	171.7	-0.4		-5.1	174	703	06 36 56
06 40 50	J1905+0952	18 52 57	46.7	175.1	-0.2		-3.0	19	703	06 40 50
06 42 35	=1903+097	18 54 42	46.7	175.7	-0.2		-2.6	105	707	06 40 51
06 42 35	G45.473	18 54 42	47.9	172.5	-0.3		-4.6	-21	707	No stop
06 45 50	---	18 57 57	48.0	173.7	-0.3		-3.8	174	713	06 42 36
06 45 50	J1905+0952	18 57 57	46.8	176.9	-0.1		-1.9	-21	713	No stop
06 47 35	=1903+097	18 59 43	46.8	177.5	-0.1		-1.5	84	716	06 45 51
06 47 35	G45.473	18 59 43	48.0	174.4	-0.3		-3.4	-21	716	No stop
06 50 50	---	19 02 58	48.1	175.6	-0.2		-2.7	174	723	06 47 36
06 51 30	J1905+0952	19 03 38	46.8	178.9	-0.0		-0.6	19	723	06 51 30
06 53 15	=1903+097	19 05 24	46.8	179.6	-0.0		-0.3	105	726	06 51 31
06 53 15	G45.473	19 05 24	48.1	176.5	-0.2		-2.2	-21	726	No stop
06 56 30	---	19 08 39	48.1	177.7	-0.1		-1.4	174	732	06 53 16
06 56 30	J1905+0952	19 08 39	46.8	180.7	0.0		0.5	-21	732	No stop
06 58 15	=1903+097	19 10 24	46.8	181.4	0.1		0.8	84	736	06 56 31

Schedule for TORUN (Code Tr) Page 14

Relative motions and evolution of periodic maser

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 6 Mar 2020 Day 66 ---										
06 58 15	G45.473	19 10 24	48.1	178.3	-0.1		-1.0	-20	736	No stop
07 01 30	---	19 13 40	48.1	179.5	-0.0		-0.3	175	742	06 58 16
07 02 10	J1905+0952	19 14 20	46.8	182.8	0.1		1.7	19	742	07 02 10
07 03 55	=1903+097	19 16 05	46.8	183.4	0.2		2.1	105	745	07 02 11
07 03 55	G45.473	19 16 05	48.1	180.4	0.0		0.2	-20	745	No stop
07 07 10	---	19 19 21	48.1	181.6	0.1		1.0	175	752	07 03 56
07 07 10	J1905+0952	19 19 21	46.7	184.6	0.2		2.8	-21	752	No stop
07 08 55	=1903+097	19 21 06	46.7	185.2	0.2		3.2	84	755	07 07 11
07 08 55	G45.473	19 21 06	48.1	182.2	0.1		1.4	-20	755	No stop
07 12 10	---	19 24 22	48.1	183.4	0.2		2.1	175	761	07 08 56
07 12 50	J1905+0952	19 25 02	46.6	186.6	0.3		4.0	19	761	07 12 50
07 14 35	=1903+097	19 26 47	46.6	187.2	0.3		4.4	105	765	07 12 51
07 14 35	G45.473	19 26 47	48.1	184.3	0.2		2.6	-20	765	No stop
07 17 50	---	19 30 03	48.0	185.5	0.2		3.4	175	771	07 14 36
07 18 30	J1905+0952	19 30 43	46.5	188.6	0.4		5.3	20	771	07 18 30
07 20 15	=1903+097	19 32 28	46.5	189.3	0.4		5.6	105	774	07 18 31
---------- G59.63 ----------										
07 20 15	J1946+2300	19 32 28	59.8	173.4	-0.2		-4.3	-64	774	No stop
07 22 00	=1943+228	19 34 13	59.9	174.2	-0.2		-3.8	41	778	07 20 16
07 22 00	G59.63	19 34 13	60.4	175.2	-0.2		-3.2	-14	778	No stop
07 25 15	---	19 37 29	60.4	176.7	-0.1		-2.2	181	784	07 22 01
07 25 15	J1946+2300	19 37 29	59.9	175.7	-0.2		-2.8	-14	784	No stop
07 27 00	=1943+228	19 39 14	59.9	176.5	-0.1		-2.3	91	787	07 25 16
07 27 00	G59.63	19 39 14	60.4	177.5	-0.1		-1.6	-14	787	No stop
07 30 15	---	19 42 30	60.4	179.0	-0.0		-0.7	181	794	07 27 01
07 30 50	J1946+2300	19 43 05	59.9	178.2	-0.1		-1.2	21	794	07 30 50
07 32 35	=1943+228	19 44 50	59.9	179.0	-0.0		-0.6	105	797	07 30 51
07 32 35	G59.63	19 44 50	60.4	180.1	0.0		0.1	-14	797	No stop
07 35 50	---	19 48 06	60.4	181.6	0.1		1.0	181	803	07 32 36

Schedule for TORUN (Code Tr) Page 15

Relative motions and evolution of periodic maser

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 6 Mar 2020 Day 66 ---										
07 35 50	J1946+2300	19 48 06	60.0	180.5	0.0		0.3	-14	803	No stop
07 37 35	=1943+228	19 49 51	59.9	181.3	0.0		0.9	91	807	07 35 51
07 37 35	G59.63	19 49 51	60.4	182.4	0.1		1.6	-15	807	No stop
07 40 50	---	19 53 06	60.4	183.9	0.1		2.6	180	813	07 37 36
07 41 25	J1946+2300	19 53 42	59.9	183.1	0.1		2.0	21	813	07 41 25
07 43 10	=1943+228	19 55 27	59.9	183.9	0.1		2.5	105	816	07 41 26
07 43 10	G59.63	19 55 27	60.4	185.0	0.2		3.3	-15	816	No stop
07 46 25	---	19 58 42	60.3	186.5	0.2		4.3	180	823	07 43 11
07 46 25	J1946+2300	19 58 42	59.9	185.4	0.2		3.5	-14	823	No stop
07 48 10	=1943+228	20 00 28	59.8	186.2	0.2		4.0	91	826	07 46 26
07 48 10	G59.63	20 00 28	60.3	187.3	0.3		4.8	-15	826	No stop
07 51 25	---	20 03 43	60.2	188.8	0.3		5.8	180	832	07 48 11
07 52 00	J1946+2300	20 04 18	59.8	188.0	0.3		5.2	21	832	07 52 00
07 53 45	=1943+228	20 06 04	59.7	188.8	0.3		5.7	105	836	07 52 01
07 53 45	G59.63	20 06 04	60.1	189.9	0.4		6.5	-15	836	No stop
07 57 00	---	20 09 19	60.1	191.4	0.4		7.4	180	842	07 53 46
07 57 00	J1946+2300	20 09 19	59.7	190.2	0.4		6.7	-14	842	No stop
07 58 45	=1943+228	20 11 04	59.6	191.0	0.4		7.2	91	845	07 57 01
07 58 45	G59.63	20 11 04	60.0	192.2	0.4		7.9	-15	845	No stop
08 02 00	---	20 14 20	59.9	193.7	0.5		8.9	180	852	07 58 46
08 02 35	J1946+2300	20 14 55	59.5	192.7	0.5		8.3	21	852	08 02 35
08 04 20	=1943+228	20 16 40	59.4	193.5	0.5		8.8	105	855	08 02 36
08 04 20	G59.63	20 16 40	59.8	194.7	0.5		9.6	-15	855	No stop
08 07 35	---	20 19 56	59.7	196.2	0.6		10.5	180	861	08 04 21
08 07 35	J1946+2300	20 19 56	59.3	195.0	0.5		9.7	-14	861	No stop
08 09 20	=1943+228	20 21 41	59.2	195.8	0.6		10.2	91	865	08 07 36

```
Schedule for TORUN     (Code Tr )                                  Page  16
              Relative motions and evolution of periodic maser
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   6 Mar 2020   Day  66 ---

 ---------- Fringe finder ----------

 Next scan frequencies:  6655.27  6655.27  6655.27  6655.27  6663.27  6663.27  6663.27  6663.27
                         6671.27  6671.27  6671.27  6671.27  6679.27  6679.27  6679.27  6679.27
 Next BBC frequencies:    755.27   755.27   755.27   755.27   763.27   763.27   763.27   763.27
                          771.27   771.27   771.27   771.27   779.27   779.27   779.27   779.27

08 11 20  3C345        20 23 41  50.9 272.9  3.7      51.3   -50      865   08 11 20
08 14 20  ---          20 26 42  50.5 273.5  3.7      51.2   130      870   08 11 21

 Next scan frequencies:  6654.23  6654.23  6654.23  6654.23  6662.23  6662.23  6662.23  6662.23
                         6670.23  6670.23  6670.23  6670.23  6678.23  6678.23  6678.23  6678.23
 Next BBC frequencies:    754.23   754.23   754.23   754.23   762.23   762.23   762.23   762.23
                          770.23   770.23   770.23   770.23   778.23   778.23   778.23   778.23

08 15 05  3C345        20 27 27  50.3 273.6  3.7      51.2    39      870   08 15 05
08 18 05  ---          20 30 28  49.9 274.2  3.8      51.2   180      876   08 15 06

 ---------- G22.36, Ef out for pointing ----------

08 20 35  J1825-0737   20 32 58  23.7 214.5  2.1      20.1    16      876   08 20 35
08 22 20  =1822-076    20 34 43  23.5 214.9  2.1      20.3   105      880   08 20 36

08 22 20  G22.36       20 34 43  22.4 212.8  2.0      19.2   -18      880   No stop
08 25 35  ---          20 37 59  22.1 213.6  2.1      19.7   177      886   08 22 21

08 25 35  J1825-0737   20 37 59  23.2 215.8  2.2      20.7   -18      886   No stop
08 27 20  =1822-076    20 39 44  23.1 216.2  2.2      21.0    87      889   08 25 36

08 27 20  G22.36       20 39 44  22.0 214.0  2.1      19.9   -18      889   No stop
08 30 35  ---          20 43 00  21.7 214.8  2.2      20.3   177      896   08 27 21

 ---------- Ef back ----------

08 31 15  J1825-0737   20 43 40  22.7 217.2  2.3      21.5    22      896   08 31 15
08 33 00  =1822-076    20 45 25  22.6 217.6  2.3      21.7   105      899   08 31 16

08 33 00  G22.36       20 45 25  21.5 215.4  2.2      20.7   -18      899   No stop
08 36 15  ---          20 48 41  21.2 216.2  2.3      21.1   177      905   08 33 01

08 36 15  J1825-0737   20 48 41  22.2 218.4  2.4      22.1   -18      905   No stop
08 38 00  =1822-076    20 50 26  22.1 218.9  2.4      22.4    87      909   08 36 16

08 38 00  G22.36       20 50 26  21.0 216.7  2.3      21.3   -18      909   No stop
08 41 15  ---          20 53 41  20.7 217.5  2.3      21.7   177      915   08 38 01
```

Schedule for TORUN (Code Tr) Page 17

Relative motions and evolution of periodic maser

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 6 Mar 2020 Day 66 ---										
08 41 55	J1825-0737	20 54 21	21.7	219.9	2.5		22.8	22	915	08 41 55
08 43 40	=1822-076	20 56 07	21.5	220.3	2.5		23.1	105	918	08 41 56
08 43 40	G22.36	20 56 07	20.5	218.1	2.4		22.0	-18	918	No stop
08 46 55	---	20 59 22	20.2	218.9	2.4		22.4	177	925	08 43 41
08 46 55	J1825-0737	20 59 22	21.2	221.1	2.5		23.5	-18	925	No stop
08 48 40	=1822-076	21 01 08	21.0	221.5	2.6		23.7	87	928	08 46 56
08 48 40	G22.36	21 01 08	20.0	219.3	2.5		22.7	-18	928	No stop
08 51 55	---	21 04 23	19.7	220.1	2.5		23.1	177	934	08 48 41
08 52 35	J1825-0737	21 05 03	20.7	222.5	2.6		24.1	22	934	08 52 35
08 54 20	=1822-076	21 06 48	20.5	222.9	2.7		24.3	105	938	08 52 36
08 54 20	G22.36	21 06 48	19.5	220.7	2.6		23.4	-18	938	No stop
08 57 35	---	21 10 04	19.2	221.4	2.6		23.8	177	944	08 54 21
08 57 35	J1825-0737	21 10 04	20.1	223.7	2.7		24.7	-19	944	No stop
08 59 20	=1822-076	21 11 49	20.0	224.1	2.8		24.9	86	947	08 57 36
08 59 20	G22.36	21 11 49	19.0	221.9	2.7		24.0	-18	947	No stop
09 02 35	---	21 15 05	18.7	222.6	2.7		24.3	177	954	08 59 21
09 03 15	J1825-0737	21 15 45	19.5	225.0	2.8		25.4	21	954	09 03 15
09 05 00	=1822-076	21 17 30	19.4	225.4	2.8		25.6	105	957	09 03 16
09 05 00	G22.36	21 17 30	18.4	223.2	2.7		24.6	-18	957	No stop
09 08 15	---	21 20 46	18.1	224.0	2.8		25.0	177	963	09 05 01
09 08 15	J1825-0737	21 20 46	19.0	226.2	2.9		25.9	-19	963	No stop
09 10 00	=1822-076	21 22 31	18.8	226.6	2.9		26.1	86	967	09 08 16
09 10 00	G22.36	21 22 31	17.9	224.4	2.8		25.2	-18	967	No stop
09 13 15	---	21 25 47	17.6	225.2	2.9		25.6	177	973	09 10 01
09 13 55	J1825-0737	21 26 27	18.4	227.5	3.0		26.5	21	973	09 13 55
09 15 40	=1822-076	21 28 12	18.2	228.0	3.0		26.7	105	976	09 13 56
---------- G45.473 ----------										
09 16 10	J1905+0952	21 28 42	38.2	226.8	2.4		26.4	-59	976	09 16 10
09 17 55	=1903+097	21 30 27	38.0	227.3	2.4		26.6	46	980	09 16 11

Schedule for TORUN (Code Tr) Page 18

Relative motions and evolution of periodic maser

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 6 Mar 2020 Day 66 ---										
09 17 55	G45.473	21 30 27	40.2	225.6	2.3		26.0	-22	980	No stop
09 21 10	---	21 33 43	39.8	226.6	2.3		26.4	173	986	09 17 56
09 21 10	J1905+0952	21 33 43	37.7	228.2	2.5		27.0	-22	986	No stop
09 22 55	=1903+097	21 35 28	37.5	228.7	2.5		27.2	83	989	09 21 11
09 22 55	G45.473	21 35 28	39.6	227.1	2.3		26.6	-22	989	No stop
09 26 10	---	21 38 44	39.3	228.0	2.4		27.1	173	996	09 22 56
09 26 50	J1905+0952	21 39 24	37.0	229.7	2.5		27.7	18	996	09 26 50
09 28 35	=1903+097	21 41 09	36.8	230.2	2.6		27.9	105	999	09 26 51
09 28 35	G45.473	21 41 09	39.0	228.7	2.4		27.4	-22	999	No stop
09 31 50	---	21 44 25	38.6	229.6	2.5		27.8	173	1005	09 28 36
09 31 50	J1905+0952	21 44 25	36.5	231.1	2.6		28.3	-22	1005	No stop
09 33 35	=1903+097	21 46 10	36.3	231.6	2.7		28.5	83	1009	09 31 51
09 33 35	G45.473	21 46 10	38.4	230.1	2.5		28.0	-22	1009	No stop
09 36 50	---	21 49 25	38.0	231.0	2.6		28.4	173	1015	09 33 36
09 37 30	J1905+0952	21 50 06	35.8	232.6	2.7		29.0	18	1015	09 37 30
09 39 15	=1903+097	21 51 51	35.6	233.1	2.8		29.2	105	1018	09 37 31
09 39 15	G45.473	21 51 51	37.8	231.6	2.6		28.7	-22	1018	No stop
09 42 30	---	21 55 06	37.4	232.5	2.7		29.1	173	1025	09 39 16
09 43 10	J1905+0952	21 55 47	35.1	234.1	2.8		29.6	18	1025	09 43 10
09 44 55	=1903+097	21 57 32	34.9	234.6	2.8		29.8	105	1028	09 43 11
---------- G59.63 ----------										
09 44 55	J1946+2300	21 57 32	51.1	232.2	2.2		31.1	-74	1028	No stop
09 46 40	=1943+228	21 59 17	50.9	232.8	2.2		31.3	31	1031	09 44 56
09 46 40	G59.63	21 59 17	51.0	233.9	2.2		31.9	-15	1031	No stop
09 49 55	---	22 02 33	50.6	234.9	2.3		32.4	180	1038	09 46 41
09 49 55	J1946+2300	22 02 33	50.5	233.8	2.3		31.8	-14	1038	No stop
09 51 40	=1943+228	22 04 18	50.3	234.3	2.3		32.0	91	1041	09 49 56
09 51 40	G59.63	22 04 18	50.4	235.4	2.3		32.6	-15	1041	No stop
09 54 55	---	22 07 33	50.0	236.4	2.4		33.1	180	1047	09 51 41

```
Schedule for TORUN     (Code Tr )                                  Page  19
              Relative motions and evolution of periodic maser
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   6 Mar 2020   Day  66 ---

09 55 30  J1946+2300   22 08 09  49.8 235.5  2.4      32.5    21     1047   09 55 30
09 57 15  =1943+228    22 09 54  49.6 236.0  2.4      32.8   105     1051   09 55 31

09 57 15  G59.63       22 09 54  49.7 237.1  2.4      33.4   -14     1051   No stop
10 00 30  ---          22 13 09  49.3 238.1  2.5      33.8   181     1057   09 57 16

10 00 30  J1946+2300   22 13 09  49.2 237.0  2.4      33.2   -14     1057   No stop
10 02 15  =1943+228    22 14 55  49.0 237.5  2.5      33.4    91     1060   10 00 31

10 02 15  G59.63       22 14 55  49.1 238.6  2.5      34.0   -14     1060   No stop
10 05 30  ---          22 18 10  48.7 239.5  2.6      34.4   181     1067   10 02 16

10 06 05  J1946+2300   22 18 45  48.5 238.6  2.5      33.9    21     1067   10 06 05
10 07 50  =1943+228    22 20 31  48.3 239.1  2.6      34.1   105     1070   10 06 06

10 07 50  G59.63       22 20 31  48.4 240.2  2.6      34.6   -14     1070   No stop
10 11 05  ---          22 23 46  47.9 241.1  2.7      35.0   181     1076   10 07 51

10 11 05  J1946+2300   22 23 46  47.8 240.1  2.6      34.4   -14     1076   No stop
10 12 50  =1943+228    22 25 31  47.6 240.6  2.6      34.6    91     1080   10 11 06

 ---------- G107.29 ----------

 Next scan frequencies:  6655.27  6655.27  6655.27  6655.27  6663.27  6663.27  6663.27  6663.27
                         6671.27  6671.27  6671.27  6671.27  6679.27  6679.27  6679.27  6679.27
 Next BBC frequencies:    755.27   755.27   755.27   755.27   763.27   763.27   763.27   763.27
                          771.27   771.27   771.27   771.27   779.27   779.27   779.27   779.27

10 17 50  J2223+6249   22 30 32  80.1 355.6  0.1     174.2    54     1080   10 17 50
10 19 35  =2221+625    22 32 17  80.1 354.4  0.1     172.7   105     1083   10 17 51

10 19 35  G107.29      22 32 17  79.1 354.1  0.2     171.9   -17     1083   No stop
10 22 50  ---          22 35 33  79.0 352.2  0.2     169.3   178     1089   10 19 36

10 22 50  J2223+6249   22 35 33  80.1 352.3  0.2     169.8   -17     1089   No stop
10 24 35  =2221+625    22 37 18  80.0 351.2  0.2     168.3    88     1093   10 22 51

10 24 35  G107.29      22 37 18  79.0 351.2  0.3     168.0   -17     1093   No stop
10 27 50  ---          22 40 34  78.9 349.4  0.3     165.4   178     1099   10 24 36

10 28 20  J2223+6249   22 41 04  79.9 348.8  0.3     165.1    13     1099   10 28 20
10 30 05  =2221+625    22 42 49  79.9 347.7  0.3     163.7   105     1102   10 28 21

10 30 05  G107.29      22 42 49  78.8 348.2  0.3     163.7   -17     1102   No stop
10 33 20  ---          22 46 05  78.7 346.4  0.4     161.3   178     1109   10 30 06
```

Schedule for TORUN (Code Tr) Page 20

Relative motions and evolution of periodic maser

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 6 Mar 2020 Day 66 ---										
10 33 20	J2223+6249	22 46 05	79.8	345.7	0.4		161.0	-17	1109	No stop
10 35 05	=2221+625	22 47 50	79.7	344.7	0.4		159.6	88	1112	10 33 21
10 35 05	G107.29	22 47 50	78.6	345.5	0.4		160.0	-17	1112	No stop
10 38 20	---	22 51 06	78.5	343.8	0.5		157.6	178	1118	10 35 06
10 38 50	J2223+6249	22 51 36	79.5	342.5	0.5		156.6	13	1118	10 38 50
10 40 35	=2221+625	22 53 21	79.4	341.5	0.5		155.2	105	1122	10 38 51
10 40 35	G107.29	22 53 21	78.4	342.7	0.5		156.0	-17	1122	No stop
10 43 50	---	22 56 36	78.3	341.1	0.6		153.7	178	1128	10 40 36
10 43 50	J2223+6249	22 56 36	79.3	339.6	0.5		152.7	-17	1128	No stop
10 45 35	=2221+625	22 58 22	79.2	338.7	0.6		151.4	88	1131	10 43 51
10 45 35	G107.29	22 58 22	78.2	340.2	0.6		152.5	-17	1131	No stop
10 48 50	---	23 01 37	78.0	338.7	0.7		150.2	178	1138	10 45 36
10 49 20	J2223+6249	23 02 07	79.0	336.7	0.6		148.6	13	1138	10 49 20
10 51 05	=2221+625	23 03 53	78.9	335.9	0.7		147.4	105	1141	10 49 21
10 51 05	G107.29	23 03 53	77.9	337.7	0.7		148.7	-17	1141	No stop
10 54 20	---	23 07 08	77.7	336.3	0.8		146.6	178	1147	10 51 06
10 54 20	J2223+6249	23 07 08	78.7	334.3	0.7		145.1	-18	1147	No stop
10 56 05	=2221+625	23 08 53	78.5	333.5	0.7		143.9	87	1151	10 54 21
---------- G108.76 ----------										
10 57 05	J2258+5719	23 09 54	85.4	342.6	0.2		160.5	20	1151	10 57 05
10 58 50	=2256+570	23 11 39	85.4	339.8	0.2		157.4	105	1154	10 57 06
10 58 50	G108.76	23 11 39	84.0	345.0	0.2		162.5	-24	1154	No stop
11 02 05	---	23 14 54	83.9	341.2	0.3		158.1	171	1160	10 58 51
11 02 05	J2258+5719	23 14 54	85.2	335.0	0.3		151.9	-28	1160	No stop
11 03 50	=2256+570	23 16 40	85.0	332.6	0.3		149.2	77	1164	11 02 06
11 03 50	G108.76	23 16 40	83.8	339.3	0.3		155.8	-27	1164	No stop
11 07 05	---	23 19 55	83.6	335.9	0.3		151.7	168	1170	11 03 51
11 07 35	J2258+5719	23 20 25	84.8	327.9	0.3		143.6	-1	1170	11 07 35
11 09 20	=2256+570	23 22 11	84.6	325.9	0.4		141.3	104	1173	11 07 36

```
Schedule for TORUN     (Code Tr )                                  Page  21
              Relative motions and evolution of periodic maser
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   6 Mar 2020   Day  66 ---

11 09 20  G108.76      23 22 11  83.4 333.6  0.4     149.0   -30     1173   No stop
11 12 35  ---          23 25 26  83.2 330.6  0.4     145.2   165     1180   11 09 21

11 12 35  J2258+5719   23 25 26  84.3 322.4  0.4     137.1   -32     1180   No stop
11 14 20  =2256+570    23 27 11  84.2 320.7  0.5     135.1    73     1183   11 12 36

11 14 20  G108.76      23 27 11  83.1 329.0  0.5     143.3   -31     1183   No stop
11 17 35  ---          23 30 27  82.8 326.4  0.5     140.0   164     1189   11 14 21

11 18 05  J2258+5719   23 30 57  83.8 317.4  0.5     131.0    -3     1189   11 18 05
11 19 50  =2256+570    23 32 42  83.6 316.0  0.5     129.2   102     1193   11 18 06

 ---------- G59.63 ----------

 Next scan frequencies:  6654.23  6654.23  6654.23  6654.23  6662.23  6662.23  6662.23  6662.23
                         6670.23  6670.23  6670.23  6670.23  6678.23  6678.23  6678.23  6678.23
 Next BBC frequencies:    754.23   754.23   754.23   754.23   762.23   762.23   762.23   762.23
                          770.23   770.23   770.23   770.23   778.23   778.23   778.23   778.23

11 24 50  J1946+2300   23 37 43  37.5 258.5  3.8      39.8   114     1193   11 24 50
11 26 35  =1943+228    23 39 28  37.2 258.9  3.9      39.8   105     1196   11 24 51

11 26 35  G59.63       23 39 28  37.2 259.8  3.9      40.1   -14     1196   No stop
11 29 50  ---          23 42 44  36.8 260.5  4.0      40.2   181     1202   11 26 36

11 29 50  J1946+2300   23 42 44  36.7 259.6  3.9      39.9   -13     1202   No stop
11 31 35  =1943+228    23 44 29  36.5 260.0  4.0      40.0    92     1206   11 29 51

11 31 35  G59.63       23 44 29  36.5 260.9  4.0      40.3   -14     1206   No stop
11 34 50  ---          23 47 45  36.0 261.6  4.1      40.4   181     1212   11 31 36

11 35 20  J1946+2300   23 48 15  35.9 260.8  4.0      40.1    17     1212   11 35 20
11 37 05  =1943+228    23 50 00  35.7 261.2  4.1      40.2   105     1215   11 35 21

11 37 05  G59.63       23 50 00  35.7 262.1  4.1      40.4   -13     1215   No stop
11 40 20  ---          23 53 16  35.2 262.8  4.1      40.5   182     1222   11 37 06

11 40 20  J1946+2300   23 53 16  35.2 261.9  4.1      40.2   -13     1222   No stop
11 42 05  =1943+228    23 55 01  34.9 262.3  4.1      40.3    92     1225   11 40 21

11 42 05  G59.63       23 55 01  34.9 263.1  4.2      40.6   -13     1225   No stop
11 45 20  ---          23 58 17  34.4 263.8  4.2      40.6   182     1231   11 42 06

11 45 50  J1946+2300   23 58 47  34.4 263.1  4.2      40.4    17     1231   11 45 50
11 47 35  =1943+228    00 00 32  34.1 263.5  4.2      40.4   105     1235   11 45 51
```

```
Schedule for TORUN     (Code Tr )                                  Page  22
               Relative motions and evolution of periodic maser
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   6 Mar 2020   Day  66 ---

 ---------- Fringe finder ----------

 Next scan frequencies:  6655.27  6655.27  6655.27  6655.27  6663.27  6663.27  6663.27  6663.27
                         6671.27  6671.27  6671.27  6671.27  6679.27  6679.27  6679.27  6679.27
 Next BBC frequencies:    755.27   755.27   755.27   755.27   763.27   763.27   763.27   763.27
                          771.27   771.27   771.27   771.27   779.27   779.27   779.27   779.27

11 51 35  3C454.3      00 04 33  50.7 207.0  1.2      16.5   111     1235   11 51 35
11 55 35  ---          00 08 33  50.4 208.4  1.2      17.3   240     1242   11 51 36

 Next scan frequencies:  6654.23  6654.23  6654.23  6654.23  6662.23  6662.23  6662.23  6662.23
                         6670.23  6670.23  6670.23  6670.23  6678.23  6678.23  6678.23  6678.23
 Next BBC frequencies:    754.23   754.23   754.23   754.23   762.23   762.23   762.23   762.23
                          770.23   770.23   770.23   770.23   778.23   778.23   778.23   778.23

11 56 20  3C454.3      00 09 18  50.4 208.7  1.2      17.5    39     1242   11 56 20
12 00 00  ---          00 12 59  50.1 210.0  1.3      18.2   220     1250   11 56 21



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


 ======== Setup file: sess120.M256

   Setup group:    6         Station: TORUN            Total bit rate:   256
   Format: VDIF              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         9         1         9         2        10         2        10
                 3        11         3        11         4        12         4        12
 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=   6655.27  6655.27  6655.27  6655.27  6663.27  6663.27  6663.27  6663.27
            6671.27  6671.27  6671.27  6671.27  6679.27  6679.27  6679.27  6679.27
  BBC fr=    755.27   755.27   755.27   755.27   763.27   763.27   763.27   763.27
             771.27   771.27   771.27   771.27   779.27   779.27   779.27   779.27
  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

 Frequency Set:  15  Based on FREQ, BW, and/or DOPPLER in schedule.  Used with PCAL = off
  LO sum=   6654.23  6654.23  6654.23  6654.23  6662.23  6662.23  6662.23  6662.23
            6670.23  6670.23  6670.23  6670.23  6678.23  6678.23  6678.23  6678.23
  BBC fr=    754.23   754.23   754.23   754.23   762.23   762.23   762.23   762.23
             770.23   770.23   770.23   770.23   778.23   778.23   778.23   778.23
  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:  15

  Track assignments are:
   track1=   1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15, 16
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

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

* G22.36            18 28 59.382713   * 18 31 44.120550     18 32 48.955452       0.00
                   -09 24 24.71342    *-09 22 12.31290     -09 21 21.21204        0.00
                    Doppler based on LSR frame and radio definition.  Velocities:
                        55.00    55.00    55.00    55.00    55.00    55.00    55.00    55.00
                        55.00    55.00    55.00    55.00    55.00    55.00

* G59.63            19 41 42.255878   * 19 43 49.972000     19 44 39.718985       0.00
                    23 21 22.34671    * 23 28 36.80000      23 31 18.94181        0.00
                    Doppler based on other sources.

* G45.473           19 11 46.091741   * 19 14 07.361000     19 15 02.671500       0.00
                    11 07 02.33145    * 11 12 15.95700      11 14 12.58562        0.00
                    Doppler based on other sources.

* G107.29           22 19 49.849679   * 22 21 26.773000     22 22 02.466965       0.00
```

```
                    63 36 28.47312    * 63 51 37.65700      63 57 33.68344        0.00
                    Doppler based on LSR frame and radio definition.  Velocities:
                       -30.00   -30.00   -30.00   -30.00   -30.00   -30.00   -30.00   -30.00
                       -30.00   -30.00   -30.00   -30.00   -30.00   -30.00

* G108.76           22 56 46.759810   * 22 58 51.188000     22 59 38.324148       0.00
                    58 29 09.14492    * 58 45 14.37000      58 51 34.62299        0.00
                    Doppler based on other sources.

* 3C345             16 41 17.606229   * 16 42 58.809967     16 43 39.059855       0.79
  J1642+3948        39 54 10.81492    * 39 48 36.99399      39 46 08.31025        0.59
  1641+399          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
  J1642+39          GSFC 2016a X/S astro solution,  53724 observations.
                    Doppler based on other sources.

  1822-076          18 22 54.910228   * 18 25 37.609521     18 26 41.673381       0.16
* J1825-0737       -07 39 15.96721    *-07 37 30.01329     -07 36 49.97089        0.24
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,    113 observations.
                    Doppler based on other sources.

  1903+097          19 03 17.231910   * 19 05 39.898972     19 06 35.807393       0.13
* J1905+0952        09 47 30.15815    * 09 52 08.40750      09 53 51.30948        0.22
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,    104 observations.
                    Doppler based on other sources.

  1943+228          19 43 57.820038   * 19 46 06.251395     19 46 56.275357       0.15
* J1946+2300        22 52 41.05689    * 23 00 04.41455      23 02 50.22353        0.26
  J1946+23          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,    172 observations.
                    Doppler based on other sources.

  2221+625          22 21 37.739312   * 22 23 18.096559     22 23 55.264356       1.30
* J2223+6249        62 34 21.29294    * 62 49 33.80457      62 55 31.19581        0.80
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,     36 observations.
                    Doppler based on other sources.

* 3C454.3           22 51 29.519739   * 22 53 57.747939     22 54 55.293822       0.65
  J2253+1608        15 52 54.34808    * 16 08 53.56091      16 15 07.71256        0.73
  2251+158          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
  J2253+16          GSFC 2016a X/S astro solution,  41272 observations.
                    Doppler based on other sources.

  2256+570          22 56 51.881091   * 22 58 57.941194     22 59 45.816746       0.27
* J2258+5719        57 03 01.11776    * 57 19 06.46327      57 25 26.60456        0.15
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,    130 observations.
                    Doppler based on other sources.
```

em117otr

A 3D View of high-mass star formation: gas Kinematics and Magnetic

PI: *L. Moscadelli*

Address: Osservatorio Astrofisico di Arcetri

Observing mode: Polarization observations of 1 source at 6.7 GHz (128 Mb/s

Schedule for TORUN (Code Tr) Page 2

A 3D View of high-mass star formation: gas Kinematics and Magnetic Field

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 7 Mar 2020 Day 67 ---										
Next scan frequencies:		6661.17	6661.17	6661.17	6661.17		6665.17	6665.17	6665.17	6665.17
		6669.17	6669.17	6669.17	6669.17		6673.17	6673.17	6673.17	6673.17
Next BBC frequencies:		761.17	761.17	761.17	761.17		765.17	765.17	765.17	765.17
		769.17	769.17	769.17	769.17		773.17	773.17	773.17	773.17
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 00 00	J1331+3030	14 15 17	66.0	203.4	0.7		16.1	0	0	02 00 00
02 10 00	=3C286	14 25 19	65.3	208.4	0.9		19.3	600	10	02 00 01
02 10 30	J1331+3030	14 25 49	65.3	208.6	0.9		19.5	23	10	02 10 30
02 20 30	=3C286	14 35 50	64.5	213.4	1.1		22.5	600	19	02 10 31
02 24 50	3C345	14 40 11	65.2	110.0	-2.1		-47.2	38	19	02 24 50
02 34 50	---	14 50 13	66.6	113.2	-1.9		-45.9	600	29	02 24 51
02 35 20	3C345	14 50 43	66.7	113.4	-1.9		-45.8	24	29	02 35 20
02 45 20	---	15 00 44	68.0	116.9	-1.7		-44.1	600	39	02 35 21
02 50 20	J1331+3030	15 05 45	61.6	226.2	1.6		30.2	67	39	02 50 20
03 00 20	=3C286	15 15 47	60.5	230.0	1.7		32.2	600	48	02 50 21
03 04 50	J1832-2039	15 20 18	5.3	135.5	-3.2		-26.7	49	48	03 04 50
03 09 50	=1829-207	15 25 18	5.8	136.5	-3.1		-26.2	300	53	03 04 51
03 09 50	G012.68-0.18	15 25 18	10.0	139.3	-2.8		-24.3	-30	53	No stop
03 11 50	---	15 27 19	10.2	139.8	-2.8		-24.1	90	55	03 09 51
03 12 35	J1832-2039	15 28 04	6.1	137.1	-3.1		-25.9	16	55	03 12 35
03 15 30	=1829-207	15 30 59	6.4	137.7	-3.0		-25.6	175	58	03 12 36
03 15 30	G012.68-0.18	15 30 59	10.6	140.6	-2.7		-23.6	-30	58	No stop
03 17 30	---	15 33 00	10.8	141.0	-2.7		-23.4	90	60	03 15 31
03 17 30	J1832-2039	15 33 00	6.6	138.2	-3.0		-25.3	-29	60	No stop
03 20 30	=1829-207	15 36 00	6.9	138.8	-3.0		-25.0	151	63	03 17 31
03 20 30	G012.68-0.18	15 36 00	11.0	141.7	-2.7		-23.0	-30	63	No stop
03 22 30	---	15 38 01	11.2	142.2	-2.6		-22.8	90	65	03 20 31
03 23 15	J1832-2039	15 38 46	7.2	139.4	-2.9		-24.7	16	65	03 23 15
03 26 10	=1829-207	15 41 41	7.4	140.0	-2.9		-24.4	175	67	03 23 16

Schedule for TORUN (Code Tr) Page 3

A 3D View of high-mass star formation: gas Kinematics and Magnetic Field

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 7 Mar 2020 Day 67 ---										
03 26 10	G012.68-0.18	15 41 41	11.6	143.0	-2.6		-22.3	-29	67	No stop
03 28 10	---	15 43 41	11.7	143.4	-2.5		-22.1	91	69	03 26 11
03 28 10	J1832-2039	15 43 41	7.6	140.4	-2.8		-24.1	-29	69	No stop
03 31 10	=1829-207	15 46 42	7.9	141.1	-2.8		-23.8	151	72	03 28 11
03 31 10	G012.68-0.18	15 46 42	12.0	144.1	-2.5		-21.7	-29	72	No stop
03 33 10	---	15 48 42	12.2	144.6	-2.4		-21.5	91	74	03 31 11
03 33 10	J1832-2039	15 48 42	8.1	141.5	-2.7		-23.5	-29	74	No stop
03 36 10	=1829-207	15 51 43	8.4	142.2	-2.7		-23.2	151	77	03 33 11
03 36 10	G012.68-0.18	15 51 43	12.4	145.2	-2.4		-21.1	-29	77	No stop
03 38 10	---	15 53 43	12.6	145.7	-2.4		-20.8	91	79	03 36 11
03 38 55	J1832-2039	15 54 28	8.6	142.8	-2.6		-22.8	16	79	03 38 55
03 41 50	=1829-207	15 57 24	8.9	143.4	-2.6		-22.5	175	82	03 38 56
03 41 50	G012.68-0.18	15 57 24	12.9	146.5	-2.3		-20.4	-29	82	No stop
03 43 50	---	15 59 24	13.1	147.0	-2.3		-20.1	91	84	03 41 51
03 43 50	J1832-2039	15 59 24	9.1	143.9	-2.6		-22.2	-29	84	No stop
03 46 50	=1829-207	16 02 25	9.3	144.5	-2.5		-21.9	151	87	03 43 51
03 51 20	J1331+3030	16 06 55	54.0	246.5	2.6		39.7	52	87	03 51 20
04 01 20	=3C286	16 16 57	52.6	249.3	2.7		40.6	600	96	03 51 21
04 10 10	J2202+4216	16 25 48	35.6	424.7	-5.6		-47.3	165	96	04 10 10
04 20 10	=VR422201	16 35 50	37.0	426.3	-5.5		-48.1	600	106	04 10 11
04 29 30	J1832-2039	16 45 12	12.6	154.2	-1.8		-16.2	1	106	04 29 30
04 32 30	=1829-207	16 48 12	12.8	154.8	-1.8		-15.8	180	109	04 29 31
04 32 30	G012.68-0.18	16 48 12	16.4	158.5	-1.4		-13.4	-28	109	No stop
04 34 30	---	16 50 12	16.6	159.0	-1.4		-13.1	92	111	04 32 31
04 34 30	J1832-2039	16 50 12	12.9	155.3	-1.7		-15.5	-27	111	No stop
04 37 30	=1829-207	16 53 13	13.1	156.0	-1.7		-15.1	153	114	04 34 31
04 37 30	G012.68-0.18	16 53 13	16.7	159.7	-1.4		-12.7	-27	114	No stop
04 39 30	---	16 55 13	16.8	160.2	-1.3		-12.4	93	116	04 37 31
04 39 30	J1832-2039	16 55 13	13.3	156.5	-1.6		-14.8	-27	116	No stop
04 42 30	=1829-207	16 58 14	13.4	157.2	-1.6		-14.4	153	119	04 39 31
04 42 30	G012.68-0.18	16 58 14	17.0	160.9	-1.3		-11.9	-27	119	No stop
04 44 30	---	17 00 14	17.1	161.4	-1.2		-11.6	93	121	04 42 31

Schedule for TORUN (Code Tr) Page 4

A 3D View of high-mass star formation: gas Kinematics and Magnetic Field

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 7 Mar 2020 Day 67 ---										
04 45 15	J1832-2039	17 00 59	13.6	157.8	-1.5		-14.0	18	121	04 45 15
04 48 10	=1829-207	17 03 55	13.7	158.5	-1.5		-13.6	175	123	04 45 16
04 48 10	G012.68-0.18	17 03 55	17.2	162.3	-1.2		-11.1	-27	123	No stop
04 50 10	---	17 05 55	17.3	162.8	-1.2		-10.8	93	125	04 48 11
04 50 10	J1832-2039	17 05 55	13.9	159.0	-1.5		-13.3	-27	125	No stop
04 53 10	=1829-207	17 08 55	14.0	159.7	-1.4		-12.9	153	128	04 50 11
04 58 35	J1331+3030	17 14 21	44.2	263.1	3.7		43.7	104	128	04 58 35
05 06 35	=3C286	17 22 23	43.0	264.8	3.8		43.9	480	136	04 58 36
05 11 55	J1832-2039	17 27 44	14.9	164.1	-1.1		-10.1	103	136	05 11 55
05 14 55	=1829-207	17 30 44	15.0	164.8	-1.0		-9.7	180	139	05 11 56
05 14 55	G012.68-0.18	17 30 44	18.2	168.9	-0.7		-7.0	-26	139	No stop
05 16 55	---	17 32 44	18.3	169.4	-0.7		-6.7	94	141	05 14 56
05 16 55	J1832-2039	17 32 44	15.1	165.3	-1.0		-9.4	-26	141	No stop
05 19 55	=1829-207	17 35 45	15.2	166.0	-1.0		-8.9	154	144	05 16 56
05 19 55	G012.68-0.18	17 35 45	18.4	170.2	-0.7		-6.2	-26	144	No stop
05 21 55	---	17 37 45	18.4	170.6	-0.6		-5.9	94	146	05 19 56
05 21 55	J1832-2039	17 37 45	15.3	166.5	-0.9		-8.6	-26	146	No stop
05 24 55	=1829-207	17 40 46	15.4	167.2	-0.9		-8.1	154	148	05 21 56
05 24 55	G012.68-0.18	17 40 46	18.5	171.4	-0.6		-5.4	-26	148	No stop
05 26 55	---	17 42 46	18.5	171.9	-0.5		-5.1	94	150	05 24 56
05 27 40	J1832-2039	17 43 31	15.5	167.9	-0.8		-7.7	20	150	05 27 40
05 30 35	=1829-207	17 46 27	15.6	168.6	-0.8		-7.3	175	153	05 27 41
05 30 35	G012.68-0.18	17 46 27	18.6	172.8	-0.5		-4.5	-25	153	No stop
05 32 35	---	17 48 27	18.6	173.3	-0.4		-4.2	95	155	05 30 36
05 32 35	J1832-2039	17 48 27	15.6	169.1	-0.7		-7.0	-25	155	No stop
05 35 35	=1829-207	17 51 27	15.7	169.8	-0.7		-6.5	155	158	05 32 36
05 35 35	G012.68-0.18	17 51 27	18.7	174.1	-0.4		-3.7	-25	158	No stop
05 37 35	---	17 53 28	18.7	174.6	-0.4		-3.4	95	160	05 35 36
05 37 35	J1832-2039	17 53 28	15.8	170.3	-0.7		-6.2	-25	160	No stop
05 40 35	=1829-207	17 56 28	15.8	171.0	-0.6		-5.7	155	163	05 37 36

Schedule for TORUN (Code Tr) Page 5

A 3D View of high-mass star formation: gas Kinematics and Magnetic Field

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 7 Mar 2020 Day 67 ---										
05 40 35	G012.68-0.18	17 56 28	18.8	175.3	-0.3		-2.9	-25	163	No stop
05 42 35	---	17 58 29	18.8	175.8	-0.3		-2.6	95	165	05 40 36
05 43 20	J1832-2039	17 59 14	15.9	171.7	-0.6		-5.3	20	165	05 43 20
05 46 15	=1829-207	18 02 09	15.9	172.4	-0.5		-4.9	175	168	05 43 21
05 46 15	G012.68-0.18	18 02 09	18.8	176.8	-0.2		-2.0	-25	168	No stop
05 48 15	---	18 04 09	18.8	177.3	-0.2		-1.7	95	170	05 46 16
05 48 15	J1832-2039	18 04 09	16.0	172.9	-0.5		-4.6	-25	170	No stop
05 51 15	=1829-207	18 07 10	16.0	173.6	-0.4		-4.1	155	172	05 48 16
05 51 15	G012.68-0.18	18 07 10	18.9	178.0	-0.1		-1.3	-24	172	No stop
05 53 15	---	18 09 10	18.9	178.5	-0.1		-0.9	96	174	05 51 16
05 53 15	J1832-2039	18 09 10	16.1	174.1	-0.4		-3.8	-24	174	No stop
05 56 15	=1829-207	18 12 11	16.1	174.8	-0.4		-3.3	156	177	05 53 16
05 56 15	G012.68-0.18	18 12 11	18.9	179.3	-0.0		-0.5	-24	177	No stop
05 58 15	---	18 14 11	18.9	179.8	-0.0		-0.1	96	179	05 56 16
05 59 00	J1832-2039	18 14 56	16.1	175.5	-0.3		-2.9	21	179	05 59 00
06 01 55	=1829-207	18 17 52	16.2	176.2	-0.3		-2.4	175	182	05 59 01
06 07 30	J1331+3030	18 23 28	33.9	277.0	4.9		43.7	119	182	06 07 30
06 15 30	=3C286	18 31 29	32.7	278.5	5.0		43.5	480	190	06 07 31
06 20 55	J1832-2039	18 36 55	16.3	180.9	0.1		0.6	114	190	06 20 55
06 23 55	=1829-207	18 39 55	16.2	181.6	0.1		1.0	180	193	06 20 56
06 23 55	G012.68-0.18	18 39 55	18.7	186.2	0.4		3.9	-24	193	No stop
06 25 55	---	18 41 56	18.6	186.7	0.4		4.2	96	195	06 23 56
06 25 55	J1832-2039	18 41 56	16.2	182.1	0.1		1.3	-24	195	No stop
06 28 55	=1829-207	18 44 56	16.2	182.8	0.2		1.8	156	197	06 25 56
06 28 55	G012.68-0.18	18 44 56	18.6	187.5	0.5		4.7	-24	197	No stop
06 30 55	---	18 46 56	18.5	188.0	0.5		5.0	96	199	06 28 56
06 30 55	J1832-2039	18 46 56	16.2	183.3	0.2		2.1	-24	199	No stop
06 33 55	=1829-207	18 49 57	16.2	184.0	0.3		2.6	156	202	06 30 56
06 33 55	G012.68-0.18	18 49 57	18.5	188.7	0.6		5.5	-25	202	No stop
06 35 55	---	18 51 57	18.4	189.2	0.6		5.8	95	204	06 33 56

Schedule for TORUN (Code Tr) Page 6

A 3D View of high-mass star formation: gas Kinematics and Magnetic Field

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 7 Mar 2020 Day 67 ---										
06 36 40	J1832-2039	18 52 42	16.1	184.7	0.3		3.0	21	204	06 36 40
06 39 35	=1829-207	18 55 38	16.1	185.4	0.4		3.5	175	207	06 36 41
06 39 35	G012.68-0.18	18 55 38	18.3	190.2	0.7		6.4	-25	207	No stop
06 41 35	---	18 57 38	18.3	190.7	0.7		6.7	95	209	06 39 36
06 41 35	J1832-2039	18 57 38	16.1	185.9	0.4		3.8	-24	209	No stop
06 44 35	=1829-207	19 00 39	16.0	186.6	0.5		4.3	156	212	06 41 36
06 44 35	G012.68-0.18	19 00 39	18.2	191.4	0.8		7.2	-25	212	No stop
06 46 35	---	19 02 39	18.1	191.9	0.8		7.5	95	214	06 44 36
06 46 35	J1832-2039	19 02 39	16.0	187.1	0.5		4.6	-24	214	No stop
06 49 35	=1829-207	19 05 40	15.9	187.9	0.5		5.0	156	217	06 46 36
06 49 35	G012.68-0.18	19 05 40	18.0	192.6	0.8		7.9	-25	217	No stop
06 51 35	---	19 07 40	18.0	193.1	0.9		8.3	95	219	06 49 36
06 52 20	J1832-2039	19 08 25	15.9	188.5	0.6		5.5	21	219	06 52 20
06 55 15	=1829-207	19 11 20	15.8	189.2	0.6		5.9	175	221	06 52 21
06 55 15	G012.68-0.18	19 11 20	17.8	194.1	0.9		8.8	-25	221	No stop
06 57 15	---	19 13 21	17.8	194.5	1.0		9.1	95	223	06 55 16
06 57 15	J1832-2039	19 13 21	15.7	189.7	0.7		6.2	-24	223	No stop
07 00 15	=1829-207	19 16 21	15.7	190.4	0.7		6.7	156	226	06 57 16
07 00 15	G012.68-0.18	19 16 21	17.7	195.3	1.0		9.6	-25	226	No stop
07 02 15	---	19 18 22	17.6	195.8	1.1		9.9	95	228	07 00 16
07 02 15	J1832-2039	19 18 22	15.6	190.9	0.8		7.0	-25	228	No stop
07 05 15	=1829-207	19 21 22	15.5	191.7	0.8		7.4	155	231	07 02 16
07 10 45	J1331+3030	19 26 53	24.6	288.5	5.9		41.3	122	231	07 10 45
07 18 45	=3C286	19 34 54	23.5	289.9	6.0		40.9	480	239	07 10 46
07 24 05	J1832-2039	19 40 15	14.8	196.2	1.1		10.3	117	239	07 24 05
07 27 05	=1829-207	19 43 16	14.7	196.9	1.2		10.7	180	242	07 24 06
07 27 05	G012.68-0.18	19 43 16	16.4	201.8	1.5		13.6	-25	242	No stop
07 29 05	---	19 45 16	16.3	202.3	1.5		13.9	95	244	07 27 06
07 29 05	J1832-2039	19 45 16	14.6	197.4	1.2		11.0	-25	244	No stop
07 32 05	=1829-207	19 48 17	14.5	198.1	1.2		11.5	155	247	07 29 06

Schedule for TORUN (Code Tr) Page 7

A 3D View of high-mass star formation: gas Kinematics and Magnetic Field

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 7 Mar 2020 Day 67 ---										
07 32 05	G012.68-0.18	19 48 17	16.1	203.0	1.6		14.3	-25	247	No stop
07 34 05	---	19 50 17	16.0	203.5	1.6		14.6	95	249	07 32 06
07 34 05	J1832-2039	19 50 17	14.4	198.6	1.3		11.8	-25	249	No stop
07 37 05	=1829-207	19 53 17	14.2	199.3	1.3		12.2	155	251	07 34 06
07 37 05	G012.68-0.18	19 53 17	15.8	204.2	1.6		15.0	-25	251	No stop
07 39 05	---	19 55 18	15.7	204.7	1.7		15.3	95	253	07 37 06
07 39 50	J1832-2039	19 56 03	14.1	199.9	1.4		12.6	20	253	07 39 50
07 42 45	=1829-207	19 58 58	14.0	200.6	1.4		13.1	175	256	07 39 51
07 42 45	G012.68-0.18	19 58 58	15.4	205.6	1.7		15.8	-25	256	No stop
07 44 45	---	20 00 59	15.3	206.1	1.8		16.1	95	258	07 42 46
07 44 45	J1832-2039	20 00 59	13.8	201.1	1.5		13.3	-25	258	No stop
07 47 45	=1829-207	20 03 59	13.7	201.8	1.5		13.8	155	261	07 44 46
07 47 45	G012.68-0.18	20 03 59	15.1	206.8	1.8		16.5	-25	261	No stop
07 49 45	---	20 05 59	15.0	207.3	1.8		16.8	95	263	07 47 46
07 49 45	J1832-2039	20 05 59	13.6	202.2	1.5		14.1	-25	263	No stop
07 52 45	=1829-207	20 09 00	13.4	202.9	1.6		14.5	155	266	07 49 46
07 52 45	G012.68-0.18	20 09 00	14.7	208.0	1.9		17.2	-25	266	No stop
07 54 45	---	20 11 00	14.6	208.4	1.9		17.5	95	268	07 52 46
07 55 30	J1832-2039	20 11 45	13.2	203.6	1.6		14.9	20	268	07 55 30
07 58 25	=1829-207	20 14 41	13.1	204.3	1.7		15.3	175	271	07 55 31
07 58 25	G012.68-0.18	20 14 41	14.3	209.3	2.0		18.0	-25	271	No stop
08 00 25	---	20 16 41	14.2	209.8	2.0		18.3	95	273	07 58 26
08 00 25	J1832-2039	20 16 41	12.9	204.7	1.7		15.6	-25	273	No stop
08 03 25	=1829-207	20 19 42	12.7	205.4	1.8		16.0	155	275	08 00 26
08 03 25	G012.68-0.18	20 19 42	14.0	210.5	2.1		18.7	-25	275	No stop
08 05 25	---	20 21 42	13.8	210.9	2.1		18.9	95	277	08 03 26
08 06 10	J1832-2039	20 22 27	12.6	206.1	1.8		16.4	20	277	08 06 10
08 09 05	=1829-207	20 25 23	12.4	206.7	1.9		16.8	175	280	08 06 11
08 14 25	J1331+3030	20 30 43	15.9	299.8	7.0		37.2	120	280	08 14 25
08 22 25	=3C286	20 38 45	14.8	301.3	7.1		36.5	480	288	08 14 26

Schedule for TORUN (Code Tr) Page 8

A 3D View of high-mass star formation: gas Kinematics and Magnetic Field

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 7 Mar 2020 Day 67 ---										
08 27 35	J1832-2039	20 43 56	11.0	210.9	2.2		19.3	113	288	08 27 35
08 30 35	=1829-207	20 46 56	10.8	211.6	2.2		19.7	180	291	08 27 36
08 30 35	G012.68-0.18	20 46 56	11.7	216.7	2.5		22.2	-25	291	No stop
08 32 35	---	20 48 56	11.5	217.1	2.6		22.4	95	293	08 30 36
08 32 35	J1832-2039	20 48 56	10.6	212.1	2.3		19.9	-25	293	No stop
08 35 35	=1829-207	20 51 57	10.4	212.7	2.3		20.3	155	296	08 32 36
08 35 35	G012.68-0.18	20 51 57	11.2	217.8	2.6		22.8	-25	296	No stop
08 37 35	---	20 53 57	11.1	218.3	2.6		23.0	95	298	08 35 36
08 37 35	J1832-2039	20 53 57	10.2	213.2	2.3		20.6	-25	298	No stop
08 40 35	=1829-207	20 56 58	10.0	213.9	2.4		20.9	155	300	08 37 36
08 40 35	G012.68-0.18	20 56 58	10.8	218.9	2.7		23.4	-25	300	No stop
08 42 35	---	20 58 58	10.6	219.4	2.7		23.6	95	302	08 40 36
08 43 21	J1832-2039	20 59 44	9.7	214.5	2.4		21.3	21	302	08 43 21
08 46 16	=1829-207	21 02 40	9.5	215.1	2.5		21.7	175	305	08 43 22
08 46 16	G012.68-0.18	21 02 40	10.2	220.2	2.8		24.0	-25	305	No stop
08 48 16	---	21 04 40	10.0	220.6	2.8		24.3	95	307	08 46 17
08 48 16	J1832-2039	21 04 40	9.3	215.6	2.5		21.9	-25	307	No stop
08 51 16	=1829-207	21 07 41	9.1	216.2	2.6		22.3	155	310	08 48 17
08 51 16	G012.68-0.18	21 07 41	9.7	221.3	2.9		24.6	-25	310	No stop
08 53 16	---	21 09 41	9.5	221.7	2.9		24.9	95	312	08 51 17
08 53 16	J1832-2039	21 09 41	8.9	216.7	2.6		22.5	-25	312	No stop
08 56 16	=1829-207	21 12 41	8.6	217.3	2.7		22.9	155	315	08 53 17
08 56 16	G012.68-0.18	21 12 41	9.2	222.4	3.0		25.2	-25	315	No stop
08 58 16	---	21 14 42	9.0	222.8	3.0		25.4	95	317	08 56 17
08 59 02	J1832-2039	21 15 28	8.3	217.9	2.7		23.2	21	317	08 59 02
09 01 57	=1829-207	21 18 23	8.1	218.6	2.8		23.6	175	320	08 59 03
09 01 57	G012.68-0.18	21 18 23	8.7	223.6	3.1		25.8	-25	320	No stop
09 03 57	---	21 20 24	8.4	224.1	3.1		26.0	95	322	09 01 58
09 03 57	J1832-2039	21 20 24	7.9	219.0	2.8		23.8	-25	322	No stop
09 06 57	=1829-207	21 23 24	7.6	219.6	2.8		24.2	155	324	09 03 58

```
Schedule for TORUN     (Code Tr )                                  Page   9
              A 3D View of high-mass star formation: gas Kinematics and Magnetic Field
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   7 Mar 2020   Day  67 ---

09 06 57 G012.68-0.18  21 23 24   8.1 224.7  3.1      26.4   -25      324   No stop
09 08 57  ---          21 25 24   7.9 225.1  3.2      26.6    95      326   09 06 58

09 09 43  J1832-2039   21 26 11   7.3 220.2  2.9      24.5    21      326   09 09 43
09 12 38  =1829-207    21 29 06   7.0 220.9  2.9      24.8   175      329   09 09 44

09 17 43  J1331+3030   21 34 12   8.1 311.4  8.0      31.5   110      329   09 17 43
09 24 43  =3C286       21 41 13   7.4 312.7  8.2      30.8   420      336   09 17 44

09 29 43  J1832-2039   21 46 14   5.3 224.5  3.2      26.7   108      336   09 29 43
09 32 43  =1829-207    21 49 14   5.0 225.1  3.3      27.0   180      339   09 29 44

09 32 43 G012.68-0.18  21 49 14   5.3 230.2  3.6      29.0   -25      339   No stop
09 34 43  ---          21 51 15   5.0 230.6  3.6      29.2    95      341   09 32 44

09 34 43  J1832-2039   21 51 15   4.8 225.5  3.3      27.3   -25      341   No stop
09 37 43  =1829-207    21 54 15   4.4 226.2  3.3      27.6   155      344   09 34 44

09 37 43 G012.68-0.18  21 54 15   4.7 231.2  3.7      29.5   -25      344   No stop
09 39 43  ---          21 56 15   4.5 231.6  3.7      29.7    95      346   09 37 44

09 39 43  J1832-2039   21 56 15   4.2 226.6  3.4      27.8   -25      346   No stop
09 42 43  =1829-207    21 59 16   3.9 227.2  3.4      28.1   155      349   09 39 44

09 42 43 G012.68-0.18  21 59 16   4.1 232.3  3.7      30.0   -25      349   No stop
09 44 43  ---          22 01 16   3.9 232.7  3.8      30.1    95      350   09 42 44

09 45 28  J1832-2039   22 02 01   3.6 227.8  3.5      28.4    20      350   09 45 28
09 48 23  =1829-207    22 04 57   3.3 228.4  3.5      28.7   175      353   09 45 29

09 48 23 G012.68-0.18  22 04 57   3.4 233.4  3.8      30.5   -25      353   No stop
09 50 23  ---          22 06 57   3.2 233.8  3.9      30.7    95      355   09 48 24

09 50 23  J1832-2039   22 06 57   3.0 228.8  3.6      28.9   -25      355   No stop
09 53 23  =1829-207    22 09 58   2.7 229.4  3.6  D   29.2     0      358   09 50 24

10 22 53  3C84         22 39 33  43.0  74.3 -4.7     -50.6  1437      358   10 22 53
10 30 53  ---          22 47 34  44.1  75.6 -4.6     -51.0   480      366   10 22 54



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


 ======== Setup file: sess120.M128

   Setup group:    6         Station: TORUN             Total bit rate:   128
```

```
Format: VDIF              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         9         1         9         2        10         2        10
                 3        11         3        11         4        12         4        12
 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=   6661.17  6661.17  6661.17  6661.17  6665.17  6665.17  6665.17  6665.17
            6669.17  6669.17  6669.17  6669.17  6673.17  6673.17  6673.17  6673.17
  BBC fr=    761.17   761.17   761.17   761.17   765.17   765.17   765.17   765.17
             769.17   769.17   769.17   769.17   773.17   773.17   773.17   773.17
  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:   5

  Track assignments are:
   track1=   1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15, 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 15 03.984627       0.00
                   -18 02 40.99379    *-18 01 46.57000     -18 01 23.22923        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 29.567265   * 03 19 48.160096     03 21 06.550898       1.50
  J0319+4130        41 19 51.91692    * 41 30 42.10404      41 35 02.64175        2.86
  0316+413          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
  J0319+41          GSFC 2016a X/S astro solution,  10291 observations.
                    Doppler based on other sources.

  3C286             13 28 49.657769   * 13 31 08.288061     13 32 04.420515       0.17
* J1331+3030        30 45 58.64066    * 30 30 32.95930      30 24 13.65488        0.16
  1328+307          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
  J1331+30          GSFC 2016a X/S astro solution,    269 observations.
                    Doppler based on other sources.

* 3C345             16 41 17.606229   * 16 42 58.809967     16 43 39.102106       0.79
  J1642+3948        39 54 10.81492    * 39 48 36.99399      39 46 08.22670        0.59
  1641+399          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
  J1642+39          GSFC 2016a X/S astro solution,  53724 observations.
                    Doppler based on other sources.
```

```
  1829-207          18 29 12.261807   * 18 32 11.046470     18 33 21.455518       0.20
* J1832-2039       -20 42 02.03596    *-20 39 48.20359     -20 38 52.59257        0.32
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,    128 observations.
                    Doppler based on other sources.

  VR422201          22 00 39.362504   * 22 02 43.291371     22 03 30.892318       0.01
* J2202+4216        42 02 08.59075    * 42 16 39.97988      42 22 18.37519        0.00
  BLLAC             /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
  2200+420          GSFC 2016a X/S astro solution,  52189 observations.
  J2202+42          Doppler based on other sources.
```

rd001tr

EVN mapping of 6.7 GHz maser in accretion burst candidate.

PI: *Michal Durjasz*

```
Address:  Torun Centre for Astronomy

Schedule for TORUN     (Code Tr )                                    Page   2
               EVN mapping of 6.7 GHz maser in accretion burst candidate.
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   7 Mar 2020   Day  67 ---
 Next scan frequencies:  6662.57  6662.57  6662.57  6662.57  6666.57  6666.57  6666.57  6666.57
                         6670.57  6670.57  6670.57  6670.57  6674.57  6674.57  6674.57  6674.57
 Next BBC frequencies:    762.57   762.57   762.57   762.57   766.57   766.57   766.57   766.57
                          770.57   770.57   770.57   770.57   774.57   774.57   774.57   774.57
 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

12 00 00  3C454.3      00 16 56  49.8 211.4  1.4      19.0     0        0   12 00 00
12 05 00  ---          00 21 56  49.4 213.1  1.5      20.0   300        5   12 00 01

12 09 00  J2102+4702   00 25 57  57.6 280.3  3.4      60.2    91        5   12 09 00
12 10 45  =2100+468    00 27 42  57.4 280.6  3.4      60.2   105        7   12 09 01

12 11 15  G85.41       00 28 12  55.0 278.7  3.6      57.0     7        7   12 11 15
12 14 30  ---          00 31 28  54.5 279.2  3.6      56.9   195       10   12 11 16

12 14 30  J2102+4702   00 31 28  56.8 281.2  3.5      60.0   -22       10   No stop
12 16 15  =2100+468    00 33 13  56.5 281.4  3.5      59.9    83       11   12 14 31

12 16 45  G85.41       00 33 43  54.2 279.6  3.6      56.8     7       11   12 16 45
12 20 00  ---          00 36 59  53.7 280.1  3.7      56.7   195       14   12 16 46

12 20 00  J2102+4702   00 36 59  56.0 282.0  3.6      59.7   -22       14   No stop
12 21 45  =2100+468    00 38 44  55.7 282.3  3.6      59.6    83       16   12 20 01

12 22 15  G85.41       00 39 14  53.3 280.5  3.7      56.6     7       16   12 22 15
12 25 30  ---          00 42 30  52.9 281.0  3.8      56.4   195       19   12 22 16

12 25 30  J2102+4702   00 42 30  55.2 282.8  3.7      59.3   -22       19   No stop
12 27 15  =2100+468    00 44 15  54.9 283.1  3.7      59.2    83       21   12 25 31

12 27 45  G85.41       00 44 45  52.5 281.4  3.8      56.3     7       21   12 27 45
12 31 00  ---          00 48 01  52.0 281.9  3.9      56.2   195       24   12 27 46

12 31 00  J2102+4702   00 48 01  54.4 283.7  3.8      59.0   -22       24   No stop
12 32 45  =2100+468    00 49 46  54.1 283.9  3.8      58.9    83       26   12 31 01

12 33 15  G85.41       00 50 16  51.7 282.3  3.9      56.0     7       26   12 33 15
12 36 30  ---          00 53 32  51.2 282.8  4.0      55.9   195       29   12 33 16

12 36 30  J2102+4702   00 53 32  53.6 284.5  3.8      58.7   -22       29   No stop
12 38 15  =2100+468    00 55 17  53.3 284.8  3.9      58.6    83       31   12 36 31

12 38 45  G85.41       00 55 47  50.9 283.2  4.0      55.7     7       31   12 38 45
12 42 00  ---          00 59 02  50.4 283.7  4.1      55.6   195       34   12 38 46
```

Schedule for TORUN (Code Tr) Page 3

EVN mapping of 6.7 GHz maser in accretion burst candidate.

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 7 Mar 2020 Day 67 ---										
12 42 00	J2102+4702	00 59 02	52.8	285.3	3.9		58.3	-22	34	No stop
12 43 45	=2100+468	01 00 48	52.5	285.6	4.0		58.2	83	36	12 42 01
12 44 15	G85.41	01 01 18	50.1	284.0	4.1		55.4	7	36	12 44 15
12 47 30	---	01 04 33	49.6	284.5	4.2		55.3	195	39	12 44 16
12 47 30	J2102+4702	01 04 33	52.0	286.1	4.0		58.0	-23	39	No stop
12 49 15	=2100+468	01 06 19	51.7	286.4	4.1		57.8	82	40	12 47 31
12 49 45	G85.41	01 06 49	49.3	284.9	4.2		55.1	7	40	12 49 45
12 53 00	---	01 10 04	48.8	285.4	4.3		54.9	195	43	12 49 46
12 53 00	J2102+4702	01 10 04	51.2	286.9	4.1		57.6	-23	43	No stop
12 54 45	=2100+468	01 11 50	50.9	287.2	4.1		57.4	82	45	12 53 01
12 55 15	G85.41	01 12 20	48.5	285.7	4.3		54.8	7	45	12 55 15
12 58 30	---	01 15 35	48.0	286.2	4.3		54.6	195	48	12 55 16
12 58 30	J2102+4702	01 15 35	50.4	287.7	4.2		57.2	-23	48	No stop
13 00 15	=2100+468	01 17 20	50.1	288.0	4.2		57.1	82	50	12 58 31
13 00 45	G85.41	01 17 51	47.7	286.6	4.4		54.4	7	50	13 00 45
13 04 00	---	01 21 06	47.2	287.1	4.4		54.2	195	53	13 00 46
13 04 00	J2102+4702	01 21 06	49.6	288.5	4.3		56.8	-23	53	No stop
13 05 45	=2100+468	01 22 51	49.4	288.8	4.3		56.7	82	55	13 04 01
13 06 15	G85.41	01 23 21	46.9	287.4	4.5		54.1	7	55	13 06 15
13 09 30	---	01 26 37	46.5	287.9	4.5		53.9	195	58	13 06 16
13 09 30	J2102+4702	01 26 37	48.8	289.3	4.4		56.4	-23	58	No stop
13 11 15	=2100+468	01 28 22	48.6	289.6	4.4		56.2	82	60	13 09 31
13 11 45	G85.41	01 28 52	46.1	288.3	4.6		53.7	7	60	13 11 45
13 15 00	---	01 32 08	45.7	288.7	4.6		53.5	195	63	13 11 46
13 15 00	J2102+4702	01 32 08	48.0	290.1	4.5		55.9	-23	63	No stop
13 16 45	=2100+468	01 33 53	47.8	290.4	4.5		55.8	82	64	13 15 01
13 17 15	G85.41	01 34 23	45.3	289.1	4.7		53.3	7	64	13 17 15
13 20 30	---	01 37 39	44.9	289.6	4.7		53.1	195	68	13 17 16
13 20 30	J2102+4702	01 37 39	47.3	290.9	4.6		55.5	-23	68	No stop
13 22 15	=2100+468	01 39 24	47.0	291.1	4.6		55.4	82	69	13 20 31

Schedule for TORUN (Code Tr) Page 4

EVN mapping of 6.7 GHz maser in accretion burst candidate.

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 7 Mar 2020 Day 67 ---										
13 22 45	G85.41	01 39 54	44.6	289.9	4.8		53.0	7	69	13 22 45
13 26 00	---	01 43 10	44.1	290.4	4.8		52.7	195	72	13 22 46
13 26 00	J2102+4702	01 43 10	46.5	291.7	4.7		55.1	-23	72	No stop
13 27 45	=2100+468	01 44 55	46.2	291.9	4.7		54.9	82	74	13 26 01
13 28 15	G85.41	01 45 25	43.8	290.7	4.8		52.5	7	74	13 28 15
13 31 30	---	01 48 41	43.3	291.2	4.9		52.3	195	77	13 28 16
13 31 30	J2102+4702	01 48 41	45.7	292.5	4.8		54.6	-23	77	No stop
13 33 15	=2100+468	01 50 26	45.5	292.7	4.8		54.5	82	79	13 31 31
13 33 45	G85.41	01 50 56	43.0	291.6	4.9		52.1	7	79	13 33 45
13 37 00	---	01 54 11	42.6	292.0	5.0		51.9	195	82	13 33 46
13 37 00	J2102+4702	01 54 11	45.0	293.2	4.9		54.2	-23	82	No stop
13 38 45	=2100+468	01 55 57	44.7	293.5	4.9		54.0	82	84	13 37 01
13 39 15	G85.41	01 56 27	42.2	292.4	5.0		51.7	7	84	13 39 15
13 42 30	---	01 59 42	41.8	292.9	5.1		51.5	195	87	13 39 16
13 42 30	J2102+4702	01 59 42	44.2	294.0	4.9		53.7	-23	87	No stop
13 44 15	=2100+468	02 01 28	44.0	294.3	5.0		53.6	82	89	13 42 31
13 44 45	G85.41	02 01 58	41.5	293.2	5.1		51.3	7	89	13 44 45
13 48 00	---	02 05 13	41.0	293.7	5.2		51.0	195	92	13 44 46
13 48 00	J2102+4702	02 05 13	43.5	294.8	5.0		53.2	-23	92	No stop
13 49 45	=2100+468	02 06 59	43.2	295.0	5.1		53.1	82	93	13 48 01
13 50 15	G85.41	02 07 29	40.7	294.0	5.2		50.8	7	93	13 50 15
13 53 30	---	02 10 44	40.3	294.5	5.3		50.6	195	97	13 50 16
13 53 30	J2102+4702	02 10 44	42.7	295.6	5.1		52.7	-23	97	No stop
13 55 15	=2100+468	02 12 29	42.5	295.8	5.2		52.6	82	98	13 53 31
13 55 45	G85.41	02 13 00	40.0	294.8	5.3		50.4	7	98	13 55 45
13 59 00	---	02 16 15	39.5	295.3	5.4		50.1	195	101	13 55 46
13 59 00	J2102+4702	02 16 15	42.0	296.3	5.2		52.3	-23	101	No stop
14 00 45	=2100+468	02 18 00	41.7	296.6	5.3		52.1	82	103	13 59 01
14 01 15	G85.41	02 18 30	39.2	295.6	5.4		49.9	7	103	14 01 15
14 04 30	---	02 21 46	38.8	296.1	5.4		49.7	195	106	14 01 16

Schedule for TORUN (Code Tr) Page 5

EVN mapping of 6.7 GHz maser in accretion burst candidate.

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 7 Mar 2020 Day 67 ---										
14 04 30	J2102+4702	02 21 46	41.2	297.1	5.3		51.8	-23	106	No stop
14 06 15	=2100+468	02 23 31	41.0	297.4	5.3		51.6	82	108	14 04 31
14 06 45	G85.41	02 24 01	38.5	296.4	5.5		49.5	7	108	14 06 45
14 10 00	---	02 27 17	38.0	296.9	5.5		49.2	195	111	14 06 46
14 10 00	J2102+4702	02 27 17	40.5	297.9	5.4		51.3	-23	111	No stop
14 11 45	=2100+468	02 29 02	40.3	298.1	5.4		51.1	82	113	14 10 01
14 12 15	G85.41	02 29 32	37.7	297.2	5.6		49.0	7	113	14 12 15
14 15 30	---	02 32 48	37.3	297.7	5.6		48.7	195	116	14 12 16
14 15 30	J2102+4702	02 32 48	39.8	298.6	5.5		50.7	-23	116	No stop
14 17 15	=2100+468	02 34 33	39.5	298.9	5.5		50.6	82	118	14 15 31
14 17 45	G85.41	02 35 03	37.0	298.0	5.7		48.5	7	118	14 17 45
14 21 00	---	02 38 19	36.6	298.5	5.7		48.2	195	121	14 17 46
14 21 00	J2102+4702	02 38 19	39.0	299.4	5.6		50.2	-23	121	No stop
14 22 45	=2100+468	02 40 04	38.8	299.7	5.6		50.1	82	122	14 21 01
14 23 15	G85.41	02 40 34	36.3	298.9	5.8		48.0	7	122	14 23 15
14 26 30	---	02 43 50	35.9	299.3	5.8		47.7	195	126	14 23 16
14 26 30	J2102+4702	02 43 50	38.3	300.2	5.7		49.7	-23	126	No stop
14 28 15	=2100+468	02 45 35	38.1	300.4	5.7		49.5	82	127	14 26 31
14 28 45	G85.41	02 46 05	35.6	299.7	5.9		47.5	7	127	14 28 45
14 32 00	---	02 49 21	35.1	300.1	5.9		47.2	195	130	14 28 46
14 32 00	J2102+4702	02 49 21	37.6	301.0	5.8		49.2	-23	130	No stop
14 33 45	=2100+468	02 51 06	37.4	301.2	5.8		49.0	82	132	14 32 01
14 34 15	G85.41	02 51 36	34.8	300.5	5.9		47.0	7	132	14 34 15
14 37 30	---	02 54 51	34.4	301.0	6.0		46.7	195	135	14 34 16
14 37 30	J2102+4702	02 54 51	36.9	301.7	5.9		48.6	-23	135	No stop
14 39 15	=2100+468	02 56 37	36.7	302.0	5.9		48.4	82	137	14 37 31
14 39 45	G85.41	02 57 07	34.1	301.3	6.0		46.5	7	137	14 39 45
14 43 00	---	03 00 22	33.7	301.8	6.1		46.2	195	140	14 39 46
14 43 00	J2102+4702	03 00 22	36.2	302.5	6.0		48.1	-23	140	No stop
14 44 45	=2100+468	03 02 08	36.0	302.8	6.0		47.9	82	142	14 43 01

```
Schedule for TORUN     (Code Tr )                                   Page   6
              EVN mapping of 6.7 GHz maser in accretion burst candidate.
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   7 Mar 2020   Day  67 ---

14 45 15  G85.41       03 02 38  33.4 302.1  6.1      46.0     7      142   14 45 15
14 48 30  ---          03 05 53  33.0 302.6  6.2      45.7   195      145   14 45 16

14 48 30  J2102+4702   03 05 53  35.5 303.3  6.0      47.5   -23      145   No stop
14 50 15  =2100+468    03 07 39  35.3 303.5  6.1      47.3    82      147   14 48 31

14 53 15  3C454.3      03 10 39  28.5 258.9  4.3      37.9    75      147   14 53 15
14 58 15  ---          03 15 40  27.8 260.0  4.3      38.0   300      151   14 53 16

15 01 15  J2102+4702   03 18 40  33.9 305.1  6.3      46.2    75      151   15 01 15
15 03 00  =2100+468    03 20 26  33.7 305.4  6.3      46.0   105      153   15 01 16

15 03 30  G85.41       03 20 56  31.1 304.8  6.4      44.2     7      153   15 03 30
15 06 45  ---          03 24 11  30.7 305.3  6.5      43.9   195      156   15 03 31

15 06 45  J2102+4702   03 24 11  33.2 305.9  6.4      45.6   -23      156   No stop
15 08 30  =2100+468    03 25 57  33.0 306.1  6.4      45.4    82      158   15 06 46

15 09 00  G85.41       03 26 27  30.5 305.6  6.5      43.6     7      158   15 09 00
15 12 15  ---          03 29 42  30.1 306.1  6.6      43.3   195      161   15 09 01

15 12 15  J2102+4702   03 29 42  32.6 306.7  6.4      45.0   -23      161   No stop
15 14 00  =2100+468    03 31 27  32.4 306.9  6.5      44.9    82      163   15 12 16

15 14 30  G85.41       03 31 57  29.8 306.4  6.6      43.1     7      163   15 14 30
15 17 45  ---          03 35 13  29.4 306.9  6.7      42.7   195      166   15 14 31

15 17 45  J2102+4702   03 35 13  31.9 307.5  6.5      44.5   -23      166   No stop
15 19 30  =2100+468    03 36 58  31.7 307.7  6.6      44.3    82      168   15 17 46

15 20 00  G85.41       03 37 28  29.1 307.3  6.7      42.5     7      168   15 20 00
15 23 15  ---          03 40 44  28.7 307.7  6.8      42.2   195      171   15 20 01

15 23 15  J2102+4702   03 40 44  31.3 308.3  6.6      43.9   -23      171   No stop
15 25 00  =2100+468    03 42 29  31.0 308.5  6.7      43.7    82      172   15 23 16

15 25 30  G85.41       03 42 59  28.5 308.1  6.8      41.9     7      172   15 25 30
15 28 45  ---          03 46 15  28.1 308.6  6.9      41.6   195      176   15 25 31

15 28 45  J2102+4702   03 46 15  30.6 309.0  6.7      43.3   -23      176   No stop
15 30 30  =2100+468    03 48 00  30.4 309.3  6.8      43.1    82      177   15 28 46

15 31 00  G85.41       03 48 30  27.8 308.9  6.9      41.3     7      177   15 31 00
15 34 15  ---          03 51 46  27.4 309.4  6.9      41.0   195      180   15 31 01
```

Schedule for TORUN (Code Tr) Page 7

EVN mapping of 6.7 GHz maser in accretion burst candidate.

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 7 Mar 2020 Day 67 ---										
15 34 15	J2102+4702	03 51 46	30.0	309.8	6.8		42.6	-23	180	No stop
15 36 00	=2100+468	03 53 31	29.8	310.1	6.8		42.5	82	182	15 34 16
15 36 30	G85.41	03 54 01	27.2	309.7	7.0		40.7	7	182	15 36 30
15 39 45	---	03 57 17	26.8	310.2	7.0		40.4	195	185	15 36 31
15 39 45	J2102+4702	03 57 17	29.3	310.6	6.9		42.0	-23	185	No stop
15 41 30	=2100+468	03 59 02	29.1	310.9	6.9		41.8	82	187	15 39 46
15 42 00	G85.41	03 59 32	26.5	310.6	7.1		40.1	6	187	15 42 00
15 45 15	---	04 02 48	26.2	311.1	7.1		39.8	195	190	15 42 01
15 45 15	J2102+4702	04 02 48	28.7	311.4	7.0		41.4	-23	190	No stop
15 47 00	=2100+468	04 04 33	28.5	311.7	7.0		41.2	82	192	15 45 16
15 47 30	G85.41	04 05 03	25.9	311.4	7.2		39.5	6	192	15 47 30
15 50 45	---	04 08 18	25.6	311.9	7.2		39.2	195	195	15 47 31
15 50 45	J2102+4702	04 08 18	28.1	312.2	7.1		40.8	-23	195	No stop
15 52 30	=2100+468	04 10 04	27.9	312.5	7.1		40.6	82	197	15 50 46
15 53 00	G85.41	04 10 34	25.3	312.2	7.3		38.9	6	197	15 53 00
15 56 15	---	04 13 49	24.9	312.7	7.3		38.6	195	200	15 53 01
15 56 15	J2102+4702	04 13 49	27.5	313.1	7.2		40.1	-23	200	No stop
15 58 00	=2100+468	04 15 35	27.3	313.3	7.2		39.9	82	201	15 56 16
15 58 30	G85.41	04 16 05	24.7	313.1	7.4		38.3	6	201	15 58 30
16 01 45	---	04 19 20	24.3	313.6	7.4		37.9	195	205	15 58 31
16 01 45	J2102+4702	04 19 20	26.9	313.9	7.3		39.5	-23	205	No stop
16 03 30	=2100+468	04 21 06	26.7	314.1	7.3		39.3	82	206	16 01 46
16 04 00	G85.41	04 21 36	24.1	313.9	7.4		37.7	6	206	16 04 00
16 07 15	---	04 24 51	23.7	314.4	7.5		37.3	195	209	16 04 01
16 07 15	J2102+4702	04 24 51	26.3	314.7	7.4		38.9	-23	209	No stop
16 09 00	=2100+468	04 26 36	26.1	314.9	7.4		38.7	82	211	16 07 16
16 09 30	G85.41	04 27 07	23.5	314.8	7.5		37.1	6	211	16 09 30
16 12 45	---	04 30 22	23.2	315.3	7.6		36.7	195	214	16 09 31
16 12 45	J2102+4702	04 30 22	25.7	315.5	7.5		38.2	-23	214	No stop
16 14 30	=2100+468	04 32 07	25.5	315.8	7.5		38.0	82	216	16 12 46

Schedule for TORUN (Code Tr) Page 8

EVN mapping of 6.7 GHz maser in accretion burst candidate.

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

--- Sat 7 Mar 2020 Day 67 ---

Start UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
16 15 00	G85.41	04 32 37	22.9	315.6	7.6		36.4	6	216	16 15 00
16 18 15	---	04 35 53	22.6	316.1	7.7		36.0	195	219	16 15 01
16 18 15	J2102+4702	04 35 53	25.1	316.3	7.5		37.6	-23	219	No stop
16 20 00	=2100+468	04 37 38	24.9	316.6	7.6		37.3	82	221	16 18 16
16 20 30	G85.41	04 38 08	22.3	316.5	7.7		35.8	6	221	16 20 30
16 23 45	---	04 41 24	22.0	317.0	7.8		35.4	195	224	16 20 31
16 23 45	J2102+4702	04 41 24	24.6	317.1	7.6		36.9	-23	224	No stop
16 25 30	=2100+468	04 43 09	24.4	317.4	7.7		36.7	82	226	16 23 46
16 26 00	G85.41	04 43 39	21.8	317.3	7.8		35.1	6	226	16 26 00
16 29 15	---	04 46 55	21.5	317.8	7.9		34.7	195	229	16 26 01
16 29 15	J2102+4702	04 46 55	24.0	318.0	7.7		36.2	-23	229	No stop
16 31 00	=2100+468	04 48 40	23.8	318.2	7.8		36.0	82	230	16 29 16
16 31 30	G85.41	04 49 10	21.2	318.2	7.9		34.5	6	230	16 31 30
16 34 45	---	04 52 26	20.9	318.7	8.0		34.1	195	234	16 31 31
16 34 45	J2102+4702	04 52 26	23.5	318.8	7.8		35.5	-23	234	No stop
16 36 30	=2100+468	04 54 11	23.3	319.1	7.9		35.3	82	235	16 34 46
16 37 00	G85.41	04 54 41	20.7	319.1	8.0		33.8	6	235	16 37 00
16 40 15	---	04 57 57	20.4	319.6	8.1		33.4	195	238	16 37 01
16 40 15	J2102+4702	04 57 57	22.9	319.6	7.9		34.9	-23	238	No stop
16 42 00	=2100+468	04 59 42	22.7	319.9	7.9		34.6	82	240	16 40 16
16 42 30	G85.41	05 00 12	20.1	319.9	8.1		33.1	6	240	16 42 30
16 45 45	---	05 03 27	19.8	320.4	8.1		32.7	195	243	16 42 31
16 45 45	J2102+4702	05 03 27	22.4	320.5	8.0		34.2	-23	243	No stop
16 47 30	=2100+468	05 05 13	22.2	320.7	8.0		34.0	82	245	16 45 46
16 48 00	G85.41	05 05 43	19.6	320.8	8.2		32.4	6	245	16 48 00
16 51 15	---	05 08 58	19.3	321.3	8.2		32.0	195	248	16 48 01
16 51 15	J2102+4702	05 08 58	21.9	321.3	8.1		33.5	-23	248	No stop
16 53 00	=2100+468	05 10 44	21.7	321.6	8.1		33.3	82	250	16 51 16
16 53 30	G85.41	05 11 14	19.1	321.7	8.3		31.8	6	250	16 53 30
16 56 45	---	05 14 29	18.8	322.2	8.3		31.3	195	253	16 53 31

Schedule for TORUN (Code Tr) Page 9

EVN mapping of 6.7 GHz maser in accretion burst candidate.

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 7 Mar 2020 Day 67 ---										
16 56 45	J2102+4702	05 14 29	21.3	322.2	8.2		32.8	-23	253	No stop
16 58 30	=2100+468	05 16 15	21.2	322.4	8.2		32.6	82	255	16 56 46
16 59 00	G85.41	05 16 45	18.6	322.6	8.4		31.1	6	255	16 59 00
17 02 15	---	05 20 00	18.3	323.1	8.4		30.7	195	258	16 59 01
17 02 15	J2102+4702	05 20 00	20.8	323.0	8.3		32.1	-23	258	No stop
17 04 00	=2100+468	05 21 45	20.7	323.3	8.3		31.8	82	259	17 02 16
17 04 30	G85.41	05 22 16	18.1	323.4	8.5		30.4	6	259	17 04 30
17 07 45	---	05 25 31	17.8	324.0	8.5		30.0	195	263	17 04 31
17 07 45	J2102+4702	05 25 31	20.3	323.9	8.4		31.4	-23	263	No stop
17 09 30	=2100+468	05 27 16	20.2	324.1	8.4		31.1	82	264	17 07 46
17 10 00	G85.41	05 27 46	17.6	324.3	8.5		29.7	6	264	17 10 00
17 13 15	---	05 31 02	17.3	324.9	8.6		29.2	195	267	17 10 01
17 13 15	J2102+4702	05 31 02	19.9	324.7	8.5		30.6	-23	267	No stop
17 15 00	=2100+468	05 32 47	19.7	325.0	8.5		30.4	82	269	17 13 16
17 15 30	G85.41	05 33 17	17.1	325.2	8.6		29.0	6	269	17 15 30
17 18 45	---	05 36 33	16.8	325.8	8.7		28.5	195	272	17 15 31
17 18 45	J2102+4702	05 36 33	19.4	325.6	8.6		29.9	-23	272	No stop
17 20 30	=2100+468	05 38 18	19.2	325.8	8.6		29.7	82	274	17 18 46
17 21 00	G85.41	05 38 48	16.7	326.1	8.7		28.2	6	274	17 21 00
17 24 15	---	05 42 04	16.4	326.6	8.8		27.8	195	277	17 21 01
17 24 15	J2102+4702	05 42 04	18.9	326.4	8.7		29.2	-23	277	No stop
17 26 00	=2100+468	05 43 49	18.8	326.7	8.7		29.0	82	279	17 24 16
17 26 30	G85.41	05 44 19	16.2	327.0	8.8		27.5	6	279	17 26 30
17 29 45	---	05 47 35	15.9	327.6	8.9		27.1	195	282	17 26 31
17 29 45	J2102+4702	05 47 35	18.5	327.3	8.7		28.5	-23	282	No stop
17 31 30	=2100+468	05 49 20	18.3	327.6	8.8		28.2	82	284	17 29 46
17 32 00	G85.41	05 49 50	15.8	327.9	8.9		26.8	6	284	17 32 00
17 35 15	---	05 53 06	15.5	328.5	9.0		26.4	195	287	17 32 01
17 35 15	J2102+4702	05 53 06	18.0	328.2	8.8		27.7	-23	287	No stop
17 37 00	=2100+468	05 54 51	17.9	328.5	8.9		27.5	82	288	17 35 16

```
Schedule for TORUN     (Code Tr )                                  Page  10
               EVN mapping of 6.7 GHz maser in accretion burst candidate.
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   7 Mar 2020   Day  67 ---

17 37 30  G85.41       05 55 21  15.3 328.8  9.0      26.1     7      288   17 37 30
17 42 15  ---          06 00 07  15.0 329.6  9.1      25.4   285      293   17 37 31

17 42 15  J2102+4702   06 00 07  17.5 329.3  9.0      26.8   -23      293   No stop
17 45 00  =2100+468    06 02 52  17.3 329.7  9.0      26.4   142      296   17 42 16

17 45 00  G85.41       06 02 52  14.7 330.1  9.1      25.1   -23      296   No stop
17 48 15  ---          06 06 08  14.5 330.6  9.2      24.6   172      299   17 45 01

17 48 15  J2102+4702   06 06 08  17.0 330.2  9.1      26.0   -23      299   No stop
17 50 00  =2100+468    06 07 53  16.9 330.5  9.1      25.7    82      300   17 48 16

17 56 00  3C84         06 13 54  59.1 265.8  2.9      53.2   186      300   17 56 00
18 00 00  ---          06 17 55  58.5 266.7  2.9      53.3   240      304   17 56 01



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


 ======== Setup file: sess120M1.setini

   Setup group:    5         Station: TORUN            Total bit rate:   128
   Format: VDIF              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         9         1         9         2        10         2        10
                 3        11         3        11         4        12         4        12
 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:   4  Based on FREQ, BW, and/or DOPPLER in schedule.  Used with PCAL = off
  LO sum=   6662.57  6662.57  6662.57  6662.57  6666.57  6666.57  6666.57  6666.57
            6670.57  6670.57  6670.57  6670.57  6674.57  6674.57  6674.57  6674.57
  BBC fr=    762.57   762.57   762.57   762.57   766.57   766.57   766.57   766.57
             770.57   770.57   770.57   770.57   774.57   774.57   774.57   774.57
  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:   4

  Track assignments are:
   track1=   1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15, 16
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

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

* G85.41            20 52 28.152532   * 20 54 13.680000     20 54 54.056871       0.00
                    44 42 39.95224    * 44 54 07.60000      44 58 29.67349        0.00
                    Doppler based on LSR frame and radio definition.  Velocities:
                       -29.00   -29.00   -29.00   -29.00   -29.00   -29.00   -29.00   -29.00
                       -29.00   -29.00   -29.00   -29.00   -29.00   -29.00

* 3C84              03 16 29.567265   * 03 19 48.160096     03 21 06.542936       1.50
  J0319+4130        41 19 51.91692    * 41 30 42.10404      41 35 02.62336        2.86
  0316+413          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
  J0319+41          GSFC 2016a X/S astro solution,  10291 observations.
                    Doppler based on other sources.

  2100+468          21 00 33.500167   * 21 02 17.056074     21 02 56.559215       0.38
* J2102+4702        46 50 23.37641    * 47 02 16.25338      47 06 48.64291        0.39
  J2102+47          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,     41 observations.
                    Doppler based on other sources.

* 3C454.3           22 51 29.519739   * 22 53 57.747939     22 54 55.309553       0.65
  J2253+1608        15 52 54.34808    * 16 08 53.56091      16 15 07.58789        0.73
  2251+158          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
  J2253+16          GSFC 2016a X/S astro solution,  41272 observations.
                    Doppler based on other sources.
```

em117ptr

A 3D View of high-mass star formation: gas Kinematics and Magnetic
PI: *L. Moscadelli*

```
Address:  Osservatorio Astrofisico di Arcetri

Observing mode: Polarization observations of 1 source at 6.7 GHz (128 Mb/s

Schedule for TORUN     (Code Tr )                                    Page   2
               A 3D View of high-mass star formation: gas Kinematics and Magnetic Field
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   8 Mar 2020   Day  68 ---
 Next scan frequencies:  6661.54  6661.54  6661.54  6661.54  6665.54  6665.54  6665.54  6665.54
                         6669.54  6669.54  6669.54  6669.54  6673.54  6673.54  6673.54  6673.54
 Next BBC frequencies:    761.54   761.54   761.54   761.54   765.54   765.54   765.54   765.54
                          769.54   769.54   769.54   769.54   773.54   773.54   773.54   773.54
 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 00 00  J2202+4216   14 19 14  20.1  45.0 -7.7     -35.1     0        0   02 00 00
02 08 00  =VR422201    14 27 15  21.0  46.3 -7.6     -36.0   480        8   02 00 01

02 15 35  J1331+3030   14 34 51  64.6 212.9  1.0      22.2   108        8   02 15 35
02 20 35  =3C286       14 39 52  64.2 215.2  1.1      23.7   300       13   02 15 36

02 21 05  J1331+3030   14 40 22  64.1 215.5  1.1      23.8    23       13   02 21 05
02 31 05  =3C286       14 50 24  63.2 219.9  1.3      26.5   600       22   02 21 06

02 35 51  3C345        14 55 10  67.3 114.9 -1.8     -45.1    60       22   02 35 51
02 43 51  ---          15 03 12  68.3 117.9 -1.7     -43.7   480       30   02 35 52

02 48 31  J2202+4216   15 07 53  25.6  52.7 -6.9     -40.3   105       30   02 48 31
02 56 31  =VR422201    15 15 54  26.6  53.9 -6.8     -41.1   480       38   02 48 32

03 00 31  J1821-0502   15 19 54  20.4 130.6 -3.0     -27.2    72       38   03 00 31
03 05 31  =1818-050    15 24 55  21.0 131.8 -3.0     -26.7   300       43   03 00 32

03 05 31  G25.65+1.05  15 24 55  18.6 129.2 -3.2     -27.9   -23       43   No stop
03 07 31  ---          15 26 56  18.8 129.6 -3.1     -27.7    97       44   03 05 32

03 08 16  J1821-0502   15 27 41  21.3 132.5 -2.9     -26.4    22       44   03 08 16
03 11 06  =1818-050    15 30 31  21.6 133.1 -2.9     -26.1   170       47   03 08 17

03 11 06  G25.65+1.05  15 30 31  19.3 130.5 -3.1     -27.3   -22       47   No stop
03 13 06  ---          15 32 32  19.5 130.9 -3.0     -27.1    98       49   03 11 07

03 13 06  J1821-0502   15 32 32  21.8 133.6 -2.8     -25.9   -23       49   No stop
03 16 06  =1818-050    15 35 32  22.1 134.4 -2.8     -25.5   157       52   03 13 07

03 16 06  G25.65+1.05  15 35 32  19.8 131.7 -3.0     -26.8   -22       52   No stop
03 18 06  ---          15 37 32  20.1 132.1 -3.0     -26.6    98       54   03 16 07

03 18 51  J1821-0502   15 38 17  22.4 135.0 -2.7     -25.2    22       54   03 18 51
03 21 41  =1818-050    15 41 08  22.7 135.7 -2.7     -24.9   170       57   03 18 52
```

03 21 41	G25.65+1.05	15 41 08	20.5	133.0	-2.9	-26.2	-22	57	No stop
03 23 41	---	15 43 08	20.7	133.5	-2.9	-26.0	98	59	03 21 42

Schedule for TORUN (Code Tr) Page 3

A 3D View of high-mass star formation: gas Kinematics and Magnetic Field

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 8 Mar 2020 Day 68 ---										
03 23 41	J1821-0502	15 43 08	22.9	136.2	-2.7		-24.7	-22	59	No stop
03 26 41	=1818-050	15 46 09	23.2	137.0	-2.6		-24.3	158	62	03 23 42
03 26 41	G25.65+1.05	15 46 09	21.0	134.2	-2.8		-25.7	-22	62	No stop
03 28 41	---	15 48 09	21.2	134.7	-2.8		-25.4	98	63	03 26 42
03 28 41	J1821-0502	15 48 09	23.4	137.4	-2.6		-24.1	-22	63	No stop
03 31 41	=1818-050	15 51 10	23.7	138.2	-2.5		-23.7	158	66	03 28 42
03 31 41	G25.65+1.05	15 51 10	21.5	135.4	-2.7		-25.1	-22	66	No stop
03 33 41	---	15 53 10	21.7	135.9	-2.7		-24.9	98	68	03 31 42
03 34 26	J1821-0502	15 53 55	24.0	138.9	-2.5		-23.4	23	68	03 34 26
03 37 16	=1818-050	15 56 46	24.3	139.6	-2.4		-23.0	170	71	03 34 27
03 37 16	G25.65+1.05	15 56 46	22.1	136.8	-2.6		-24.4	-22	71	No stop
03 39 16	---	15 58 46	22.3	137.2	-2.6		-24.2	98	73	03 37 17
03 39 16	J1821-0502	15 58 46	24.5	140.1	-2.4		-22.7	-22	73	No stop
03 42 16	=1818-050	16 01 46	24.8	140.9	-2.3		-22.4	158	76	03 39 17
03 46 16	J2202+4216	16 05 47	32.9	61.6	-6.0		-45.7	66	76	03 46 16
03 54 16	=VR422201	16 13 48	34.0	62.9	-5.8		-46.3	480	84	03 46 17
03 58 26	J1821-0502	16 17 59	26.2	145.0	-2.1		-20.2	71	84	03 58 26
04 01 26	=1818-050	16 20 59	26.5	145.8	-2.0		-19.8	180	86	03 58 27
04 01 26	G25.65+1.05	16 20 59	24.5	142.8	-2.2		-21.4	-21	86	No stop
04 03 26	---	16 23 00	24.6	143.3	-2.2		-21.1	99	88	04 01 27
04 03 26	J1821-0502	16 23 00	26.7	146.3	-2.0		-19.5	-22	88	No stop
04 06 26	=1818-050	16 26 00	26.9	147.1	-1.9		-19.1	158	91	04 03 27
04 06 26	G25.65+1.05	16 26 00	24.9	144.1	-2.2		-20.7	-21	91	No stop
04 08 26	---	16 28 01	25.1	144.6	-2.1		-20.5	99	93	04 06 27
04 08 26	J1821-0502	16 28 01	27.1	147.7	-1.9		-18.8	-21	93	No stop
04 11 26	=1818-050	16 31 01	27.3	148.5	-1.9		-18.4	159	96	04 08 27
04 11 26	G25.65+1.05	16 31 01	25.3	145.4	-2.1		-20.1	-21	96	No stop
04 13 26	---	16 33 01	25.5	145.9	-2.0		-19.8	99	98	04 11 27
04 14 11	J1821-0502	16 33 47	27.5	149.2	-1.8		-18.0	24	98	04 14 11
04 17 01	=1818-050	16 36 37	27.8	150.0	-1.8		-17.6	170	101	04 14 12

Schedule for TORUN (Code Tr) Page 4

A 3D View of high-mass star formation: gas Kinematics and Magnetic Field

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 8 Mar 2020 Day 68 ---										
04 17 01	G25.65+1.05	16 36 37	25.8	146.8	-2.0		-19.3	-21	101	No stop
04 19 01	---	16 38 37	26.0	147.3	-1.9		-19.0	99	103	04 17 02
04 19 01	J1821-0502	16 38 37	27.9	150.5	-1.7		-17.3	-21	103	No stop
04 22 01	=1818-050	16 41 38	28.1	151.3	-1.7		-16.8	159	106	04 19 02
04 22 01	G25.65+1.05	16 41 38	26.2	148.1	-1.9		-18.6	-21	106	No stop
04 24 01	---	16 43 38	26.4	148.7	-1.9		-18.3	99	108	04 22 02
04 24 01	J1821-0502	16 43 38	28.3	151.9	-1.6		-16.5	-21	108	No stop
04 27 01	=1818-050	16 46 39	28.5	152.7	-1.6		-16.1	159	110	04 24 02
04 27 01	G25.65+1.05	16 46 39	26.6	149.4	-1.8		-17.9	-21	110	No stop
04 29 01	---	16 48 39	26.8	150.0	-1.8		-17.6	99	112	04 27 02
04 29 46	J1821-0502	16 49 24	28.7	153.4	-1.5		-15.6	24	112	04 29 46
04 32 36	=1818-050	16 52 15	28.9	154.2	-1.5		-15.2	170	115	04 29 47
04 32 36	G25.65+1.05	16 52 15	27.0	150.9	-1.7		-17.1	-21	115	No stop
04 34 36	---	16 54 15	27.2	151.5	-1.7		-16.8	99	117	04 32 37
04 34 36	J1821-0502	16 54 15	29.0	154.8	-1.5		-14.9	-21	117	No stop
04 37 36	=1818-050	16 57 15	29.2	155.6	-1.4		-14.4	159	120	04 34 37
04 41 51	J2202+4216	17 01 31	40.5	70.3	-5.0		-49.9	69	120	04 41 51
04 49 51	=VR422201	17 09 32	41.7	71.5	-4.9		-50.4	480	128	04 41 52
04 54 16	J1821-0502	17 13 58	30.1	160.2	-1.1		-11.8	73	128	04 54 16
04 57 16	=1818-050	17 16 59	30.3	161.1	-1.1		-11.3	180	131	04 54 17
04 57 16	G25.65+1.05	17 16 59	28.6	157.7	-1.3		-13.3	-21	131	No stop
04 59 16	---	17 18 59	28.8	158.2	-1.3		-13.0	99	133	04 57 17
04 59 16	J1821-0502	17 18 59	30.4	161.7	-1.1		-10.9	-22	133	No stop
05 02 16	=1818-050	17 21 59	30.5	162.5	-1.0		-10.4	158	135	04 59 17
05 02 16	G25.65+1.05	17 21 59	28.9	159.0	-1.2		-12.5	-21	135	No stop
05 04 16	---	17 24 00	29.0	159.6	-1.2		-12.2	99	137	05 02 17
05 04 16	J1821-0502	17 24 00	30.6	163.1	-1.0		-10.1	-22	137	No stop
05 07 16	=1818-050	17 27 00	30.7	163.9	-0.9		-9.6	158	140	05 04 17
05 07 16	G25.65+1.05	17 27 00	29.2	160.4	-1.1		-11.7	-22	140	No stop
05 09 16	---	17 29 01	29.3	161.0	-1.1		-11.3	98	142	05 07 17

Schedule for TORUN (Code Tr) Page 5

A 3D View of high-mass star formation: gas Kinematics and Magnetic Field

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 8 Mar 2020 Day 68 ---										
05 10 01	J1821-0502	17 29 46	30.8	164.7	-0.9		-9.1	23	142	05 10 01
05 12 51	=1818-050	17 32 36	30.9	165.5	-0.8		-8.7	170	145	05 10 02
05 12 51	G25.65+1.05	17 32 36	29.4	162.0	-1.0		-10.8	-22	145	No stop
05 14 51	---	17 34 37	29.5	162.6	-1.0		-10.4	98	147	05 12 52
05 14 51	J1821-0502	17 34 37	31.0	166.1	-0.8		-8.3	-22	147	No stop
05 17 51	=1818-050	17 37 37	31.1	167.0	-0.7		-7.8	158	150	05 14 52
05 17 51	G25.65+1.05	17 37 37	29.7	163.4	-1.0		-9.9	-22	150	No stop
05 19 51	---	17 39 37	29.8	164.0	-0.9		-9.6	98	152	05 17 52
05 19 51	J1821-0502	17 39 37	31.2	167.6	-0.7		-7.5	-22	152	No stop
05 22 51	=1818-050	17 42 38	31.3	168.4	-0.7		-6.9	158	155	05 19 52
05 22 51	G25.65+1.05	17 42 38	29.9	164.8	-0.9		-9.1	-22	155	No stop
05 24 51	---	17 44 38	30.0	165.4	-0.8		-8.8	98	157	05 22 52
05 25 36	J1821-0502	17 45 23	31.4	169.2	-0.6		-6.5	23	157	05 25 36
05 28 26	=1818-050	17 48 14	31.4	170.1	-0.6		-6.0	170	159	05 25 37
05 28 26	G25.65+1.05	17 48 14	30.1	166.4	-0.8		-8.2	-22	159	No stop
05 30 26	---	17 50 14	30.2	167.0	-0.8		-7.8	98	161	05 28 27
05 30 26	J1821-0502	17 50 14	31.5	170.6	-0.5		-5.6	-22	161	No stop
05 33 26	=1818-050	17 53 15	31.6	171.5	-0.5		-5.1	158	164	05 30 27
05 37 56	J2202+4216	17 57 45	48.7	79.3	-4.1		-53.0	70	164	05 37 56
05 45 56	=VR422201	18 05 47	49.9	80.7	-4.0		-53.3	480	172	05 37 57
05 50 36	J1821-0502	18 10 27	31.8	176.5	-0.2		-2.1	74	172	05 50 36
05 53 36	=1818-050	18 13 28	31.8	177.4	-0.1		-1.6	180	175	05 50 37
05 53 36	G25.65+1.05	18 13 28	30.7	173.7	-0.4		-3.8	-22	175	No stop
05 55 36	---	18 15 28	30.8	174.2	-0.3		-3.5	98	177	05 53 37
05 55 36	J1821-0502	18 15 28	31.9	178.0	-0.1		-1.2	-23	177	No stop
05 58 36	=1818-050	18 18 29	31.9	178.9	-0.1		-0.7	157	180	05 55 37
05 58 36	G25.65+1.05	18 18 29	30.8	175.1	-0.3		-3.0	-22	180	No stop
06 00 36	---	18 20 29	30.8	175.7	-0.2		-2.6	98	181	05 58 37
06 00 36	J1821-0502	18 20 29	31.9	179.5	-0.0		-0.3	-23	181	No stop
06 03 36	=1818-050	18 23 30	31.9	180.4	0.0		0.2	157	184	06 00 37

Schedule for TORUN (Code Tr) Page 6

A 3D View of high-mass star formation: gas Kinematics and Magnetic Field

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 8 Mar 2020 Day 68 ---										
06 03 36	G25.65+1.05	18 23 30	30.9	176.5	-0.2		-2.1	-22	184	No stop
06 05 36	---	18 25 30	30.9	177.1	-0.2		-1.7	98	186	06 03 37
06 06 21	J1821-0502	18 26 15	31.9	181.2	0.1		0.7	22	186	06 06 21
06 09 11	=1818-050	18 29 05	31.9	182.0	0.1		1.2	170	189	06 06 22
06 09 11	G25.65+1.05	18 29 05	30.9	178.2	-0.1		-1.1	-22	189	No stop
06 11 11	---	18 31 06	30.9	178.8	-0.1		-0.8	98	191	06 09 12
06 11 11	J1821-0502	18 31 06	31.8	182.6	0.1		1.6	-23	191	No stop
06 14 11	=1818-050	18 34 06	31.8	183.5	0.2		2.1	157	194	06 11 12
06 14 11	G25.65+1.05	18 34 06	30.9	179.6	-0.0		-0.2	-22	194	No stop
06 16 11	---	18 36 07	30.9	180.2	0.0		0.1	98	196	06 14 12
06 16 11	J1821-0502	18 36 07	31.8	184.1	0.2		2.4	-23	196	No stop
06 19 11	=1818-050	18 39 07	31.8	184.9	0.3		3.0	157	199	06 16 12
06 19 11	G25.65+1.05	18 39 07	30.9	181.1	0.1		0.7	-22	199	No stop
06 21 11	---	18 41 07	30.9	181.7	0.1		1.0	98	201	06 19 12
06 21 56	J1821-0502	18 41 53	31.7	185.8	0.3		3.5	22	201	06 21 56
06 24 46	=1818-050	18 44 43	31.7	186.6	0.4		4.0	170	203	06 21 57
06 24 46	G25.65+1.05	18 44 43	30.9	182.7	0.2		1.6	-22	203	No stop
06 26 46	---	18 46 43	30.9	183.3	0.2		2.0	98	205	06 24 47
06 26 46	J1821-0502	18 46 43	31.6	187.2	0.4		4.3	-23	205	No stop
06 29 46	=1818-050	18 49 44	31.6	188.0	0.5		4.8	157	208	06 26 47
06 34 36	J2202+4216	18 54 35	57.2	89.6	-3.1		-54.4	78	208	06 34 36
06 42 36	=VR422201	19 02 36	58.4	91.2	-3.0		-54.4	480	216	06 34 37
06 47 36	J1821-0502	19 07 37	31.1	193.2	0.8		7.9	82	216	06 47 36
06 50 36	=1818-050	19 10 37	31.0	194.1	0.8		8.4	180	219	06 47 37
06 50 36	G25.65+1.05	19 10 37	30.5	190.2	0.6		6.1	-23	219	No stop
06 52 36	---	19 12 38	30.4	190.7	0.6		6.5	97	221	06 50 37
06 52 36	J1821-0502	19 12 38	30.9	194.7	0.8		8.8	-23	221	No stop
06 55 36	=1818-050	19 15 38	30.8	195.5	0.9		9.3	157	224	06 52 37
06 55 36	G25.65+1.05	19 15 38	30.3	191.6	0.7		7.0	-23	224	No stop
06 57 36	---	19 17 38	30.3	192.2	0.7		7.3	97	226	06 55 37

Schedule for TORUN (Code Tr) Page 7

A 3D View of high-mass star formation: gas Kinematics and Magnetic Field

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 8 Mar 2020 Day 68 ---										
06 57 36	J1821-0502	19 17 38	30.7	196.1	0.9		9.6	-23	226	No stop
07 00 36	=1818-050	19 20 39	30.6	197.0	1.0		10.1	157	228	06 57 37
07 00 36	G25.65+1.05	19 20 39	30.2	193.0	0.8		7.8	-23	228	No stop
07 02 36	---	19 22 39	30.1	193.6	0.8		8.2	97	230	07 00 37
07 03 21	J1821-0502	19 23 24	30.5	197.7	1.0		10.6	22	230	07 03 21
07 06 11	=1818-050	19 26 15	30.3	198.5	1.1		11.1	170	233	07 03 22
07 06 11	G25.65+1.05	19 26 15	30.0	194.6	0.8		8.8	-23	233	No stop
07 08 11	---	19 28 15	29.9	195.2	0.9		9.1	97	235	07 06 12
07 08 11	J1821-0502	19 28 15	30.2	199.1	1.1		11.4	-23	235	No stop
07 11 11	=1818-050	19 31 16	30.1	200.0	1.2		11.9	157	238	07 08 12
07 11 11	G25.65+1.05	19 31 16	29.8	196.0	0.9		9.6	-23	238	No stop
07 13 11	---	19 33 16	29.7	196.6	1.0		9.9	97	240	07 11 12
07 13 11	J1821-0502	19 33 16	30.0	200.5	1.2		12.2	-23	240	No stop
07 16 11	=1818-050	19 36 16	29.8	201.4	1.2		12.7	157	243	07 13 12
07 16 11	G25.65+1.05	19 36 16	29.5	197.5	1.0		10.4	-22	243	No stop
07 18 11	---	19 38 17	29.4	198.0	1.0		10.8	98	245	07 16 12
07 18 56	J1821-0502	19 39 02	29.7	202.1	1.3		13.1	22	245	07 18 56
07 21 46	=1818-050	19 41 52	29.5	202.9	1.3		13.6	170	247	07 18 57
07 21 46	G25.65+1.05	19 41 52	29.3	199.0	1.1		11.4	-22	247	No stop
07 23 46	---	19 43 53	29.2	199.6	1.1		11.7	98	249	07 21 47
07 23 46	J1821-0502	19 43 53	29.4	203.5	1.4		13.9	-23	249	No stop
07 26 46	=1818-050	19 46 53	29.2	204.3	1.4		14.4	157	252	07 23 47
07 31 56	J2202+4216	19 52 04	65.7	102.9	-2.2		-52.4	91	252	07 31 56
07 39 56	=VR422201	20 00 05	66.9	105.1	-2.1		-51.7	480	260	07 31 57
07 45 17	J1821-0502	20 05 27	27.9	209.4	1.7		17.2	98	260	07 45 17
07 48 17	=1818-050	20 08 28	27.7	210.2	1.8		17.7	180	263	07 45 18
07 48 17	G25.65+1.05	20 08 28	27.7	206.3	1.6		15.5	-22	263	No stop
07 50 17	---	20 10 28	27.6	206.9	1.6		15.8	98	265	07 48 18
07 50 17	J1821-0502	20 10 28	27.6	210.7	1.8		17.9	-23	265	No stop
07 53 17	=1818-050	20 13 29	27.3	211.5	1.9		18.4	157	268	07 50 18

Schedule for TORUN (Code Tr) Page 8

A 3D View of high-mass star formation: gas Kinematics and Magnetic Field

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 8 Mar 2020 Day 68 ---										
07 53 17	G25.65+1.05	20 13 29	27.4	207.7	1.6		16.3	-22	268	No stop
07 55 17	---	20 15 29	27.2	208.2	1.7		16.6	98	270	07 53 18
07 55 17	J1821-0502	20 15 29	27.2	212.1	1.9		18.7	-23	270	No stop
07 58 17	=1818-050	20 18 29	26.9	212.9	1.9		19.1	157	273	07 55 18
07 58 17	G25.65+1.05	20 18 29	27.0	209.0	1.7		17.0	-22	273	No stop
08 00 17	---	20 20 30	26.9	209.6	1.8		17.3	98	275	07 58 18
08 01 02	J1821-0502	20 21 15	26.7	213.6	2.0		19.5	22	275	08 01 02
08 03 52	=1818-050	20 24 05	26.5	214.3	2.0		19.9	170	277	08 01 03
08 03 52	G25.65+1.05	20 24 05	26.6	210.5	1.8		17.9	-22	277	No stop
08 05 52	---	20 26 06	26.5	211.1	1.8		18.2	98	279	08 03 53
08 05 52	J1821-0502	20 26 06	26.3	214.9	2.1		20.2	-23	279	No stop
08 08 52	=1818-050	20 29 06	26.0	215.6	2.1		20.6	157	282	08 05 53
08 08 52	G25.65+1.05	20 29 06	26.2	211.9	1.9		18.6	-22	282	No stop
08 10 52	---	20 31 06	26.1	212.4	1.9		18.9	98	284	08 08 53
08 10 52	J1821-0502	20 31 06	25.8	216.2	2.1		20.8	-23	284	No stop
08 13 52	=1818-050	20 34 07	25.6	216.9	2.2		21.2	157	287	08 10 53
08 13 52	G25.65+1.05	20 34 07	25.8	213.2	2.0		19.3	-22	287	No stop
08 15 52	---	20 36 07	25.7	213.7	2.0		19.6	98	289	08 13 53
08 16 37	J1821-0502	20 36 52	25.3	217.6	2.2		21.6	22	289	08 16 37
08 19 27	=1818-050	20 39 43	25.1	218.4	2.3		22.0	170	292	08 16 38
08 19 27	G25.65+1.05	20 39 43	25.4	214.6	2.1		20.1	-22	292	No stop
08 21 27	---	20 41 43	25.2	215.1	2.1		20.3	98	294	08 19 28
08 21 27	J1821-0502	20 41 43	24.9	218.9	2.3		22.2	-22	294	No stop
08 24 27	=1818-050	20 44 44	24.6	219.6	2.4		22.6	158	296	08 21 28
08 29 52	J2202+4216	20 50 10	73.7	123.9	-1.2		-42.4	116	296	08 29 52
08 37 52	=VR422201	20 58 11	74.7	128.0	-1.1		-39.8	480	304	08 29 53
08 43 27	J1821-0502	21 03 47	22.7	224.4	2.7		24.9	127	304	08 43 27
08 46 27	=1818-050	21 06 47	22.4	225.1	2.7		25.3	180	307	08 43 28
08 46 27	G25.65+1.05	21 06 47	22.8	221.5	2.5		23.6	-22	307	No stop
08 48 27	---	21 08 48	22.6	222.0	2.6		23.8	98	309	08 46 28

Schedule for TORUN (Code Tr) Page 9

A 3D View of high-mass star formation: gas Kinematics and Magnetic Field

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 8 Mar 2020 Day 68 ---										
08 48 27	J1821-0502	21 08 48	22.1	225.6	2.8		25.5	-22	309	No stop
08 51 27	=1818-050	21 11 48	21.8	226.3	2.8		25.9	158	312	08 48 28
08 51 27	G25.65+1.05	21 11 48	22.3	222.7	2.6		24.2	-22	312	No stop
08 53 27	---	21 13 48	22.1	223.2	2.6		24.4	98	314	08 51 28
08 53 27	J1821-0502	21 13 48	21.6	226.8	2.9		26.1	-22	314	No stop
08 56 27	=1818-050	21 16 49	21.3	227.5	2.9		26.4	158	317	08 53 28
08 56 27	G25.65+1.05	21 16 49	21.8	223.9	2.7		24.8	-22	317	No stop
08 58 27	---	21 18 49	21.6	224.4	2.7		25.0	98	319	08 56 28
08 59 12	J1821-0502	21 19 34	21.0	228.2	3.0		26.7	23	319	08 59 12
09 02 02	=1818-050	21 22 25	20.6	228.9	3.0		27.0	170	321	08 59 13
09 02 02	G25.65+1.05	21 22 25	21.2	225.3	2.8		25.4	-22	321	No stop
09 04 02	---	21 24 25	21.0	225.8	2.8		25.6	98	323	09 02 03
09 04 02	J1821-0502	21 24 25	20.4	229.3	3.0		27.2	-22	323	No stop
09 07 02	=1818-050	21 27 26	20.1	230.1	3.1		27.5	158	326	09 04 03
09 07 02	G25.65+1.05	21 27 26	20.7	226.5	2.9		26.0	-22	326	No stop
09 09 02	---	21 29 26	20.5	227.0	2.9		26.2	98	328	09 07 03
09 09 02	J1821-0502	21 29 26	19.8	230.5	3.1		27.7	-22	328	No stop
09 12 02	=1818-050	21 32 27	19.5	231.2	3.2		28.0	158	331	09 09 03
09 12 02	G25.65+1.05	21 32 27	20.1	227.7	3.0		26.5	-22	331	No stop
09 14 02	---	21 34 27	19.9	228.2	3.0		26.7	98	333	09 12 03
09 14 47	J1821-0502	21 35 12	19.2	231.9	3.2		28.3	23	333	09 14 47
09 17 37	=1818-050	21 38 02	18.8	232.5	3.3		28.6	170	336	09 14 48
09 17 37	G25.65+1.05	21 38 02	19.5	229.0	3.0		27.1	-22	336	No stop
09 19 37	---	21 40 03	19.3	229.5	3.1		27.3	98	338	09 17 38
09 19 37	J1821-0502	21 40 03	18.6	233.0	3.3		28.8	-22	338	No stop
09 22 37	=1818-050	21 43 03	18.2	233.7	3.3		29.1	158	341	09 19 38
09 27 58	J2202+4216	21 48 25	79.0	165.3	-0.3		-11.9	79	341	09 27 58
09 35 58	=VR422201	21 56 26	79.2	173.0	-0.1		-5.7	480	348	09 27 59
09 41 28	J1821-0502	22 01 57	15.9	238.0	3.7		30.7	79	348	09 41 28
09 44 28	=1818-050	22 04 58	15.5	238.6	3.7		31.0	180	351	09 41 29

Schedule for TORUN (Code Tr) Page 10

A 3D View of high-mass star formation: gas Kinematics and Magnetic Field

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 8 Mar 2020 Day 68 ---										
09 44 28	G25.65+1.05	22 04 58	16.3	235.2	3.5		29.7	-21	351	No stop
09 46 28	---	22 06 58	16.1	235.6	3.5		29.9	99	353	09 44 29
09 46 28	J1821-0502	22 06 58	15.2	239.1	3.7		31.1	-22	353	No stop
09 49 28	=1818-050	22 09 59	14.8	239.7	3.8		31.4	158	356	09 46 29
09 49 28	G25.65+1.05	22 09 59	15.7	236.3	3.6		30.2	-21	356	No stop
09 51 28	---	22 11 59	15.5	236.8	3.6		30.3	99	358	09 49 29
09 51 28	J1821-0502	22 11 59	14.6	240.2	3.8		31.5	-22	358	No stop
09 54 28	=1818-050	22 14 59	14.2	240.8	3.9		31.8	158	361	09 51 29
09 54 28	G25.65+1.05	22 14 59	15.1	237.4	3.7		30.6	-21	361	No stop
09 56 28	---	22 17 00	14.8	237.9	3.7		30.7	99	363	09 54 29
09 57 13	J1821-0502	22 17 45	13.8	241.4	3.9		32.0	23	363	09 57 13
10 00 03	=1818-050	22 20 35	13.5	242.0	4.0		32.2	170	366	09 57 14
10 00 03	G25.65+1.05	22 20 35	14.4	238.7	3.8		31.0	-21	366	No stop
10 02 03	---	22 22 36	14.1	239.1	3.8		31.2	99	367	10 00 04
10 02 03	J1821-0502	22 22 36	13.2	242.5	4.0		32.3	-22	367	No stop
10 05 03	=1818-050	22 25 36	12.8	243.1	4.1		32.5	158	370	10 02 04
10 05 03	G25.65+1.05	22 25 36	13.7	239.8	3.8		31.4	-21	370	No stop
10 07 03	---	22 27 37	13.5	240.2	3.9		31.6	99	372	10 05 04
10 07 03	J1821-0502	22 27 37	12.5	243.6	4.1		32.7	-22	372	No stop
10 10 03	=1818-050	22 30 37	12.1	244.2	4.1		32.9	158	375	10 07 04
10 10 03	G25.65+1.05	22 30 37	13.1	240.8	3.9		31.8	-21	375	No stop
10 12 03	---	22 32 37	12.8	241.3	4.0		32.0	99	377	10 10 04
10 12 48	J1821-0502	22 33 22	11.7	244.8	4.2		33.1	23	377	10 12 48
10 15 38	=1818-050	22 36 13	11.4	245.4	4.2		33.2	170	380	10 12 49
10 15 38	G25.65+1.05	22 36 13	12.3	242.1	4.0		32.2	-21	380	No stop
10 17 38	---	22 38 13	12.1	242.5	4.0		32.4	99	382	10 15 39
10 17 38	J1821-0502	22 38 13	11.1	245.8	4.3		33.4	-21	382	No stop
10 20 38	=1818-050	22 41 14	10.7	246.5	4.3		33.5	159	385	10 17 39
10 25 23	J2202+4216	22 46 00	77.1	217.7	0.7		29.8	22	385	10 25 23
10 32 23	=VR422201	22 53 01	76.5	222.6	0.8		33.4	420	391	10 25 24

```
Schedule for TORUN     (Code Tr )                                  Page  11
               A 3D View of high-mass star formation: gas Kinematics and Magnetic Field
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   8 Mar 2020   Day  68 ---

10 37 18  J1821-0502   22 57 57   8.3 250.0  4.6      34.5    26      391   10 37 18
10 40 18  =1818-050    23 00 57   7.9 250.6  4.6      34.6   180      394   10 37 19

10 40 18  G25.65+1.05  23 00 57   9.0 247.3  4.4      33.8   -21      394   No stop
10 42 18  ---          23 02 57   8.7 247.7  4.5      34.0    99      396   10 40 19

10 42 43  J1821-0502   23 03 22   7.6 251.1  4.7      34.8     4      396   10 42 43
10 47 43  =1818-050    23 08 23   6.9 252.1  4.8      35.0   300      401   10 42 44

10 52 39  J2202+4216   23 13 20  74.2 234.4  1.2      41.3    29      401   10 52 39
10 59 59  =VR422201    23 20 41  73.3 237.9  1.3      43.5   440      408   10 52 40



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


 ======== Setup file: sess120.M128

   Setup group:    6         Station: TORUN            Total bit rate:   128
   Format: VDIF              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         9         1         9         2        10         2        10
                  3        11         3        11         4        12         4        12
  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:   4  Based on FREQ, BW, and/or DOPPLER in schedule.  Used with PCAL = off
  LO sum=   6661.54  6661.54  6661.54  6661.54  6665.54  6665.54  6665.54  6665.54
            6669.54  6669.54  6669.54  6669.54  6673.54  6673.54  6673.54  6673.54
  BBC fr=    761.54   761.54   761.54   761.54   765.54   765.54   765.54   765.54
             769.54   769.54   769.54   769.54   773.54   773.54   773.54   773.54
  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:   4

  Track assignments are:
   track1=   1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15, 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 24.212719       0.00
                    -06 02 05.96283    *-05 59 42.10000     -05 58 47.77192        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 49.657769   * 13 31 08.288061     13 32 04.445364       0.17
* J1331+3030         30 45 58.64066    * 30 30 32.95930      30 24 13.70356        0.16
  1328+307           /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
  J1331+30           GSFC 2016a X/S astro solution,    269 observations.
                     Doppler based on other sources.

* 3C345              16 41 17.606229   * 16 42 58.809967     16 43 39.138831       0.79
  J1642+3948         39 54 10.81492    * 39 48 36.99399      39 46 08.15073        0.59
  1641+399           /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
  J1642+39           GSFC 2016a X/S astro solution,  53724 observations.
                     Doppler based on other sources.

  1818-050           18 18 32.138842   * 18 21 11.809566     18 22 14.767578       0.13
* J1821-0502         -05 03 46.86951    *-05 02 20.08544     -05 01 48.68974        0.24
                     /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                     GSFC 2016a X/S astro solution,    107 observations.
                     Doppler based on other sources.
```

```
  VR422201          22 00 39.362504   * 22 02 43.291371     22 03 30.904400       0.01
* J2202+4216        42 02 08.59075    * 42 16 39.97988      42 22 18.13421        0.00
  BLLAC             /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
  2200+420          GSFC 2016a X/S astro solution,  52189 observations.
  J2202+42          Doppler based on other sources.
```

n20l1tr

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
-----------------------------------------------------------------------------------------

 --- Tue  10 Mar 2020   Day  70 ---

 Next scan frequencies:  1634.50  1634.50  1634.50  1634.50  1650.50  1650.50  1650.50  1650.50
                         1666.50  1666.50  1666.50  1666.50  1682.50  1682.50  1682.50  1682.50
 Next BBC frequencies:    665.50   665.50   665.50   665.50   649.50   649.50   649.50   649.50
                          633.50   633.50   633.50   633.50   617.50   617.50   617.50   617.50
 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  J0237+2848   00 28 45  56.0 122.5 -2.2     -35.4     0        0   12 00 00
12 05 00  =0234+285    00 33 46  56.7 124.1 -2.1     -34.6   300       19   12 00 01

12 08 00  J0237+2848   00 36 47  57.0 125.1 -2.0     -34.1   173       19   12 08 00
12 12 00  =0234+285    00 40 47  57.5 126.4 -2.0     -33.5   240       35   12 08 01

12 15 00  J0237+2848   00 43 48  57.9 127.5 -1.9     -33.0   173       35   12 15 00
12 22 00  =0234+285    00 50 49  58.7 129.9 -1.8     -31.7   420       62   12 15 01

12 25 00  J0237+2848   00 53 49  59.1 131.0 -1.8     -31.2   173       62   12 25 00
12 32 00  =0234+285    01 00 50  59.8 133.6 -1.6     -29.8   420       89   12 25 01

12 35 00  J0237+2848   01 03 51  60.2 134.8 -1.6     -29.1   173       89   12 35 00
12 42 00  =0234+285    01 10 52  60.9 137.5 -1.5     -27.6   420      116   12 35 01

12 45 00  J0237+2848   01 13 53  61.2 138.7 -1.4     -26.9   173      116   12 45 00
12 52 00  =0234+285    01 20 54  61.9 141.6 -1.3     -25.2   420      143   12 45 01

12 55 00  J0237+2848   01 23 54  62.1 142.9 -1.3     -24.4   173      143   12 55 00
13 02 00  =0234+285    01 30 55  62.8 145.9 -1.1     -22.6   420      170   12 55 01

13 05 00  J0237+2848   01 33 56  63.0 147.3 -1.1     -21.8   173      170   13 05 00
13 12 00  =0234+285    01 40 57  63.5 150.5 -1.0     -19.8   420      197   13 05 01

13 15 00  J0237+2848   01 43 58  63.8 151.9 -0.9     -18.9   172      197   13 15 00
13 22 00  =0234+285    01 50 59  64.2 155.2 -0.8     -16.7   420      224   13 15 01

13 25 00  J0237+2848   01 53 59  64.4 156.7 -0.8     -15.8   172      224   13 25 00
13 32 00  =0234+285    02 01 00  64.8 160.1 -0.6     -13.5   420      251   13 25 01

 ---------- Arecibo In ----------

13 38 00  J2139+1423   02 07 01  25.4 260.1  4.5      37.7   146      251   13 38 00
13 42 00  =2136+141    02 11 02  24.8 260.9  4.5      37.8   240      267   13 38 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
-----------------------------------------------------------------------------------------
 --- Tue  10 Mar 2020   Day  70 ---
13 45 00  J2139+1423   02 14 02  24.4 261.6  4.6      37.8   173      267   13 45 00
13 52 00  =2136+141    02 21 04  23.3 263.0  4.7      38.0   420      294   13 45 01

13 55 00  J2139+1423   02 24 04  22.9 263.7  4.7      38.1   173      294   13 55 00
14 02 00  =2136+141    02 31 05  21.8 265.1  4.9      38.2   420      321   13 55 01

14 05 00  J2139+1423   02 34 06  21.4 265.7  4.9      38.2   173      321   14 05 00
14 12 00  =2136+141    02 41 07  20.3 267.2  5.0      38.3   420      348   14 05 01

14 15 00  J2139+1423   02 44 07  19.9 267.8  5.1      38.3   173      348   14 15 00
14 22 00  =2136+141    02 51 09  18.8 269.2  5.2      38.3   420      375   14 15 01

14 25 00  J2139+1423   02 54 09  18.4 269.8  5.2      38.3   173      375   14 25 00
14 32 00  =2136+141    03 01 10  17.3 271.2  5.4      38.3   420      402   14 25 01

14 35 00  J2139+1423   03 04 11  16.9 271.8  5.4      38.3   173      402   14 35 00
14 42 00  =2136+141    03 11 12  15.8 273.2  5.5      38.3   420      429   14 35 01

14 45 00  J2139+1423   03 14 12  15.4 273.8  5.6      38.2   173      429   14 45 00
14 52 00  =2136+141    03 21 13  14.3 275.1  5.7      38.1   420      456   14 45 01

14 55 00  J2139+1423   03 24 14  13.9 275.7  5.7      38.1   173      456   14 55 00
15 00 00  =2136+141    03 29 15  13.1 276.7  5.8      38.0   300      475   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: sess120.L512ar

   Setup group:   10         Station: TORUN            Total bit rate:   512
   Format: VDIF              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         9         1         9         2        10         2        10
                 3        11         3        11         4        12         4        12
 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:   7  Setup file default.  Used with PCAL = off
 LO sum=   1634.50  1634.50  1634.50  1634.50  1650.50  1650.50  1650.50  1650.50
           1666.50  1666.50  1666.50  1666.50  1682.50  1682.50  1682.50  1682.50
 BBC fr=    665.50   665.50   665.50   665.50   649.50   649.50   649.50   649.50
            633.50   633.50   633.50   633.50   617.50   617.50   617.50   617.50
 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=   1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15, 16
  barrel=roll_off
```

em141btr

EVN-18CM-CGCG-N

PI: *Mar Mezcua*

```
Address:  Institute of Space Sciences (ICE, CSIC)

Observing mode: Continuum

Schedule for TORUN     (Code Tr )                                  Page   2
               EVN-18CM-CGCG-N
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  10 Mar 2020   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

18 30 00  4C39.25      06 59 49  61.1 104.2 -2.5     -48.5     0        0   18 30 00
18 34 00  ---          07 03 50  61.6 105.2 -2.4     -48.2   240       31   18 30 01

18 35 30  J0945-0153   07 05 20  25.4 134.2 -2.7     -25.5   -59       31   18 35 30
18 38 30  =0943-016    07 08 21  25.8 135.0 -2.6     -25.2   121       54   18 35 31

18 38 30  CGCG-N       07 08 21  27.1 134.8 -2.6     -25.2   -18       54   No stop
18 43 30  ---          07 13 21  27.6 136.1 -2.5     -24.6   282       93   18 38 31

18 44 10  J0945-0153   07 14 02  26.4 136.4 -2.5     -24.5    22       93   18 44 10
18 46 10  =0943-016    07 16 02  26.6 136.9 -2.5     -24.2   120      108   18 44 11

18 46 10  CGCG-N       07 16 02  27.9 136.8 -2.5     -24.3   -18      108   No stop
18 51 10  ---          07 21 03  28.4 138.1 -2.4     -23.7   282      147   18 46 11

18 51 10  J0945-0153   07 21 03  27.1 138.2 -2.4     -23.6   -18      147   No stop
18 53 40  =0943-016    07 23 33  27.3 138.8 -2.4     -23.3   132      166   18 51 11

18 53 40  CGCG-N       07 23 33  28.6 138.7 -2.4     -23.3   -18      166   No stop
18 58 40  ---          07 28 34  29.1 140.0 -2.3     -22.7   282      205   18 53 41

18 59 20  J0945-0153   07 29 14  27.9 140.3 -2.3     -22.6    22      205   18 59 20
19 01 20  =0943-016    07 31 14  28.1 140.8 -2.3     -22.3   120      220   18 59 21

19 01 20  CGCG-N       07 31 14  29.4 140.8 -2.2     -22.3   -18      220   No stop
19 06 20  ---          07 36 15  29.9 142.1 -2.1     -21.7   282      259   19 01 21

19 06 20  J0945-0153   07 36 15  28.5 142.2 -2.2     -21.6   -18      259   No stop
19 08 50  =0943-016    07 38 46  28.8 142.8 -2.1     -21.3   132      278   19 06 21

19 08 50  CGCG-N       07 38 46  30.1 142.8 -2.1     -21.3   -18      278   No stop
19 13 50  ---          07 43 46  30.5 144.1 -2.0     -20.6   282      317   19 08 51

19 14 30  J0945-0153   07 44 27  29.3 144.3 -2.0     -20.5    22      317   19 14 30
19 16 30  =0943-016    07 46 27  29.5 144.9 -2.0     -20.2   120      332   19 14 31
```

Schedule for TORUN (Code Tr) Page 3

EVN-18CM-CGCG-N

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 10 Mar 2020 Day 70 ---										
19 16 30	CGCG-N	07 46 27	30.8	144.8	-2.0		-20.2	-18	332	No stop
19 21 30	---	07 51 28	31.2	146.2	-1.9		-19.5	282	371	19 16 31
19 21 30	J0945-0153	07 51 28	29.9	146.2	-1.9		-19.5	-18	371	No stop
19 24 00	=0943-016	07 53 58	30.1	146.9	-1.9		-19.1	132	390	19 21 31
19 24 00	CGCG-N	07 53 58	31.4	146.9	-1.9		-19.1	-18	390	No stop
19 29 00	---	07 58 59	31.8	148.3	-1.8		-18.4	282	429	19 24 01
19 29 40	J0945-0153	07 59 39	30.5	148.5	-1.8		-18.3	22	429	19 29 40
19 31 40	=0943-016	08 01 39	30.7	149.0	-1.8		-18.0	120	444	19 29 41
19 31 40	CGCG-N	08 01 39	32.0	149.1	-1.7		-18.0	-18	444	No stop
19 36 40	---	08 06 40	32.4	150.5	-1.6		-17.2	282	483	19 31 41
19 36 40	J0945-0153	08 06 40	31.1	150.4	-1.7		-17.3	-18	483	No stop
19 39 10	=0943-016	08 09 11	31.3	151.1	-1.6		-16.9	132	502	19 36 41
19 39 10	CGCG-N	08 09 11	32.6	151.2	-1.6		-16.8	-18	502	No stop
19 44 10	---	08 14 11	32.9	152.6	-1.5		-16.0	282	541	19 39 11
19 44 50	J0945-0153	08 14 52	31.7	152.7	-1.5		-16.0	22	541	19 44 50
19 46 50	=0943-016	08 16 52	31.8	153.3	-1.5		-15.7	120	556	19 44 51
19 46 50	CGCG-N	08 16 52	33.1	153.4	-1.5		-15.6	-18	556	No stop
19 51 50	---	08 21 53	33.4	154.8	-1.4		-14.8	282	595	19 46 51
19 51 50	J0945-0153	08 21 53	32.1	154.7	-1.4		-14.9	-18	595	No stop
19 54 20	=0943-016	08 24 23	32.3	155.4	-1.4		-14.5	132	614	19 51 51
19 54 20	CGCG-N	08 24 23	33.6	155.5	-1.3		-14.4	-18	614	No stop
19 59 20	---	08 29 24	33.9	157.0	-1.3		-13.6	282	653	19 54 21
20 00 00	J0945-0153	08 30 04	32.6	157.1	-1.3		-13.5	22	653	20 00 00
20 02 00	=0943-016	08 32 04	32.7	157.6	-1.2		-13.2	120	669	20 00 01
20 02 00	CGCG-N	08 32 04	34.1	157.8	-1.2		-13.1	-18	669	No stop
20 07 00	---	08 37 05	34.3	159.3	-1.1		-12.3	282	707	20 02 01
20 07 00	J0945-0153	08 37 05	33.0	159.1	-1.2		-12.4	-18	707	No stop
20 09 30	=0943-016	08 39 36	33.2	159.8	-1.1		-12.0	132	727	20 07 01
20 12 30	4C39.25	08 42 36	73.8	146.4	-0.8		-25.3	14	727	20 12 30
20 16 00	---	08 46 07	74.1	148.7	-0.7		-23.7	210	754	20 12 31
20 17 50	J0945-0153	08 47 57	33.6	162.3	-1.0		-10.5	-56	754	20 17 50
20 20 50	=0943-016	08 50 57	33.7	163.2	-0.9		-10.0	124	777	20 17 51

Schedule for TORUN (Code Tr) Page 4

EVN-18CM-CGCG-N

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 10 Mar 2020 Day 70 ---										
20 20 50	CGCG-N	08 50 57	35.0	163.4	-0.9		-9.9	-18	777	No stop
20 25 50	---	08 55 58	35.2	164.9	-0.8		-9.0	282	815	20 20 51
20 26 30	J0945-0153	08 56 38	33.9	164.9	-0.8		-9.0	22	815	20 26 30
20 28 30	=0943-016	08 58 39	34.0	165.4	-0.8		-8.7	120	831	20 26 31
20 28 30	CGCG-N	08 58 39	35.3	165.7	-0.8		-8.5	-18	831	No stop
20 33 30	---	09 03 40	35.5	167.3	-0.7		-7.6	282	870	20 28 31
20 33 30	J0945-0153	09 03 40	34.2	166.9	-0.7		-7.8	-18	870	No stop
20 36 00	=0943-016	09 06 10	34.3	167.7	-0.7		-7.4	132	889	20 33 31
20 36 00	CGCG-N	09 06 10	35.6	168.0	-0.6		-7.2	-18	889	No stop
20 41 00	---	09 11 11	35.7	169.5	-0.6		-6.3	282	927	20 36 01
20 41 40	J0945-0153	09 11 51	34.4	169.4	-0.6		-6.3	22	927	20 41 40
20 43 40	=0943-016	09 13 51	34.5	170.0	-0.5		-6.0	120	943	20 41 41
20 43 40	CGCG-N	09 13 51	35.8	170.4	-0.5		-5.8	-18	943	No stop
20 48 40	---	09 18 52	35.9	171.9	-0.4		-4.8	282	982	20 43 41
20 48 40	J0945-0153	09 18 52	34.6	171.5	-0.5		-5.1	-18	982	No stop
20 51 10	=0943-016	09 21 22	34.7	172.3	-0.4		-4.6	132	1001	20 48 41
20 51 10	CGCG-N	09 21 22	35.9	172.7	-0.4		-4.4	-18	1001	No stop
20 56 10	---	09 26 23	36.0	174.2	-0.3		-3.5	282	1040	20 51 11
20 56 50	J0945-0153	09 27 03	34.8	174.0	-0.3		-3.6	22	1040	20 56 50
20 58 50	=0943-016	09 29 04	34.8	174.6	-0.3		-3.2	120	1055	20 56 51
20 58 50	CGCG-N	09 29 04	36.1	175.0	-0.3		-3.0	-18	1055	No stop
21 03 50	---	09 34 05	36.1	176.6	-0.2		-2.0	282	1094	20 58 51
21 03 50	J0945-0153	09 34 05	34.9	176.1	-0.2		-2.3	-18	1094	No stop
21 06 20	=0943-016	09 36 35	34.9	176.9	-0.2		-1.9	132	1113	21 03 51
21 06 20	CGCG-N	09 36 35	36.1	177.4	-0.1		-1.6	-18	1113	No stop
21 11 20	---	09 41 36	36.2	178.9	-0.1		-0.6	282	1152	21 06 21
21 12 00	J0945-0153	09 42 16	34.9	178.6	-0.1		-0.8	22	1152	21 12 00
21 14 00	=0943-016	09 44 16	34.9	179.2	-0.0		-0.5	120	1167	21 12 01
21 14 00	CGCG-N	09 44 16	36.2	179.8	-0.0		-0.1	-18	1167	No stop
21 19 00	---	09 49 17	36.2	181.3	0.1		0.8	282	1206	21 14 01

Schedule for TORUN (Code Tr) Page 5

EVN-18CM-CGCG-N

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 10 Mar 2020 Day 70 ---										
21 19 00	J0945-0153	09 49 17	34.9	180.8	0.0		0.5	-18	1206	No stop
21 21 30	=0943-016	09 51 47	34.9	181.5	0.1		0.9	132	1225	21 19 01
21 21 30	CGCG-N	09 51 47	36.1	182.1	0.1		1.3	-18	1225	No stop
21 26 30	---	09 56 48	36.1	183.6	0.2		2.2	282	1264	21 21 31
21 27 10	J0945-0153	09 57 28	34.9	183.3	0.2		2.0	22	1264	21 27 10
21 29 10	=0943-016	09 59 29	34.9	183.9	0.2		2.3	120	1279	21 27 11
21 29 10	CGCG-N	09 59 29	36.1	184.5	0.2		2.7	-18	1279	No stop
21 34 10	---	10 04 30	36.0	186.0	0.3		3.6	282	1318	21 29 11
21 34 10	J0945-0153	10 04 30	34.8	185.4	0.3		3.2	-18	1318	No stop
21 36 40	=0943-016	10 07 00	34.8	186.2	0.3		3.7	132	1337	21 34 11
21 36 40	CGCG-N	10 07 00	36.0	186.8	0.4		4.1	-18	1337	No stop
21 41 40	---	10 12 01	35.9	188.3	0.4		5.0	282	1376	21 36 41
21 42 20	J0945-0153	10 12 41	34.7	187.9	0.4		4.7	22	1376	21 42 20
21 44 20	=0943-016	10 14 41	34.6	188.5	0.5		5.1	120	1391	21 42 21
21 44 20	CGCG-N	10 14 41	35.8	189.1	0.5		5.5	-18	1391	No stop
21 49 20	---	10 19 42	35.7	190.7	0.6		6.4	282	1430	21 44 21
21 49 20	J0945-0153	10 19 42	34.5	190.0	0.5		6.0	-18	1430	No stop
21 51 50	=0943-016	10 22 12	34.4	190.8	0.6		6.4	132	1449	21 49 21
21 51 50	CGCG-N	10 22 12	35.6	191.4	0.6		6.8	-18	1449	No stop
21 56 50	---	10 27 13	35.5	193.0	0.7		7.7	282	1488	21 51 51
21 57 30	J0945-0153	10 27 53	34.3	192.5	0.7		7.5	22	1488	21 57 30
21 59 30	=0943-016	10 29 54	34.2	193.1	0.7		7.8	120	1503	21 57 31
21 59 30	CGCG-N	10 29 54	35.4	193.8	0.7		8.2	-17	1503	No stop
22 04 30	---	10 34 55	35.2	195.3	0.8		9.1	283	1542	21 59 31
22 04 30	J0945-0153	10 34 55	34.0	194.6	0.8		8.7	-17	1542	No stop
22 07 00	=0943-016	10 37 25	33.9	195.3	0.8		9.1	133	1561	22 04 31
22 07 00	CGCG-N	10 37 25	35.1	196.1	0.9		9.6	-17	1561	No stop
22 12 00	---	10 42 26	34.9	197.6	1.0		10.4	283	1600	22 07 01
22 12 40	J0945-0153	10 43 06	33.7	197.0	0.9		10.1	23	1600	22 12 40
22 14 40	=0943-016	10 45 06	33.6	197.6	1.0		10.5	120	1615	22 12 41

Schedule for TORUN (Code Tr) Page 6

EVN-18CM-CGCG-N

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 10 Mar 2020 Day 70 ---										
22 14 40	CGCG-N	10 45 06	34.7	198.4	1.0		10.9	-17	1615	No stop
22 19 40	---	10 50 07	34.5	199.9	1.1		11.8	283	1654	22 14 41
22 19 40	J0945-0153	10 50 07	33.3	199.1	1.1		11.3	-17	1654	No stop
22 22 10	=0943-016	10 52 37	33.2	199.8	1.1		11.7	133	1673	22 19 41
22 22 10	CGCG-N	10 52 37	34.4	200.6	1.1		12.2	-17	1673	No stop
22 27 10	---	10 57 38	34.1	202.1	1.2		13.0	283	1712	22 22 11
22 27 50	J0945-0153	10 58 18	32.9	201.4	1.2		12.7	23	1712	22 27 50
22 29 50	=0943-016	11 00 19	32.8	202.0	1.2		13.0	120	1727	22 27 51
22 29 50	CGCG-N	11 00 19	33.9	202.9	1.3		13.5	-17	1727	No stop
22 34 50	---	11 05 19	33.6	204.3	1.3		14.3	283	1766	22 29 51
22 34 50	J0945-0153	11 05 19	32.5	203.5	1.3		13.8	-17	1766	No stop
22 37 20	=0943-016	11 07 50	32.4	204.2	1.4		14.3	133	1785	22 34 51
22 37 20	CGCG-N	11 07 50	33.5	205.1	1.4		14.7	-17	1785	No stop
22 42 20	---	11 12 51	33.1	206.5	1.5		15.5	283	1824	22 37 21
22 43 00	J0945-0153	11 13 31	32.0	205.8	1.4		15.2	23	1824	22 43 00
22 45 00	=0943-016	11 15 31	31.9	206.4	1.5		15.5	120	1840	22 43 01
22 45 00	CGCG-N	11 15 31	33.0	207.3	1.5		16.0	-17	1840	No stop
22 50 00	---	11 20 32	32.6	208.7	1.6		16.8	283	1878	22 45 01
22 50 00	J0945-0153	11 20 32	31.5	207.8	1.6		16.3	-17	1878	No stop
22 52 30	=0943-016	11 23 02	31.4	208.5	1.6		16.7	133	1898	22 50 01
22 52 30	CGCG-N	11 23 02	32.4	209.4	1.6		17.2	-17	1898	No stop
22 57 30	---	11 28 03	32.0	210.8	1.7		17.9	283	1936	22 52 31
22 58 10	J0945-0153	11 28 43	30.9	210.1	1.7		17.5	23	1936	22 58 10
23 00 10	=0943-016	11 30 44	30.8	210.7	1.7		17.8	120	1952	22 58 11
23 00 10	CGCG-N	11 30 44	31.8	211.6	1.8		18.3	-17	1952	No stop
23 05 10	---	11 35 44	31.4	213.0	1.8		19.1	283	1990	23 00 11
23 05 10	J0945-0153	11 35 44	30.4	212.0	1.8		18.6	-17	1990	No stop
23 07 40	=0943-016	11 38 15	30.2	212.7	1.9		19.0	133	2010	23 05 11
23 07 40	CGCG-N	11 38 15	31.2	213.7	1.9		19.4	-17	2010	No stop
23 12 40	---	11 43 16	30.8	215.0	2.0		20.2	283	2048	23 07 41

```
Schedule for TORUN     (Code Tr )                                  Page   7
               EVN-18CM-CGCG-N
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  10 Mar 2020   Day  70 ---

23 13 20  J0945-0153   11 43 56  29.7 214.3  2.0      19.8    23     2048   23 13 20
23 15 20  =0943-016    11 45 56  29.6 214.8  2.0      20.1   120     2064   23 13 21

23 15 20  CGCG-N       11 45 56  30.6 215.8  2.0      20.5   -17     2064   No stop
23 20 20  ---          11 50 57  30.1 217.1  2.1      21.2   283     2102   23 15 21

23 20 20  J0945-0153   11 50 57  29.1 216.2  2.1      20.8   -17     2102   No stop
23 22 50  =0943-016    11 53 27  28.9 216.8  2.1      21.1   133     2122   23 20 21

23 22 50  CGCG-N       11 53 27  29.9 217.8  2.1      21.6   -16     2122   No stop
23 27 50  ---          11 58 28  29.4 219.1  2.2      22.3   284     2160   23 22 51

23 28 30  J0945-0153   11 59 08  28.4 218.3  2.2      21.9    23     2160   23 28 30
23 30 30  =0943-016    12 01 09  28.2 218.9  2.2      22.1   120     2176   23 28 31

23 30 30  CGCG-N       12 01 09  29.2 219.8  2.3      22.6   -16     2176   No stop
23 35 30  ---          12 06 09  28.7 221.2  2.4      23.3   284     2214   23 30 31

23 35 30  J0945-0153   12 06 09  27.7 220.2  2.3      22.8   -17     2214   No stop
23 38 00  =0943-016    12 08 40  27.5 220.8  2.4      23.1   133     2234   23 35 31

23 38 00  CGCG-N       12 08 40  28.4 221.8  2.4      23.6   -16     2234   No stop
23 43 00  ---          12 13 41  27.9 223.1  2.5      24.2   284     2272   23 38 01

23 43 40  J0945-0153   12 14 21  26.9 222.3  2.5      23.8    24     2272   23 43 40
23 45 40  =0943-016    12 16 21  26.7 222.8  2.5      24.1   120     2288   23 43 41

23 45 40  CGCG-N       12 16 21  27.6 223.8  2.5      24.6   -16     2288   No stop
23 50 40  ---          12 21 22  27.1 225.1  2.6      25.2   284     2326   23 45 41

23 50 40  J0945-0153   12 21 22  26.2 224.1  2.6      24.7   -16     2326   No stop
23 53 10  =0943-016    12 23 52  25.9 224.7  2.6      25.0   134     2346   23 50 41

23 53 10  CGCG-N       12 23 52  26.9 225.7  2.6      25.5   -16     2346   No stop
23 58 10  ---          12 28 53  26.3 227.0  2.7      26.0   284     2384   23 53 11

 --- Start: Tue  10 Mar 2020   Day  70 -- Stop: Wed  11 Mar 2020   Day  71 ---

23 58 50  J0945-0153   12 29 33  25.3 226.1  2.7      25.7    24     2384   23 58 50
00 00 50  =0943-016    12 31 34  25.1 226.6  2.7      25.9   120     2400   23 58 51

00 00 50  CGCG-N       12 31 34  26.0 227.7  2.8      26.3   -16     2400   No stop
00 05 50  ---          12 36 34  25.5 228.9  2.9      26.9   284     2439   00 00 51
```

```
Schedule for TORUN     (Code Tr )                                Page   8
               EVN-18CM-CGCG-N
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  11 Mar 2020   Day  71 ---

00 05 50  J0945-0153   12 36 34  24.5 227.9  2.8      26.5   -16     2439   No stop
00 08 20  =0943-016    12 39 05  24.3 228.5  2.9      26.7   134     2458   00 05 51

00 08 20  CGCG-N       12 39 05  25.2 229.5  2.9      27.2   -16     2458   No stop
00 13 20  ---          12 44 06  24.6 230.7  3.0      27.7   284     2497   00 08 21

00 14 00  J0945-0153   12 44 46  23.6 229.9  3.0      27.3    24     2497   00 14 00
00 16 00  =0943-016    12 46 46  23.4 230.3  3.0      27.6   120     2512   00 14 01

00 16 00  CGCG-N       12 46 46  24.3 231.4  3.0      28.0   -16     2512   No stop
00 21 00  ---          12 51 47  23.7 232.6  3.1      28.5   284     2551   00 16 01

00 21 00  J0945-0153   12 51 47  22.8 231.5  3.1      28.1   -16     2551   No stop
00 23 30  =0943-016    12 54 17  22.5 232.1  3.1      28.3   134     2570   00 21 01

00 23 30  CGCG-N       12 54 17  23.4 233.2  3.2      28.7   -16     2570   No stop
00 27 30  ---          12 58 18  22.9 234.1  3.2      29.1   224     2601   00 23 31

00 27 30  J0945-0153   12 58 18  22.0 233.1  3.2      28.7   -16     2601   No stop
00 30 00  =0943-016    13 00 48  21.7 233.7  3.2      29.0   134     2620   00 27 31



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


 ======== Setup file: sess120.L1024

   Setup group:    9         Station: TORUN            Total bit rate:  1024
   Format: VDIF              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         9         1         9         2        10         2        10
                3        11         3        11         4        12         4        12
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=   1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15, 16
 barrel=roll_off
```

ek046htr

Resolving the mystery of large VLBI-Gaia offsets

PI: *Yuri Kovalev*

Address: Lebedev Physical Institute

Observing mode: continuum

Schedule for TORUN (Code Tr) Page 2

Resolving the mystery of large VLBI-Gaia offsets

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 11 Mar 2020 Day 71 ---										
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	
04 00 00	J1632+8232	16 31 23	60.6	-0.1	0.0		179.7	0	0	04 00 00
04 04 10	=1637+826	16 35 34	60.6	-0.3	0.1		178.4	250	32	04 00 01
04 08 31	J1740+4506	16 39 56	77.3	122.8	-1.0		-45.6	0	32	04 08 31
04 12 41	=1738+451	16 44 06	77.8	125.3	-0.9		-44.0	250	64	04 08 32
04 14 52	J1824+5651	16 46 17	75.5	65.2	-1.6		-94.6	-5	64	04 14 52
04 19 02	=1823+568	16 50 28	76.1	65.0	-1.6		-95.7	245	97	04 14 53
04 20 47	J1806+6949	16 52 13	71.2	20.0	-1.2		-143.4	0	97	04 20 47
04 24 57	=1807+698	16 56 24	71.4	19.1	-1.2		-145.3	250	129	04 20 48
04 25 45	J1849+6705	16 57 12	70.5	33.2	-1.9		-122.2	5	129	04 25 45
04 29 55	=1849+670	17 01 23	70.9	32.6	-1.8		-123.8	250	161	04 25 46
04 31 00	J2009+7229	17 02 28	62.4	28.2	-3.1		-109.2	19	161	04 31 00
04 35 10	=2010+723	17 06 38	62.7	27.9	-3.1		-110.4	250	193	04 31 01
04 40 31	J1759+2343	17 12 00	59.3	158.2	-0.8		-14.1	46	193	04 40 31
04 44 41	=1756+237	17 16 11	59.5	160.0	-0.7		-12.9	250	225	04 40 32
04 48 25	J2216+3518	17 19 56	36.6	77.7	-5.0		-46.0	44	225	04 48 25
04 52 35	=2214+350	17 24 07	37.2	78.4	-4.9		-46.2	250	258	04 48 26
04 53 25	J2244+4057	17 24 57	37.1	68.7	-5.3		-47.9	15	258	04 53 25
04 57 35	=2241+406	17 29 07	37.7	69.3	-5.3		-48.2	250	290	04 53 26
05 00 32	J2356+8152	17 32 05	51.5	12.9	-6.4		-73.5	49	290	05 00 32
05 04 42	=2353+816	17 36 15	51.6	12.9	-6.3		-74.5	250	322	05 00 33
05 05 48	J0157+7442	17 37 22	42.9	16.9	-8.4		-41.8	19	322	05 05 48
05 09 58	=0153+744	17 41 32	43.1	17.2	-8.3		-42.7	250	354	05 05 49
05 10 59	J0011+7045	17 42 34	46.9	28.4	-6.5		-60.6	24	354	05 10 59
05 15 09	=0008+704	17 46 45	47.2	28.6	-6.4		-61.4	250	386	05 11 00

Schedule for TORUN (Code Tr) Page 3

Resolving the mystery of large VLBI-Gaia offsets

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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	11 Mar 2020	Day 71 ---								
05 20 57	J1740+4506	17 52 34	81.8	194.8	0.2		12.6	1	386	05 20 57
05 25 07	=1738+451	17 56 44	81.6	199.7	0.3		16.7	250	419	05 20 58
05 27 48	J1759+2343	17 59 25	60.6	179.8	-0.0		-0.1	68	419	05 27 48
05 31 58	=1756+237	18 03 36	60.6	181.8	0.1		1.2	250	451	05 27 49
05 36 59	J1824+5651	18 08 38	85.6	29.5	-0.3		-147.3	-19	451	05 36 59
05 41 09	=1823+568	18 12 49	85.9	22.8	-0.2		-154.9	231	483	05 37 00
05 42 14	J1806+6949	18 13 54	73.3	-2.2	0.1		176.2	0	483	05 42 14
05 46 24	=1807+698	18 18 04	73.2	-3.4	0.2		174.0	250	515	05 42 15
05 47 12	J1849+6705	18 18 52	75.5	11.8	-0.5		-161.5	2	515	05 47 12
05 51 22	=1849+670	18 23 03	75.6	10.3	-0.4		-164.0	250	547	05 47 13
05 52 37	J2009+7229	18 24 19	67.6	20.4	-1.8		-135.8	31	547	05 52 37
05 56 47	=2010+723	18 28 29	67.8	19.8	-1.7		-137.3	250	580	05 52 38
06 02 42	J2131-1207	18 34 25	14.6	134.8	-3.0		-25.8	111	580	06 02 42
06 06 52	=2128-123	18 38 36	15.0	135.8	-2.9		-25.3	250	612	06 02 43
06 07 17	J2129-1538	18 39 01	12.1	138.0	-2.9		-24.7	0	612	06 07 17
06 11 27	=2126-158	18 43 11	12.5	138.9	-2.8		-24.2	250	644	06 07 18
06 13 35	J2253+1608	18 45 19	29.4	102.4	-4.2		-37.6	39	644	06 13 35
06 17 45	=2251+158	18 49 30	30.0	103.4	-4.1		-37.5	250	676	06 13 36
06 19 14	J2216+3518	18 51 00	50.1	95.1	-3.4		-47.2	0	676	06 19 14
06 23 24	=2214+350	18 55 10	50.8	96.1	-3.4		-47.1	250	709	06 19 15
06 24 07	J2244+4057	18 55 53	50.3	83.8	-3.8		-52.3	4	709	06 24 07
06 28 17	=2241+406	19 00 04	51.0	84.6	-3.8		-52.4	250	741	06 24 08
06 31 14	J2356+8152	19 03 01	54.6	13.3	-4.9		-95.7	19	741	06 31 14
06 35 24	=2353+816	19 07 12	54.8	13.3	-4.8		-96.7	250	773	06 31 15
06 36 19	J0011+7045	19 08 07	53.4	32.2	-5.1		-77.8	2	773	06 36 19
06 40 29	=0008+704	19 12 18	53.7	32.4	-5.0		-78.7	250	805	06 36 20
06 41 14	J0157+7442	19 13 03	47.7	22.4	-6.8		-61.0	8	805	06 41 14
06 45 24	=0153+744	19 17 14	48.0	22.6	-6.7		-61.9	250	837	06 41 15
06 51 28	J2131-1207	19 23 19	19.2	146.4	-2.2		-19.9	103	837	06 51 28
06 55 38	=2128-123	19 27 30	19.6	147.4	-2.1		-19.3	250	870	06 51 29
06 56 03	J2129-1538	19 27 55	16.5	149.3	-2.0		-18.6	0	870	06 56 03
07 00 13	=2126-158	19 32 06	16.8	150.3	-2.0		-18.0	250	902	06 56 04

Schedule for TORUN (Code Tr) Page 4

Resolving the mystery of large VLBI-Gaia offsets

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 11 Mar 2020 Day 71 ---										
07 03 25	J1759+2343	19 35 18	55.5	220.9	1.6		25.4	32	902	07 03 25
07 07 35	=1756+237	19 39 28	55.1	222.4	1.7		26.2	250	934	07 03 26
07 13 34	J0251+4315	19 45 29	25.0	50.2	-7.1		-39.3	0	934	07 13 34
07 17 44	=0248+430	19 49 39	25.5	50.8	-7.1		-39.8	250	966	07 13 35
07 19 31	J0542+4951	19 51 26	16.4	20.8	-9.9		-19.3	31	966	07 19 31
07 23 41	=0538+498	19 55 37	16.6	21.4	-9.8		-19.9	250	998	07 19 32
07 27 06	J1632+8232	19 59 03	57.2	-11.0	3.5		118.8	39	998	07 27 06
07 31 16	=1637+826	20 03 14	57.1	-11.1	3.5		117.7	250	1031	07 27 07
07 40 32	J1824+5651	20 12 31	74.2	-65.5	1.8		92.3	433	1031	07 40 32
07 44 42	=1823+568	20 16 42	73.6	-65.5	1.9		91.3	250	1063	07 40 33
07 46 10	J1806+6949	20 18 10	67.6	-29.4	2.2		121.2	0	1063	07 46 10
07 50 20	=1807+698	20 22 20	67.3	-29.9	2.3		119.8	250	1095	07 46 11
07 51 08	J1849+6705	20 23 08	72.0	-30.0	1.6		129.4	16	1095	07 51 08
07 55 18	=1849+670	20 27 19	71.7	-30.8	1.6		127.7	250	1127	07 51 09
08 02 03	J2131-1207	20 34 05	23.7	164.3	-1.0		-9.5	0	1127	08 02 03
08 06 13	=2128-123	20 38 16	23.8	165.4	-0.9		-8.9	250	1159	08 02 04
08 06 47	J2129-1538	20 38 50	20.5	166.8	-0.9		-8.2	7	1159	08 06 47
08 10 57	=2126-158	20 43 01	20.6	167.8	-0.8		-7.5	250	1192	08 06 48
08 14 08	J1759+2343	20 46 13	47.1	243.3	2.8		35.9	26	1192	08 14 08
08 18 18	=1756+237	20 50 23	46.6	244.4	2.8		36.3	250	1224	08 14 09
08 22 35	J2253+1608	20 54 41	46.3	135.9	-2.0		-25.8	25	1224	08 22 35
08 26 45	=2251+158	20 58 52	46.7	137.2	-1.9		-25.1	250	1256	08 22 36
08 28 18	J2216+3518	21 00 25	67.7	135.0	-1.3		-31.4	0	1256	08 28 18
08 32 28	=2214+350	21 04 36	68.2	136.9	-1.2		-30.2	250	1288	08 28 19
08 33 25	J2244+4057	21 05 33	69.4	115.7	-1.7		-45.9	0	1288	08 33 25
08 37 35	=2241+406	21 09 44	69.9	117.3	-1.6		-45.1	250	1320	08 33 26
08 38 56	J0005+3820	21 11 04	56.7	98.1	-2.9		-49.4	16	1320	08 38 56
08 43 06	=0003+380	21 15 15	57.3	99.1	-2.9		-49.2	250	1353	08 38 57
08 43 59	J0048+3157	21 16 09	46.7	97.1	-3.6		-44.7	0	1353	08 43 59
08 48 09	=0046+316	21 20 20	47.3	98.0	-3.5		-44.6	250	1385	08 44 00

Schedule for TORUN (Code Tr) Page 5

Resolving the mystery of large VLBI-Gaia offsets

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 11 Mar 2020 Day 71 ---										
08 49 08	J0052+4402	21 21 19	54.7	82.7	-3.5		-56.1	13	1385	08 49 08
08 53 18	=0049+437	21 25 29	55.3	83.4	-3.5		-56.2	250	1417	08 49 09
08 54 49	J0152+3350	21 27 01	40.1	84.6	-4.4		-46.1	20	1417	08 54 49
08 58 59	=0149+335	21 31 11	40.7	85.3	-4.4		-46.2	250	1449	08 54 50
09 00 32	J0231+1322	21 32 44	19.7	93.7	-5.0		-38.0	0	1449	09 00 32
09 04 42	=0229+131	21 36 55	20.3	94.6	-4.9		-38.0	250	1481	09 00 33
09 09 09	J2131-1207	21 41 22	24.8	182.4	0.1		1.4	77	1481	09 09 09
09 13 19	=2128-123	21 45 33	24.8	183.5	0.2		2.1	250	1514	09 09 10
09 13 53	J2129-1538	21 46 07	21.3	184.1	0.3		2.6	7	1514	09 13 53
09 18 03	=2126-158	21 50 18	21.2	185.2	0.3		3.2	250	1546	09 13 54
09 22 20	J1740+4506	21 54 36	49.1	285.3	4.2		55.1	42	1546	09 22 20
09 26 30	=1738+451	21 58 47	48.5	286.0	4.3		54.9	250	1578	09 22 21
09 27 28	J1824+5651	21 59 44	59.7	299.0	3.6		73.8	2	1578	09 27 28
09 31 38	=1823+568	22 03 55	59.1	299.3	3.7		73.2	250	1610	09 27 29
09 33 17	J2009+7229	22 05 35	67.0	338.2	1.9		131.9	7	1610	09 33 17
09 37 27	=2010+723	22 09 45	66.7	337.7	2.0		130.4	250	1642	09 33 18
09 43 36	J2129-1538	22 15 56	20.6	191.8	0.8		7.3	62	1642	09 43 36
09 47 46	=2126-158	22 20 06	20.5	192.8	0.8		7.9	250	1675	09 43 37
09 48 30	J2131-1207	22 20 51	24.1	192.9	0.8		7.9	17	1675	09 48 30
09 52 40	=2128-123	22 25 01	23.9	194.0	0.9		8.6	250	1707	09 48 31
09 55 54	J1759+2343	22 28 15	32.4	267.1	4.5		40.9	32	1707	09 55 54
10 00 04	=1756+237	22 32 26	31.8	267.9	4.5		41.0	250	1739	09 55 55
10 04 21	J2253+1608	22 36 43	53.0	172.7	-0.3		-4.5	51	1739	10 04 21
10 08 31	=2251+158	22 40 54	53.1	174.4	-0.2		-3.5	250	1771	10 04 22
10 09 59	J2216+3518	22 42 22	71.8	196.6	0.4		12.1	4	1771	10 09 59
10 14 09	=2214+350	22 46 33	71.6	199.2	0.5		14.0	250	1803	10 10 00
10 14 58	J2244+4057	22 47 22	78.0	182.1	0.0		1.7	0	1803	10 14 58
10 19 08	=2241+406	22 51 33	77.9	185.8	0.1		4.6	250	1836	10 14 59
10 27 09	J2356+8152	22 59 35	60.8	364.1	-1.0		-162.2	109	1836	10 27 09
10 31 19	=2353+816	23 03 46	60.8	363.8	-0.9		-163.5	250	1868	10 27 10

Schedule for TORUN (Code Tr) Page 6

Resolving the mystery of large VLBI-Gaia offsets

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

--- Wed 11 Mar 2020 Day 71 ---

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
10 32 14	J0011+7045	23 04 41	70.7	376.8	-1.1		-148.0	4	1868	10 32 14
10 36 24	=0008+704	23 08 52	70.9	375.9	-1.1		-149.8	250	1900	10 32 15
10 37 40	J0157+7442	23 10 08	62.6	382.6	-2.8		-118.5	31	1900	10 37 40
10 41 50	=0153+744	23 14 19	62.9	382.3	-2.8		-119.7	250	1932	10 37 41
10 46 13	J0005+3820	23 18 43	73.2	145.6	-0.8		-25.7	-220	1932	10 46 13
10 50 23	=0003+380	23 22 53	73.5	148.2	-0.7		-23.8	30	1964	10 46 14
10 51 35	J0048+3157	23 24 06	63.9	135.2	-1.4		-29.9	22	1964	10 51 35
10 55 45	=0046+316	23 28 16	64.4	137.0	-1.4		-28.9	250	1997	10 51 36
10 56 45	J0052+4402	23 29 17	73.5	114.4	-1.4		-49.7	0	1997	10 56 45
11 00 55	=0049+437	23 33 27	74.1	116.2	-1.3		-48.7	250	2029	10 56 46
11 02 07	J0152+3350	23 34 39	58.8	113.9	-2.3		-41.4	0	2029	11 02 07
11 06 17	=0149+335	23 38 50	59.4	115.2	-2.2		-40.9	250	2061	11 02 08
11 07 52	J0231+1322	23 40 25	37.8	122.8	-2.9		-31.3	0	2061	11 07 52
11 12 02	=0229+131	23 44 36	38.3	123.9	-2.8		-30.8	250	2093	11 07 53
11 14 01	J0251+4315	23 46 36	58.1	88.7	-3.1		-55.6	32	2093	11 14 01
11 18 11	=0248+430	23 50 46	58.7	89.5	-3.0		-55.6	250	2126	11 14 02
11 20 31	J0542+4951	23 53 07	38.8	55.7	-5.9		-50.3	51	2126	11 20 31
11 24 41	=0538+498	23 57 17	39.3	56.3	-5.8		-50.8	250	2158	11 20 32
11 27 45	J1632+8232	00 00 21	49.7	-10.8	7.5		59.1	34	2158	11 27 45
11 31 55	=1637+826	00 04 32	49.6	-10.7	7.6		58.2	250	2190	11 27 46
11 34 11	J1824+5651	00 06 49	44.0	-49.3	5.7		56.4	44	2190	11 34 11
11 38 21	=1823+568	00 10 59	43.5	-48.8	5.8		55.8	250	2222	11 34 12
11 39 24	J1806+6949	00 12 02	48.2	-31.2	6.1		64.3	12	2222	11 39 24
11 43 34	=1807+698	00 16 13	47.9	-30.9	6.2		63.5	250	2254	11 39 25
11 44 19	J1849+6705	00 16 58	50.3	-37.1	5.5		68.6	18	2254	11 44 19
11 48 29	=1849+670	00 21 08	49.9	-36.8	5.5		67.8	250	2287	11 44 20
11 50 08	J1740+4506	00 22 48	29.3	-52.7	6.7		42.6	8	2287	11 50 08
11 54 18	=1738+451	00 26 59	28.8	-52.1	6.8		42.2	250	2319	11 50 09
11 59 36	J2253+1608	00 32 17	48.5	216.7	1.6		21.9	-238	2319	11 59 36
12 03 46	=2251+158	00 36 28	48.1	218.1	1.7		22.7	12	2351	11 59 37

Schedule for TORUN (Code Tr) Page 7

Resolving the mystery of large VLBI-Gaia offsets

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 11 Mar 2020 Day 71 ---										
12 05 14	J2216+3518	00 37 56	59.7	248.5	2.3		43.3	12	2351	12 05 14
12 09 24	=2214+350	00 42 07	59.1	249.7	2.4		43.7	250	2383	12 05 15
12 10 25	J2244+4057	00 43 08	66.8	250.7	2.0		48.7	18	2383	12 10 25
12 14 35	=2241+406	00 47 19	66.2	252.0	2.0		49.2	250	2415	12 10 26
12 17 48	J0005+3820	00 50 33	73.5	211.5	0.7		23.6	96	2415	12 17 48
12 21 58	=0003+380	00 54 44	73.2	214.1	0.8		25.5	250	2448	12 17 49
12 23 14	J0048+3157	00 56 00	68.9	183.6	0.1		2.6	0	2448	12 23 14
12 27 24	=0046+316	01 00 11	68.9	186.1	0.2		4.3	250	2480	12 23 15
12 29 06	J0052+4402	01 01 52	81.0	189.5	0.1		8.0	42	2480	12 29 06
12 33 16	=0049+437	01 06 03	80.8	194.2	0.2		11.8	250	2512	12 29 07
12 34 46	J0152+3350	01 07 34	69.2	152.2	-0.8		-19.7	-9	2512	12 34 46
12 38 56	=0149+335	01 11 44	69.4	154.5	-0.7		-18.1	241	2544	12 34 47
12 40 33	J0231+1322	01 13 21	47.3	150.8	-1.3		-17.5	0	2544	12 40 33
12 44 43	=0229+131	01 17 32	47.6	152.2	-1.3		-16.7	250	2576	12 40 34
12 46 55	J0251+4315	01 19 44	71.8	113.0	-1.6		-49.5	27	2576	12 46 55
12 51 05	=0248+430	01 23 55	72.4	114.6	-1.5		-48.6	250	2609	12 46 56
12 53 38	J0542+4951	01 26 28	51.1	67.9	-4.3		-59.6	44	2609	12 53 38
12 57 48	=0538+498	01 30 39	51.7	68.4	-4.2		-60.0	250	2641	12 53 39
13 02 36	J1632+8232	01 35 28	47.4	-7.7	9.1		37.8	121	2641	13 02 36
13 06 46	=1637+826	01 39 39	47.3	-7.5	9.2		36.9	250	2673	13 02 37
13 07 43	J2009+7229	01 40 36	51.8	-28.7	5.5		74.3	0	2673	13 07 43
13 11 53	=2010+723	01 44 47	51.5	-28.6	5.6		73.4	250	2705	13 07 44
13 17 11	J2253+1608	01 50 05	39.8	239.8	2.9		32.7	-236	2705	13 17 11
13 21 21	=2251+158	01 54 16	39.2	240.9	3.0		33.1	14	2737	13 17 12
13 25 18	J2356+8152	01 58 14	59.8	352.0	2.0		143.0	0	2737	13 25 18
13 29 28	=2353+816	02 02 24	59.7	351.8	2.1		141.8	250	2770	13 25 19
13 30 23	J0011+7045	02 03 20	68.4	335.6	1.8		130.7	8	2770	13 30 23
13 34 33	=0008+704	02 07 30	68.1	335.0	1.9		129.2	250	2802	13 30 24
13 36 12	J0157+7442	02 09 09	68.3	358.3	0.2		176.0	37	2802	13 36 12
13 40 22	=0153+744	02 13 20	68.2	357.5	0.2		174.3	250	2834	13 36 13

Schedule for TORUN (Code Tr) Page 8

Resolving the mystery of large VLBI-Gaia offsets

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 11 Mar 2020 Day 71 ---										
13 46 02	J0005+3820	02 19 02	63.1	250.4	2.2		46.3	110	2834	13 46 02
13 50 16	=0003+380	02 23 16	62.5	251.7	2.3		46.7	254	2867	13 46 03
13 52 10	J0048+3157	02 25 10	62.9	228.7	1.6		32.1	51	2867	13 52 10
13 56 24	=0046+316	02 29 24	62.4	230.3	1.7		33.0	254	2899	13 52 11
13 57 32	J0052+4402	02 30 33	71.8	250.4	1.6		52.1	14	2899	13 57 32
14 01 46	=0049+437	02 34 48	71.2	251.9	1.7		52.7	254	2932	13 57 33
14 03 54	J0152+3350	02 36 56	69.4	206.2	0.7		18.6	21	2932	14 03 54
14 08 08	=0149+335	02 41 11	69.1	208.5	0.8		20.2	254	2965	14 03 55
14 09 42	J0231+1322	02 42 45	50.3	183.8	0.2		2.3	9	2965	14 09 42
14 13 56	=0229+131	02 46 59	50.3	185.4	0.2		3.3	254	2998	14 09 43
14 16 07	J0251+4315	02 49 12	80.2	176.1	-0.1		-3.2	6	2998	14 16 07
14 20 21	=0248+430	02 53 26	80.2	180.6	0.0		0.5	254	3030	14 16 08
14 23 20	J0542+4951	02 56 26	64.1	80.0	-2.8		-66.6	-37	3030	14 23 20
14 27 34	=0538+498	03 00 40	64.7	80.7	-2.7		-66.8	217	3063	14 23 21
14 34 32	J1849+6705	03 07 40	37.2	-23.7	8.3		38.3	194	3063	14 34 32
14 38 46	=1849+670	03 11 54	36.9	-23.3	8.4		37.6	254	3096	14 34 33
14 39 51	J2009+7229	03 12 59	45.5	-24.3	7.1		55.6	18	3096	14 39 51
14 44 05	=2010+723	03 17 14	45.3	-24.1	7.1		54.7	254	3129	14 39 52
14 45 33	J1632+8232	03 18 42	45.9	-3.3	10.8		15.4	31	3129	14 45 33
14 49 47	=1637+826	03 22 56	45.9	-3.1	10.9		14.5	254	3161	14 45 34
14 51 01	J1806+6949	03 24 11	36.4	-16.2	9.3		29.1	25	3161	14 51 01
14 55 15	=1807+698	03 28 26	36.2	-15.8	9.4		28.3	254	3194	14 51 02
14 57 06	J2356+8152	03 30 17	57.3	-11.9	3.6		116.9	18	3194	14 57 06
15 01 20	=2353+816	03 34 32	57.2	-12.1	3.6		115.8	254	3227	14 57 07
15 02 16	J0011+7045	03 35 27	61.6	-32.3	3.4		101.8	0	3227	15 02 16
15 06 30	=0008+704	03 39 42	61.3	-32.4	3.5		100.7	254	3259	15 02 17
15 08 08	J0157+7442	03 41 21	66.0	-16.1	1.7		140.5	51	3259	15 08 08
15 12 22	=0153+744	03 45 36	65.8	-16.6	1.8		139.0	254	3292	15 08 09
15 22 04	J0048+3157	03 55 19	50.9	256.4	3.1		43.5	21	3292	15 22 04
15 26 17	=0046+316	03 59 33	50.2	257.4	3.2		43.7	253	3325	15 22 05

```
Schedule for TORUN     (Code Tr )                                  Page   9
              Resolving the mystery of large VLBI-Gaia offsets
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  11 Mar 2020   Day  71 ---

15 27 16  J0052+4402   04 00 32  58.5 272.8  3.1      56.7    13     3325   15 27 16
15 31 29  =0049+437    04 04 46  57.8 273.5  3.2      56.7   253     3357   15 27 17

15 32 44  J0152+3350   04 06 00  59.8 244.0  2.2      40.6     0     3357   15 32 44
15 36 57  =0149+335    04 10 14  59.2 245.3  2.3      41.1   253     3390   15 32 45

15 38 30  J0231+1322   04 11 47  45.8 215.7  1.6      21.1    19     3390   15 38 30
15 42 43  =0229+131    04 16 01  45.4 217.1  1.7      21.8   253     3422   15 38 31

15 44 54  J0251+4315   04 18 13  72.9 243.9  1.4      47.9    15     3422   15 44 54
15 49 07  =0248+430    04 22 27  72.3 245.6  1.5      48.8   253     3455   15 44 55

15 55 45  J0542+4951   04 29 06  77.9  98.0 -1.3     -67.3    87     3455   15 55 45
15 59 59  =0538+498    04 33 21  78.5  99.3 -1.2     -66.8   254     3488   15 55 46



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


 ======== Setup file: sess120.L1024

   Setup group:    9         Station: TORUN            Total bit rate:  1024
   Format: VDIF              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         9         1         9         2        10         2        10
                  3        11         3        11         4        12         4        12
  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:   7  Setup file default.  Used with PCAL = 1MHz
  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:   7

  Track assignments are:
   track1=   1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15, 16
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

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

  0003+380          00 03 22.335504   * 00 05 57.175393     00 06 57.253180       0.13
* J0005+3820        38 03 33.40997    * 38 20 15.14904      38 26 49.20902        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  1840 observations

  0008+704          00 08 49.693643   * 00 11 31.902797     00 12 33.230400       0.56
* J0011+7045        70 28 50.79210    * 70 45 31.62634      70 52 10.72048        0.22
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  176 observations

  0046+316          00 46 04.857322   * 00 48 47.141480     00 49 50.373777       0.12
* J0048+3157        31 41 04.49533    * 31 57 25.08484      32 03 51.02336        0.11
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  1080 observations

  0049+437          00 49 39.848494   * 00 52 27.825867     00 53 33.174394       0.18
* J0052+4402        43 46 37.37207    * 44 02 54.51597      44 09 21.51666        0.15
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  255 observations

  0149+335          01 49 40.036701   * 01 52 34.576408     01 53 42.903159       0.18
* J0152+3350        33 35 46.68972    * 33 50 33.15880      33 56 23.61422        0.18
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  151 observations
```

```
  0153+744          01 53 04.337075   * 01 57 34.964939     01 59 20.496066       0.44
* J0157+7442        74 28 05.62189    * 74 42 43.22953      74 48 39.00425        0.11
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  1126 observations

  0229+131          02 29 02.524214   * 02 31 45.894061     02 32 50.008287       0.10
* J0231+1322        13 09 40.78819    * 13 22 54.71634      13 28 03.49322        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  109449 observations

  0248+430          02 48 18.485707   * 02 51 34.536750     02 52 51.642344       0.14
* J0251+4315        43 02 56.98557    * 43 15 15.82919      43 20 11.29515        0.11
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  1308 observations

  0538+498          05 38 43.517524   * 05 42 36.137901     05 44 08.808437       0.16
* J0542+4951        49 49 42.83716    * 49 51 07.23379      49 51 45.29340        0.11
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  2002 observations

  1637+826          16 37 56.926910   * 16 32 31.969878     16 30 27.868463       0.78
* J1632+8232        82 38 18.49826    * 82 32 16.39990      82 29 26.97912        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  10135 observations

  1738+451          17 38 39.409580   * 17 40 06.372611     17 40 40.713721       0.21
* J1740+4506        45 08 20.31720    * 45 06 50.37091      45 05 57.27658        0.20
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  123 observations

  1756+237          17 56 55.937405   * 17 59 00.358089     17 59 49.500455       0.19
* J1759+2343        23 43 55.77917    * 23 43 46.95383      23 43 31.02686        0.21
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  181 observations

  1807+698          18 07 18.543587   * 18 06 50.680645     18 06 38.771050       0.29
* J1806+6949        69 48 57.10467    * 69 49 28.10852      69 49 19.63500        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  146554 observations

  1823+568          18 23 14.951492   * 18 24 07.068370     18 24 27.054304       0.18
* J1824+5651        56 49 18.07202    * 56 51 01.49083      56 51 23.95426        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  11370 observations

  1849+670          18 49 16.505869   * 18 49 16.072281     18 49 14.474039       0.26
* J1849+6705        67 02 07.88053    * 67 05 41.68027      67 06 47.33252        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  47097 observations

  2010+723          20 10 16.209308   * 20 09 52.303853     20 09 39.385937       0.41
* J2009+7229        72 20 20.74085    * 72 29 19.35053      72 32 37.24078        0.12
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  438 observations

  2126-158          21 26 26.777532   * 21 29 12.175899     21 30 16.580744       0.10
* J2129-1538       -15 51 50.34808    *-15 38 41.04191     -15 33 31.07482        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  14782 observations

  2128-123          21 28 52.676060   * 21 31 35.261752     21 32 38.574801       0.10
* J2131-1207       -12 20 20.53571    *-12 07 04.79610     -12 01 52.99462        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
```

```
                    rfc_2018a Petrov and Kovalev, in preparation  16909 observations

  2214+350          22 14 07.014327   * 22 16 20.009902     22 17 11.377393       0.12
* J2216+3518        35 03 15.09223    * 35 18 14.17996      35 24 03.05370        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  30582 observations

  2241+406          22 41 57.956930   * 22 44 12.731148     22 45 04.683192       0.23
* J2244+4057        40 41 27.56069    * 40 57 13.62048      41 03 22.47446        0.22
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  85 observations

  2251+158          22 51 29.519743   * 22 53 57.747942     22 54 55.322995       0.10
* J2253+1608        15 52 54.34805    * 16 08 53.56088      16 15 07.12806        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  41804 observations

  2353+816          23 53 58.676764   * 23 56 22.793915     23 57 12.348551       0.72
* J2356+8152        81 36 10.67120    * 81 52 52.25510      81 59 32.36466        0.10
                    /home/guest/rmc/SCHED/sched11.5/catalogs/rfc_2018a_cat.key
                    rfc_2018a Petrov and Kovalev, in preparation  3111 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)
   J0005+3820          42.9
   J0011+7045          74.7
   J0048+3157          40.5
   J0052+4402          51.3
   J0152+3350          50.7
   J0157+7442          81.5
   J0231+1322          48.9
   J0251+4315          65.6
   J0542+4951          95.2
   J1632+8232          95.3
   J1740+4506          90.2
   J1759+2343          84.1
   J1806+6949          89.9
   J1824+5651          85.3
   J1849+6705          85.5
   J2009+7229          82.1
   J2129-1538          31.4
   J2131-1207          29.8
   J2216+3518          42.2
   J2244+4057          45.6
   J2253+1608          21.3
   J2356+8152          85.5

  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
```

er047dtr

EVN-COSMOS - Taming AGN and star-formation across cosmic time

PI: *Jack Radcliffe*

```
Address:  Physics Department

Observing mode:
Schedule for TORUN     (Code Tr )                                   Page   2
               EVN-COSMOS - Taming AGN and star-formation across cosmic time
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  11 Mar 2020   Day  71 ---

 Next scan frequencies:  1610.50  1610.50  1610.50  1610.50  1642.50  1642.50  1642.50  1642.50
                         1674.50  1674.50  1674.50  1674.50  1706.50  1706.50  1706.50  1706.50
 Next BBC frequencies:    689.50   689.50   689.50   689.50   657.50   657.50   657.50   657.50
                          625.50   625.50   625.50   625.50   593.50   593.50   593.50   593.50
 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 00 00  J1011+0106   05 33 31  12.9 105.9 -4.6     -35.3     0        0   17 00 00
17 06 00  =1008+013    05 39 32  13.7 107.1 -4.5     -35.0   360       46   17 00 01

17 06 40  J0959+0243   05 40 12  16.9 108.9 -4.3     -34.7    14       46   17 06 40
17 08 10  ---          05 41 42  17.1 109.2 -4.3     -34.6    90       58   17 06 41

17 08 10  COSMOS-DEEP  05 41 42  16.8 109.1 -4.3     -34.6   -11       58   No stop
17 14 10  ---          05 47 43  17.6 110.4 -4.2     -34.3   349      104   17 08 11

17 14 10  J0959+0243   05 47 43  17.9 110.5 -4.2     -34.3   -12      104   No stop
17 16 10  ---          05 49 44  18.2 111.0 -4.2     -34.1   108      120   17 14 11

17 16 10  COSMOS-DEEP  05 49 44  17.9 110.8 -4.2     -34.2   -11      120   No stop
17 24 10  ---          05 57 45  19.0 112.5 -4.1     -33.7   469      182   17 16 11

17 24 40  J0959+0243   05 58 15  19.4 112.8 -4.0     -33.6    18      182   17 24 40
17 26 10  ---          05 59 45  19.6 113.2 -4.0     -33.5    90      193   17 24 41

17 26 10  COSMOS-DEEP  05 59 45  19.3 113.0 -4.0     -33.6   -11      193   No stop
17 34 10  ---          06 07 47  20.4 114.8 -3.9     -33.1   469      255   17 26 11

17 34 10  J1011+0106   06 07 47  17.7 113.2 -4.1     -33.5   -24      255   No stop
17 36 00  =1008+013    06 09 37  18.0 113.6 -4.0     -33.4    86      269   17 34 11

17 36 40  J0959+0243   06 10 17  21.0 115.5 -3.8     -32.9    15      269   17 36 40
17 38 10  ---          06 11 47  21.2 115.9 -3.8     -32.7    90      281   17 36 41

17 38 10  COSMOS-DEEP  06 11 47  20.9 115.7 -3.8     -32.8   -11      281   No stop
17 44 10  ---          06 17 48  21.7 117.0 -3.7     -32.4   349      327   17 38 11

17 44 10  J0959+0243   06 17 48  22.1 117.2 -3.7     -32.3   -12      327   No stop
17 46 10  ---          06 19 49  22.3 117.7 -3.7     -32.2   108      343   17 44 11

17 46 10  COSMOS-DEEP  06 19 49  22.0 117.5 -3.7     -32.2   -11      343   No stop
17 54 10  ---          06 27 50  23.1 119.3 -3.6     -31.6   469      404   17 46 11
```

Schedule for TORUN (Code Tr) Page 3

EVN-COSMOS - Taming AGN and star-formation across cosmic time

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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	11 Mar 2020	Day 71 ---								
17 54 40	J0959+0243	06 28 20	23.4	119.6	-3.5		-31.5	18	404	17 54 40
17 56 10	---	06 29 50	23.6	120.0	-3.5		-31.4	90	416	17 54 41
17 56 10	COSMOS-DEEP	06 29 50	23.3	119.8	-3.5		-31.4	-11	416	No stop
18 04 10	---	06 37 52	24.4	121.7	-3.4		-30.8	469	478	17 56 11
18 04 10	J1011+0106	06 37 52	21.7	119.9	-3.6		-31.4	-24	478	No stop
18 06 00	=1008+013	06 39 42	22.0	120.4	-3.5		-31.2	86	492	18 04 11
18 08 00	4C39.25	06 41 42	58.4	99.6	-2.8		-49.6	-31	492	18 08 00
18 14 00	---	06 47 43	59.3	101.0	-2.7		-49.3	329	538	18 08 01
18 19 00	J1011+0106	06 52 44	23.6	123.4	-3.3		-30.1	151	538	18 19 00
18 20 30	=1008+013	06 54 14	23.8	123.8	-3.3		-30.0	90	550	18 19 01
18 20 30	J0959+0243	06 54 14	26.7	125.8	-3.1		-29.2	-25	550	No stop
18 22 00	---	06 55 45	26.9	126.2	-3.1		-29.0	65	562	18 20 31
18 22 00	COSMOS-DEEP	06 55 45	26.6	125.9	-3.1		-29.1	-11	562	No stop
18 28 00	---	07 01 46	27.3	127.4	-3.0		-28.5	349	608	18 22 01
18 28 30	J0959+0243	07 02 16	27.7	127.8	-3.0		-28.4	19	608	18 28 30
18 30 00	---	07 03 46	27.9	128.1	-2.9		-28.2	90	620	18 28 31
18 30 00	COSMOS-DEEP	07 03 46	27.6	127.9	-3.0		-28.3	-11	620	No stop
18 36 00	---	07 09 47	28.3	129.4	-2.9		-27.7	349	666	18 30 01
18 36 00	J0959+0243	07 09 47	28.6	129.7	-2.8		-27.6	-11	666	No stop
18 38 00	---	07 11 47	28.8	130.2	-2.8		-27.3	109	681	18 36 01
18 38 00	COSMOS-DEEP	07 11 47	28.5	129.9	-2.8		-27.4	-11	681	No stop
18 45 30	---	07 19 18	29.3	131.8	-2.7		-26.6	439	739	18 38 01
18 46 10	J1011+0106	07 19 58	26.9	130.0	-2.9		-27.4	17	739	18 46 10
18 47 40	=1008+013	07 21 29	27.1	130.4	-2.8		-27.2	90	751	18 46 11
18 47 40	J0959+0243	07 21 29	29.9	132.6	-2.6		-26.2	-25	751	No stop
18 49 30	---	07 23 19	30.1	133.1	-2.6		-26.0	85	765	18 47 41
18 49 30	COSMOS-DEEP	07 23 19	29.8	132.9	-2.6		-26.1	-11	765	No stop
18 55 30	---	07 29 20	30.4	134.4	-2.5		-25.4	349	812	18 49 31
18 56 00	J0959+0243	07 29 50	30.8	134.8	-2.5		-25.2	19	812	18 56 00
18 58 00	---	07 31 50	31.0	135.3	-2.5		-25.0	120	827	18 56 01
18 58 00	COSMOS-DEEP	07 31 50	30.7	135.1	-2.5		-25.1	-11	827	No stop
19 06 00	---	07 39 52	31.5	137.2	-2.4		-24.1	469	889	18 58 01

Schedule for TORUN (Code Tr) Page 4

EVN-COSMOS - Taming AGN and star-formation across cosmic time

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 11 Mar 2020 Day 71 ---										
19 06 00	J0959+0243	07 39 52	31.8	137.5	-2.3		-24.0	-11	889	No stop
19 08 00	---	07 41 52	32.0	138.0	-2.3		-23.7	109	904	19 06 01
19 08 00	COSMOS-DEEP	07 41 52	31.8	137.8	-2.3		-23.8	-11	904	No stop
19 16 00	---	07 49 53	32.5	139.9	-2.2		-22.8	469	966	19 08 01
19 16 40	J1011+0106	07 50 33	30.2	137.9	-2.4		-23.8	17	966	19 16 40
19 18 10	=1008+013	07 52 04	30.4	138.3	-2.3		-23.6	90	978	19 16 41
19 18 10	J0959+0243	07 52 04	33.0	140.8	-2.1		-22.3	-24	978	No stop
19 20 00	---	07 53 54	33.2	141.3	-2.1		-22.1	86	992	19 18 11
19 20 00	COSMOS-DEEP	07 53 54	32.9	141.0	-2.1		-22.2	-11	992	No stop
19 26 00	---	07 59 55	33.5	142.7	-2.0		-21.4	349	1038	19 20 01
19 26 30	J0959+0243	08 00 25	33.8	143.1	-2.0		-21.1	19	1038	19 26 30
19 28 30	---	08 02 25	34.0	143.7	-2.0		-20.9	120	1054	19 26 31
19 28 30	COSMOS-DEEP	08 02 25	33.7	143.4	-2.0		-21.0	-11	1054	No stop
19 36 30	---	08 10 27	34.4	145.7	-1.9		-19.8	469	1116	19 28 31
19 36 30	J0959+0243	08 10 27	34.7	146.0	-1.8		-19.7	-11	1116	No stop
19 38 30	---	08 12 27	34.8	146.5	-1.8		-19.4	109	1131	19 36 31
19 38 30	COSMOS-DEEP	08 12 27	34.6	146.2	-1.8		-19.5	-11	1131	No stop
19 46 30	---	08 20 28	35.2	148.6	-1.7		-18.3	469	1193	19 38 31
19 47 10	J1011+0106	08 21 09	33.0	146.2	-1.9		-19.5	18	1193	19 47 10
19 48 40	=1008+013	08 22 39	33.2	146.6	-1.8		-19.3	90	1204	19 47 11
19 48 40	J0959+0243	08 22 39	35.7	149.5	-1.6		-17.8	-23	1204	No stop
19 50 30	---	08 24 29	35.8	150.0	-1.6		-17.5	87	1219	19 48 41
19 50 30	COSMOS-DEEP	08 24 29	35.5	149.7	-1.6		-17.6	-11	1219	No stop
19 56 30	---	08 30 30	36.0	151.5	-1.5		-16.7	349	1265	19 50 31
19 57 00	J0959+0243	08 31 00	36.3	152.0	-1.5		-16.4	19	1265	19 57 00
19 59 00	---	08 33 00	36.4	152.6	-1.5		-16.1	120	1280	19 57 01
19 59 00	COSMOS-DEEP	08 33 00	36.2	152.2	-1.5		-16.3	-11	1280	No stop
20 07 00	---	08 41 02	36.7	154.6	-1.3		-14.9	469	1342	19 59 01
20 07 00	J0959+0243	08 41 02	36.9	155.0	-1.3		-14.7	-11	1342	No stop
20 09 00	---	08 43 02	37.1	155.6	-1.3		-14.4	109	1358	20 07 01

Schedule for TORUN (Code Tr) Page 5

EVN-COSMOS - Taming AGN and star-formation across cosmic time

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 11 Mar 2020 Day 71 ---										
20 09 00	COSMOS-DEEP	08 43 02	36.8	155.2	-1.3		-14.6	-11	1358	No stop
20 17 00	---	08 51 03	37.3	157.7	-1.2		-13.2	469	1420	20 09 01
20 17 40	J1011+0106	08 51 44	35.3	155.0	-1.3		-14.7	19	1420	20 17 40
20 19 10	=1008+013	08 53 14	35.4	155.5	-1.3		-14.4	90	1431	20 17 41
20 19 10	J0959+0243	08 53 14	37.7	158.7	-1.1		-12.6	-22	1431	No stop
20 21 00	---	08 55 04	37.8	159.3	-1.1		-12.3	88	1445	20 19 11
20 21 00	COSMOS-DEEP	08 55 04	37.5	158.9	-1.1		-12.5	-11	1445	No stop
20 27 00	---	09 01 05	37.8	160.8	-1.0		-11.4	349	1492	20 21 01
20 27 30	J0959+0243	09 01 35	38.1	161.3	-1.0		-11.1	19	1492	20 27 30
20 29 30	---	09 03 35	38.2	161.9	-0.9		-10.8	120	1507	20 27 31
20 29 30	COSMOS-DEEP	09 03 35	38.0	161.5	-1.0		-11.0	-10	1507	No stop
20 37 30	---	09 11 37	38.3	164.0	-0.8		-9.5	470	1569	20 29 31
20 37 30	J0959+0243	09 11 37	38.5	164.4	-0.8		-9.3	-11	1569	No stop
20 39 30	---	09 13 37	38.6	165.0	-0.8		-8.9	109	1584	20 37 31
20 39 30	COSMOS-DEEP	09 13 37	38.4	164.7	-0.8		-9.1	-10	1584	No stop
20 47 30	---	09 21 38	38.7	167.2	-0.7		-7.6	470	1646	20 39 31
20 48 10	J1011+0106	09 22 19	36.9	164.3	-0.8		-9.4	19	1646	20 48 10
20 49 40	=1008+013	09 23 49	36.9	164.8	-0.8		-9.1	90	1658	20 48 11
20 49 40	J0959+0243	09 23 49	39.0	168.3	-0.6		-7.0	-22	1658	No stop
20 51 30	---	09 25 39	39.0	168.9	-0.6		-6.7	88	1672	20 49 41
20 51 30	COSMOS-DEEP	09 25 39	38.8	168.5	-0.6		-6.9	-10	1672	No stop
20 57 30	---	09 31 40	39.0	170.4	-0.5		-5.7	350	1718	20 51 31
20 58 00	J0959+0243	09 32 10	39.2	171.0	-0.5		-5.4	19	1718	20 58 00
21 00 00	---	09 34 10	39.2	171.6	-0.4		-5.0	120	1734	20 58 01
21 00 00	COSMOS-DEEP	09 34 10	39.0	171.2	-0.5		-5.3	-10	1734	No stop
21 08 00	---	09 42 12	39.2	173.8	-0.3		-3.7	470	1796	21 00 01
21 08 00	J0959+0243	09 42 12	39.4	174.2	-0.3		-3.5	-11	1796	No stop
21 10 00	---	09 44 12	39.4	174.8	-0.3		-3.1	109	1811	21 08 01
21 10 00	COSMOS-DEEP	09 44 12	39.2	174.4	-0.3		-3.3	-10	1811	No stop
21 18 00	---	09 52 13	39.3	177.0	-0.2		-1.8	470	1873	21 10 01

Schedule for TORUN (Code Tr) Page 6

EVN-COSMOS - Taming AGN and star-formation across cosmic time

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 11 Mar 2020 Day 71 ---										
21 18 40	J1011+0106	09 52 54	37.8	173.9	-0.3		-3.7	19	1873	21 18 40
21 20 10	=1008+013	09 54 24	37.8	174.3	-0.3		-3.4	90	1885	21 18 41
21 20 10	J0959+0243	09 54 24	39.5	178.1	-0.1		-1.1	-23	1885	No stop
21 22 00	---	09 56 14	39.5	178.7	-0.1		-0.8	87	1899	21 20 11
21 22 00	COSMOS-DEEP	09 56 14	39.3	178.3	-0.1		-1.0	-11	1899	No stop
21 28 00	---	10 02 15	39.4	180.3	0.0		0.2	349	1945	21 22 01
21 28 30	J0959+0243	10 02 45	39.5	180.8	0.0		0.5	19	1945	21 28 30
21 30 30	---	10 04 45	39.5	181.5	0.1		0.9	120	1961	21 28 31
21 30 30	COSMOS-DEEP	10 04 45	39.4	181.1	0.1		0.6	-11	1961	No stop
21 38 30	---	10 12 47	39.3	183.7	0.2		2.2	469	2022	21 30 31
21 38 30	J0959+0243	10 12 47	39.5	184.1	0.2		2.4	-11	2022	No stop
21 40 30	---	10 14 47	39.4	184.7	0.2		2.8	109	2038	21 38 31
21 40 30	COSMOS-DEEP	10 14 47	39.3	184.3	0.2		2.6	-11	2038	No stop
21 48 30	---	10 22 48	39.2	186.9	0.4		4.1	469	2100	21 40 31
21 49 10	J1011+0106	10 23 29	37.9	183.5	0.2		2.1	18	2100	21 49 10
21 50 40	=1008+013	10 24 59	37.8	184.0	0.2		2.4	90	2111	21 49 11
21 50 40	J0959+0243	10 24 59	39.3	188.0	0.4		4.8	-23	2111	No stop
21 52 30	---	10 26 49	39.2	188.6	0.4		5.2	87	2126	21 50 41
21 52 30	COSMOS-DEEP	10 26 49	39.1	188.2	0.4		4.9	-11	2126	No stop
21 58 30	---	10 32 50	38.9	190.1	0.5		6.0	349	2172	21 52 31
21 59 00	J0959+0243	10 33 20	39.1	190.7	0.6		6.4	19	2172	21 59 00
22 01 00	---	10 35 20	39.0	191.3	0.6		6.8	120	2187	21 59 01
22 01 00	COSMOS-DEEP	10 35 20	38.9	190.9	0.6		6.5	-11	2187	No stop
22 09 00	---	10 43 22	38.6	193.4	0.7		8.0	469	2249	22 01 01
22 09 00	J0959+0243	10 43 22	38.7	193.9	0.7		8.3	-11	2249	No stop
22 11 00	---	10 45 22	38.7	194.5	0.8		8.7	109	2265	22 09 01
22 11 00	COSMOS-DEEP	10 45 22	38.5	194.1	0.7		8.4	-11	2265	No stop
22 19 00	---	10 53 23	38.2	196.6	0.9		9.9	469	2326	22 11 01
22 19 40	J1011+0106	10 54 04	37.2	193.1	0.7		7.9	18	2326	22 19 40
22 21 10	=1008+013	10 55 34	37.1	193.6	0.7		8.1	90	2338	22 19 41

Schedule for TORUN (Code Tr) Page 7

EVN-COSMOS - Taming AGN and star-formation across cosmic time

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 11 Mar 2020 Day 71 ---										
22 21 10	J0959+0243	10 55 34	38.2	197.7	0.9		10.5	-23	2338	No stop
22 23 00	---	10 57 24	38.2	198.3	1.0		10.9	87	2352	22 21 11
22 23 00	COSMOS-DEEP	10 57 24	38.1	197.9	0.9		10.6	-11	2352	No stop
22 29 00	---	11 03 25	37.8	199.7	1.0		11.7	349	2399	22 23 01
22 29 30	J0959+0243	11 03 55	37.8	200.3	1.1		12.0	19	2399	22 29 30
22 31 30	---	11 05 56	37.7	200.9	1.1		12.4	120	2414	22 29 31
22 31 30	COSMOS-DEEP	11 05 56	37.6	200.5	1.1		12.1	-11	2414	No stop
22 39 30	---	11 13 57	37.2	203.0	1.2		13.6	469	2476	22 31 31
22 39 30	J0959+0243	11 13 57	37.3	203.4	1.2		13.8	-11	2476	No stop
22 41 30	---	11 15 57	37.2	204.0	1.3		14.2	109	2491	22 39 31
22 41 30	COSMOS-DEEP	11 15 57	37.1	203.6	1.2		13.9	-11	2491	No stop
22 49 30	---	11 23 58	36.6	206.0	1.4		15.3	469	2553	22 41 31
22 50 10	J1011+0106	11 24 39	35.8	202.5	1.2		13.3	18	2553	22 50 10
22 51 40	=1008+013	11 26 09	35.7	202.9	1.2		13.5	90	2565	22 50 11
22 51 40	J0959+0243	11 26 09	36.5	207.1	1.4		15.9	-23	2565	No stop
22 53 30	---	11 27 59	36.4	207.6	1.5		16.2	87	2579	22 51 41
22 53 30	COSMOS-DEEP	11 27 59	36.3	207.2	1.4		15.9	-11	2579	No stop
22 59 30	---	11 34 00	35.9	209.0	1.5		16.9	349	2625	22 53 31
23 00 00	J0959+0243	11 34 30	35.9	209.6	1.6		17.2	19	2625	23 00 00
23 02 00	---	11 36 31	35.7	210.1	1.6		17.6	120	2641	23 00 01
23 02 00	COSMOS-DEEP	11 36 31	35.7	209.7	1.6		17.3	-11	2641	No stop
23 10 00	---	11 44 32	35.1	212.0	1.7		18.6	469	2703	23 02 01
23 10 00	J0959+0243	11 44 32	35.1	212.5	1.7		18.8	-11	2703	No stop
23 12 00	---	11 46 32	35.0	213.1	1.8		19.1	109	2718	23 10 01
23 12 00	COSMOS-DEEP	11 46 32	34.9	212.6	1.8		18.9	-11	2718	No stop
23 20 00	---	11 54 33	34.2	214.9	1.9		20.1	469	2780	23 12 01
23 20 40	J1011+0106	11 55 14	33.7	211.5	1.7		18.3	18	2780	23 20 40
23 22 10	=1008+013	11 56 44	33.6	211.9	1.7		18.5	90	2792	23 20 41
23 22 10	J0959+0243	11 56 44	34.1	216.0	1.9		20.7	-23	2792	No stop
23 24 00	---	11 58 34	33.9	216.5	2.0		20.9	87	2806	23 22 11

Schedule for TORUN (Code Tr) Page 8

EVN-COSMOS - Taming AGN and star-formation across cosmic time

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 11 Mar 2020 Day 71 ---										
23 24 00	COSMOS-DEEP	11 58 34	33.9	216.1	2.0		20.7	-11	2806	No stop
23 30 00	---	12 04 35	33.3	217.7	2.1		21.6	349	2852	23 24 01
23 30 30	J0959+0243	12 05 05	33.3	218.3	2.1		21.9	19	2852	23 30 30
23 32 30	---	12 07 06	33.1	218.9	2.1		22.2	120	2868	23 30 31
23 32 30	COSMOS-DEEP	12 07 06	33.1	218.4	2.1		21.9	-11	2868	No stop
23 40 30	---	12 15 07	32.3	220.6	2.2		23.0	469	2929	23 32 31
23 40 30	J0959+0243	12 15 07	32.4	221.1	2.2		23.3	-11	2929	No stop
23 42 30	---	12 17 07	32.2	221.6	2.3		23.5	109	2945	23 40 31
23 42 30	COSMOS-DEEP	12 17 07	32.1	221.2	2.3		23.3	-11	2945	No stop
23 50 30	---	12 25 08	31.3	223.3	2.4		24.4	469	3007	23 42 31
23 51 10	J1011+0106	12 25 49	31.0	219.9	2.2		22.7	18	3007	23 51 10
23 52 40	=1008+013	12 27 19	30.9	220.3	2.3		22.9	90	3018	23 51 11
23 52 40	J0959+0243	12 27 19	31.1	224.3	2.5		24.8	-23	3018	No stop
23 54 30	---	12 29 09	30.9	224.8	2.5		25.1	87	3032	23 52 41
--- Start: Wed 11 Mar 2020 Day 71 -- Stop: Thu 12 Mar 2020 Day 72 ---										
23 54 30	COSMOS-DEEP	12 29 09	30.9	224.4	2.5		24.9	-11	3032	No stop
00 00 30	---	12 35 10	30.3	226.0	2.6		25.6	349	3079	23 54 31
00 01 00	J0959+0243	12 35 40	30.2	226.5	2.6		25.9	19	3079	00 01 00
00 03 00	---	12 37 41	30.0	227.0	2.6		26.1	120	3094	00 01 01
00 03 00	COSMOS-DEEP	12 37 41	30.0	226.6	2.6		25.9	-11	3094	No stop
00 11 00	---	12 45 42	29.1	228.7	2.7		26.8	469	3156	00 03 01
00 11 00	J0959+0243	12 45 42	29.1	229.1	2.8		27.0	-11	3156	No stop
00 13 00	---	12 47 42	28.9	229.6	2.8		27.2	109	3172	00 11 01
00 13 00	COSMOS-DEEP	12 47 42	28.9	229.2	2.8		27.1	-11	3172	No stop
00 21 00	---	12 55 43	28.0	231.2	2.9		27.9	469	3233	00 13 01
00 23 00	J0956+2515	12 57 44	46.4	248.1	3.0		38.0	36	3233	00 23 00
00 29 00	=0953+254	13 03 45	45.6	249.6	3.1		38.5	360	3280	00 23 01
00 30 30	COSMOS-DEEP	13 05 15	26.8	233.6	3.1		28.9	6	3280	00 30 30
00 37 00	---	13 11 46	26.0	235.2	3.2		29.6	390	3330	00 30 31

```
Schedule for TORUN     (Code Tr )                                   Page   9
               EVN-COSMOS - Taming AGN and star-formation across cosmic time
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  12 Mar 2020   Day  72 ---

00 37 30  J0959+0243   13 12 16  26.0 235.7  3.2      29.8    19     3330   00 37 30
00 39 00  ---          13 13 46  25.8 236.0  3.2      29.9    90     3342   00 37 31

00 39 00  COSMOS-DEEP  13 13 46  25.8 235.6  3.2      29.7   -11     3342   No stop
00 46 00  ---          13 20 48  24.9 237.3  3.3      30.4   409     3396   00 39 01

00 46 00  J0959+0243   13 20 48  24.9 237.7  3.3      30.5   -11     3396   No stop
00 48 00  ---          13 22 48  24.6 238.2  3.4      30.7   109     3411   00 46 01

00 48 40  J1011+0106   13 23 28  24.7 234.6  3.2      29.3    18     3411   00 48 40
00 50 10  =1008+013    13 24 58  24.5 234.9  3.2      29.4    90     3423   00 48 41

00 50 10  J0959+0243   13 24 58  24.4 238.7  3.4      30.9   -23     3423   No stop
00 52 00  ---          13 26 49  24.1 239.1  3.4      31.1    87     3437   00 50 11

00 52 00  COSMOS-DEEP  13 26 49  24.1 238.7  3.4      30.9   -10     3437   No stop
00 58 00  ---          13 32 50  23.4 240.2  3.5      31.4   350     3483   00 52 01

00 58 30  J0959+0243   13 33 20  23.3 240.7  3.6      31.6    19     3483   00 58 30
01 00 00  ---          13 34 50  23.1 241.0  3.6      31.7    90     3495   00 58 31

01 00 00  COSMOS-DEEP  13 34 50  23.1 240.6  3.6      31.6   -10     3495   No stop
01 08 00  ---          13 42 51  22.0 242.5  3.7      32.2   470     3557   01 00 01

01 08 00  J0959+0243   13 42 51  22.0 242.8  3.7      32.3   -11     3557   No stop
01 10 00  ---          13 44 52  21.7 243.3  3.7      32.5   109     3572   01 08 01

01 10 00  COSMOS-DEEP  13 44 52  21.8 242.9  3.7      32.4   -10     3572   No stop
01 18 00  ---          13 52 53  20.7 244.7  3.9      32.9   470     3634   01 10 01

01 18 40  J1011+0106   13 53 33  20.8 241.6  3.7      31.9    19     3634   01 18 40
01 20 10  =1008+013    13 55 03  20.6 241.9  3.7      32.0    90     3646   01 18 41

01 20 10  J0959+0243   13 55 03  20.4 245.6  3.9      33.2   -22     3646   No stop
01 22 00  ---          13 56 54  20.1 246.0  3.9      33.3    88     3660   01 20 11

01 22 00  COSMOS-DEEP  13 56 54  20.2 245.6  3.9      33.2   -10     3660   No stop
01 28 00  ---          14 02 54  19.3 247.0  4.0      33.6   350     3706   01 22 01

01 28 30  J0959+0243   14 03 25  19.2 247.4  4.1      33.7    19     3706   01 28 30
01 30 00  ---          14 04 55  19.0 247.8  4.1      33.8    90     3718   01 28 31

01 30 00  COSMOS-DEEP  14 04 55  19.0 247.4  4.1      33.7   -10     3718   No stop
01 38 00  ---          14 12 56  17.9 249.1  4.2      34.2   470     3780   01 30 01
```

Schedule for TORUN (Code Tr) Page 10

EVN-COSMOS - Taming AGN and star-formation across cosmic time

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 12 Mar 2020 Day 72 ---										
01 38 00	J0959+0243	14 12 56	17.9	249.5	4.2		34.3	-11	3780	No stop
01 40 00	---	14 14 56	17.6	250.0	4.2		34.4	109	3795	01 38 01
01 40 00	COSMOS-DEEP	14 14 56	17.6	249.6	4.2		34.3	-10	3795	No stop
01 48 00	---	14 22 58	16.5	251.3	4.4		34.7	470	3857	01 40 01
01 48 40	J1011+0106	14 23 38	16.8	248.3	4.2		33.9	19	3857	01 48 40
01 50 10	=1008+013	14 25 08	16.5	248.6	4.2		34.0	90	3868	01 48 41
01 50 10	J0959+0243	14 25 08	16.2	252.2	4.4		34.9	-22	3868	No stop
01 52 00	---	14 26 58	15.9	252.5	4.4		35.0	88	3883	01 50 11
01 52 00	COSMOS-DEEP	14 26 58	15.9	252.2	4.4		34.9	-10	3883	No stop
01 58 00	---	14 32 59	15.1	253.4	4.5		35.2	350	3929	01 52 01
01 58 30	J0959+0243	14 33 30	15.0	253.9	4.6		35.3	19	3929	01 58 30
02 00 00	---	14 35 00	14.7	254.2	4.6		35.3	90	3941	01 58 31
02 00 00	COSMOS-DEEP	14 35 00	14.8	253.9	4.6		35.3	-10	3941	No stop
02 08 00	---	14 43 01	13.6	255.6	4.7		35.6	470	4002	02 00 01
02 08 00	J0959+0243	14 43 01	13.6	255.9	4.7		35.7	-11	4002	No stop
02 10 00	---	14 45 01	13.3	256.3	4.7		35.7	109	4018	02 08 01
02 10 00	COSMOS-DEEP	14 45 01	13.3	256.0	4.7		35.7	-10	4018	No stop
02 18 00	---	14 53 03	12.2	257.6	4.9		36.0	470	4080	02 10 01
02 18 40	J1011+0106	14 53 43	12.5	254.7	4.7		35.4	19	4080	02 18 40
02 20 10	=1008+013	14 55 13	12.3	255.0	4.7		35.5	90	4091	02 18 41
02 20 10	J0959+0243	14 55 13	11.8	258.5	4.9		36.1	-22	4091	No stop
02 22 00	---	14 57 03	11.5	258.8	4.9		36.1	88	4105	02 20 11
02 22 00	COSMOS-DEEP	14 57 03	11.6	258.5	4.9		36.1	-10	4105	No stop
02 28 00	---	15 03 04	10.7	259.7	5.0		36.3	350	4152	02 22 01
02 28 30	J0959+0243	15 03 34	10.6	260.2	5.1		36.3	19	4152	02 28 30
02 30 00	---	15 05 05	10.3	260.5	5.1		36.4	90	4163	02 28 31
02 30 00	COSMOS-DEEP	15 05 05	10.4	260.1	5.1		36.3	-10	4163	No stop
02 38 00	---	15 13 06	9.2	261.7	5.2		36.5	470	4225	02 30 01
02 38 00	J0959+0243	15 13 06	9.1	262.1	5.2		36.5	-11	4225	No stop
02 40 00	---	15 15 06	8.8	262.5	5.2		36.6	109	4241	02 38 01

```
Schedule for TORUN     (Code Tr )                                  Page  11
              EVN-COSMOS - Taming AGN and star-formation across cosmic time
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  12 Mar 2020   Day  72 ---

02 40 00  COSMOS-DEEP  15 15 06   8.9 262.2  5.2      36.5   -10     4241   No stop
02 48 00  ---          15 23 08   7.7 263.8  5.4      36.7   470     4303   02 40 01

02 48 40  J1011+0106   15 23 48   8.1 260.9  5.2      36.4    19     4303   02 48 40
02 50 10  =1008+013    15 25 18   7.8 261.2  5.2      36.4    90     4314   02 48 41

02 50 10  J0959+0243   15 25 18   7.3 264.6  5.4      36.8   -22     4314   No stop
02 52 00  ---          15 27 08   7.1 265.0  5.4      36.8    88     4328   02 50 11

02 52 00  COSMOS-DEEP  15 27 08   7.1 264.6  5.4      36.8   -10     4328   No stop
02 58 00  ---          15 33 09   6.2 265.8  5.5      36.8   350     4375   02 52 01

02 58 30  J0959+0243   15 33 39   6.1 266.3  5.6      36.9    19     4375   02 58 30
03 00 00  ---          15 35 10   5.9 266.6  5.6      36.9    90     4386   02 58 31

03 00 00  COSMOS-DEEP  15 35 10   5.9 266.2  5.6      36.8   -10     4386   No stop
03 08 00  ---          15 43 11   4.7 267.8  5.7      36.9   470     4448   03 00 01

03 08 00  J0959+0243   15 43 11   4.6 268.2  5.7      36.9   -10     4448   No stop
03 10 00  ---          15 45 11   4.3 268.6  5.8      36.9   110     4464   03 08 01

03 10 00  COSMOS-DEEP  15 45 11   4.4 268.2  5.7      36.9   -10     4464   No stop
03 18 00  ---          15 53 13   3.2 269.8  5.9      36.9   470     4525   03 10 01

03 20 00  J1015+0109   15 55 13   4.1 266.3  5.6      36.8    97     4525   03 20 00
03 26 00  =1013+014    16 01 14   3.2 267.5  5.7      36.9   360     4572   03 20 01



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


 ======== Setup file: sess120.L1024ar

   Setup group:   11         Station: TORUN            Total bit rate:  1024
   Format: VDIF              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         9         1         9         2        10         2        10
                  3        11         3        11         4        12         4        12
  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=   1610.50  1610.50  1610.50  1610.50  1642.50  1642.50  1642.50  1642.50
            1674.50  1674.50  1674.50  1674.50  1706.50  1706.50  1706.50  1706.50
  BBC fr=    689.50   689.50   689.50   689.50   657.50   657.50   657.50   657.50
             625.50   625.50   625.50   625.50   593.50   593.50   593.50   593.50
  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=   1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15, 16
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

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

* J0959+0243        09 56 32.884578   * 09 59 08.318200     10 00 11.191911       0.00
                    02 57 32.68843    * 02 43 09.61320      02 37 17.46508        0.00
                    approx 18 mJy from VLBA-COSMOS

* COSMOS-DEEP       09 57 49.681612   * 10 00 25.000000     10 01 27.830895       0.00
                    02 47 25.90418    * 02 33 00.00000      02 27 06.72058        0.00
                    Center of COSMOS-deep

  J0927+3902        09 23 55.319217   * 09 27 03.013938     09 28 18.765509       0.13
  0923+392          39 15 23.56637    * 39 02 20.85177      38 57 06.85727        0.10
* 4C39.25           /home/guest/rmc/SCHED/sched11.5/catalogs/sources.vlba.2012jul
  J0927+39          rfc_2012b Petrov, 2012, unpublished 239566 observations

* J0956+2515        09 53 59.738481   * 09 56 49.875375     09 57 58.614802       0.41
  0953+254          25 29 33.58581    * 25 15 16.04991      25 09 29.15490        0.38
  J0956+25          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.vlba.2012jul
  OK290             GSFC 2011B astro solution     26281 Observations

* J1011+0106        10 08 41.222937   * 10 11 15.639226     10 12 18.136044       0.66
  1008+013          01 21 31.32679    * 01 06 42.51399      01 00 40.09703        1.90
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.vlba.2012jul
                    GSFC 2011B astro solution        32 Observations

* J1015+0109        10 13 22.642342   * 10 15 57.055116     10 16 59.558542       0.48
```

```
1013+014          01 24 11.84452    * 01 09 13.74679      01 03 07.69630        0.70
                  /home/guest/rmc/SCHED/sched11.5/catalogs/sources.vlba.2012jul
                  GSFC 2011B astro solution        41 Observations
```

ep119tr

HE0040-1105 at 1 Gb/s - L band

PI: *Miguel Perez-Torres*

```
Address:  IAA - CSIC
Observing mode: 1024 Mbps

Schedule for TORUN     (Code Tr )                                  Page   2
               HE0040-1105 at 1 Gb/s - L band
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  12 Mar 2020   Day  72 ---
 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

10 00 00  J0039-0942   22 36 19  22.0 146.9 -2.1     -19.5     0        0   10 00 00
10 03 00  =0036-099    22 39 19  22.2 147.6 -2.0     -19.0   180       23   10 00 01

10 03 00  HE0040-1105  22 39 19  20.9 147.1 -2.1     -19.4   -18       23   No stop
10 07 00  =HE0040      22 43 20  21.2 148.1 -2.0     -18.8   222       54   10 03 01

10 07 30  J0039-0942   22 43 50  22.6 148.8 -1.9     -18.4    12       54   10 07 30
10 08 40  =0036-099    22 45 00  22.7 149.0 -1.9     -18.3    70       63   10 07 31

10 08 40  HE0040-1105  22 45 00  21.4 148.5 -2.0     -18.6   -18       63   No stop
10 12 40  =HE0040      22 49 01  21.7 149.5 -1.9     -18.0   222       94   10 08 41

10 12 40  J0039-0942   22 49 01  23.0 150.1 -1.9     -17.7   -18       94   No stop
10 13 50  =0036-099    22 50 11  23.1 150.4 -1.8     -17.5    52      103   10 12 41

10 13 50  HE0040-1105  22 50 11  21.7 149.8 -1.9     -17.9   -18      103   No stop
10 17 50  =HE0040      22 54 12  22.0 150.9 -1.8     -17.3   222      134   10 13 51

10 18 20  J0039-0942   22 54 42  23.4 151.5 -1.8     -16.9    12      134   10 18 20
10 19 30  =0036-099    22 55 52  23.5 151.8 -1.7     -16.7    70      143   10 18 21

10 19 30  HE0040-1105  22 55 52  22.2 151.3 -1.8     -17.1   -18      143   No stop
10 23 30  =HE0040      22 59 52  22.5 152.3 -1.7     -16.5   222      174   10 19 31

10 23 30  J0039-0942   22 59 52  23.8 152.9 -1.7     -16.1   -18      174   No stop
10 24 40  =0036-099    23 01 03  23.8 153.2 -1.7     -16.0    52      183   10 23 31

10 24 40  HE0040-1105  23 01 03  22.5 152.6 -1.7     -16.3   -18      183   No stop
10 28 40  =HE0040      23 05 03  22.8 153.6 -1.6     -15.8   222      214   10 24 41

10 29 10  J0039-0942   23 05 33  24.1 154.3 -1.6     -15.3    12      214   10 29 10
10 30 20  =0036-099    23 06 44  24.2 154.6 -1.6     -15.1    70      223   10 29 11

10 30 20  HE0040-1105  23 06 44  22.9 154.1 -1.6     -15.5   -18      223   No stop
10 34 20  =HE0040      23 10 44  23.2 155.1 -1.5     -14.9   222      254   10 30 21
```

Schedule for TORUN (Code Tr) Page 3

HE0040-1105 at 1 Gb/s - L band

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 12 Mar 2020 Day 72 ---										
10 34 20	J0039-0942	23 10 44	24.5	155.7	-1.5		-14.5	-18	254	No stop
10 35 30	=0036-099	23 11 54	24.5	156.0	-1.5		-14.3	52	263	10 34 21
10 35 30	HE0040-1105	23 11 54	23.2	155.4	-1.5		-14.7	-18	263	No stop
10 39 30	=HE0040	23 15 55	23.5	156.4	-1.5		-14.1	222	294	10 35 31
10 40 00	J0039-0942	23 16 25	24.8	157.2	-1.4		-13.7	12	294	10 40 00
10 41 10	=0036-099	23 17 35	24.9	157.5	-1.4		-13.5	70	303	10 40 01
10 41 10	HE0040-1105	23 17 35	23.6	156.9	-1.4		-13.9	-18	303	No stop
10 45 10	=HE0040	23 21 36	23.8	157.9	-1.4		-13.3	222	334	10 41 11
10 45 10	J0039-0942	23 21 36	25.1	158.6	-1.3		-12.9	-18	334	No stop
10 46 20	=0036-099	23 22 46	25.2	158.9	-1.3		-12.7	52	343	10 45 11
10 46 20	HE0040-1105	23 22 46	23.9	158.2	-1.3		-13.1	-18	343	No stop
10 50 20	=HE0040	23 26 47	24.1	159.3	-1.3		-12.5	222	374	10 46 21
10 50 50	J0039-0942	23 27 17	25.4	160.1	-1.2		-12.0	12	374	10 50 50
10 52 00	=0036-099	23 28 27	25.5	160.4	-1.2		-11.8	70	383	10 50 51
10 52 00	HE0040-1105	23 28 27	24.2	159.7	-1.3		-12.2	-18	383	No stop
10 56 00	=HE0040	23 32 28	24.4	160.8	-1.2		-11.6	222	414	10 52 01
10 56 00	J0039-0942	23 32 28	25.7	161.5	-1.1		-11.2	-18	414	No stop
10 57 10	=0036-099	23 33 38	25.7	161.8	-1.1		-11.0	52	423	10 56 01
10 57 10	HE0040-1105	23 33 38	24.5	161.1	-1.2		-11.4	-18	423	No stop
11 01 10	=HE0040	23 37 39	24.6	162.1	-1.1		-10.8	222	453	10 57 11
11 01 40	J0039-0942	23 38 09	25.9	163.0	-1.0		-10.3	12	453	11 01 40
11 02 50	=0036-099	23 39 19	26.0	163.3	-1.0		-10.1	70	462	11 01 41
11 02 50	HE0040-1105	23 39 19	24.7	162.6	-1.1		-10.5	-18	462	No stop
11 06 50	=HE0040	23 43 20	24.9	163.6	-1.0		-9.9	222	493	11 02 51
11 06 50	J0039-0942	23 43 20	26.1	164.4	-0.9		-9.4	-18	493	No stop
11 08 00	=0036-099	23 44 30	26.2	164.7	-0.9		-9.2	52	502	11 06 51
11 08 00	HE0040-1105	23 44 30	24.9	164.0	-1.0		-9.7	-18	502	No stop
11 12 00	=HE0040	23 48 30	25.1	165.0	-0.9		-9.1	222	533	11 08 01
11 12 30	J0039-0942	23 49 01	26.4	165.9	-0.9		-8.5	12	533	11 12 30
11 13 40	=0036-099	23 50 11	26.4	166.2	-0.8		-8.3	70	542	11 12 31
11 13 40	HE0040-1105	23 50 11	25.2	165.5	-0.9		-8.8	-18	542	No stop
11 17 40	=HE0040	23 54 11	25.3	166.6	-0.8		-8.2	222	573	11 13 41

Schedule for TORUN (Code Tr) Page 4

HE0040-1105 at 1 Gb/s - L band

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 12 Mar 2020 Day 72 ---										
11 17 40	J0039-0942	23 54 11	26.5	167.3	-0.8		-7.7	-18	573	No stop
11 18 50	=0036-099	23 55 22	26.6	167.7	-0.7		-7.5	52	582	11 17 41
11 18 50	HE0040-1105	23 55 22	25.4	166.9	-0.8		-8.0	-18	582	No stop
11 22 50	=HE0040	23 59 22	25.5	168.0	-0.7		-7.3	222	613	11 18 51
11 23 20	J0039-0942	23 59 52	26.7	168.9	-0.7		-6.7	12	613	11 23 20
11 24 30	=0036-099	00 01 02	26.7	169.2	-0.7		-6.5	70	622	11 23 21
11 24 30	HE0040-1105	00 01 02	25.5	168.4	-0.7		-7.1	-18	622	No stop
11 28 30	=HE0040	00 05 03	25.7	169.5	-0.6		-6.4	222	653	11 24 31
11 28 30	J0039-0942	00 05 03	26.9	170.3	-0.6		-5.9	-18	653	No stop
11 29 40	=0036-099	00 06 13	26.9	170.6	-0.6		-5.7	52	662	11 28 31
11 29 40	HE0040-1105	00 06 13	25.7	169.8	-0.6		-6.2	-18	662	No stop
11 33 40	=HE0040	00 10 14	25.8	170.9	-0.6		-5.6	222	693	11 29 41
11 34 10	J0039-0942	00 10 44	27.0	171.9	-0.5		-4.9	12	693	11 34 10
11 35 20	=0036-099	00 11 54	27.0	172.2	-0.5		-4.7	70	702	11 34 11
11 35 20	HE0040-1105	00 11 54	25.8	171.3	-0.5		-5.3	-18	702	No stop
11 39 20	=HE0040	00 15 55	25.9	172.4	-0.5		-4.6	222	733	11 35 21
11 39 20	J0039-0942	00 15 55	27.1	173.3	-0.4		-4.1	-18	733	No stop
11 40 30	=0036-099	00 17 05	27.1	173.6	-0.4		-3.9	52	742	11 39 21
11 40 30	HE0040-1105	00 17 05	25.9	172.8	-0.4		-4.4	-17	742	No stop
11 44 30	=HE0040	00 21 06	26.0	173.8	-0.4		-3.8	223	773	11 40 31
11 45 00	J0039-0942	00 21 36	27.2	174.9	-0.3		-3.1	13	773	11 45 00
11 46 10	=0036-099	00 22 46	27.2	175.2	-0.3		-2.9	70	782	11 45 01
11 46 10	HE0040-1105	00 22 46	26.0	174.3	-0.3		-3.5	-17	782	No stop
11 50 10	=HE0040	00 26 47	26.1	175.4	-0.3		-2.8	223	813	11 46 11
11 50 10	J0039-0942	00 26 47	27.2	176.3	-0.2		-2.2	-17	813	No stop
11 51 20	=0036-099	00 27 57	27.2	176.6	-0.2		-2.0	53	822	11 50 11
11 51 20	J0050-0929	00 27 57	27.3	173.4	-0.4		-4.0	-21	822	No stop
11 54 20	=0048-097	00 30 57	27.4	174.2	-0.3		-3.5	159	845	11 51 21
11 54 20	HE0040-1105	00 30 57	26.1	176.5	-0.2		-2.1	-19	845	No stop
11 58 20	=HE0040	00 34 58	26.2	177.6	-0.1		-1.4	221	876	11 54 21

Schedule for TORUN (Code Tr) Page 5

HE0040-1105 at 1 Gb/s - L band

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 12 Mar 2020 Day 72 ---										
11 58 50	J0050-0929	00 35 28	27.4	175.5	-0.3		-2.7	12	876	11 58 50
11 59 50	=0048-097	00 36 28	27.4	175.8	-0.3		-2.6	60	884	11 58 51
11 59 50	HE0040-1105	00 36 28	26.2	178.0	-0.1		-1.2	-19	884	No stop
12 03 50	=HE0040	00 40 29	26.2	179.1	-0.1		-0.5	221	915	11 59 51
12 03 50	J0050-0929	00 40 29	27.5	176.9	-0.2		-1.9	-18	915	No stop
12 04 50	=0048-097	00 41 29	27.5	177.2	-0.2		-1.7	42	922	12 03 51
12 04 50	HE0040-1105	00 41 29	26.2	179.4	-0.0		-0.4	-19	922	No stop
12 08 50	=HE0040	00 45 30	26.2	180.5	0.0		0.3	221	953	12 04 51
12 09 20	J0050-0929	00 46 00	27.5	178.4	-0.1		-1.0	12	953	12 09 20
12 10 20	=0048-097	00 47 00	27.5	178.7	-0.1		-0.8	60	961	12 09 21
12 10 20	HE0040-1105	00 47 00	26.2	180.9	0.1		0.6	-19	961	No stop
12 14 20	=HE0040	00 51 01	26.2	182.0	0.1		1.2	221	992	12 10 21
12 14 20	J0050-0929	00 51 01	27.5	179.8	-0.0		-0.1	-18	992	No stop
12 15 20	=0048-097	00 52 01	27.5	180.1	0.0		0.1	42	1000	12 14 21
12 15 20	HE0040-1105	00 52 01	26.2	182.3	0.1		1.4	-18	1000	No stop
12 19 20	=HE0040	00 56 01	26.1	183.4	0.2		2.1	222	1031	12 15 21
12 19 50	J0050-0929	00 56 32	27.5	181.4	0.1		0.8	11	1031	12 19 50
12 20 50	=0048-097	00 57 32	27.5	181.6	0.1		1.0	60	1038	12 19 51
12 20 50	HE0040-1105	00 57 32	26.1	183.8	0.2		2.3	-19	1038	No stop
12 24 50	=HE0040	01 01 32	26.1	184.9	0.3		3.0	221	1069	12 20 51
12 24 50	J0050-0929	01 01 32	27.5	182.7	0.2		1.7	-19	1069	No stop
12 25 50	=0048-097	01 02 33	27.5	183.0	0.2		1.8	41	1077	12 24 51
12 25 50	HE0040-1105	01 02 33	26.1	185.2	0.3		3.2	-19	1077	No stop
12 29 50	=HE0040	01 06 33	26.0	186.3	0.4		3.8	221	1108	12 25 51
12 30 20	J0050-0929	01 07 03	27.4	184.3	0.3		2.6	11	1108	12 30 20
12 31 20	=0048-097	01 08 03	27.4	184.6	0.3		2.8	60	1116	12 30 21
12 31 20	HE0040-1105	01 08 03	26.0	186.7	0.4		4.1	-19	1116	No stop
12 35 20	=HE0040	01 12 04	25.9	187.8	0.5		4.7	221	1146	12 31 21
12 35 20	J0050-0929	01 12 04	27.4	185.7	0.3		3.4	-19	1146	No stop
12 36 20	=0048-097	01 13 04	27.4	185.9	0.4		3.6	41	1154	12 35 21

Schedule for TORUN (Code Tr) Page 6

HE0040-1105 at 1 Gb/s - L band

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 12 Mar 2020 Day 72 ---										
12 36 20	HE0040-1105	01 13 04	25.9	188.1	0.5		4.9	-19	1154	No stop
12 40 20	=HE0040	01 17 05	25.8	189.1	0.6		5.6	221	1185	12 36 21
12 40 50	J0050-0929	01 17 35	27.3	187.2	0.4		4.4	11	1185	12 40 50
12 41 50	=0048-097	01 18 35	27.3	187.5	0.4		4.5	60	1193	12 40 51
12 41 50	HE0040-1105	01 18 35	25.8	189.5	0.6		5.8	-19	1193	No stop
12 45 50	=HE0040	01 22 36	25.6	190.6	0.7		6.5	221	1224	12 41 51
12 45 50	J0050-0929	01 22 36	27.2	188.6	0.5		5.2	-19	1224	No stop
12 46 50	=0048-097	01 23 36	27.2	188.9	0.5		5.4	41	1232	12 45 51
12 46 50	HE0040-1105	01 23 36	25.6	190.9	0.7		6.6	-19	1232	No stop
12 50 50	=HE0040	01 27 37	25.5	192.0	0.7		7.3	221	1262	12 46 51
12 51 20	J0050-0929	01 28 07	27.0	190.1	0.6		6.1	11	1262	12 51 20
12 52 20	=0048-097	01 29 07	27.0	190.4	0.6		6.3	60	1270	12 51 21
12 52 20	HE0040-1105	01 29 07	25.4	192.4	0.8		7.5	-19	1270	No stop
12 56 20	=HE0040	01 33 08	25.3	193.5	0.8		8.2	221	1301	12 52 21
12 56 20	J0050-0929	01 33 08	26.9	191.5	0.7		7.0	-20	1301	No stop
12 57 20	=0048-097	01 34 08	26.9	191.8	0.7		7.1	40	1309	12 56 21
12 57 20	HE0040-1105	01 34 08	25.3	193.7	0.8		8.4	-20	1309	No stop
13 01 20	=HE0040	01 38 08	25.1	194.8	0.9		9.0	220	1340	12 57 21
13 01 50	J0050-0929	01 38 38	26.7	193.0	0.8		7.9	10	1340	13 01 50
13 02 50	=0048-097	01 39 39	26.7	193.3	0.8		8.0	60	1347	13 01 51
13 02 50	HE0040-1105	01 39 39	25.1	195.2	0.9		9.2	-20	1347	No stop
13 06 50	=HE0040	01 43 39	24.9	196.3	1.0		9.9	220	1378	13 02 51
13 06 50	J0050-0929	01 43 39	26.5	194.4	0.9		8.7	-20	1378	No stop
13 07 50	=0048-097	01 44 39	26.5	194.6	0.9		8.8	40	1386	13 06 51
13 07 50	HE0040-1105	01 44 39	24.9	196.6	1.0		10.0	-20	1386	No stop
13 11 50	=HE0040	01 48 40	24.7	197.6	1.1		10.7	220	1417	13 07 51
13 12 20	J0050-0929	01 49 10	26.3	195.9	1.0		9.6	10	1417	13 12 20
13 13 20	=0048-097	01 50 10	26.3	196.1	1.0		9.7	60	1425	13 12 21
13 13 20	HE0040-1105	01 50 10	24.6	198.0	1.1		10.9	-20	1425	No stop
13 17 20	=HE0040	01 54 11	24.4	199.1	1.2		11.5	220	1456	13 13 21

Schedule for TORUN (Code Tr) Page 7

HE0040-1105 at 1 Gb/s - L band

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 12 Mar 2020 Day 72 ---										
13 17 20	J0050-0929	01 54 11	26.1	197.2	1.0		10.4	-20	1456	No stop
13 18 20	=0048-097	01 55 11	26.1	197.5	1.1		10.5	40	1463	13 17 21
13 18 20	HE0040-1105	01 55 11	24.4	199.4	1.2		11.7	-20	1463	No stop
13 22 20	=HE0040	01 59 12	24.2	200.4	1.3		12.3	220	1494	13 18 21
13 22 50	J0050-0929	01 59 42	25.9	198.7	1.1		11.3	10	1494	13 22 50
13 23 50	=0048-097	02 00 42	25.8	199.0	1.2		11.4	60	1502	13 22 51
13 23 50	HE0040-1105	02 00 42	24.1	200.8	1.3		12.5	-20	1502	No stop
13 27 50	=HE0040	02 04 43	23.9	201.9	1.4		13.2	220	1533	13 23 51
13 27 50	J0050-0929	02 04 43	25.6	200.1	1.2		12.0	-20	1533	No stop
13 28 50	=0048-097	02 05 43	25.6	200.3	1.2		12.2	40	1541	13 27 51
13 28 50	HE0040-1105	02 05 43	23.8	202.1	1.4		13.3	-20	1541	No stop
13 32 50	=HE0040	02 09 44	23.6	203.2	1.4		13.9	220	1572	13 28 51
13 33 20	J0050-0929	02 10 14	25.3	201.5	1.3		12.9	10	1572	13 33 20
13 34 20	=0048-097	02 11 14	25.3	201.8	1.3		13.1	60	1579	13 33 21
13 34 20	HE0040-1105	02 11 14	23.5	203.6	1.5		14.1	-20	1579	No stop
13 38 20	=HE0040	02 15 14	23.3	204.6	1.5		14.7	220	1610	13 34 21
13 38 20	J0050-0929	02 15 14	25.0	202.9	1.4		13.7	-20	1610	No stop
13 39 20	=0048-097	02 16 15	25.0	203.1	1.4		13.8	40	1618	13 38 21
13 39 20	HE0040-1105	02 16 15	23.2	204.9	1.5		14.9	-21	1618	No stop
13 43 20	=HE0040	02 20 15	22.9	205.9	1.6		15.5	219	1649	13 39 21
13 43 50	J0039-0942	02 20 45	23.7	207.3	1.7		16.2	15	1649	13 43 50
13 45 00	=0036-099	02 21 56	23.6	207.6	1.7		16.4	70	1658	13 43 51
13 45 00	HE0040-1105	02 21 56	22.8	206.3	1.6		15.7	-16	1658	No stop
13 49 00	=HE0040	02 25 56	22.5	207.4	1.7		16.3	224	1689	13 45 01
13 49 00	J0039-0942	02 25 56	23.4	208.6	1.8		16.9	-15	1689	No stop
13 50 10	=0036-099	02 27 06	23.3	208.9	1.8		17.1	55	1698	13 49 01
13 50 10	HE0040-1105	02 27 06	22.5	207.6	1.7		16.5	-15	1698	No stop
13 54 10	=HE0040	02 31 07	22.2	208.7	1.8		17.0	225	1729	13 50 11
13 54 40	J0039-0942	02 31 37	22.9	210.0	1.9		17.8	15	1729	13 54 40
13 55 50	=0036-099	02 32 47	22.9	210.3	1.9		17.9	70	1738	13 54 41

Schedule for TORUN (Code Tr) Page 8

HE0040-1105 at 1 Gb/s - L band

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 12 Mar 2020 Day 72 ---										
13 55 50	HE0040-1105	02 32 47	22.1	209.1	1.8		17.3	-15	1738	No stop
13 59 50	=HE0040	02 36 48	21.8	210.1	1.9		17.9	225	1769	13 55 51
13 59 50	J0039-0942	02 36 48	22.6	211.4	1.9		18.5	-15	1769	No stop
14 01 00	=0036-099	02 37 58	22.5	211.7	2.0		18.6	55	1778	13 59 51
14 01 00	HE0040-1105	02 37 58	21.7	210.4	1.9		18.0	-15	1778	No stop
14 05 00	=HE0040	02 41 59	21.4	211.4	2.0		18.6	225	1809	14 01 01
14 05 30	J0039-0942	02 42 29	22.1	212.8	2.0		19.3	15	1809	14 05 30
14 06 40	=0036-099	02 43 39	22.0	213.1	2.1		19.4	70	1818	14 05 31
14 06 40	HE0040-1105	02 43 39	21.2	211.8	2.0		18.8	-15	1818	No stop
14 10 40	=HE0040	02 47 40	20.9	212.8	2.1		19.3	225	1849	14 06 41
14 10 40	J0039-0942	02 47 40	21.7	214.1	2.1		20.0	-15	1849	No stop
14 11 50	=0036-099	02 48 50	21.6	214.4	2.1		20.1	55	1858	14 10 41
14 11 50	HE0040-1105	02 48 50	20.8	213.1	2.1		19.5	-15	1858	No stop
14 15 50	=HE0040	02 52 51	20.5	214.1	2.2		20.0	225	1888	14 11 51
14 16 20	J0039-0942	02 53 21	21.2	215.5	2.2		20.7	15	1888	14 16 20
14 17 30	=0036-099	02 54 31	21.1	215.8	2.2		20.9	70	1898	14 16 21
14 17 30	HE0040-1105	02 54 31	20.3	214.5	2.2		20.3	-15	1898	No stop
14 21 30	=HE0040	02 58 32	20.0	215.5	2.2		20.8	225	1928	14 17 31
14 21 30	J0039-0942	02 58 32	20.7	216.8	2.3		21.4	-15	1928	No stop
14 22 40	=0036-099	02 59 42	20.6	217.1	2.3		21.5	55	1937	14 21 31
14 22 40	HE0040-1105	02 59 42	19.9	215.8	2.3		20.9	-15	1937	No stop
14 26 40	=HE0040	03 03 42	19.5	216.8	2.3		21.5	225	1968	14 22 41
14 27 10	J0039-0942	03 04 12	20.2	218.2	2.4		22.1	15	1968	14 27 10
14 28 20	=0036-099	03 05 23	20.1	218.5	2.4		22.3	70	1977	14 27 11
14 28 20	HE0040-1105	03 05 23	19.4	217.2	2.4		21.7	-15	1977	No stop
14 32 20	=HE0040	03 09 23	19.0	218.1	2.4		22.2	225	2008	14 28 21
14 32 20	J0039-0942	03 09 23	19.7	219.4	2.5		22.8	-15	2008	No stop
14 33 30	=0036-099	03 10 34	19.6	219.7	2.5		22.9	55	2017	14 32 21
14 33 30	HE0040-1105	03 10 34	18.9	218.4	2.4		22.3	-15	2017	No stop
14 37 30	=HE0040	03 14 34	18.5	219.4	2.5		22.8	225	2048	14 33 31

Schedule for TORUN (Code Tr) Page 9

HE0040-1105 at 1 Gb/s - L band

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 12 Mar 2020 Day 72 ---										
14 38 00	J0039-0942	03 15 04	19.2	220.8	2.6		23.4	15	2048	14 38 00
14 39 10	=0036-099	03 16 14	19.1	221.1	2.6		23.6	70	2057	14 38 01
14 39 10	HE0040-1105	03 16 14	18.4	219.8	2.5		23.0	-15	2057	No stop
14 43 10	=HE0040	03 20 15	18.0	220.7	2.6		23.5	225	2088	14 39 11
14 43 10	J0039-0942	03 20 15	18.7	222.0	2.7		24.1	-15	2088	No stop
14 44 20	=0036-099	03 21 25	18.5	222.3	2.7		24.2	55	2097	14 43 11
14 44 20	HE0040-1105	03 21 25	17.9	221.0	2.6		23.6	-15	2097	No stop
14 48 20	=HE0040	03 25 26	17.5	221.9	2.7		24.1	225	2128	14 44 21
14 48 50	J0039-0942	03 25 56	18.1	223.4	2.8		24.7	15	2128	14 48 50
14 50 00	=0036-099	03 27 06	18.0	223.6	2.8		24.9	70	2137	14 48 51
14 50 00	HE0040-1105	03 27 06	17.3	222.3	2.7		24.3	-15	2137	No stop
14 54 00	=HE0040	03 31 07	16.9	223.3	2.8		24.8	225	2168	14 50 01
14 54 00	J0039-0942	03 31 07	17.5	224.6	2.9		25.3	-15	2168	No stop
14 55 10	=0036-099	03 32 17	17.4	224.9	2.9		25.4	55	2177	14 54 01
14 55 10	HE0040-1105	03 32 17	16.8	223.5	2.8		24.9	-15	2177	No stop
14 59 10	=HE0040	03 36 18	16.4	224.5	2.9		25.4	225	2208	14 55 11
14 59 40	J0039-0942	03 36 48	16.9	225.9	2.9		25.9	15	2208	14 59 40
15 00 50	=0036-099	03 37 58	16.8	226.2	3.0		26.1	70	2217	14 59 41
15 00 50	HE0040-1105	03 37 58	16.2	224.9	2.9		25.5	-15	2217	No stop
15 04 50	=HE0040	03 41 59	15.7	225.8	3.0		26.0	225	2248	15 00 51
15 04 50	J0039-0942	03 41 59	16.4	227.1	3.0		26.5	-15	2248	No stop
15 06 00	=0036-099	03 43 09	16.2	227.4	3.1		26.6	55	2257	15 04 51
15 06 00	HE0040-1105	03 43 09	15.6	226.1	3.0		26.1	-15	2257	No stop
15 10 00	=HE0040	03 47 10	15.2	227.0	3.1		26.5	225	2288	15 06 01
15 10 30	J0039-0942	03 47 40	15.7	228.4	3.1		27.1	15	2288	15 10 30
15 11 40	=0036-099	03 48 50	15.6	228.7	3.1		27.2	70	2297	15 10 31
15 11 40	HE0040-1105	03 48 50	15.0	227.4	3.1		26.7	-15	2297	No stop
15 15 40	=HE0040	03 52 50	14.6	228.3	3.2		27.1	225	2328	15 11 41
15 15 40	J0039-0942	03 52 50	15.1	229.6	3.2		27.6	-15	2328	No stop
15 16 50	=0036-099	03 54 01	15.0	229.8	3.2		27.7	55	2337	15 15 41

Schedule for TORUN (Code Tr) Page 10

HE0040-1105 at 1 Gb/s - L band

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 12 Mar 2020 Day 72 ---										
15 16 50	HE0040-1105	03 54 01	14.4	228.5	3.2		27.3	-15	2337	No stop
15 20 50	=HE0040	03 58 01	14.0	229.4	3.2		27.7	225	2368	15 16 51
15 21 20	J0039-0942	03 58 31	14.5	230.9	3.3		28.2	15	2368	15 21 20
15 22 30	=0036-099	03 59 42	14.4	231.1	3.3		28.3	70	2377	15 21 21
15 22 30	HE0040-1105	03 59 42	13.8	229.8	3.3		27.8	-15	2377	No stop
15 26 30	=HE0040	04 03 42	13.3	230.7	3.3		28.2	225	2408	15 22 31
15 26 30	J0039-0942	04 03 42	13.9	232.0	3.4		28.7	-15	2408	No stop
15 27 40	=0036-099	04 04 52	13.7	232.3	3.4		28.8	55	2417	15 26 31
15 27 40	J0050-0929	04 04 52	15.3	229.8	3.2		27.7	-19	2417	No stop
15 30 00	=0048-097	04 07 13	15.0	230.3	3.3		27.9	121	2435	15 27 41
15 30 00	HE0040-1105	04 07 13	12.9	231.5	3.4		28.6	-22	2435	No stop
15 34 00	=HE0040	04 11 13	12.4	232.4	3.5		28.9	218	2466	15 30 01
15 34 30	J0050-0929	04 11 44	14.5	231.3	3.3		28.4	8	2466	15 34 30
15 35 30	=0048-097	04 12 44	14.4	231.6	3.4		28.5	60	2473	15 34 31
15 35 30	HE0040-1105	04 12 44	12.3	232.7	3.5		29.1	-22	2473	No stop
15 39 30	=HE0040	04 16 44	11.8	233.6	3.6		29.5	218	2504	15 35 31
15 39 30	J0050-0929	04 16 44	13.9	232.5	3.4		28.9	-22	2504	No stop
15 40 30	=0048-097	04 17 45	13.8	232.7	3.4		28.9	38	2512	15 39 31
15 40 30	HE0040-1105	04 17 45	11.7	233.8	3.6		29.5	-22	2512	No stop
15 44 30	=HE0040	04 21 45	11.2	234.7	3.6		29.9	218	2543	15 40 31
15 45 00	J0050-0929	04 22 15	13.2	233.7	3.5		29.4	8	2543	15 45 00
15 46 00	=0048-097	04 23 15	13.1	233.9	3.5		29.5	60	2551	15 45 01
15 46 00	HE0040-1105	04 23 15	11.0	235.0	3.7		30.0	-22	2551	No stop
15 50 00	=HE0040	04 27 16	10.5	235.9	3.7		30.4	218	2582	15 46 01
15 50 00	J0050-0929	04 27 16	12.6	234.8	3.6		29.8	-22	2582	No stop
15 51 00	=0048-097	04 28 16	12.5	235.0	3.6		29.9	38	2589	15 50 01
15 51 00	HE0040-1105	04 28 16	10.4	236.1	3.7		30.5	-22	2589	No stop
15 55 00	=HE0040	04 32 17	9.9	236.9	3.8		30.8	218	2620	15 51 01
15 55 30	J0050-0929	04 32 47	12.0	236.0	3.7		30.3	8	2620	15 55 30
15 56 30	=0048-097	04 33 47	11.8	236.2	3.7		30.4	60	2628	15 55 31

Schedule for TORUN (Code Tr) Page 11

HE0040-1105 at 1 Gb/s - L band

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 12 Mar 2020 Day 72 ---										
15 56 30	HE0040-1105	04 33 47	9.7	237.3	3.8		30.9	-22	2628	No stop
16 00 30	=HE0040	04 37 48	9.2	238.1	3.9		31.3	218	2659	15 56 31
16 00 30	J0050-0929	04 37 48	11.3	237.1	3.8		30.7	-22	2659	No stop
16 01 30	=0048-097	04 38 48	11.2	237.3	3.8		30.8	38	2667	16 00 31
16 01 30	HE0040-1105	04 38 48	9.0	238.3	3.9		31.3	-22	2667	No stop
16 05 30	=HE0040	04 42 49	8.5	239.2	4.0		31.7	218	2697	16 01 31
16 06 00	J0050-0929	04 43 19	10.6	238.3	3.9		31.2	8	2697	16 06 00
16 07 00	=0048-097	04 44 19	10.5	238.5	3.9		31.3	60	2705	16 06 01
16 07 00	HE0040-1105	04 44 19	8.3	239.5	4.0		31.8	-22	2705	No stop
16 11 00	=HE0040	04 48 20	7.8	240.3	4.1		32.1	218	2736	16 07 01
16 11 00	J0050-0929	04 48 20	10.0	239.3	3.9		31.6	-22	2736	No stop
16 12 00	=0048-097	04 49 20	9.9	239.6	4.0		31.6	38	2744	16 11 01
16 12 00	HE0040-1105	04 49 20	7.7	240.5	4.1		32.2	-22	2744	No stop
16 16 00	=HE0040	04 53 20	7.1	241.4	4.2		32.4	218	2775	16 12 01
16 16 30	J0050-0929	04 53 50	9.3	240.5	4.0		32.0	8	2775	16 16 30
16 17 30	=0048-097	04 54 51	9.1	240.7	4.1		32.1	60	2782	16 16 31
16 17 30	HE0040-1105	04 54 51	6.9	241.7	4.2		32.6	-22	2782	No stop
16 21 30	=HE0040	04 58 51	6.4	242.5	4.3		32.8	218	2813	16 17 31
16 21 30	J0050-0929	04 58 51	8.6	241.6	4.1		32.4	-22	2813	No stop
16 22 30	=0048-097	04 59 51	8.5	241.8	4.1		32.4	38	2821	16 21 31
16 22 30	HE0040-1105	04 59 51	6.3	242.7	4.3		32.9	-22	2821	No stop
16 26 30	=HE0040	05 03 52	5.7	243.6	4.3		33.2	218	2852	16 22 31
16 27 00	J0050-0929	05 04 22	7.9	242.7	4.2		32.7	8	2852	16 27 00
16 28 00	=0048-097	05 05 22	7.7	242.9	4.2		32.8	60	2860	16 27 01
16 28 00	HE0040-1105	05 05 22	5.5	243.9	4.4		33.3	-22	2860	No stop
16 32 00	=HE0040	05 09 23	5.0	244.7	4.4		33.5	218	2891	16 28 01
16 32 00	J0050-0929	05 09 23	7.2	243.8	4.3		33.1	-22	2891	No stop
16 33 00	=0048-097	05 10 23	7.1	244.0	4.3		33.2	38	2898	16 32 01
16 33 00	HE0040-1105	05 10 23	4.9	244.9	4.4		33.6	-22	2898	No stop
16 37 00	=HE0040	05 14 24	4.3	245.7	4.5		33.9	218	2929	16 33 01

```
Schedule for TORUN     (Code Tr )                                Page  12
               HE0040-1105 at 1 Gb/s - L band
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  12 Mar 2020   Day  72 ---

16 37 30  J0050-0929   05 14 54   6.5 244.9  4.4      33.5     8     2929   16 37 30
16 38 30  =0048-097    05 15 54   6.3 245.1  4.4      33.5    60     2937   16 37 31

16 38 30  HE0040-1105  05 15 54   4.1 246.0  4.5      34.0   -22     2937   No stop
16 42 30  =HE0040      05 19 55   3.6 246.9  4.6      34.2   218     2968   16 38 31

16 42 30  J0050-0929   05 19 55   5.8 246.0  4.5      33.8   -22     2968   No stop
16 43 30  =0048-097    05 20 55   5.6 246.2  4.5      33.8    38     2976   16 42 31

16 43 30  HE0040-1105  05 20 55   3.4 247.1  4.6      34.3   -22     2976   No stop
16 47 30  =HE0040      05 24 56   2.9 247.9  4.7  D   34.5     0     3007   16 43 31

16 48 00  J0050-0929   05 25 26   5.0 247.1  4.6      34.1     8     3007   16 48 00
16 49 00  =0048-097    05 26 26   4.9 247.3  4.6      34.2    60     3014   16 48 01

16 53 00  J0050-0929   05 30 26   4.3 248.1  4.6      34.4   233     3014   16 53 00
16 54 00  =0048-097    05 31 27   4.2 248.3  4.7      34.4    60     3022   16 53 01

16 59 00  J0050-0929   05 36 27   3.5 249.3  4.7      34.7   293     3022   16 59 00
17 00 00  =0048-097    05 37 28   3.3 249.5  4.8      34.8    60     3030   16 59 01



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


 ======== Setup file: sess120.L1024

   Setup group:    9         Station: TORUN            Total bit rate:  1024
   Format: VDIF              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         9         1         9         2        10         2        10
                  3        11         3        11         4        12         4        12
  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=   1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15, 16
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

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

  HE0040            00 40 05.417141   * 00 42 36.861190     00 43 35.775267       0.00
* HE0040-1105      -11 05 48.03830    *-10 49 22.08193     -10 43 00.31037        0.00

  0036-099          00 36 34.432124   * 00 39 06.291670     00 40 05.370628       0.12
* J0039-0942       -09 59 15.48032    *-09 42 46.88972     -09 36 23.88124        0.25
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,     87 observations.

  0048-097          00 48 09.975919   * 00 50 41.317387     00 51 40.220321       0.00
* J0050-0929       -09 45 24.21200    *-09 29 05.21036     -09 22 46.28360        0.01
  J0050-09          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,  46110 observations.
```

eg109btr

A dual AGN candidate with 0.13 arcsec separation

PI: *Krisztina Gabanyi*

```
Address:  MTA-ELTE Extragalactic Astrophysics Research Group

Observing mode: 18 cm 1 Gb/s

Schedule for TORUN     (Code Tr )                                   Page   2
               A dual AGN candidate with 0.13 arcsec separation
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  12 Mar 2020   Day  72 ---
 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  J0956+2515   06 07 33  39.1  99.8 -3.8     -40.8     0        0   17 30 00
17 38 00  =0953+254    06 15 34  40.3 101.6 -3.7     -40.5   480       62   17 30 01

17 39 45  J1007+1356   06 17 19  30.1 108.1 -3.9     -36.0    52       62   17 39 45
17 40 55  =1004+141    06 18 29  30.3 108.4 -3.8     -35.9    70       71   17 39 46

17 40 55  J1010+1413   06 18 29  30.1 107.6 -3.9     -36.2   -13       71   No stop
17 44 25  ---          06 22 00  30.6 108.4 -3.8     -36.0   197       98   17 40 56

17 44 25  J1007+1356   06 22 00  30.8 109.2 -3.8     -35.7   -13       98   No stop
17 45 55  =1004+141    06 23 30  31.0 109.5 -3.8     -35.6    77      109   17 44 26

17 45 55  J1010+1413   06 23 30  30.8 108.7 -3.8     -35.9   -13      109   No stop
17 49 25  ---          06 27 01  31.3 109.6 -3.7     -35.7   197      137   17 45 56

17 50 10  J1007+1356   06 27 46  31.6 110.5 -3.7     -35.4    32      137   17 50 10
17 51 20  =1004+141    06 28 56  31.7 110.8 -3.7     -35.3    70      146   17 50 11

17 51 20  J1010+1413   06 28 56  31.6 110.0 -3.7     -35.6   -13      146   No stop
17 54 50  ---          06 32 27  32.1 110.8 -3.7     -35.4   197      173   17 51 21

17 54 50  J1007+1356   06 32 27  32.2 111.6 -3.6     -35.1   -13      173   No stop
17 56 20  =1004+141    06 33 57  32.4 112.0 -3.6     -35.0    77      184   17 54 51

17 56 20  J1010+1413   06 33 57  32.3 111.2 -3.6     -35.3   -13      184   No stop
17 59 50  ---          06 37 27  32.8 112.0 -3.6     -35.0   197      211   17 56 21

18 00 35  J1007+1356   06 38 13  33.0 113.0 -3.5     -34.7    32      211   18 00 35
18 01 45  =1004+141    06 39 23  33.2 113.3 -3.5     -34.6    70      220   18 00 36

18 01 45  J1010+1413   06 39 23  33.0 112.4 -3.5     -34.9   -13      220   No stop
18 05 15  ---          06 42 53  33.5 113.3 -3.5     -34.7   197      247   18 01 46

18 05 15  J1007+1356   06 42 53  33.7 114.1 -3.4     -34.4   -13      247   No stop
18 06 45  =1004+141    06 44 24  33.9 114.5 -3.4     -34.3    77      259   18 05 16
```

Schedule for TORUN (Code Tr) Page 3

A dual AGN candidate with 0.13 arcsec separation

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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	12 Mar 2020	Day 72 ---								
18 06 45	J1010+1413	06 44 24	33.7	113.6	-3.5		-34.6	-13	259	No stop
18 10 15	---	06 47 54	34.2	114.5	-3.4		-34.3	197	286	18 06 46
18 11 00	J1007+1356	06 48 39	34.5	115.5	-3.3		-33.9	32	286	18 11 00
18 12 10	=1004+141	06 49 49	34.6	115.8	-3.3		-33.8	70	295	18 11 01
18 12 10	J1010+1413	06 49 49	34.5	115.0	-3.4		-34.2	-13	295	No stop
18 15 40	---	06 53 20	35.0	115.8	-3.3		-33.9	197	322	18 12 11
18 15 40	J1007+1356	06 53 20	35.1	116.7	-3.3		-33.6	-13	322	No stop
18 17 10	=1004+141	06 54 50	35.3	117.0	-3.2		-33.4	77	334	18 15 41
18 17 10	J1010+1413	06 54 50	35.2	116.2	-3.3		-33.8	-13	334	No stop
18 20 40	---	06 58 21	35.6	117.0	-3.2		-33.5	197	361	18 17 11
18 21 25	J1007+1356	06 59 06	35.9	118.1	-3.2		-33.1	32	361	18 21 25
18 22 35	=1004+141	07 00 16	36.0	118.4	-3.1		-33.0	70	370	18 21 26
18 22 35	J1010+1413	07 00 16	35.9	117.5	-3.2		-33.3	-13	370	No stop
18 26 05	---	07 03 47	36.4	118.4	-3.1		-33.0	197	397	18 22 36
18 26 05	J1007+1356	07 03 47	36.5	119.3	-3.1		-32.6	-13	397	No stop
18 27 35	=1004+141	07 05 17	36.7	119.7	-3.1		-32.5	77	408	18 26 06
18 27 35	J1010+1413	07 05 17	36.6	118.8	-3.1		-32.9	-13	408	No stop
18 31 05	---	07 08 48	37.0	119.7	-3.0		-32.5	197	435	18 27 36
18 31 50	J1007+1356	07 09 33	37.2	120.8	-3.0		-32.1	31	435	18 31 50
18 33 00	=1004+141	07 10 43	37.4	121.1	-3.0		-32.0	70	444	18 31 51
18 33 00	J1010+1413	07 10 43	37.3	120.2	-3.0		-32.4	-13	444	No stop
18 36 30	---	07 14 13	37.7	121.1	-3.0		-32.0	197	471	18 33 01
18 36 30	J1007+1356	07 14 13	37.8	122.0	-2.9		-31.6	-14	471	No stop
18 38 00	=1004+141	07 15 44	38.0	122.4	-2.9		-31.5	76	483	18 36 31
18 38 00	J1010+1413	07 15 44	37.9	121.5	-2.9		-31.9	-13	483	No stop
18 41 30	---	07 19 14	38.4	122.4	-2.9		-31.5	197	510	18 38 01
18 42 15	J1007+1356	07 19 59	38.6	123.5	-2.8		-31.0	31	510	18 42 15
18 43 25	=1004+141	07 21 10	38.7	123.8	-2.8		-30.9	70	519	18 42 16
18 43 25	J1010+1413	07 21 10	38.6	122.9	-2.8		-31.3	-13	519	No stop
18 46 55	---	07 24 40	39.0	123.8	-2.8		-30.9	197	546	18 43 26
18 46 55	J1007+1356	07 24 40	39.1	124.7	-2.7		-30.5	-14	546	No stop
18 48 25	=1004+141	07 26 10	39.3	125.2	-2.7		-30.4	76	558	18 46 56

Schedule for TORUN (Code Tr) Page 4

A dual AGN candidate with 0.13 arcsec separation

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 12 Mar 2020 Day 72 ---										
18 48 25	J1010+1413	07 26 10	39.2	124.2	-2.8		-30.8	-13	558	No stop
18 51 55	---	07 29 41	39.7	125.2	-2.7		-30.4	197	585	18 48 26
18 52 40	J1007+1356	07 30 26	39.8	126.3	-2.6		-29.9	31	585	18 52 40
18 53 50	=1004+141	07 31 36	40.0	126.6	-2.6		-29.8	70	594	18 52 41
18 53 50	J1010+1413	07 31 36	39.9	125.7	-2.7		-30.2	-13	594	No stop
18 57 20	---	07 35 07	40.3	126.7	-2.6		-29.8	197	621	18 53 51
18 57 20	J1007+1356	07 35 07	40.4	127.6	-2.6		-29.3	-14	621	No stop
18 58 50	=1004+141	07 36 37	40.6	128.0	-2.5		-29.2	76	633	18 57 21
18 58 50	J1010+1413	07 36 37	40.5	127.1	-2.6		-29.6	-13	633	No stop
19 02 20	---	07 40 08	40.9	128.1	-2.5		-29.2	197	660	18 58 51
19 03 05	J1007+1356	07 40 53	41.1	129.2	-2.5		-28.6	31	660	19 03 05
19 04 15	=1004+141	07 42 03	41.2	129.5	-2.4		-28.5	70	669	19 03 06
19 04 15	J1010+1413	07 42 03	41.1	128.6	-2.5		-28.9	-13	669	No stop
19 07 45	---	07 45 34	41.6	129.6	-2.4		-28.5	197	696	19 04 16
19 07 45	J1007+1356	07 45 34	41.6	130.6	-2.4		-28.0	-14	696	No stop
19 09 15	=1004+141	07 47 04	41.8	131.0	-2.4		-27.8	76	707	19 07 46
19 09 15	J1010+1413	07 47 04	41.7	130.0	-2.4		-28.3	-14	707	No stop
19 12 45	---	07 50 34	42.1	131.0	-2.3		-27.8	196	734	19 09 16
19 13 30	J1007+1356	07 51 20	42.3	132.2	-2.3		-27.3	31	734	19 13 30
19 14 40	=1004+141	07 52 30	42.4	132.6	-2.3		-27.1	70	743	19 13 31
19 14 40	J1010+1413	07 52 30	42.3	131.6	-2.3		-27.6	-14	743	No stop
19 18 10	---	07 56 00	42.7	132.6	-2.3		-27.1	196	770	19 14 41
19 18 10	J1007+1356	07 56 00	42.8	133.6	-2.2		-26.6	-14	770	No stop
19 19 40	=1004+141	07 57 31	42.9	134.0	-2.2		-26.4	76	782	19 18 11
19 19 40	J1010+1413	07 57 31	42.9	133.1	-2.2		-26.9	-14	782	No stop
19 23 10	---	08 01 01	43.3	134.1	-2.2		-26.4	196	809	19 19 41
19 23 55	J1007+1356	08 01 46	43.4	135.3	-2.1		-25.8	31	809	19 23 55
19 25 05	=1004+141	08 02 56	43.5	135.7	-2.1		-25.6	70	818	19 23 56
19 25 05	J1010+1413	08 02 56	43.5	134.7	-2.1		-26.1	-14	818	No stop
19 28 35	---	08 06 27	43.9	135.7	-2.1		-25.6	196	845	19 25 06

Schedule for TORUN (Code Tr) Page 5

A dual AGN candidate with 0.13 arcsec separation

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 12 Mar 2020 Day 72 ---										
19 28 35	J1007+1356	08 06 27	43.9	136.7	-2.0		-25.1	-14	845	No stop
19 30 05	=1004+141	08 07 57	44.0	137.2	-2.0		-24.9	76	857	19 28 36
19 30 05	J1010+1413	08 07 57	44.0	136.2	-2.1		-25.4	-14	857	No stop
19 33 35	---	08 11 28	44.4	137.3	-2.0		-24.8	196	884	19 30 06
19 34 20	J1007+1356	08 12 13	44.5	138.5	-1.9		-24.2	31	884	19 34 20
19 35 30	=1004+141	08 13 23	44.6	138.9	-1.9		-24.0	70	893	19 34 21
19 35 30	J1010+1413	08 13 23	44.6	137.9	-2.0		-24.5	-14	893	No stop
19 39 00	---	08 16 54	44.9	139.0	-1.9		-24.0	196	920	19 35 31
19 39 00	J1007+1356	08 16 54	44.9	140.0	-1.9		-23.4	-14	920	No stop
19 40 30	=1004+141	08 18 24	45.1	140.4	-1.8		-23.2	76	931	19 39 01
19 40 30	J1010+1413	08 18 24	45.1	139.4	-1.9		-23.7	-14	931	No stop
19 44 00	---	08 21 55	45.4	140.5	-1.8		-23.2	196	958	19 40 31
19 44 45	J1007+1356	08 22 40	45.5	141.8	-1.8		-22.5	31	958	19 44 45
19 45 55	=1004+141	08 23 50	45.6	142.2	-1.7		-22.3	70	967	19 44 46
19 45 55	J1010+1413	08 23 50	45.6	141.2	-1.8		-22.9	-14	967	No stop
19 49 25	---	08 27 20	45.9	142.3	-1.7		-22.3	196	994	19 45 56
19 49 25	J1007+1356	08 27 20	45.9	143.3	-1.7		-21.7	-14	994	No stop
19 50 55	=1004+141	08 28 51	46.0	143.8	-1.7		-21.4	76	1006	19 49 26
19 50 55	J1010+1413	08 28 51	46.1	142.8	-1.7		-22.0	-14	1006	No stop
19 54 25	---	08 32 21	46.4	143.9	-1.7		-21.4	196	1033	19 50 56
19 55 10	J1007+1356	08 33 06	46.4	145.2	-1.6		-20.7	31	1033	19 55 10
19 56 20	=1004+141	08 34 17	46.5	145.6	-1.6		-20.5	70	1042	19 55 11
19 56 20	J1010+1413	08 34 17	46.5	144.5	-1.6		-21.1	-14	1042	No stop
19 59 50	---	08 37 47	46.8	145.7	-1.6		-20.4	196	1069	19 56 21
19 59 50	J1007+1356	08 37 47	46.8	146.7	-1.5		-19.8	-14	1069	No stop
20 01 20	=1004+141	08 39 17	46.9	147.2	-1.5		-19.6	76	1081	19 59 51
20 01 20	J1010+1413	08 39 17	47.0	146.2	-1.5		-20.1	-14	1081	No stop
20 04 50	---	08 42 48	47.3	147.4	-1.5		-19.5	196	1108	20 01 21
20 05 35	J1007+1356	08 43 33	47.3	148.7	-1.4		-18.8	31	1108	20 05 35
20 06 45	=1004+141	08 44 43	47.4	149.1	-1.4		-18.5	70	1117	20 05 36

```
Schedule for TORUN     (Code Tr )                                  Page   6
               A dual AGN candidate with 0.13 arcsec separation
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  12 Mar 2020   Day  72 ---

20 06 45  J1010+1413   08 44 43  47.4 148.0 -1.4     -19.1   -14     1117   No stop
20 10 15  ---          08 48 14  47.7 149.2 -1.4     -18.5   196     1144   20 06 46

20 10 15  J1007+1356   08 48 14  47.6 150.3 -1.3     -17.9   -14     1144   No stop
20 11 45  =1004+141    08 49 44  47.7 150.8 -1.3     -17.6    76     1156   20 10 16

20 11 45  J1010+1413   08 49 44  47.8 149.7 -1.4     -18.2   -14     1156   No stop
20 15 15  ---          08 53 15  48.1 150.9 -1.3     -17.5   196     1183   20 11 46

20 16 00  J1007+1356   08 54 00  48.0 152.3 -1.2     -16.7    31     1183   20 16 00
20 17 10  =1004+141    08 55 10  48.1 152.7 -1.2     -16.5    70     1192   20 16 01

20 17 10  J1010+1413   08 55 10  48.2 151.6 -1.3     -17.1   -14     1192   No stop
20 20 40  ---          08 58 41  48.4 152.8 -1.2     -16.4   196     1219   20 17 11

20 20 40  J1007+1356   08 58 41  48.4 153.9 -1.2     -15.8   -14     1219   No stop
20 22 40  =1004+141    09 00 41  48.5 154.6 -1.1     -15.4   106     1234   20 20 41

20 23 00  J0956+2515   09 01 01  60.1 153.5 -0.9     -17.2   -38     1234   20 23 00
20 30 00  =0953+254    09 08 02  60.5 156.6 -0.8     -15.3   382     1288   20 23 01



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


 ======== Setup file: sess120.L1024

   Setup group:    9         Station: TORUN            Total bit rate:  1024
   Format: VDIF              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         9         1         9         2        10         2        10
                3        11         3        11         4        12         4        12
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:   7  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:   7

Track assignments are:
 track1=   1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15, 16
 barrel=roll_off
```

ey029btr

e-EVN: EY029B, EN005C

PI: *Yang, Nimmo*

```
Address:  JIVE

Observing mode: realtime e-vlbi
Schedule for TORUN     (Code Tr )                                  Page   2
               e-EVN: EY029B, EN005C
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  17 Mar 2020   Day  77 ---
 ---------- CLOCK-SEARCH ----------

 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

09 00 00  J0237+2848   21 55 52  34.0  85.9 -4.7     -43.2     0        0   09 00 00
09 15 00  =0234+285    22 10 54  36.3  88.8 -4.5     -43.3   900      116   09 00 01

09 17 00  J0237+2848   22 12 54  36.6  89.2 -4.4     -43.3   114      116   09 17 00
09 30 00  =0234+285    22 25 56  38.5  91.8 -4.2     -43.3   780      216   09 17 01

09 32 00  J0237+2848   22 27 57  38.8  92.2 -4.2     -43.3   114      216   09 32 00
09 45 00  =0234+285    22 40 59  40.8  94.9 -4.0     -43.1   780      317   09 32 01

09 47 00  J0237+2848   22 42 59  41.1  95.4 -3.9     -43.1   114      317   09 47 00
10 00 00  =0234+285    22 56 01  43.0  98.2 -3.7     -42.8   780      417   09 47 01

10 02 00  J0237+2848   22 58 02  43.3  98.6 -3.7     -42.7   114      417   10 02 00
10 15 00  =0234+285    23 11 04  45.2 101.6 -3.5     -42.2   780      518   10 02 01

10 17 00  J0237+2848   23 13 04  45.5 102.0 -3.4     -42.1   114      518   10 17 00
10 30 00  =0234+285    23 26 06  47.4 105.1 -3.2     -41.5   780      618   10 17 01

10 32 00  J0237+2848   23 28 07  47.7 105.6 -3.2     -41.3   114      618   10 32 00
10 45 00  =0234+285    23 41 09  49.6 108.9 -3.0     -40.5   780      719   10 32 01

10 47 00  J0237+2848   23 43 09  49.9 109.4 -2.9     -40.3   114      719   10 47 00
11 00 00  =0234+285    23 56 11  51.7 112.8 -2.7     -39.2   780      819   10 47 01

11 02 00  J0237+2848   23 58 12  52.0 113.4 -2.7     -39.0   113      819   11 02 00
11 15 00  =0234+285    00 11 14  53.8 117.1 -2.5     -37.6   780      920   11 02 01

11 17 00  J0237+2848   00 13 14  54.0 117.7 -2.4     -37.4   113      920   11 17 00
11 30 00  =0234+285    00 26 16  55.7 121.7 -2.2     -35.7   780     1020   11 17 01

11 32 00  J0237+2848   00 28 16  56.0 122.3 -2.2     -35.4   113     1020   11 32 00
11 45 00  =0234+285    00 41 19  57.6 126.6 -2.0     -33.4   780     1121   11 32 01
```

Schedule for TORUN (Code Tr) Page 3

e-EVN: EY029B, EN005C

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 17 Mar 2020 Day 77 ---										
11 47 00	J0237+2848	00 43 19	57.8	127.3	-1.9		-33.1	113	1121	11 47 00
12 00 00	=0234+285	00 56 21	59.3	132.0	-1.7		-30.7	780	1221	11 47 01
12 02 00	J0237+2848	00 58 21	59.6	132.7	-1.7		-30.3	113	1221	12 02 00
12 15 00	=0234+285	01 11 24	60.9	137.7	-1.5		-27.5	780	1322	12 02 01
12 17 00	J0237+2848	01 13 24	61.1	138.5	-1.4		-27.0	113	1322	12 17 00
12 30 00	=0234+285	01 26 26	62.4	144.0	-1.2		-23.8	780	1422	12 17 01
12 32 00	J0237+2848	01 28 26	62.5	144.9	-1.2		-23.3	113	1422	12 32 00
12 45 00	=0234+285	01 41 28	63.6	150.7	-1.0		-19.6	780	1523	12 32 01
12 47 00	J0237+2848	01 43 29	63.7	151.7	-0.9		-19.0	113	1523	12 47 00
13 00 00	=0234+285	01 56 31	64.6	157.9	-0.7		-14.9	780	1623	12 47 01
13 02 00	J0237+2848	01 58 31	64.7	158.9	-0.7		-14.3	113	1623	13 02 00
13 15 00	=0234+285	02 11 33	65.3	165.5	-0.5		-9.9	780	1724	13 02 01
13 17 00	J0237+2848	02 13 34	65.3	166.5	-0.4		-9.2	112	1724	13 17 00
13 30 00	=0234+285	02 26 36	65.7	173.4	-0.2		-4.5	780	1824	13 17 01
13 40 00	J0530+1331	02 36 38	37.5	121.9	-2.9		-31.6	476	1824	13 40 00
13 45 00	=0528+134	02 41 38	38.1	123.3	-2.8		-31.1	300	1863	13 40 01
13 47 00	J0530+1331	02 43 39	38.3	123.8	-2.8		-30.9	113	1863	13 47 00
14 00 00	=0528+134	02 56 41	39.9	127.3	-2.6		-29.4	780	1963	13 47 01
14 02 00	J0530+1331	02 58 41	40.2	127.9	-2.6		-29.2	113	1963	14 02 00
14 10 00	=0528+134	03 06 42	41.1	130.1	-2.4		-28.2	480	2025	14 02 01
---------- EY029B ----------										
14 20 00	4C39.25	03 16 44	28.6	62.2	-6.2		-43.1	447	2025	14 20 00
14 25 00	---	03 21 45	29.3	63.0	-6.1		-43.5	300	2064	14 20 01
14 27 00	J0854+5757	03 23 45	45.7	49.1	-5.5		-58.6	45	2064	14 27 00
14 28 00	---	03 24 45	45.8	49.2	-5.5		-58.7	60	2071	14 27 01
14 28 30	J0854+5757	03 25 15	45.9	49.2	-5.5		-58.8	24	2071	14 28 30
14 29 30	---	03 26 16	46.0	49.3	-5.5		-58.9	60	2079	14 28 31
14 29 30	VLA1	03 26 16	43.8	50.6	-5.7		-56.0	-22	2079	No stop
14 31 30	---	03 28 16	44.1	50.8	-5.6		-56.3	98	2095	14 29 31
14 31 30	RGG9	03 28 16	43.9	50.5	-5.7		-56.1	-10	2095	No stop
14 33 30	---	03 30 16	44.2	50.7	-5.6		-56.4	110	2110	14 31 31

Schedule for TORUN (Code Tr) Page 4

e-EVN: EY029B, EN005C

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 17 Mar 2020 Day 77 ---										
14 33 30	J0854+5757	03 30 16	46.4	49.7	-5.4		-59.5	-23	2110	No stop
14 34 30	---	03 31 16	46.5	49.8	-5.4		-59.6	37	2118	14 33 31
14 34 30	RGG9	03 31 16	44.3	50.8	-5.6		-56.5	-22	2118	No stop
14 38 30	---	03 35 17	44.7	51.2	-5.5		-57.1	218	2149	14 34 31
14 39 00	J0854+5757	03 35 47	47.1	50.2	-5.3		-60.3	7	2149	14 39 00
14 40 00	---	03 36 47	47.2	50.3	-5.3		-60.4	60	2156	14 39 01
14 40 00	RGG9	03 36 47	44.9	51.4	-5.5		-57.3	-22	2156	No stop
14 44 00	---	03 40 48	45.4	51.8	-5.4		-57.8	218	2187	14 40 01
14 44 00	J0854+5757	03 40 48	47.6	50.7	-5.3		-61.0	-22	2187	No stop
14 45 00	---	03 41 48	47.8	50.8	-5.2		-61.1	38	2195	14 44 01
14 45 00	RGG9	03 41 48	45.5	51.9	-5.4		-57.9	-22	2195	No stop
14 49 00	---	03 45 49	46.0	52.3	-5.4		-58.4	218	2226	14 45 01
14 49 30	J0854+5757	03 46 19	48.3	51.3	-5.2		-61.8	8	2226	14 49 30
14 50 30	---	03 47 19	48.4	51.4	-5.1		-61.9	60	2234	14 49 31
14 50 30	VLA1	03 47 19	46.3	52.9	-5.3		-58.8	-22	2234	No stop
14 52 30	---	03 49 19	46.5	53.1	-5.3		-59.0	98	2249	14 50 31
14 52 30	RGG9	03 49 19	46.4	52.7	-5.3		-58.9	-10	2249	No stop
14 54 30	---	03 51 20	46.6	52.9	-5.3		-59.2	110	2265	14 52 31
14 54 30	J0854+5757	03 51 20	48.9	51.7	-5.1		-62.5	-22	2265	No stop
14 55 30	---	03 52 20	49.0	51.8	-5.1		-62.6	38	2272	14 54 31
14 55 30	RGG9	03 52 20	46.8	53.0	-5.3		-59.3	-22	2272	No stop
14 59 30	---	03 56 21	47.2	53.4	-5.2		-59.8	218	2303	14 55 31
15 00 00	J0854+5757	03 56 51	49.5	52.2	-5.0		-63.2	8	2303	15 00 00
15 01 00	---	03 57 51	49.6	52.3	-5.0		-63.4	60	2311	15 00 01
15 01 00	RGG9	03 57 51	47.4	53.6	-5.2		-60.0	-22	2311	No stop
15 05 00	---	04 01 51	47.9	54.0	-5.1		-60.6	218	2342	15 01 01
15 05 00	J0854+5757	04 01 51	50.1	52.7	-4.9		-64.0	-22	2342	No stop
15 06 00	---	04 02 52	50.2	52.8	-4.9		-64.1	38	2350	15 05 01
15 06 00	RGG9	04 02 52	48.0	54.1	-5.1		-60.7	-22	2350	No stop
15 10 00	---	04 06 52	48.5	54.5	-5.0		-61.2	218	2381	15 06 01

Schedule for TORUN (Code Tr) Page 5

e-EVN: EY029B, EN005C

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 17 Mar 2020 Day 77 ---										
15 10 30	J0854+5757	04 07 22	50.8	53.2	-4.8		-64.7	8	2381	15 10 30
15 11 30	---	04 08 23	50.9	53.3	-4.8		-64.9	60	2388	15 10 31
15 11 30	VLA1	04 08 23	48.9	55.0	-5.0		-61.5	-21	2388	No stop
15 13 30	---	04 10 23	49.1	55.2	-4.9		-61.8	99	2404	15 11 31
15 13 30	RGG9	04 10 23	48.9	54.9	-5.0		-61.7	-10	2404	No stop
15 15 30	---	04 12 23	49.2	55.1	-4.9		-61.9	110	2419	15 13 31
15 15 30	J0854+5757	04 12 23	51.4	53.6	-4.7		-65.5	-22	2419	No stop
15 16 30	---	04 13 23	51.5	53.7	-4.7		-65.6	38	2427	15 15 31
15 16 30	RGG9	04 13 23	49.3	55.2	-4.9		-62.1	-22	2427	No stop
15 20 30	---	04 17 24	49.8	55.6	-4.8		-62.6	218	2458	15 16 31
15 21 00	J0854+5757	04 17 54	52.1	54.1	-4.6		-66.2	8	2458	15 21 00
15 22 00	---	04 18 54	52.2	54.2	-4.6		-66.4	60	2466	15 21 01
15 22 00	RGG9	04 18 54	50.0	55.7	-4.8		-62.8	-22	2466	No stop
15 26 00	---	04 22 55	50.5	56.1	-4.7		-63.3	218	2497	15 22 01
15 26 00	J0854+5757	04 22 55	52.7	54.6	-4.6		-67.0	-22	2497	No stop
15 27 00	---	04 23 55	52.8	54.6	-4.5		-67.1	38	2504	15 26 01
15 27 00	RGG9	04 23 55	50.6	56.2	-4.7		-63.5	-22	2504	No stop
15 31 00	---	04 27 56	51.1	56.6	-4.7		-64.0	218	2535	15 27 01
15 31 30	J0854+5757	04 28 26	53.3	55.0	-4.5		-67.8	8	2535	15 31 30
15 32 30	---	04 29 26	53.5	55.1	-4.4		-67.9	60	2543	15 31 31
15 32 30	VLA1	04 29 26	51.5	57.1	-4.6		-64.3	-21	2543	No stop
15 34 30	---	04 31 26	51.7	57.3	-4.6		-64.5	99	2558	15 32 31
15 34 30	RGG9	04 31 26	51.6	57.0	-4.6		-64.5	-10	2558	No stop
15 36 30	---	04 33 27	51.8	57.1	-4.6		-64.7	110	2574	15 34 31
15 36 30	J0854+5757	04 33 27	54.0	55.4	-4.4		-68.5	-22	2574	No stop
15 37 30	---	04 34 27	54.1	55.5	-4.4		-68.6	38	2582	15 36 31
15 37 30	RGG9	04 34 27	51.9	57.2	-4.6		-64.8	-22	2582	No stop
15 41 30	---	04 38 27	52.5	57.6	-4.5		-65.4	218	2612	15 37 31
15 42 00	J0854+5757	04 38 58	54.6	55.9	-4.3		-69.3	8	2612	15 42 00
15 43 00	---	04 39 58	54.8	56.0	-4.3		-69.4	60	2620	15 42 01

Schedule for TORUN (Code Tr) Page 6

e-EVN: EY029B, EN005C

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 17 Mar 2020 Day 77 ---										
15 43 00	RGG9	04 39 58	52.6	57.8	-4.5		-65.6	-22	2620	No stop
15 47 00	---	04 43 58	53.2	58.1	-4.4		-66.1	218	2651	15 43 01
15 47 00	J0854+5757	04 43 58	55.3	56.3	-4.2		-70.0	-22	2651	No stop
15 48 00	---	04 44 59	55.4	56.4	-4.2		-70.2	38	2659	15 47 01
15 48 00	RGG9	04 44 59	53.3	58.2	-4.4		-66.2	-22	2659	No stop
15 52 00	---	04 48 59	53.8	58.6	-4.3		-66.8	218	2690	15 48 01
15 52 30	J0854+5757	04 49 29	56.0	56.7	-4.1		-70.8	8	2690	15 52 30
15 53 30	---	04 50 29	56.1	56.8	-4.1		-71.0	60	2697	15 52 31
15 53 30	VLA1	04 50 29	54.2	59.1	-4.3		-67.0	-21	2697	No stop
15 55 30	---	04 52 30	54.4	59.3	-4.2		-67.3	99	2713	15 53 31
15 55 30	RGG9	04 52 30	54.2	58.9	-4.3		-67.2	-10	2713	No stop
15 57 30	---	04 54 30	54.5	59.1	-4.2		-67.5	110	2728	15 55 31
15 57 30	J0854+5757	04 54 30	56.6	57.1	-4.0		-71.6	-22	2728	No stop
15 58 30	---	04 55 30	56.7	57.2	-4.0		-71.7	38	2736	15 57 31
15 58 30	RGG9	04 55 30	54.6	59.2	-4.2		-67.6	-22	2736	No stop
16 02 30	---	04 59 31	55.1	59.6	-4.1		-68.2	218	2767	15 58 31
16 03 00	J0854+5757	05 00 01	57.3	57.5	-3.9		-72.4	8	2767	16 03 00
16 04 00	---	05 01 01	57.4	57.6	-3.9		-72.5	60	2775	16 03 01
16 04 00	RGG9	05 01 01	55.3	59.7	-4.1		-68.4	-21	2775	No stop
16 08 00	---	05 05 02	55.9	60.1	-4.0		-68.9	219	2806	16 04 01
16 08 00	J0854+5757	05 05 02	57.9	57.9	-3.9		-73.1	-22	2806	No stop
16 09 00	---	05 06 02	58.1	58.0	-3.8		-73.3	38	2813	16 08 01
16 09 00	RGG9	05 06 02	56.0	60.2	-4.0		-69.0	-21	2813	No stop
16 13 00	---	05 10 03	56.5	60.5	-4.0		-69.6	219	2844	16 09 01
16 13 30	J0854+5757	05 10 33	58.6	58.3	-3.8		-74.0	8	2844	16 13 30
16 14 30	---	05 11 33	58.8	58.4	-3.7		-74.1	60	2852	16 13 31
16 14 30	VLA1	05 11 33	56.9	61.1	-3.9		-69.8	-21	2852	No stop
16 16 30	---	05 13 33	57.2	61.2	-3.9		-70.1	99	2868	16 14 31
16 16 30	RGG9	05 13 33	57.0	60.8	-3.9		-70.0	-11	2868	No stop
16 18 30	---	05 15 34	57.2	61.0	-3.9		-70.3	109	2883	16 16 31

Schedule for TORUN (Code Tr) Page 7

e-EVN: EY029B, EN005C

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 17 Mar 2020 Day 77 ---										
16 18 30	J0854+5757	05 15 34	59.3	58.7	-3.7		-74.7	-22	2883	No stop
16 19 30	---	05 16 34	59.4	58.7	-3.7		-74.9	38	2891	16 18 31
16 19 30	RGG9	05 16 34	57.4	61.1	-3.9		-70.4	-21	2891	No stop
16 23 30	---	05 20 34	57.9	61.4	-3.8		-71.0	219	2922	16 19 31
16 24 00	J0854+5757	05 21 04	60.0	59.0	-3.6		-75.6	8	2922	16 24 00
16 25 00	---	05 22 05	60.1	59.1	-3.6		-75.7	60	2929	16 24 01
16 25 00	RGG9	05 22 05	58.1	61.6	-3.8		-71.2	-21	2929	No stop
16 29 00	---	05 26 05	58.6	61.9	-3.7		-71.7	219	2960	16 25 01
16 29 00	J0854+5757	05 26 05	60.6	59.4	-3.5		-76.3	-21	2960	No stop
16 30 00	---	05 27 05	60.8	59.4	-3.5		-76.5	39	2968	16 29 01
16 30 00	RGG9	05 27 05	58.8	62.0	-3.7		-71.9	-21	2968	No stop
16 34 00	---	05 31 06	59.3	62.3	-3.6		-72.4	219	2999	16 30 01
16 34 30	J0854+5757	05 31 36	61.3	59.7	-3.4		-77.2	9	2999	16 34 30
16 35 30	---	05 32 36	61.5	59.8	-3.4		-77.4	60	3007	16 34 31
16 35 30	VLA1	05 32 36	59.7	62.9	-3.6		-72.6	-21	3007	No stop
16 37 30	---	05 34 37	60.0	63.0	-3.5		-72.9	99	3022	16 35 31
16 37 30	RGG9	05 34 37	59.8	62.6	-3.6		-72.9	-11	3022	No stop
16 39 30	---	05 36 37	60.0	62.8	-3.5		-73.2	109	3038	16 37 31
16 39 30	J0854+5757	05 36 37	62.0	60.0	-3.3		-78.0	-21	3038	No stop
16 40 30	---	05 37 37	62.1	60.1	-3.3		-78.2	39	3045	16 39 31
16 40 30	RGG9	05 37 37	60.2	62.9	-3.5		-73.3	-21	3045	No stop
16 44 30	---	05 41 38	60.7	63.2	-3.4		-73.9	219	3076	16 40 31
16 45 00	J0854+5757	05 42 08	62.7	60.3	-3.2		-78.9	9	3076	16 45 00
16 46 00	---	05 43 08	62.8	60.4	-3.2		-79.1	60	3084	16 45 01
16 46 00	RGG9	05 43 08	60.9	63.3	-3.4		-74.1	-21	3084	No stop
16 50 00	---	05 47 09	61.4	63.6	-3.3		-74.6	219	3115	16 46 01
16 50 00	J0854+5757	05 47 09	63.4	60.6	-3.2		-79.7	-21	3115	No stop
16 51 00	---	05 48 09	63.5	60.6	-3.1		-79.9	39	3123	16 50 01
16 51 00	RGG9	05 48 09	61.6	63.7	-3.3		-74.8	-21	3123	No stop
16 55 00	---	05 52 10	62.1	64.0	-3.3		-75.3	219	3153	16 51 01

Schedule for TORUN (Code Tr) Page 8

e-EVN: EY029B, EN005C

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 17 Mar 2020 Day 77 ---										
16 55 30	J0854+5757	05 52 40	64.1	60.9	-3.1		-80.6	9	3153	16 55 30
16 56 30	---	05 53 40	64.2	60.9	-3.0		-80.8	60	3161	16 55 31
16 56 30	VLA1	05 53 40	62.5	64.5	-3.2		-75.5	-22	3161	No stop
16 58 30	---	05 55 40	62.8	64.7	-3.2		-75.8	98	3177	16 56 31
16 58 30	RGG9	05 55 40	62.6	64.3	-3.2		-75.8	-11	3177	No stop
17 00 30	---	05 57 40	62.9	64.4	-3.2		-76.1	109	3192	16 58 31
17 00 30	J0854+5757	05 57 40	64.7	61.1	-3.0		-81.5	-21	3192	No stop
17 01 30	---	05 58 41	64.9	61.2	-3.0		-81.6	39	3200	17 00 31
17 01 30	RGG9	05 58 41	63.0	64.5	-3.2		-76.3	-21	3200	No stop
17 05 30	---	06 02 41	63.5	64.8	-3.1		-76.8	219	3231	17 01 31
17 06 00	J0854+5757	06 03 11	65.5	61.4	-2.9		-82.4	8	3231	17 06 00
17 07 00	---	06 04 12	65.6	61.4	-2.9		-82.6	60	3239	17 06 01
17 07 00	RGG9	06 04 12	63.7	64.9	-3.1		-77.0	-22	3239	No stop
17 11 00	---	06 08 12	64.3	65.2	-3.0		-77.6	218	3269	17 07 01
17 11 00	J0854+5757	06 08 12	66.1	61.6	-2.8		-83.3	-22	3269	No stop
17 12 00	---	06 09 12	66.3	61.6	-2.8		-83.5	38	3277	17 11 01
17 12 00	RGG9	06 09 12	64.4	65.2	-3.0		-77.8	-22	3277	No stop
17 16 00	---	06 13 13	65.0	65.5	-2.9		-78.4	218	3308	17 12 01
17 16 30	J0854+5757	06 13 43	66.9	61.8	-2.7		-84.3	8	3308	17 16 30
17 17 30	---	06 14 43	67.0	61.8	-2.7		-84.5	60	3316	17 16 31
17 17 30	VLA1	06 14 43	65.4	66.0	-2.9		-78.6	-23	3316	No stop
17 19 30	---	06 16 44	65.7	66.2	-2.8		-78.9	97	3331	17 17 31
17 19 30	RGG9	06 16 44	65.5	65.7	-2.9		-78.9	-11	3331	No stop
17 21 30	---	06 18 44	65.7	65.9	-2.8		-79.2	109	3347	17 19 31
17 21 30	J0854+5757	06 18 44	67.5	61.9	-2.6		-85.2	-23	3347	No stop
17 22 30	---	06 19 44	67.7	61.9	-2.6		-85.4	37	3354	17 21 31
17 22 30	RGG9	06 19 44	65.9	65.9	-2.8		-79.3	-23	3354	No stop
17 26 30	---	06 23 45	66.4	66.2	-2.7		-79.9	217	3385	17 22 31
17 27 00	J0854+5757	06 24 15	68.3	62.1	-2.5		-86.2	7	3385	17 27 00
17 28 00	---	06 25 15	68.4	62.1	-2.5		-86.4	60	3393	17 27 01

Schedule for TORUN (Code Tr) Page 9

e-EVN: EY029B, EN005C

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 17 Mar 2020 Day 77 ---										
17 28 00	RGG9	06 25 15	66.6	66.3	-2.7		-80.2	-23	3393	No stop
17 32 00	---	06 29 16	67.2	66.5	-2.6		-80.8	217	3424	17 28 01
17 32 00	J0854+5757	06 29 16	68.9	62.2	-2.4		-87.2	-24	3424	No stop
17 33 00	---	06 30 16	69.1	62.2	-2.4		-87.4	36	3432	17 32 01
17 33 00	RGG9	06 30 16	67.3	66.6	-2.6		-80.9	-24	3432	No stop
17 37 00	---	06 34 16	67.9	66.8	-2.6		-81.6	216	3463	17 33 01
17 37 30	J0854+5757	06 34 47	69.7	62.2	-2.4		-88.3	6	3463	17 37 30
17 38 30	---	06 35 47	69.8	62.3	-2.3		-88.5	60	3470	17 37 31
17 38 30	VLA1	06 35 47	68.3	67.3	-2.5		-81.7	-25	3470	No stop
17 40 30	---	06 37 47	68.6	67.4	-2.5		-82.1	95	3486	17 38 31
17 40 30	RGG9	06 37 47	68.4	67.0	-2.5		-82.1	-11	3486	No stop
17 42 30	---	06 39 47	68.6	67.1	-2.5		-82.4	109	3501	17 40 31
17 42 30	J0854+5757	06 39 47	70.3	62.3	-2.3		-89.3	-25	3501	No stop
17 43 30	---	06 40 48	70.4	62.3	-2.3		-89.5	35	3509	17 42 31
17 43 30	RGG9	06 40 48	68.8	67.1	-2.4		-82.6	-25	3509	No stop
17 47 30	---	06 44 48	69.3	67.3	-2.4		-83.2	215	3540	17 43 31
17 48 00	J0854+5757	06 45 18	71.0	62.3	-2.2		-90.5	5	3540	17 48 00
17 49 00	---	06 46 18	71.2	62.3	-2.2		-90.7	60	3548	17 48 01
17 49 00	RGG9	06 46 18	69.5	67.4	-2.4		-83.5	-25	3548	No stop
17 53 00	---	06 50 19	70.1	67.5	-2.3		-84.2	215	3579	17 49 01
17 53 00	J0854+5757	06 50 19	71.7	62.3	-2.1		-91.6	-26	3579	No stop
17 54 00	---	06 51 19	71.8	62.2	-2.1		-91.8	34	3586	17 53 01
17 54 00	RGG9	06 51 19	70.2	67.6	-2.3		-84.3	-26	3586	No stop
17 58 00	---	06 55 20	70.8	67.7	-2.2		-85.0	214	3617	17 54 01
17 58 30	J0854+5757	06 55 50	72.4	62.2	-2.0		-92.8	4	3617	17 58 30
17 59 30	---	06 56 50	72.6	62.1	-2.0		-93.1	60	3625	17 58 31
17 59 30	VLA1	06 56 50	71.2	68.3	-2.2		-85.2	-27	3625	No stop
18 01 30	---	06 58 50	71.5	68.4	-2.1		-85.5	93	3640	17 59 31
18 01 30	RGG9	06 58 50	71.3	67.9	-2.1		-85.6	-11	3640	No stop
18 03 30	---	07 00 51	71.5	67.9	-2.1		-86.0	109	3656	18 01 31

Schedule for TORUN (Code Tr) Page 10

e-EVN: EY029B, EN005C

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 17 Mar 2020 Day 77 ---										
18 03 30	J0854+5757	07 00 51	73.1	62.0	-1.9		-94.0	-27	3656	No stop
18 04 30	---	07 01 51	73.2	62.0	-1.9		-94.3	33	3664	18 03 31
18 04 30	RGG9	07 01 51	71.7	68.0	-2.1		-86.2	-27	3664	No stop
18 08 30	---	07 05 52	72.2	68.1	-2.0		-86.9	213	3695	18 04 31
18 09 00	J0854+5757	07 06 22	73.8	61.8	-1.8		-95.4	3	3695	18 09 00
18 10 00	---	07 07 22	74.0	61.8	-1.8		-95.6	60	3702	18 09 01
18 10 00	RGG9	07 07 22	72.5	68.1	-2.0		-87.2	-28	3702	No stop
18 14 00	---	07 11 23	73.0	68.2	-1.9		-87.9	212	3733	18 10 01
18 14 00	J0854+5757	07 11 23	74.5	61.6	-1.7		-96.7	-28	3733	No stop
18 15 00	---	07 12 23	74.6	61.5	-1.7		-97.0	32	3741	18 14 01
18 15 00	RGG9	07 12 23	73.2	68.2	-1.9		-88.1	-28	3741	No stop
18 19 00	---	07 16 23	73.7	68.3	-1.9		-88.9	212	3772	18 15 01
18 19 30	J0854+5757	07 16 53	75.2	61.2	-1.7		-98.2	1	3772	18 19 30
18 20 30	---	07 17 54	75.4	61.1	-1.6		-98.5	60	3780	18 19 31
18 20 30	VLA1	07 17 54	74.2	68.8	-1.8		-89.1	-30	3780	No stop
18 22 30	---	07 19 54	74.5	68.8	-1.8		-89.5	90	3795	18 20 31
18 22 30	RGG9	07 19 54	74.2	68.3	-1.8		-89.6	-11	3795	No stop
18 24 30	---	07 21 54	74.5	68.3	-1.8		-90.0	109	3810	18 22 31
18 24 30	J0854+5757	07 21 54	75.9	60.8	-1.6		-99.7	-30	3810	No stop
18 25 30	---	07 22 54	76.0	60.7	-1.6		-100.0	30	3818	18 24 31
18 25 30	RGG9	07 22 54	74.6	68.3	-1.7		-90.2	-30	3818	No stop
18 29 30	---	07 26 55	75.2	68.3	-1.7		-91.1	210	3849	18 25 31
18 30 00	J0854+5757	07 27 25	76.6	60.2	-1.5		-101.4	-1	3849	18 30 00
18 31 00	---	07 28 25	76.7	60.1	-1.5		-101.7	59	3857	18 30 01
18 31 00	RGG9	07 28 25	75.4	68.2	-1.7		-91.4	-31	3857	No stop
18 35 00	---	07 32 26	76.0	68.2	-1.6		-92.3	209	3888	18 31 01
18 35 00	J0854+5757	07 32 26	77.3	59.6	-1.4		-103.1	-32	3888	No stop
18 36 00	---	07 33 26	77.4	59.5	-1.4		-103.4	28	3895	18 35 01
18 36 00	RGG9	07 33 26	76.1	68.1	-1.6		-92.5	-32	3895	No stop
18 40 00	---	07 37 27	76.6	68.0	-1.5		-93.5	208	3926	18 36 01

Schedule for TORUN (Code Tr) Page 11

e-EVN: EY029B, EN005C

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 17 Mar 2020 Day 77 ---										
18 40 30	J0854+5757	07 37 57	78.0	58.8	-1.3		-105.0	-3	3926	18 40 30
18 41 30	---	07 38 57	78.1	58.6	-1.3		-105.4	57	3934	18 40 31
18 41 30	VLA1	07 38 57	77.1	68.5	-1.4		-93.7	-35	3934	No stop
18 43 30	---	07 40 57	77.4	68.4	-1.4		-94.2	85	3950	18 41 31
18 43 30	RGG9	07 40 57	77.1	67.9	-1.4		-94.4	-12	3950	No stop
18 45 30	---	07 42 58	77.4	67.8	-1.4		-94.9	108	3965	18 43 31
18 45 30	J0854+5757	07 42 58	78.6	57.9	-1.2		-107.0	-35	3965	No stop
18 46 30	---	07 43 58	78.7	57.7	-1.2		-107.4	25	3973	18 45 31
18 46 30	RGG9	07 43 58	77.6	67.7	-1.4		-95.2	-35	3973	No stop
18 50 30	---	07 47 59	78.1	67.4	-1.3		-96.2	205	4004	18 46 31
18 51 00	J0854+5757	07 48 29	79.3	56.7	-1.1		-109.3	-7	4004	18 51 00
18 52 00	---	07 49 29	79.4	56.4	-1.1		-109.8	53	4011	18 51 01
18 52 00	RGG9	07 49 29	78.3	67.3	-1.3		-96.7	-37	4011	No stop
18 56 00	---	07 53 29	78.9	67.0	-1.2		-97.9	203	4042	18 52 01
18 56 00	J0854+5757	07 53 29	79.9	55.4	-1.0		-111.7	-39	4042	No stop
18 57 00	---	07 54 30	80.1	55.1	-1.0		-112.2	21	4050	18 56 01
18 57 00	RGG9	07 54 30	79.0	66.9	-1.2		-98.2	-38	4050	No stop
19 01 00	---	07 58 30	79.6	66.4	-1.2		-99.4	202	4081	18 57 01
19 01 30	J0854+5757	07 59 00	80.6	53.7	-1.0		-114.5	-11	4081	19 01 30
19 02 30	---	08 00 01	80.7	53.3	-0.9		-115.1	49	4089	19 01 31
19 02 30	VLA1	08 00 01	80.0	66.7	-1.1		-99.8	-42	4089	No stop
19 04 30	---	08 02 01	80.3	66.4	-1.1		-100.5	78	4104	19 02 31
19 04 30	RGG9	08 02 01	80.0	65.9	-1.1		-100.6	-11	4104	No stop
19 06 30	---	08 04 01	80.3	65.6	-1.1		-101.4	109	4120	19 04 31
19 06 30	J0854+5757	08 04 01	81.2	51.8	-0.9		-117.4	-43	4120	No stop
19 07 30	---	08 05 01	81.3	51.4	-0.9		-118.0	17	4127	19 06 31
19 07 30	RGG9	08 05 01	80.5	65.4	-1.0		-101.7	-43	4127	No stop
19 11 30	---	08 09 02	81.0	64.7	-1.0		-103.3	197	4158	19 07 31
19 12 00	J0854+5757	08 09 32	81.8	49.4	-0.8		-121.0	-16	4158	19 12 00
19 13 00	---	08 10 32	82.0	48.9	-0.8		-121.7	44	4166	19 12 01

Schedule for TORUN (Code Tr) Page 12

e-EVN: EY029B, EN005C

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 17 Mar 2020 Day 77 ---										
19 13 00	RGG9	08 10 32	81.2	64.4	-1.0		-103.9	-46	4166	No stop
19 17 00	---	08 14 33	81.8	63.4	-0.9		-105.7	194	4197	19 13 01
19 17 00	J0854+5757	08 14 33	82.4	46.8	-0.7		-124.6	-49	4197	No stop
19 18 00	---	08 15 33	82.5	46.2	-0.7		-125.4	11	4205	19 17 01
19 18 00	RGG9	08 15 33	81.9	63.1	-0.9		-106.2	-49	4205	No stop
19 22 00	---	08 19 34	82.4	61.9	-0.8		-108.2	191	4236	19 18 01
19 22 30	J0854+5757	08 20 04	83.0	43.3	-0.6		-129.2	-23	4236	19 22 30
19 23 30	---	08 21 04	83.1	42.6	-0.6		-130.2	37	4243	19 22 31
19 23 30	VLA1	08 21 04	82.9	61.8	-0.7		-109.1	-53	4243	No stop
19 25 30	---	08 23 04	83.2	61.0	-0.7		-110.3	67	4259	19 23 31
19 25 30	RGG9	08 23 04	82.9	60.7	-0.7		-110.2	-11	4259	No stop
19 27 30	---	08 25 05	83.1	59.8	-0.7		-111.5	109	4274	19 25 31
19 27 30	J0854+5757	08 25 05	83.5	39.5	-0.5		-134.0	-57	4274	No stop
19 28 30	---	08 26 05	83.6	38.7	-0.5		-135.1	3	4282	19 27 31
19 28 30	RGG9	08 26 05	83.3	59.4	-0.7		-112.1	-56	4282	No stop
19 32 30	---	08 30 05	83.8	57.4	-0.6		-114.9	184	4313	19 28 31
19 33 00	J0854+5757	08 30 36	84.0	34.6	-0.4		-140.1	-31	4313	19 33 00
19 34 00	---	08 31 36	84.1	33.6	-0.4		-141.3	29	4321	19 33 01
19 34 00	RGG9	08 31 36	84.0	56.6	-0.6		-116.1	-60	4321	No stop
19 38 00	---	08 35 36	84.5	54.0	-0.5		-119.5	180	4352	19 34 01
19 39 00	RGG9	08 36 36	84.6	53.3	-0.5		-120.4	52	4352	19 39 00
19 43 00	---	08 40 37	85.1	49.9	-0.5		-124.5	240	4382	19 39 01
19 43 30	J0854+5757	08 41 07	84.8	22.6	-0.3		-154.3	-41	4382	19 43 30
19 44 30	---	08 42 07	84.8	21.2	-0.2		-155.8	19	4390	19 43 31
19 44 30	VLA1	08 42 07	85.5	47.9	-0.4		-127.2	-66	4390	No stop
19 46 30	---	08 44 08	85.7	45.6	-0.4		-129.9	54	4406	19 44 31
19 46 30	RGG9	08 44 08	85.5	46.4	-0.4		-128.8	-12	4406	No stop
19 48 30	---	08 46 08	85.7	44.1	-0.4		-131.5	108	4421	19 46 31
19 49 30	RGG9	08 47 08	85.8	42.8	-0.3		-133.0	51	4421	19 49 30
19 53 30	---	08 51 09	86.2	37.0	-0.3		-139.6	240	4452	19 49 31

Schedule for TORUN (Code Tr) Page 13

e-EVN: EY029B, EN005C

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 17 Mar 2020 Day 77 ---										
19 54 00	J0854+5757	08 51 39	85.2	7.3	-0.1		-171.8	-47	4452	19 54 00
19 55 00	---	08 52 39	85.2	5.7	-0.1		-173.5	13	4460	19 54 01
19 55 00	RGG9	08 52 39	86.3	34.6	-0.3		-142.4	-69	4460	No stop
19 59 00	---	08 56 40	86.6	27.0	-0.2		-150.7	171	4491	19 55 01
20 00 00	RGG9	08 57 40	86.7	24.9	-0.2		-153.0	49	4491	20 00 00
20 04 00	---	09 01 41	86.9	15.7	-0.1		-163.1	240	4522	20 00 01
20 04 30	J0854+5757	09 02 11	85.1	-9.3	0.1		169.5	-37	4522	20 04 30
20 05 30	---	09 03 11	85.1	-10.9	0.1		167.7	23	4529	20 04 31
20 05 30	VLA1	09 03 11	87.1	7.6	-0.0		-171.9	-48	4529	No stop
20 07 30	---	09 05 11	87.1	2.0	-0.0		-177.8	72	4545	20 05 31
20 07 30	RGG9	09 05 11	87.0	6.7	-0.0		-172.7	-23	4545	No stop
20 09 30	---	09 07 12	87.0	1.4	-0.0		-178.5	97	4560	20 07 31
20 09 30	J0854+5757	09 07 12	85.0	-16.8	0.2		160.9	-54	4560	No stop
20 10 30	---	09 08 12	84.9	-18.2	0.2		159.3	6	4568	20 09 31
20 10 30	RGG9	09 08 12	87.0	-1.2	0.0		178.7	-45	4568	No stop
20 14 30	---	09 12 12	86.9	-11.8	0.1		167.3	195	4599	20 10 31
20 15 00	J0854+5757	09 12 42	84.7	-24.3	0.3		152.3	-10	4599	20 15 00
20 16 00	---	09 13 43	84.6	-25.5	0.3		150.9	50	4607	20 15 01
20 16 00	RGG9	09 13 43	86.9	-15.5	0.1		163.3	-33	4607	No stop
20 20 00	---	09 17 43	86.7	-24.8	0.2		153.2	207	4637	20 16 01
20 20 00	J0854+5757	09 17 43	84.3	-30.2	0.4		145.3	-27	4637	No stop
20 21 00	---	09 18 43	84.3	-31.3	0.4		144.0	33	4645	20 20 01
20 21 00	RGG9	09 18 43	86.6	-26.9	0.2		150.9	-23	4645	No stop
20 25 00	---	09 22 44	86.3	-34.4	0.3		142.5	217	4676	20 21 01
20 25 30	J0854+5757	09 23 14	83.9	-35.9	0.4		138.6	7	4676	20 25 30
20 26 30	---	09 24 14	83.8	-36.8	0.5		137.5	60	4684	20 25 31
20 26 30	VLA1	09 24 14	86.1	-41.1	0.3		135.2	-24	4684	No stop
20 28 30	---	09 26 15	85.9	-43.8	0.3		132.0	96	4699	20 26 31
20 28 30	RGG9	09 26 15	86.0	-40.0	0.3		136.3	-22	4699	No stop
20 30 30	---	09 28 15	85.8	-42.7	0.3		133.1	98	4715	20 28 31

Schedule for TORUN (Code Tr) Page 14

e-EVN: EY029B, EN005C

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 17 Mar 2020 Day 77 ---										
20 30 30	J0854+5757	09 28 15	83.4	-40.2	0.5		133.2	-23	4715	No stop
20 31 30	---	09 29 15	83.3	-41.0	0.5		132.2	37	4723	20 30 31
20 31 30	RGG9	09 29 15	85.7	-44.0	0.4		131.6	-23	4723	No stop
20 35 30	---	09 33 16	85.2	-48.4	0.4		126.4	217	4753	20 31 31
20 36 00	J0854+5757	09 33 46	82.9	-44.2	0.6		128.1	6	4753	20 36 00
20 37 00	---	09 34 46	82.8	-44.8	0.6		127.2	60	4761	20 36 01
20 37 00	RGG9	09 34 46	85.1	-49.9	0.5		124.6	-26	4761	No stop
20 41 00	---	09 38 47	84.6	-53.2	0.5		120.5	214	4792	20 37 01
20 41 00	J0854+5757	09 38 47	82.3	-47.2	0.7		124.0	-27	4792	No stop
20 42 00	---	09 39 47	82.2	-47.8	0.7		123.3	33	4800	20 41 01
20 42 00	RGG9	09 39 47	84.5	-53.9	0.5		119.5	-28	4800	No stop
20 46 00	---	09 43 48	84.0	-56.5	0.6		116.1	212	4831	20 42 01
20 46 30	J0854+5757	09 44 18	81.7	-50.0	0.8		120.1	2	4831	20 46 30
20 47 30	---	09 45 18	81.6	-50.5	0.8		119.4	60	4838	20 46 31
20 47 30	VLA1	09 45 18	83.6	-59.5	0.7		112.5	-33	4838	No stop
20 49 30	---	09 47 18	83.4	-60.4	0.7		111.2	87	4854	20 47 31
20 49 30	RGG9	09 47 18	83.5	-58.4	0.7		113.5	-17	4854	No stop
20 51 30	---	09 49 18	83.3	-59.4	0.7		112.1	103	4869	20 49 31
20 51 30	J0854+5757	09 49 18	81.1	-52.1	0.9		116.9	-29	4869	No stop
20 52 30	---	09 50 19	81.0	-52.5	0.9		116.3	31	4877	20 51 31
20 52 30	RGG9	09 50 19	83.2	-59.8	0.7		111.5	-30	4877	No stop
20 56 30	---	09 54 19	82.6	-61.4	0.8		109.1	210	4908	20 52 31
20 57 00	J0854+5757	09 54 49	80.5	-54.1	1.0		113.8	0	4908	20 57 00
20 58 00	---	09 55 49	80.3	-54.4	1.0		113.3	60	4916	20 57 01
20 58 00	RGG9	09 55 49	82.4	-61.9	0.8		108.3	-30	4916	No stop
21 02 00	---	09 59 50	81.9	-63.1	0.9		106.2	210	4947	20 58 01
21 02 00	J0854+5757	09 59 50	79.8	-55.6	1.1		111.3	-30	4947	No stop
21 03 00	---	10 00 50	79.7	-55.9	1.1		110.8	30	4954	21 02 01
21 03 00	RGG9	10 00 50	81.8	-63.4	0.9		105.8	-30	4954	No stop
21 07 00	---	10 04 51	81.2	-64.4	1.0		104.0	210	4985	21 03 01

Schedule for TORUN (Code Tr) Page 15

e-EVN: EY029B, EN005C

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 17 Mar 2020 Day 77 ---										
21 07 30	J0854+5757	10 05 21	79.1	-57.0	1.2		108.8	0	4985	21 07 30
21 08 30	---	10 06 21	79.0	-57.2	1.2		108.3	60	4993	21 07 31
21 08 30	VLA1	10 06 21	80.8	-65.9	1.0		101.8	-33	4993	No stop
21 10 30	---	10 08 22	80.5	-66.2	1.0		101.0	87	5008	21 08 31
21 10 30	RGG9	10 08 22	80.7	-65.1	1.0		102.5	-14	5008	No stop
21 12 30	---	10 10 22	80.5	-65.4	1.0		101.8	106	5024	21 10 31
21 12 30	J0854+5757	10 10 22	78.5	-58.0	1.2		106.7	-30	5024	No stop
21 13 30	---	10 11 22	78.4	-58.2	1.3		106.3	30	5032	21 12 31
21 13 30	RGG9	10 11 22	80.3	-65.6	1.1		101.4	-30	5032	No stop
21 17 30	---	10 15 23	79.8	-66.2	1.1		100.0	210	5063	21 13 31
21 18 00	J0854+5757	10 15 53	77.8	-59.0	1.3		104.6	1	5063	21 18 00
21 19 00	---	10 16 53	77.7	-59.1	1.3		104.2	60	5070	21 18 01
21 19 00	RGG9	10 16 53	79.6	-66.4	1.2		99.5	-30	5070	No stop
21 23 00	---	10 20 54	79.0	-66.9	1.2		98.2	210	5101	21 19 01
21 23 00	J0854+5757	10 20 54	77.2	-59.7	1.4		102.8	-29	5101	No stop
21 24 00	---	10 21 54	77.0	-59.8	1.4		102.4	31	5109	21 23 01
21 24 00	RGG9	10 21 54	78.9	-67.0	1.2		97.9	-29	5109	No stop
21 28 00	---	10 25 54	78.3	-67.3	1.3		96.7	211	5140	21 24 01
21 28 30	J0854+5757	10 26 24	76.4	-60.4	1.5		101.0	1	5140	21 28 30
21 29 30	---	10 27 25	76.3	-60.5	1.5		100.7	60	5148	21 28 31
21 29 30	VLA1	10 27 25	77.9	-68.2	1.4		95.1	-31	5148	No stop
21 31 30	---	10 29 25	77.6	-68.3	1.4		94.6	89	5163	21 29 31
21 31 30	RGG9	10 29 25	77.8	-67.6	1.4		95.7	-13	5163	No stop
21 33 30	---	10 31 25	77.6	-67.7	1.4		95.2	107	5179	21 31 31
21 33 30	J0854+5757	10 31 25	75.8	-60.9	1.6		99.4	-29	5179	No stop
21 34 30	---	10 32 25	75.7	-60.9	1.6		99.1	31	5186	21 33 31
21 34 30	RGG9	10 32 25	77.4	-67.8	1.4		94.9	-29	5186	No stop
21 38 30	---	10 36 26	76.9	-68.0	1.5		93.9	211	5217	21 34 31
21 39 00	J0854+5757	10 36 56	75.1	-61.3	1.7		97.8	2	5217	21 39 00
21 40 00	---	10 37 56	74.9	-61.4	1.7		97.6	60	5225	21 39 01

Schedule for TORUN (Code Tr) Page 16

e-EVN: EY029B, EN005C

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 17 Mar 2020 Day 77 ---										
21 40 00	RGG9	10 37 56	76.7	-68.0	1.5		93.5	-28	5225	No stop
21 44 00	---	10 41 57	76.1	-68.1	1.6		92.6	212	5256	21 40 01
21 44 00	J0854+5757	10 41 57	74.4	-61.6	1.8		96.5	-28	5256	No stop
21 45 00	---	10 42 57	74.3	-61.7	1.8		96.2	32	5264	21 44 01
21 45 00	RGG9	10 42 57	76.0	-68.2	1.6		92.3	-28	5264	No stop
21 49 00	---	10 46 58	75.4	-68.2	1.7		91.4	212	5294	21 45 01
21 49 30	J0854+5757	10 47 28	73.7	-61.9	1.9		95.1	2	5294	21 49 30
21 50 30	---	10 48 28	73.5	-61.9	1.9		94.8	60	5302	21 49 31
21 50 30	VLA1	10 48 28	74.9	-68.8	1.7		90.2	-29	5302	No stop
21 52 30	---	10 50 28	74.7	-68.8	1.7		89.8	91	5318	21 50 31
21 52 30	RGG9	10 50 28	74.9	-68.3	1.7		90.7	-11	5318	No stop
21 54 30	---	10 52 29	74.6	-68.3	1.7		90.2	109	5333	21 52 31
21 54 30	J0854+5757	10 52 29	73.0	-62.1	1.9		93.8	-27	5333	No stop
21 55 30	---	10 53 29	72.9	-62.1	2.0		93.6	33	5341	21 54 31
21 55 30	RGG9	10 53 29	74.5	-68.3	1.8		90.0	-27	5341	No stop
21 59 30	---	10 57 30	73.9	-68.3	1.8		89.2	213	5372	21 55 31
22 00 00	J0854+5757	10 58 00	72.3	-62.2	2.0		92.5	3	5372	22 00 00
22 01 00	---	10 59 00	72.1	-62.2	2.0		92.3	60	5379	22 00 01
22 01 00	RGG9	10 59 00	73.7	-68.3	1.9		88.9	-27	5379	No stop
22 05 00	---	11 03 00	73.2	-68.2	1.9		88.1	213	5410	22 01 01
22 05 00	J0854+5757	11 03 00	71.6	-62.3	2.1		91.4	-27	5410	No stop
22 06 00	---	11 04 01	71.5	-62.3	2.1		91.2	33	5418	22 05 01
22 06 00	RGG9	11 04 01	73.0	-68.2	1.9		87.9	-27	5418	No stop
22 10 00	---	11 08 01	72.5	-68.1	2.0		87.2	213	5449	22 06 01
22 10 30	J0854+5757	11 08 31	70.9	-62.3	2.2		90.2	3	5449	22 10 30
22 11 30	---	11 09 32	70.7	-62.3	2.2		90.0	60	5457	22 10 31
22 11 30	VLA1	11 09 32	72.0	-68.5	2.1		86.2	-27	5457	No stop
22 13 30	---	11 11 32	71.7	-68.4	2.1		85.8	93	5472	22 11 31
22 13 30	RGG9	11 11 32	72.0	-68.0	2.1		86.5	-11	5472	No stop
22 15 30	---	11 13 32	71.7	-68.0	2.1		86.2	109	5488	22 13 31

```
Schedule for TORUN     (Code Tr )                                  Page  17
               e-EVN: EY029B, EN005C
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  17 Mar 2020   Day  77 ---

22 15 30  J0854+5757   11 13 32  70.2 -62.3  2.3      89.1   -26     5488   No stop
22 16 30  ---          11 14 32  70.1 -62.3  2.3      88.9    34     5495   22 15 31

22 27 00  4C39.25      11 25 04  65.6 246.4  1.9      45.1    -2     5495   22 27 00
22 31 30  ---          11 29 35  64.9 247.9  2.0      45.7   268     5530   22 27 01

22 32 00  4C39.25      11 30 05  64.9 248.1  2.0      45.7    24     5530   22 32 00
22 36 30  ---          11 34 36  64.2 249.5  2.1      46.3   270     5565   22 32 01

22 37 00  4C39.25      11 35 06  64.2 249.6  2.1      46.4    24     5565   22 37 00
22 41 30  ---          11 39 36  63.5 251.0  2.2      46.9   270     5600   22 37 01

 ---------- EY029B ----------

22 46 30  J0854+5757   11 44 37  66.1 298.5  2.8      83.2   190     5600   22 46 30
22 47 30  ---          11 45 37  66.0 298.5  2.8      83.1    60     5607   22 46 31

22 47 30  VLA1         11 45 37  67.0 293.2  2.7      80.3   -25     5607   No stop
22 49 30  ---          11 47 38  66.7 293.4  2.7      80.0    95     5623   22 47 31

22 49 30  RGG9         11 47 38  67.0 293.6  2.7      80.6   -11     5623   No stop
22 51 30  ---          11 49 38  66.7 293.7  2.7      80.2   109     5638   22 49 31

22 51 30  J0854+5757   11 49 38  65.4 298.7  2.9      82.4   -25     5638   No stop
22 52 30  ---          11 50 38  65.3 298.7  2.9      82.2    35     5646   22 51 31

22 52 30  RGG9         11 50 38  66.6 293.8  2.7      80.1   -25     5646   No stop
22 56 30  ---          11 54 39  66.0 294.0  2.8      79.5   215     5677   22 52 31

22 57 00  J0854+5757   11 55 09  64.7 298.9  3.0      81.4     5     5677   22 57 00
22 58 00  ---          11 56 09  64.6 298.9  3.0      81.2    60     5685   22 57 01

22 58 00  RGG9         11 56 09  65.8 294.1  2.8      79.3   -25     5685   No stop
23 02 00  ---          12 00 10  65.3 294.4  2.9      78.7   215     5716   22 58 01

23 02 00  J0854+5757   12 00 10  64.0 299.1  3.1      80.6   -25     5716   No stop
23 03 00  ---          12 01 10  63.9 299.2  3.1      80.4    35     5723   23 02 01

23 03 00  RGG9         12 01 10  65.1 294.4  2.9      78.5   -24     5723   No stop
23 07 00  ---          12 05 11  64.6 294.7  3.0      77.9   216     5754   23 03 01

23 07 30  J0854+5757   12 05 41  63.3 299.4  3.2      79.7     6     5754   23 07 30
23 08 30  ---          12 06 41  63.2 299.5  3.2      79.5    60     5762   23 07 31
```

Schedule for TORUN (Code Tr) Page 18

e-EVN: EY029B, EN005C

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 17 Mar 2020 Day 77 ---										
23 08 30	VLA1	12 06 41	64.1	294.6	3.0		77.2	-25	5762	No stop
23 10 30	---	12 08 41	63.8	294.8	3.0		76.9	95	5778	23 08 31
23 10 30	RGG9	12 08 41	64.1	294.9	3.0		77.4	-11	5778	No stop
23 12 30	---	12 10 42	63.8	295.1	3.0		77.1	109	5793	23 10 31
23 12 30	J0854+5757	12 10 42	62.7	299.7	3.2		78.8	-24	5793	No stop
23 13 30	---	12 11 42	62.5	299.8	3.3		78.7	36	5801	23 12 31
23 13 30	RGG9	12 11 42	63.7	295.2	3.1		77.0	-24	5801	No stop
23 17 30	---	12 15 42	63.1	295.4	3.1		76.4	216	5832	23 13 31
23 18 00	J0854+5757	12 16 12	61.9	300.0	3.3		78.0	6	5832	23 18 00
23 19 00	---	12 17 13	61.8	300.1	3.3		77.8	60	5839	23 18 01
23 19 00	RGG9	12 17 13	62.9	295.6	3.2		76.2	-24	5839	No stop
23 23 00	---	12 21 13	62.4	295.9	3.2		75.6	216	5870	23 19 01
23 23 00	J0854+5757	12 21 13	61.3	300.3	3.4		77.2	-24	5870	No stop
23 24 00	---	12 22 13	61.2	300.4	3.4		77.0	36	5878	23 23 01
23 24 00	RGG9	12 22 13	62.3	295.9	3.2		75.5	-24	5878	No stop
23 28 00	---	12 26 14	61.7	296.2	3.3		74.9	216	5909	23 24 01
23 28 30	J0854+5757	12 26 44	60.6	300.7	3.5		76.3	6	5909	23 28 30
23 29 30	---	12 27 44	60.5	300.7	3.5		76.1	60	5917	23 28 31
23 29 30	VLA1	12 27 44	61.2	296.2	3.4		74.2	-24	5917	No stop
23 31 30	---	12 29 45	61.0	296.4	3.4		73.9	96	5932	23 29 31
23 31 30	RGG9	12 29 45	61.2	296.5	3.4		74.4	-11	5932	No stop
23 33 30	---	12 31 45	61.0	296.7	3.4		74.2	109	5948	23 31 31
23 33 30	J0854+5757	12 31 45	59.9	301.0	3.6		75.5	-24	5948	No stop
23 34 30	---	12 32 45	59.8	301.1	3.6		75.4	36	5955	23 33 31
23 34 30	RGG9	12 32 45	60.8	296.7	3.4		74.0	-24	5955	No stop
23 38 30	---	12 36 46	60.3	297.1	3.5		73.5	216	5986	23 34 31
23 39 00	J0854+5757	12 37 16	59.2	301.4	3.7		74.7	6	5986	23 39 00
23 40 00	---	12 38 16	59.1	301.4	3.7		74.5	60	5994	23 39 01
23 40 00	RGG9	12 38 16	60.1	297.2	3.5		73.2	-23	5994	No stop
23 44 00	---	12 42 17	59.6	297.5	3.6		72.7	217	6025	23 40 01

Schedule for TORUN (Code Tr) Page 19

e-EVN: EY029B, EN005C

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 17 Mar 2020 Day 77 ---										
23 44 00	J0854+5757	12 42 17	58.6	301.7	3.8		73.9	-23	6025	No stop
23 45 00	---	12 43 17	58.5	301.8	3.8		73.8	37	6033	23 44 01
23 45 00	RGG9	12 43 17	59.4	297.6	3.6		72.6	-23	6033	No stop
23 49 00	---	12 47 18	58.9	297.9	3.7		72.0	217	6064	23 45 01
23 49 30	J0854+5757	12 47 48	57.9	302.1	3.9		73.1	7	6064	23 49 30
23 50 30	---	12 48 48	57.8	302.2	3.9		72.9	60	6071	23 49 31
23 50 30	VLA1	12 48 48	58.4	298.0	3.7		71.4	-23	6071	No stop
23 52 30	---	12 50 48	58.2	298.1	3.7		71.1	97	6087	23 50 31
23 52 30	RGG9	12 50 48	58.4	298.2	3.7		71.5	-11	6087	No stop
23 54 30	---	12 52 48	58.2	298.4	3.8		71.3	109	6102	23 52 31
23 54 30	J0854+5757	12 52 48	57.2	302.5	3.9		72.3	-23	6102	No stop
23 55 30	---	12 53 49	57.1	302.6	4.0		72.2	37	6110	23 54 31
23 55 30	RGG9	12 53 49	58.0	298.5	3.8		71.1	-23	6110	No stop
23 59 30	---	12 57 49	57.5	298.8	3.8		70.6	217	6141	23 55 31
--- Wed 18 Mar 2020 Day 78 ---										
00 00 00	J0854+5757	12 58 19	56.6	302.9	4.0		71.5	7	6141	00 00 00
00 01 00	---	12 59 20	56.4	303.0	4.1		71.4	60	6149	00 00 01
00 01 00	RGG9	12 59 20	57.3	298.9	3.9		70.4	-23	6149	No stop
00 05 00	---	13 03 20	56.8	299.3	3.9		69.8	217	6179	00 01 01
00 05 00	J0854+5757	13 03 20	55.9	303.3	4.1		70.8	-23	6179	No stop
00 06 00	---	13 04 20	55.8	303.4	4.1		70.6	37	6187	00 05 01
00 06 00	RGG9	13 04 20	56.7	299.4	3.9		69.7	-23	6187	No stop
00 10 00	---	13 08 21	56.1	299.7	4.0		69.2	217	6218	00 06 01
00 10 30	J0854+5757	13 08 51	55.2	303.7	4.2		70.0	7	6218	00 10 30
00 11 30	---	13 09 51	55.1	303.8	4.2		69.8	60	6226	00 10 31
00 11 30	VLA1	13 09 51	55.7	299.8	4.1		68.5	-23	6226	No stop
00 13 30	---	13 11 52	55.4	300.0	4.1		68.3	97	6241	00 11 31
00 13 30	RGG9	13 11 52	55.7	300.0	4.1		68.7	-11	6241	No stop
00 15 30	---	13 13 52	55.4	300.2	4.1		68.4	109	6257	00 13 31

Schedule for TORUN (Code Tr) Page 20

e-EVN: EY029B, EN005C

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 18 Mar 2020 Day 78 ---										
00 15 30	J0854+5757	13 13 52	54.6	304.1	4.3		69.2	-23	6257	No stop
00 16 30	---	13 14 52	54.5	304.2	4.3		69.1	37	6264	00 15 31
00 16 30	RGG9	13 14 52	55.3	300.3	4.1		68.3	-23	6264	No stop
00 20 30	---	13 18 53	54.8	300.7	4.2		67.8	217	6295	00 16 31
00 21 00	J0854+5757	13 19 23	53.9	304.6	4.4		68.4	7	6295	00 21 00
00 22 00	---	13 20 23	53.8	304.7	4.4		68.3	60	6303	00 21 01
00 22 00	RGG9	13 20 23	54.6	300.8	4.2		67.6	-22	6303	No stop
00 26 00	---	13 24 24	54.1	301.2	4.3		67.0	218	6334	00 22 01
00 26 00	J0854+5757	13 24 24	53.3	305.0	4.5		67.7	-23	6334	No stop
00 27 00	---	13 25 24	53.2	305.1	4.5		67.6	37	6342	00 26 01
00 27 00	RGG9	13 25 24	53.9	301.3	4.3		66.9	-22	6342	No stop
00 31 00	---	13 29 24	53.4	301.7	4.4		66.4	218	6373	00 27 01
00 31 30	J0854+5757	13 29 55	52.6	305.5	4.6		66.9	8	6373	00 31 30
00 32 30	---	13 30 55	52.5	305.6	4.6		66.8	60	6380	00 31 31
00 32 30	VLA1	13 30 55	52.9	301.8	4.4		65.8	-22	6380	No stop
00 34 30	---	13 32 55	52.7	302.0	4.5		65.5	98	6396	00 32 31
00 34 30	RGG9	13 32 55	53.0	302.0	4.4		65.9	-11	6396	No stop
00 36 30	---	13 34 55	52.7	302.2	4.5		65.7	109	6411	00 34 31
00 36 30	J0854+5757	13 34 55	52.0	305.9	4.6		66.2	-22	6411	No stop
00 37 30	---	13 35 56	51.9	306.0	4.7		66.1	38	6419	00 36 31
00 37 30	RGG9	13 35 56	52.6	302.3	4.5		65.5	-22	6419	No stop
00 41 30	---	13 39 56	52.1	302.7	4.5		65.0	218	6450	00 37 31
00 42 00	J0854+5757	13 40 26	51.3	306.4	4.7		65.4	8	6450	00 42 00
00 43 00	---	13 41 26	51.2	306.5	4.8		65.3	60	6458	00 42 01
00 43 00	RGG9	13 41 26	51.9	302.8	4.6		64.8	-22	6458	No stop
00 47 00	---	13 45 27	51.4	303.2	4.6		64.3	218	6489	00 43 01
00 47 00	J0854+5757	13 45 27	50.7	306.8	4.8		64.7	-22	6489	No stop
00 48 00	---	13 46 27	50.6	306.9	4.8		64.6	38	6496	00 47 01
00 48 00	RGG9	13 46 27	51.3	303.3	4.6		64.1	-22	6496	No stop
00 52 00	---	13 50 28	50.8	303.7	4.7		63.6	218	6527	00 48 01

Schedule for TORUN (Code Tr) Page 21

e-EVN: EY029B, EN005C

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 18 Mar 2020 Day 78 ---										
00 52 30	J0854+5757	13 50 58	50.1	307.3	4.9		63.9	8	6527	00 52 30
00 53 30	---	13 51 58	50.0	307.4	4.9		63.8	60	6535	00 52 31
00 53 30	VLA1	13 51 58	50.3	303.8	4.8		63.0	-22	6535	No stop
00 55 30	---	13 53 58	50.0	304.0	4.8		62.8	98	6550	00 53 31
00 55 30	RGG9	13 53 58	50.3	304.0	4.8		63.1	-11	6550	No stop
00 57 30	---	13 55 59	50.1	304.2	4.8		62.9	109	6566	00 55 31
00 57 30	J0854+5757	13 55 59	49.5	307.8	5.0		63.2	-22	6566	No stop
00 58 30	---	13 56 59	49.4	307.9	5.0		63.1	38	6574	00 57 31
00 58 30	RGG9	13 56 59	49.9	304.3	4.8		62.7	-22	6574	No stop
01 02 30	---	14 01 00	49.4	304.7	4.9		62.2	218	6605	00 58 31
01 03 00	J0854+5757	14 01 30	48.8	308.3	5.1		62.4	8	6605	01 03 00
01 04 00	---	14 02 30	48.7	308.4	5.1		62.3	60	6612	01 03 01
01 04 00	RGG9	14 02 30	49.3	304.9	4.9		62.0	-22	6612	No stop
01 08 00	---	14 06 31	48.8	305.3	5.0		61.5	218	6643	01 04 01
01 08 00	J0854+5757	14 06 31	48.2	308.8	5.2		61.7	-22	6643	No stop
01 09 00	---	14 07 31	48.1	308.9	5.2		61.6	38	6651	01 08 01
01 09 00	RGG9	14 07 31	48.6	305.4	5.0		61.4	-22	6651	No stop
01 13 00	---	14 11 31	48.2	305.8	5.1		60.8	218	6682	01 09 01
01 13 30	J0854+5757	14 12 01	47.6	309.3	5.3		60.9	8	6682	01 13 30
01 14 30	---	14 13 02	47.5	309.4	5.3		60.8	60	6690	01 13 31
01 14 30	VLA1	14 13 02	47.7	305.9	5.1		60.3	-22	6690	No stop
01 16 30	---	14 15 02	47.4	306.2	5.2		60.0	98	6705	01 14 31
01 16 30	RGG9	14 15 02	47.7	306.1	5.1		60.4	-11	6705	No stop
01 18 30	---	14 17 02	47.5	306.3	5.2		60.1	109	6720	01 16 31
01 18 30	J0854+5757	14 17 02	47.0	309.8	5.3		60.2	-22	6720	No stop
01 19 30	---	14 18 02	46.9	309.9	5.4		60.1	38	6728	01 18 31
01 19 30	RGG9	14 18 02	47.4	306.5	5.2		60.0	-21	6728	No stop
01 23 30	---	14 22 03	46.9	306.9	5.2		59.4	219	6759	01 19 31
01 24 00	J0854+5757	14 22 33	46.4	310.3	5.4		59.4	8	6759	01 24 00
01 25 00	---	14 23 33	46.3	310.4	5.5		59.3	60	6767	01 24 01

Schedule for TORUN (Code Tr) Page 22

e-EVN: EY029B, EN005C

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 18 Mar 2020 Day 78 ---										
01 25 00	RGG9	14 23 33	46.7	307.0	5.3		59.3	-21	6767	No stop
01 29 00	---	14 27 34	46.2	307.4	5.3		58.7	219	6798	01 25 01
01 29 00	J0854+5757	14 27 34	45.8	310.8	5.5		58.7	-21	6798	No stop
01 30 00	---	14 28 34	45.7	310.9	5.5		58.6	39	6806	01 29 01
01 30 00	RGG9	14 28 34	46.1	307.5	5.3		58.6	-21	6806	No stop
01 34 00	---	14 32 35	45.6	308.0	5.4		58.1	219	6836	01 30 01
01 34 30	J0854+5757	14 33 05	45.2	311.4	5.6		58.0	9	6836	01 34 30
01 35 30	---	14 34 05	45.1	311.5	5.6		57.8	60	6844	01 34 31
01 35 30	VLA1	14 34 05	45.2	308.2	5.5		57.5	-21	6844	No stop
01 37 30	---	14 36 05	44.9	308.4	5.5		57.2	99	6860	01 35 31
01 37 30	RGG9	14 36 05	45.2	308.3	5.5		57.6	-11	6860	No stop
01 39 30	---	14 38 06	45.0	308.6	5.5		57.3	109	6875	01 37 31
01 39 30	J0854+5757	14 38 06	44.6	311.9	5.7		57.3	-21	6875	No stop
01 40 30	---	14 39 06	44.5	312.0	5.7		57.1	39	6883	01 39 31
01 40 30	RGG9	14 39 06	44.9	308.7	5.5		57.2	-21	6883	No stop
01 44 30	---	14 43 07	44.4	309.1	5.6		56.7	219	6914	01 40 31
01 45 00	J0854+5757	14 43 37	44.0	312.4	5.8		56.5	9	6914	01 45 00
01 46 00	---	14 44 37	43.9	312.5	5.8		56.3	60	6921	01 45 01
01 46 00	RGG9	14 44 37	44.2	309.2	5.6		56.5	-21	6921	No stop
01 50 00	---	14 48 37	43.8	309.7	5.7		55.9	219	6952	01 46 01
01 50 00	J0854+5757	14 48 37	43.5	312.9	5.9		55.8	-21	6952	No stop
01 51 00	---	14 49 38	43.4	313.0	5.9		55.6	39	6960	01 50 01
01 51 00	RGG9	14 49 38	43.6	309.8	5.7		55.8	-21	6960	No stop
01 55 00	---	14 53 38	43.2	310.2	5.8		55.3	219	6991	01 51 01
01 55 30	J0854+5757	14 54 08	42.9	313.5	6.0		55.0	9	6991	01 55 30
01 56 30	---	14 55 09	42.8	313.6	6.0		54.9	60	6999	01 55 31
01 56 30	VLA1	14 55 09	42.7	310.4	5.8		54.7	-21	6999	No stop
01 58 30	---	14 57 09	42.5	310.7	5.9		54.5	99	7014	01 56 31
01 58 30	RGG9	14 57 09	42.8	310.6	5.8		54.8	-11	7014	No stop
02 00 30	---	14 59 09	42.5	310.8	5.9		54.5	109	7030	01 58 31

```
Schedule for TORUN     (Code Tr )                                  Page  23
               e-EVN: EY029B, EN005C
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  18 Mar 2020   Day  78 ---

02 00 30  J0854+5757   14 59 09  42.3 314.0  6.0      54.3   -21     7030   No stop
02 01 30  ---          15 00 09  42.2 314.1  6.1      54.2    39     7037   02 00 31

02 01 30  RGG9         15 00 09  42.4 310.9  5.9      54.4   -21     7037   No stop
02 05 30  ---          15 04 10  42.0 311.4  5.9      53.9   219     7068   02 01 31

02 06 00  J0854+5757   15 04 40  41.7 314.6  6.1      53.5     9     7068   02 06 00
02 07 00  ---          15 05 40  41.6 314.7  6.2      53.4    60     7076   02 06 01

02 07 00  RGG9         15 05 40  41.8 311.5  6.0      53.7   -21     7076   No stop
02 11 00  ---          15 09 41  41.4 312.0  6.0      53.1   219     7107   02 07 01

02 11 00  J0854+5757   15 09 41  41.2 315.1  6.2      52.8   -21     7107   No stop
02 12 00  ---          15 10 41  41.1 315.3  6.2      52.7    39     7115   02 11 01

02 12 00  RGG9         15 10 41  41.2 312.1  6.0      53.0   -21     7115   No stop
02 16 00  ---          15 14 42  40.8 312.6  6.1      52.5   219     7146   02 12 01

02 16 30  J0854+5757   15 15 12  40.6 315.7  6.3      52.0     9     7146   02 16 30
02 17 30  ---          15 16 12  40.5 315.8  6.3      51.9    60     7153   02 16 31

02 19 30  4C39.25      15 18 12  31.6 294.3  5.8      44.7    61     7153   02 19 30
02 24 30  ---          15 23 13  30.9 295.1  5.9      44.4   300     7192   02 19 31

 ---------- EN005C ----------

02 34 30  J0347+5557   15 33 15  19.2 357.6 11.7       2.6   462     7192   02 34 30
02 35 30  =0344+558    15 34 15  19.2 357.7 11.7       2.4    60     7200   02 34 31

02 35 30  B0329+54     15 34 15  17.7 360.0 12.0       0.0   -19     7200   No stop
02 37 30  ---          15 36 15  17.7 360.3-12.0      -0.3   101     7215   02 35 31

02 37 30  J0347+5557   15 36 15  19.2 358.0 11.8       2.1   -19     7215   No stop
02 39 30  =0344+558    15 38 16  19.1 358.3 11.8       1.8   101     7231   02 37 31

02 40 40  J0207+6246   15 39 26  27.3 371.4-10.5     -15.1    25     7231   02 40 40
02 42 40  =0203+625    15 41 26  27.4 371.7-10.5     -15.5   120     7246   02 40 41

02 42 40  R3           15 41 26  30.5 371.8-10.3     -17.5   -26     7246   No stop
02 47 40  ---          15 46 27  30.6 372.4-10.2     -18.3   274     7285   02 42 41

02 47 40  J0207+6246   15 46 27  27.5 372.3-10.4     -16.3   -25     7285   No stop
02 49 40  =0203+625    15 48 27  27.6 372.6-10.3     -16.6    95     7300   02 47 41
```

```
Schedule for TORUN     (Code Tr )                                  Page  24
               e-EVN: EY029B, EN005C
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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  18 Mar 2020   Day  78 ---

02 49 40  R3           15 48 27  30.7 372.6-10.2     -18.6   -26     7300   No stop
02 54 40  ---          15 53 28  30.9 373.2-10.1     -19.5   274     7339   02 49 41

02 55 50  J0207+6246   15 54 38  27.8 373.3-10.2     -17.7    45     7339   02 55 50
02 57 20  =0203+625    15 56 09  27.9 373.5-10.2     -17.9    90     7350   02 55 51

02 57 20  R3           15 56 09  31.0 373.5-10.1     -20.0   -26     7350   No stop
03 02 20  ---          16 01 09  31.2 374.0-10.0     -20.8   274     7389   02 57 21

03 02 20  J0207+6246   16 01 09  28.0 374.1-10.1     -18.7   -25     7389   No stop
03 04 20  =0203+625    16 03 10  28.1 374.4-10.1     -19.1    95     7405   03 02 21

03 04 20  R3           16 03 10  31.2 374.3 -9.9     -21.2   -26     7405   No stop
03 09 20  ---          16 08 10  31.4 374.8 -9.9     -22.0   274     7443   03 04 21

03 10 10  J0207+6246   16 09 01  28.3 375.1-10.0     -20.0    25     7443   03 10 10
03 11 40  =0203+625    16 10 31  28.4 375.3-10.0     -20.3    90     7455   03 10 11

03 11 40  J0140+6346   16 10 31  30.5 378.0 -9.5     -24.9   -22     7455   No stop
03 14 40  =0137+635    16 13 31  30.6 378.3 -9.5     -25.4   158     7478   03 11 41

03 14 40  J0207+6246   16 13 31  28.5 375.6 -9.9     -20.8   -22     7478   No stop
03 16 40  =0203+625    16 15 32  28.6 375.9 -9.9     -21.1    98     7493   03 14 41

03 18 35  J0213+8717   16 17 27  50.8 362.0-10.0     -27.8    18     7493   03 18 35
03 21 00  =0159+870    16 19 52  50.8 362.1-10.0     -28.3   145     7512   03 18 36

03 21 00  R10          16 19 52  50.1 359.8 11.9       2.1   -18     7512   No stop
03 25 00  ---          16 23 53  50.1 359.9 11.9       1.1   222     7543   03 21 01

03 25 00  J0213+8717   16 23 53  50.8 362.1 -9.9     -29.3   -18     7543   No stop
03 27 00  =0159+870    16 25 53  50.8 362.2 -9.9     -29.8   102     7558   03 25 01

03 27 00  R10          16 25 53  50.1 359.9 12.0       0.7   -18     7558   No stop
03 31 00  ---          16 29 54  50.1 360.0-12.0      -0.3   222     7589   03 27 01

03 31 40  J0213+8717   16 30 34  50.9 362.2 -9.8     -30.9    22     7589   03 31 40
03 33 10  =0159+870    16 32 04  50.9 362.3 -9.8     -31.2    90     7601   03 31 41

03 33 10  R10          16 32 04  50.1 360.1-11.9      -0.8   -18     7601   No stop
03 37 10  ---          16 36 05  50.1 360.1-11.9      -1.7   222     7632   03 33 11

03 37 10  J0213+8717   16 36 05  50.9 362.3 -9.7     -32.2   -18     7632   No stop
03 39 10  =0159+870    16 38 05  50.9 362.3 -9.7     -32.7   102     7647   03 37 11
```

Schedule for TORUN (Code Tr) Page 25

e-EVN: EY029B, EN005C

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 18 Mar 2020 Day 78 ---										
03 39 10	R10	16 38 05	50.1	360.2	-11.8		-2.2	-18	7647	No stop
03 43 10	---	16 42 06	50.1	360.3	-11.8		-3.1	222	7678	03 39 11
03 43 50	J0213+8717	16 42 46	50.9	362.4	-9.6		-33.8	22	7678	03 43 50
03 45 20	=0159+870	16 44 16	51.0	362.4	-9.6		-34.1	90	7690	03 43 51
03 45 20	J0052+8627	16 44 16	51.2	364.6	-8.2		-53.7	-18	7690	No stop
03 49 20	=0046+861	16 48 17	51.2	364.7	-8.1		-54.7	222	7721	03 45 21
03 49 20	J0213+8717	16 48 17	51.0	362.5	-9.5		-35.1	-18	7721	No stop
03 51 20	=0159+870	16 50 17	51.0	362.5	-9.5		-35.6	102	7736	03 49 21
03 51 20	R10	16 50 17	50.2	360.4	-11.6		-5.1	-18	7736	No stop
03 54 50	---	16 53 48	50.2	360.5	-11.6		-5.9	192	7763	03 51 21
03 55 30	J0213+8717	16 54 28	51.0	362.6	-9.4		-36.6	22	7763	03 55 30
03 57 00	=0159+870	16 55 58	51.0	362.6	-9.4		-36.9	90	7775	03 55 31
03 57 00	J0501+7128	16 55 58	34.6	359.2	11.9		1.5	-75	7775	No stop
04 00 00	=0456+714	16 58 59	34.6	359.5	11.9		0.9	105	7798	03 57 01
04 00 00	R2	16 58 59	36.9	363.0	-11.4		-6.4	-23	7798	No stop
04 04 00	---	17 02 59	37.0	363.3	-11.4		-7.2	217	7829	04 00 01
04 04 00	J0501+7128	17 02 59	34.6	359.9	12.0		0.2	-23	7829	No stop
04 06 00	=0456+714	17 05 00	34.6	360.1	-12.0		-0.2	97	7844	04 04 01
04 06 30	J0501+7128	17 05 30	34.6	360.1	-12.0		-0.3	24	7844	04 06 30
04 08 00	=0456+714	17 07 00	34.6	360.3	-12.0		-0.5	90	7856	04 06 31
04 08 00	R2	17 07 00	37.0	363.7	-11.3		-7.9	-23	7856	No stop
04 12 00	---	17 11 01	37.1	364.0	-11.2		-8.7	217	7887	04 08 01
04 13 00	J0501+7128	17 12 01	34.6	360.8	-11.9		-1.5	37	7887	04 13 00
04 14 30	=0456+714	17 13 31	34.6	360.9	-11.8		-1.7	90	7899	04 13 01
04 14 30	R2	17 13 31	37.1	364.3	-11.2		-9.1	-23	7899	No stop
04 18 00	---	17 17 02	37.1	364.6	-11.1		-9.8	187	7926	04 14 31
04 18 00	J0501+7128	17 17 02	34.6	361.3	-11.8		-2.4	-23	7926	No stop
04 20 00	=0456+714	17 19 02	34.6	361.4	-11.8		-2.7	97	7941	04 18 01
04 20 00	R2	17 19 02	37.1	364.7	-11.1		-10.2	-23	7941	No stop
04 23 30	---	17 22 33	37.2	365.0	-11.0		-10.8	187	7968	04 20 01

Schedule for TORUN (Code Tr) Page 26

e-EVN: EY029B, EN005C

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 18 Mar 2020 Day 78 ---										
04 24 30	J0501+7128	17 23 33	34.7	361.9	-11.7		-3.6	37	7968	04 24 30
04 26 00	=0456+714	17 25 03	34.7	362.0	-11.6		-3.8	90	7980	04 24 31
04 26 00	J0410+7656	17 25 03	40.6	365.2	-10.8		-14.1	-36	7980	No stop
04 29 00	=0403+768	17 28 04	40.6	365.4	-10.8		-14.7	144	8003	04 26 01
04 29 00	J0501+7128	17 28 04	34.7	362.3	-11.6		-4.4	-36	8003	No stop
04 31 00	=0456+714	17 30 04	34.7	362.5	-11.6		-4.7	84	8018	04 29 01
04 31 00	R2	17 30 04	37.3	365.7	-10.9		-12.3	-24	8018	No stop
04 34 30	---	17 33 34	37.4	366.0	-10.9		-12.9	186	8045	04 31 01
04 35 20	J0501+7128	17 34 25	34.7	362.9	-11.5		-5.5	26	8045	04 35 20
04 36 50	=0456+714	17 35 55	34.7	363.1	-11.5		-5.8	90	8057	04 35 21
04 37 40	J0449+6332	17 36 45	27.0	365.7	-11.2		-7.6	7	8057	04 37 40
04 39 40	=0444+634	17 38 45	27.0	365.9	-11.2		-8.0	120	8072	04 37 41
04 39 40	R5	17 38 45	26.8	365.1	-11.3		-6.9	-13	8072	No stop
04 43 10	---	17 42 16	26.8	365.5	-11.3		-7.4	197	8100	04 39 41
04 43 10	J0449+6332	17 42 16	27.1	366.3	-11.1		-8.6	-13	8100	No stop
04 45 10	=0444+634	17 44 16	27.1	366.6	-11.1		-8.9	107	8115	04 43 11
04 45 10	R5	17 44 16	26.9	365.8	-11.2		-7.8	-13	8115	No stop
04 48 40	---	17 47 47	26.9	366.2	-11.2		-8.4	197	8142	04 45 11
04 49 10	J0449+6332	17 48 17	27.2	367.1	-11.0		-9.6	17	8142	04 49 10
04 50 40	=0444+634	17 49 47	27.2	367.3	-11.0		-9.8	90	8154	04 49 11
04 50 40	R5	17 49 47	27.0	366.5	-11.1		-8.7	-13	8154	No stop
04 54 10	---	17 53 18	27.0	366.9	-11.1		-9.3	197	8181	04 50 41
04 54 10	J0449+6332	17 53 18	27.3	367.7	-11.0		-10.4	-13	8181	No stop
04 56 10	=0444+634	17 55 18	27.3	367.9	-10.9		-10.7	107	8196	04 54 11
04 56 10	R5	17 55 18	27.1	367.2	-11.0		-9.6	-13	8196	No stop
04 59 40	---	17 58 49	27.1	367.6	-11.0		-10.2	197	8223	04 56 11
05 00 10	J0449+6332	17 59 19	27.4	368.4	-10.9		-11.4	17	8223	05 00 10
05 01 40	=0444+634	18 00 49	27.5	368.6	-10.8		-11.7	90	8235	05 00 11
05 01 40	J0508+6056	18 00 49	24.5	366.7	-11.2		-8.3	-25	8235	No stop
05 04 40	=0503+608	18 03 49	24.6	367.1	-11.1		-8.8	155	8258	05 01 41

Schedule for TORUN (Code Tr) Page 27

e-EVN: EY029B, EN005C

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 18 Mar 2020 Day 78 ---										
05 04 40	J0449+6332	18 03 49	27.5	369.0	-10.8		-12.2	-25	8258	No stop
05 06 40	=0444+634	18 05 50	27.6	369.2	-10.8		-12.5	95	8273	05 04 41
05 06 40	R5	18 05 50	27.3	368.5	-10.9		-11.4	-13	8273	No stop
05 10 10	---	18 09 20	27.3	368.9	-10.8		-12.0	197	8300	05 06 41
05 10 40	J0449+6332	18 09 50	27.7	369.7	-10.7		-13.2	17	8300	05 10 40
05 12 10	=0444+634	18 11 21	27.7	369.9	-10.7		-13.4	90	8312	05 10 41
05 15 10	J1153+4931	18 14 21	35.0	307.7	6.3		46.9	40	8312	05 15 10
05 19 10	=1150+497	18 18 22	34.5	308.2	6.4		46.4	240	8343	05 15 11
05 20 40	J1229+6335	18 19 52	46.7	319.4	5.8		60.9	30	8343	05 20 40
05 22 40	=1226+638	18 21 52	46.5	319.6	5.9		60.6	120	8358	05 20 41
05 22 40	R6POS2	18 21 52	47.3	321.5	5.8		62.2	-17	8358	No stop
05 26 10	---	18 25 23	47.0	321.7	5.9		61.6	193	8385	05 22 41
05 26 10	J1229+6335	18 25 23	46.1	319.9	5.9		60.0	-17	8385	No stop
05 28 10	=1226+638	18 27 23	45.9	320.0	6.0		59.7	103	8401	05 26 11
05 28 10	R6POS2	18 27 23	46.8	321.9	5.9		61.2	-17	8401	No stop
05 31 40	---	18 30 54	46.4	322.2	6.0		60.6	193	8428	05 28 11
05 32 20	J1229+6335	18 31 34	45.5	320.4	6.0		59.0	23	8428	05 32 20
05 33 50	=1226+638	18 33 04	45.4	320.5	6.1		58.8	90	8440	05 32 21
05 33 50	R6POS2	18 33 04	46.2	322.3	6.0		60.3	-17	8440	No stop
05 37 20	---	18 36 35	45.9	322.6	6.1		59.7	193	8467	05 33 51
05 37 20	J1229+6335	18 36 35	45.1	320.8	6.1		58.2	-17	8467	No stop
05 39 20	=1226+638	18 38 35	44.9	321.0	6.1		57.9	103	8482	05 37 21
05 39 20	R6POS2	18 38 35	45.7	322.7	6.1		59.3	-17	8482	No stop
05 42 50	---	18 42 06	45.4	323.0	6.2		58.7	193	8509	05 39 21
05 43 30	J1229+6335	18 42 46	44.5	321.3	6.2		57.2	23	8509	05 43 30
05 45 00	=1226+638	18 44 16	44.3	321.4	6.2		56.9	90	8521	05 43 31
05 45 00	J1219+6600	18 44 16	44.8	325.1	6.4		57.3	-22	8521	No stop
05 48 00	=1217+662	18 47 17	44.5	325.3	6.4		56.8	158	8544	05 45 01
05 48 00	J1229+6335	18 47 17	44.1	321.7	6.3		56.4	-22	8544	No stop
05 50 00	=1226+638	18 49 17	43.9	321.9	6.3		56.1	98	8559	05 48 01

Schedule for TORUN (Code Tr) Page 28

e-EVN: EY029B, EN005C

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 18 Mar 2020 Day 78 ---										
05 50 00	R6POS2	18 49 17	44.8	323.6	6.3		57.5	-17	8559	No stop
05 53 30	---	18 52 47	44.5	323.9	6.4		56.9	193	8586	05 50 01
05 54 10	J1229+6335	18 53 28	43.5	322.2	6.4		55.4	23	8586	05 54 10
05 55 40	=1226+638	18 54 58	43.3	322.4	6.4		55.2	90	8598	05 54 11
05 55 40	R6POS2	18 54 58	44.3	324.0	6.4		56.5	-17	8598	No stop
05 59 10	---	18 58 28	44.0	324.3	6.5		55.9	193	8625	05 55 41
05 59 10	J1229+6335	18 58 28	43.0	322.7	6.5		54.6	-16	8625	No stop
06 01 10	=1226+638	19 00 29	42.8	322.9	6.5		54.3	104	8641	05 59 11
06 01 10	R6POS1	19 00 29	44.9	323.6	6.3		57.6	-21	8641	No stop
06 04 40	---	19 03 59	44.6	323.8	6.4		57.0	189	8668	06 01 11
06 05 20	J1229+6335	19 04 39	42.5	323.2	6.6		53.6	18	8668	06 05 20
06 06 40	=1226+638	19 06 00	42.3	323.4	6.6		53.4	80	8678	06 05 21
06 06 40	R6POS1	19 06 00	44.4	324.0	6.4		56.7	-21	8678	No stop
06 10 10	---	19 09 30	44.1	324.3	6.4		56.1	189	8705	06 06 41
06 10 50	J1229+6335	19 10 10	42.0	323.7	6.7		52.7	18	8705	06 10 50
06 12 20	=1226+638	19 11 41	41.8	323.9	6.7		52.4	90	8717	06 10 51
06 12 20	R6POS1	19 11 41	43.9	324.5	6.5		55.7	-21	8717	No stop
06 15 50	---	19 15 11	43.6	324.8	6.5		55.1	189	8744	06 12 21
06 15 50	J1229+6335	19 15 11	41.5	324.2	6.8		51.9	-22	8744	No stop
06 17 50	=1226+638	19 17 11	41.4	324.4	6.8		51.5	98	8759	06 15 51
06 17 50	R6POS1	19 17 11	43.4	324.9	6.6		54.8	-21	8759	No stop
06 21 20	---	19 20 42	43.1	325.2	6.6		54.2	189	8786	06 17 51
06 22 00	J1229+6335	19 21 22	41.0	324.8	6.9		50.9	18	8786	06 22 00
06 23 30	=1226+638	19 22 52	40.9	324.9	6.9		50.6	90	8798	06 22 01
06 23 30	R6POS1	19 22 52	42.9	325.4	6.7		53.8	-21	8798	No stop
06 27 00	---	19 26 23	42.6	325.7	6.7		53.3	189	8825	06 23 31
06 27 00	J1229+6335	19 26 23	40.6	325.2	6.9		50.0	-22	8825	No stop
06 29 00	=1226+638	19 28 23	40.4	325.4	7.0		49.7	98	8840	06 27 01
06 29 00	R6POS1	19 28 23	42.4	325.9	6.8		52.9	-21	8840	No stop
06 32 30	---	19 31 54	42.1	326.2	6.8		52.3	189	8867	06 29 01

Schedule for TORUN (Code Tr) Page 29

e-EVN: EY029B, EN005C

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 18 Mar 2020 Day 78 ---										
06 33 10	J1229+6335	19 32 34	40.0	325.8	7.0		49.0	18	8867	06 33 10
06 34 40	=1226+638	19 34 04	39.9	326.0	7.1		48.8	90	8879	06 33 11
06 38 10	J1700+6830	19 37 35	66.1	324.9	2.6		110.0	97	8879	06 38 10
06 40 10	=1700+685	19 39 35	65.9	324.8	2.7		109.4	120	8894	06 38 11
06 40 10	R9	19 39 35	66.4	324.7	2.6		110.4	-13	8894	No stop
06 43 40	---	19 43 06	66.1	324.4	2.6		109.3	197	8921	06 40 11
06 43 40	J1700+6830	19 43 06	65.6	324.5	2.7		108.3	-13	8921	No stop
06 45 40	=1700+685	19 45 06	65.4	324.4	2.8		107.7	107	8937	06 43 41
06 45 40	R9	19 45 06	65.9	324.2	2.7		108.7	-13	8937	No stop
06 49 10	---	19 48 37	65.6	324.0	2.7		107.7	197	8964	06 45 41
06 49 50	J1700+6830	19 49 17	65.1	324.1	2.8		106.5	27	8964	06 49 50
06 51 20	=1700+685	19 50 47	64.9	324.0	2.8		106.1	90	8975	06 49 51
06 51 20	R9	19 50 47	65.4	323.8	2.8		107.0	-13	8975	No stop
06 54 50	---	19 54 18	65.1	323.6	2.8		106.0	197	9003	06 51 21
06 54 50	J1700+6830	19 54 18	64.6	323.8	2.9		105.1	-13	9003	No stop
06 56 50	=1700+685	19 56 18	64.5	323.7	2.9		104.5	107	9018	06 54 51
06 56 50	R9	19 56 18	64.9	323.5	2.9		105.4	-13	9018	No stop
07 00 20	---	19 59 48	64.6	323.3	2.9		104.4	197	9045	06 56 51
07 01 00	J1700+6830	20 00 29	64.1	323.5	3.0		103.3	27	9045	07 01 00
07 02 30	=1700+685	20 01 59	63.9	323.4	3.0		102.9	90	9057	07 01 01
07 02 30	R9	20 01 59	64.4	323.2	3.0		103.8	-13	9057	No stop
07 06 00	---	20 05 29	64.1	323.0	3.0		102.9	197	9084	07 02 31
07 06 40	J1700+6830	20 06 09	63.6	323.2	3.1		101.8	27	9084	07 06 40
07 08 10	=1700+685	20 07 40	63.4	323.2	3.1		101.4	90	9095	07 06 41
07 08 10	J1716+6836	20 07 40	64.8	324.2	2.9		106.1	-19	9095	No stop
07 11 10	=1716+686	20 10 40	64.6	324.1	2.9		105.2	161	9118	07 08 11
07 11 10	J1700+6830	20 10 40	63.2	323.1	3.2		100.6	-19	9118	No stop
07 13 10	=1700+685	20 12 41	63.0	323.0	3.2		100.0	101	9134	07 11 11
07 16 10	J2009+7229	20 15 41	70.5	358.6	0.1		177.3	93	9134	07 16 10
07 18 40	=2010+723	20 18 11	70.5	358.1	0.1		176.2	150	9153	07 16 11

Schedule for TORUN (Code Tr) Page 30

e-EVN: EY029B, EN005C

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 18 Mar 2020 Day 78 ---										
07 18 40	R12	20 18 11	72.8	369.8	-0.6		-162.6	-38	9153	No stop
07 22 00	---	20 21 32	72.8	368.9	-0.5		-164.3	162	9179	07 18 41
07 22 00	J2009+7229	20 21 32	70.5	357.3	0.2		174.7	-38	9179	No stop
07 24 00	=2010+723	20 23 32	70.5	356.9	0.2		173.8	82	9194	07 22 01
07 24 00	R12	20 23 32	72.9	368.3	-0.5		-165.3	-38	9194	No stop
07 27 20	---	20 26 53	72.9	367.4	-0.4		-167.0	162	9220	07 24 01
07 28 20	J2009+7229	20 27 53	70.5	355.9	0.3		171.8	22	9220	07 28 20
07 29 50	=2010+723	20 29 23	70.4	355.6	0.3		171.1	90	9232	07 28 21
07 29 50	R12	20 29 23	73.0	366.7	-0.4		-168.3	-37	9232	No stop
07 33 10	---	20 32 44	73.0	365.7	-0.3		-170.0	163	9258	07 29 51
07 33 10	J2009+7229	20 32 44	70.4	354.8	0.4		169.6	-37	9258	No stop
07 35 10	=2010+723	20 34 44	70.4	354.4	0.4		168.7	83	9273	07 33 11
07 35 10	R12	20 34 44	73.1	365.1	-0.3		-171.0	-36	9273	No stop
07 38 30	---	20 38 05	73.1	364.1	-0.2		-172.7	164	9299	07 35 11
07 39 30	J2009+7229	20 39 05	70.3	353.5	0.5		166.8	24	9299	07 39 30
07 41 00	=2010+723	20 40 35	70.3	353.1	0.5		166.2	90	9310	07 39 31
07 41 00	J1941+7221	20 40 35	69.7	347.1	1.0		153.7	-27	9310	No stop
07 44 00	=1942+722	20 43 36	69.6	346.5	1.0		152.4	153	9334	07 41 01
07 44 00	J2009+7229	20 43 36	70.2	352.5	0.6		164.8	-27	9334	No stop
07 46 00	=2010+723	20 45 36	70.2	352.1	0.6		163.9	93	9349	07 44 01
07 46 00	R12	20 45 36	73.2	361.9	-0.1		-176.6	-34	9349	No stop
07 49 20	---	20 48 56	73.2	360.9	-0.1		-178.4	166	9375	07 46 01
07 50 20	J2009+7229	20 49 57	70.1	351.1	0.7		162.1	26	9375	07 50 20
07 51 50	=2010+723	20 51 27	70.0	350.8	0.7		161.4	90	9386	07 50 21
07 55 00	J2253+1608	20 54 37	46.3	135.9	-2.0		-25.8	-252	9386	07 55 00
08 00 00	=3C454.3	20 59 38	46.8	137.5	-1.9		-25.0	48	9425	07 55 01

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

======== Setup file: sess120.L1024

Setup group: 7 Station: TORUN Total bit rate: 1024

```
Format: VDIF              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         9         1         9         2        10         2        10
                  3        11         3        11         4        12         4        12
  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=   1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15, 16
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* R2	04 16 22.732057	* 04 22 22.000000	04 24 44.420313	0.00
	73 32 54.17098	* 73 40 00.00000	73 42 57.37405	0.00
* R3	01 54 15.539030	* 01 58 00.750170	01 59 28.534399	0.00
	65 28 24.40016	* 65 43 00.31520	65 48 52.52980	0.00
* R5	04 51 18.729512	* 04 56 00.000000	04 57 51.574637	0.00
	63 18 14.06388	* 63 23 00.00000	63 25 01.02743	0.00
* R6POS1	12 39 52.005822	* 12 42 00.000000	12 42 53.460457	0.00
	65 24 25.86765	* 65 08 00.00000	65 01 20.72309	0.00
* R6POS2	12 27 44.436007	* 12 30 00.000000	12 30 56.452072	0.00
	65 22 33.86906	* 65 06 00.00000	64 59 18.28975	0.00
* R9	17 05 09.401167	* 17 05 00.000000	17 04 56.965910	0.00
	68 20 57.71887	* 68 17 00.00000	68 15 05.04938	0.00
* R10	03 59 00.626870	* 04 20 00.000000	04 28 40.004621	0.00
	86 52 15.18607	* 87 00 00.00000	87 02 58.74401	0.00
* R12	20 51 38.636621	* 20 52 00.000000	20 52 05.465536	0.00
	69 38 37.26673	* 69 50 00.00000	69 54 16.89330	0.00

```
* B0329+54          03 29 11.066308   * 03 32 59.368000     03 34 29.338678       0.00
                    54 24 37.47697    * 54 34 43.57000      54 38 49.04249        0.00

* J0854+5757        08 50 50.156144   * 08 54 41.996408     08 56 15.400277       0.00
                    58 08 55.67781    * 57 57 29.93914      57 53 00.21060        0.00

* RGG9              09 02 30.627712   * 09 06 13.755000     09 07 43.718886       0.00
                    56 22 16.84994    * 56 10 15.03000      56 05 30.22259        0.00

* VLA1              09 00 40.787968   * 09 04 24.128000     09 05 54.163827       0.00
                    56 14 01.83315    * 56 02 05.58000      55 57 23.02115        0.00

  0046+861          00 46 16.487475   * 00 52 32.856146     00 54 55.654118       3.48
* J0052+8627        86 11 25.62845    * 86 27 44.25243      86 34 16.83376        0.14
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,     96 observations.

  0137+635          01 37 12.892378   * 01 40 43.077878     01 42 04.835133       0.29
* J0140+6346        63 30 57.03309    * 63 46 06.89082      63 52 11.54025        0.13
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,     88 observations.

  0203+625          02 03 22.157591   * 02 07 03.016744     02 08 29.262030       0.12
* J0207+6246        62 31 56.07851    * 62 46 12.06757      62 51 56.17328        0.05
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,    450 observations.

  0159+870          01 59 33.456873   * 02 13 57.846679     02 19 59.259484       4.72
* J0213+8717        87 03 16.04554    * 87 17 28.72651      87 23 09.28941        0.16
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,    140 observations.

  0234+285          02 34 55.589590   * 02 37 52.405677     02 39 01.801784       0.00
* J0237+2848        28 35 11.40773    * 28 48 08.98999      28 53 14.90251        0.00
  J0237+28          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,  58420 observations.

  0344+558          03 44 00.851036   * 03 47 56.812076     03 49 29.914611       0.21
* J0347+5557        55 48 18.57372    * 55 57 31.57844      56 01 16.54084        0.11
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,    168 observations.

  0403+768          04 03 59.194150   * 04 10 45.610833     04 13 26.846244       0.47
* J0410+7656        76 48 52.60769    * 76 56 45.31305      77 00 01.01673        0.09
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,    102 observations.

  0444+634          04 44 42.365041   * 04 49 23.310568     04 51 14.707683       0.04
* J0449+6332        63 26 55.93297    * 63 32 09.43401      63 34 21.41266        0.02
  J0449+63          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,   1127 observations.

  0456+714          04 56 00.138560   * 05 01 45.779870     05 04 03.067202       0.33
* J0501+7128        71 24 10.00560    * 71 28 33.96359      71 30 27.11364        0.11
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,    134 observations.

  0503+608          05 03 56.755388   * 05 08 27.259423     05 10 14.636185       0.34
* J0508+6056        60 52 34.35269    * 60 56 27.33637      60 58 06.92128        0.17
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,    120 observations.

  0528+134          05 28 06.759216   * 05 30 56.416746     05 32 03.801693       0.21
* J0530+1331        13 29 42.28882    * 13 31 55.14948      13 32 40.91484        0.24
```

```
  J0530+13          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution, 138236 observations.

* 4C39.25           09 23 55.319216   * 09 27 03.013937     09 28 18.721526       0.31
  J0927+3902        39 15 23.56644    * 39 02 20.85185      38 57 07.55949        0.16
  0923+392          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
  J0927+39          GSFC 2016a X/S astro solution, 250526 observations.

  1150+497          11 50 47.999853   * 11 53 24.466636     11 54 28.322935       0.03
* J1153+4931        49 47 50.09415    * 49 31 08.83018      49 24 24.70211        0.03
  J1153+49          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,   1663 observations.

  1217+662          12 17 14.164536   * 12 19 35.794315     12 20 34.729296       0.35
* J1219+6600        66 17 10.42158    * 66 00 31.84614      65 53 49.00652        0.12
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,     86 observations.

  1226+638          12 26 48.728842   * 12 29 06.026091     12 30 03.026665       0.42
* J1229+6335        63 51 35.35043    * 63 35 00.98393      63 28 18.98449        0.17
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,     89 observations.

  1700+685          17 00 19.661416   * 17 00 09.292760     17 00 05.967758       0.68
* J1700+6830        68 34 25.16470    * 68 30 06.95981      68 28 03.91623        0.26
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,     65 observations.

  1716+686          17 16 27.828740   * 17 16 13.938040     17 16 08.936935       0.25
* J1716+6836        68 39 48.33942    * 68 36 38.74534      68 35 02.71607        0.08
  J1716+68          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,    197 observations.

  1942+722          19 42 02.218480   * 19 41 26.984737     19 41 10.469477       0.88
* J1941+7221        72 14 31.86737    * 72 21 42.22350      72 24 14.55282        0.11
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,     98 observations.

  2010+723          20 10 16.209274   * 20 09 52.303818     20 09 39.778761       0.34
* J2009+7229        72 20 20.74093    * 72 29 19.35061      72 32 36.17239        0.07
  J2009+72          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,    195 observations.

  3C454.3           22 51 29.519739   * 22 53 57.747939     22 54 55.395881       0.65
* J2253+1608        15 52 54.34808    * 16 08 53.56091      16 15 06.73859        0.73
  2251+158          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
  J2253+16          GSFC 2016a X/S astro solution,  41272 observations.
```

ep117atr

e-EVN: EP117A, EN005D

PI: *Purkayastha, Nimmo*

```
Address:  JIVE

Observing mode: realtime e-vlbi

Schedule for TORUN     (Code Tr )                                   Page   2
               e-EVN: EP117A, EN005D
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   7 Apr 2020   Day  98 ---
 ---------- CLOCK-SEARCH ----------

 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

09 00 00  J0237+2848   23 18 39  46.4 103.3 -3.3     -41.9     0        0   09 00 00
09 15 00  =0234+285    23 33 42  48.5 107.0 -3.1     -41.0   900      116   09 00 01

09 17 00  J0237+2848   23 35 42  48.8 107.5 -3.1     -40.9   114      116   09 17 00
09 30 00  =0234+285    23 48 44  50.7 110.8 -2.8     -39.9   780      216   09 17 01

09 32 00  J0237+2848   23 50 44  50.9 111.4 -2.8     -39.7   113      216   09 32 00
09 45 00  =0234+285    00 03 47  52.7 115.0 -2.6     -38.4   780      317   09 32 01

09 47 00  J0237+2848   00 05 47  53.0 115.5 -2.6     -38.2   113      317   09 47 00
10 00 00  =0234+285    00 18 49  54.8 119.4 -2.3     -36.7   780      417   09 47 01

10 02 00  J0237+2848   00 20 49  55.0 120.0 -2.3     -36.4   113      417   10 02 00
10 15 00  =0234+285    00 33 52  56.7 124.1 -2.1     -34.6   780      518   10 02 01

10 17 00  J0237+2848   00 35 52  56.9 124.8 -2.1     -34.3   113      518   10 17 00
10 30 00  =0234+285    00 48 54  58.5 129.3 -1.8     -32.1   780      618   10 17 01

10 32 00  J0237+2848   00 50 54  58.7 130.0 -1.8     -31.7   113      618   10 32 00
10 45 00  =0234+285    01 03 56  60.2 134.8 -1.6     -29.1   780      719   10 32 01

10 47 00  J0237+2848   01 05 57  60.4 135.6 -1.6     -28.7   113      719   10 47 00
11 00 00  =0234+285    01 18 59  61.7 140.8 -1.3     -25.7   780      819   10 47 01

11 02 00  J0237+2848   01 20 59  61.9 141.7 -1.3     -25.2   113      819   11 02 00
11 15 00  =0234+285    01 34 01  63.0 147.3 -1.1     -21.7   780      920   11 02 01

11 17 00  J0237+2848   01 36 02  63.2 148.2 -1.0     -21.2   113      920   11 17 00
11 30 00  =0234+285    01 49 04  64.1 154.3 -0.8     -17.3   780     1020   11 17 01

11 32 00  J0237+2848   01 51 04  64.2 155.3 -0.8     -16.7   113     1020   11 32 00
11 45 00  =0234+285    02 04 06  65.0 161.7 -0.6     -12.4   780     1121   11 32 01
```

Schedule for TORUN (Code Tr) Page 3

e-EVN: EP117A, EN005D

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 7 Apr 2020 Day 98 ---										
11 55 00	J0530+1331	02 14 08	34.5	116.2	-3.3		-33.6	468	1121	11 55 00
12 00 00	=0528+134	02 19 09	35.2	117.5	-3.2		-33.2	300	1159	11 55 01
12 02 00	J0530+1331	02 21 09	35.4	118.0	-3.2		-33.1	114	1159	12 02 00
12 15 00	=0528+134	02 34 11	37.1	121.3	-3.0		-31.9	780	1260	12 02 01
12 17 00	J0530+1331	02 36 12	37.4	121.8	-2.9		-31.7	114	1260	12 17 00
12 30 00	=0528+134	02 49 14	39.0	125.3	-2.7		-30.3	780	1360	12 17 01
12 32 00	J0530+1331	02 51 14	39.3	125.8	-2.7		-30.1	113	1360	12 32 00
12 45 00	=0528+134	03 04 16	40.8	129.4	-2.5		-28.5	780	1461	12 32 01
---------- EP117A ----------										
12 55 00	J0530+1331	03 14 18	42.0	132.3	-2.3		-27.2	593	1461	12 55 00
13 00 00	=0528+134	03 19 19	42.5	133.8	-2.2		-26.5	300	1499	12 55 01
13 05 00	J1202+4444	03 24 19	16.8	34.9	-8.6		-28.8	87	1499	13 05 00
13 08 00	---	03 27 20	17.0	35.4	-8.6		-29.2	180	1523	13 05 01
13 08 00	NGC4051	03 27 20	16.8	35.3	-8.6		-29.1	-11	1523	No stop
13 12 00	---	03 31 21	17.1	36.0	-8.5		-29.6	229	1554	13 08 01
13 12 00	J1202+4444	03 31 21	17.4	36.0	-8.5		-29.7	-11	1554	No stop
13 14 00	---	03 33 21	17.6	36.3	-8.5		-30.0	109	1569	13 12 01
13 14 00	NGC4051	03 33 21	17.3	36.3	-8.5		-29.8	-11	1569	No stop
13 18 00	---	03 37 22	17.7	36.9	-8.4		-30.3	229	1600	13 14 01
13 19 00	J1202+4444	03 38 22	18.0	37.1	-8.4		-30.6	49	1600	13 19 00
13 21 00	---	03 40 22	18.2	37.5	-8.4		-30.9	120	1615	13 19 01
13 21 00	NGC4051	03 40 22	17.9	37.4	-8.4		-30.7	-11	1615	No stop
13 25 00	---	03 44 23	18.3	38.1	-8.3		-31.2	229	1646	13 21 01
13 25 00	J1202+4444	03 44 23	18.6	38.1	-8.3		-31.4	-11	1646	No stop
13 27 00	---	03 46 23	18.8	38.4	-8.3		-31.6	109	1662	13 25 01
13 27 00	NGC4051	03 46 23	18.5	38.4	-8.3		-31.5	-11	1662	No stop
13 31 00	---	03 50 24	18.9	39.0	-8.2		-32.0	229	1693	13 27 01
13 32 00	J1202+4444	03 51 24	19.2	39.2	-8.2		-32.3	49	1693	13 32 00
13 34 00	---	03 53 24	19.4	39.6	-8.2		-32.5	120	1708	13 32 01
13 34 00	NGC4051	03 53 24	19.1	39.5	-8.2		-32.3	-11	1708	No stop
13 38 00	---	03 57 25	19.5	40.2	-8.1		-32.8	229	1739	13 34 01

Schedule for TORUN (Code Tr) Page 4

e-EVN: EP117A, EN005D

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 7 Apr 2020 Day 98 ---										
13 38 00	J1202+4444	03 57 25	19.8	40.2	-8.1		-33.0	-11	1739	No stop
13 40 00	---	03 59 25	20.0	40.5	-8.1		-33.2	109	1755	13 38 01
13 40 00	NGC4051	03 59 25	19.7	40.5	-8.1		-33.1	-11	1755	No stop
13 44 00	---	04 03 26	20.1	41.1	-8.0		-33.6	229	1785	13 40 01
13 45 00	J1202+4444	04 04 26	20.5	41.3	-8.0		-33.8	49	1785	13 45 00
13 47 00	---	04 06 26	20.7	41.6	-7.9		-34.1	120	1801	13 45 01
13 47 00	NGC4051	04 06 26	20.4	41.6	-8.0		-33.9	-11	1801	No stop
13 51 00	---	04 10 27	20.8	42.2	-7.9		-34.4	229	1832	13 47 01
13 51 00	J1202+4444	04 10 27	21.1	42.2	-7.9		-34.6	-11	1832	No stop
13 53 00	---	04 12 27	21.3	42.6	-7.8		-34.8	109	1847	13 51 01
13 53 00	NGC4051	04 12 27	21.0	42.5	-7.9		-34.6	-11	1847	No stop
13 57 00	---	04 16 28	21.4	43.2	-7.8		-35.1	229	1878	13 53 01
13 58 00	J1202+4444	04 17 28	21.8	43.3	-7.8		-35.4	49	1878	13 58 00
14 00 00	---	04 19 28	22.0	43.7	-7.7		-35.6	120	1894	13 58 01
14 00 00	NGC4051	04 19 28	21.7	43.6	-7.7		-35.5	-11	1894	No stop
14 04 00	---	04 23 29	22.2	44.3	-7.7		-35.9	229	1925	14 00 01
14 04 00	J1202+4444	04 23 29	22.4	44.3	-7.7		-36.1	-11	1925	No stop
14 06 00	---	04 25 29	22.6	44.6	-7.6		-36.3	109	1940	14 04 01
14 06 00	NGC4051	04 25 29	22.4	44.6	-7.6		-36.2	-11	1940	No stop
14 10 00	---	04 29 30	22.8	45.2	-7.6		-36.6	229	1971	14 06 01
14 11 00	J1202+4444	04 30 30	23.2	45.4	-7.5		-36.9	49	1971	14 11 00
14 13 00	---	04 32 31	23.4	45.7	-7.5		-37.1	120	1986	14 11 01
14 13 00	NGC4051	04 32 31	23.1	45.7	-7.5		-37.0	-11	1986	No stop
14 17 00	---	04 36 31	23.6	46.3	-7.5		-37.4	229	2017	14 13 01
14 17 00	J1202+4444	04 36 31	23.8	46.3	-7.4		-37.6	-11	2017	No stop
14 19 00	---	04 38 32	24.0	46.6	-7.4		-37.8	109	2033	14 17 01
14 19 00	NGC4051	04 38 32	23.8	46.6	-7.4		-37.6	-11	2033	No stop
14 23 00	---	04 42 32	24.2	47.2	-7.4		-38.1	229	2064	14 19 01
14 24 00	J1202+4444	04 43 32	24.6	47.4	-7.3		-38.4	49	2064	14 24 00
14 26 00	---	04 45 33	24.8	47.7	-7.3		-38.6	120	2079	14 24 01

Schedule for TORUN (Code Tr) Page 5

e-EVN: EP117A, EN005D

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 7 Apr 2020 Day 98 ---										
14 26 00	NGC4051	04 45 33	24.5	47.7	-7.3		-38.4	-11	2079	No stop
14 30 00	---	04 49 33	25.0	48.3	-7.2		-38.9	229	2110	14 26 01
14 30 00	J1202+4444	04 49 33	25.3	48.3	-7.2		-39.1	-11	2110	No stop
14 32 00	---	04 51 34	25.5	48.6	-7.2		-39.3	109	2126	14 30 01
14 32 00	NGC4051	04 51 34	25.2	48.6	-7.2		-39.1	-11	2126	No stop
14 36 00	---	04 55 34	25.7	49.2	-7.1		-39.5	229	2156	14 32 01
14 37 00	J1202+4444	04 56 35	26.1	49.4	-7.1		-39.8	49	2156	14 37 00
14 39 00	---	04 58 35	26.3	49.7	-7.1		-40.0	120	2172	14 37 01
14 39 00	NGC4051	04 58 35	26.0	49.7	-7.1		-39.9	-11	2172	No stop
14 43 00	---	05 02 36	26.5	50.3	-7.0		-40.3	229	2203	14 39 01
14 43 00	J1202+4444	05 02 36	26.7	50.3	-7.0		-40.5	-11	2203	No stop
14 45 00	---	05 04 36	27.0	50.6	-7.0		-40.7	109	2218	14 43 01
14 45 00	NGC4051	05 04 36	26.7	50.6	-7.0		-40.5	-11	2218	No stop
14 49 00	---	05 08 37	27.2	51.2	-6.9		-40.9	229	2249	14 45 01
14 50 00	J1202+4444	05 09 37	27.6	51.3	-6.9		-41.2	49	2249	14 50 00
14 52 00	---	05 11 37	27.8	51.7	-6.9		-41.4	120	2265	14 50 01
14 52 00	NGC4051	05 11 37	27.5	51.7	-6.9		-41.3	-11	2265	No stop
14 56 00	---	05 15 38	28.0	52.3	-6.8		-41.7	229	2296	14 52 01
14 56 00	J1202+4444	05 15 38	28.3	52.3	-6.8		-41.9	-11	2296	No stop
14 58 00	---	05 17 38	28.5	52.6	-6.8		-42.1	109	2311	14 56 01
14 58 00	NGC4051	05 17 38	28.2	52.6	-6.8		-41.9	-11	2311	No stop
15 02 00	---	05 21 39	28.7	53.2	-6.7		-42.3	229	2342	14 58 01
15 03 00	J1202+4444	05 22 39	29.1	53.3	-6.7		-42.6	49	2342	15 03 00
15 05 00	---	05 24 39	29.4	53.6	-6.6		-42.8	120	2357	15 03 01
15 05 00	NGC4051	05 24 39	29.1	53.6	-6.7		-42.6	-11	2357	No stop
15 09 00	---	05 28 40	29.6	54.2	-6.6		-43.0	229	2388	15 05 01
15 09 00	J1202+4444	05 28 40	29.8	54.2	-6.6		-43.2	-11	2388	No stop
15 11 00	---	05 30 40	30.1	54.5	-6.5		-43.4	109	2404	15 09 01
15 11 00	NGC4051	05 30 40	29.8	54.5	-6.6		-43.2	-11	2404	No stop
15 15 00	---	05 34 41	30.3	55.1	-6.5		-43.6	229	2435	15 11 01

Schedule for TORUN (Code Tr) Page 6

e-EVN: EP117A, EN005D

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 7 Apr 2020 Day 98 ---										
15 16 00	J1202+4444	05 35 41	30.7	55.3	-6.5		-43.9	49	2435	15 16 00
15 18 00	---	05 37 41	31.0	55.6	-6.4		-44.1	120	2450	15 16 01
15 18 00	NGC4051	05 37 41	30.7	55.6	-6.4		-43.9	-11	2450	No stop
15 22 00	---	05 41 42	31.2	56.2	-6.4		-44.3	229	2481	15 18 01
15 22 00	J1202+4444	05 41 42	31.4	56.2	-6.4		-44.5	-11	2481	No stop
15 24 00	---	05 43 42	31.7	56.5	-6.3		-44.7	109	2497	15 22 01
15 24 00	NGC4051	05 43 42	31.4	56.5	-6.3		-44.5	-11	2497	No stop
15 28 00	---	05 47 43	31.9	57.1	-6.3		-44.9	229	2527	15 24 01
15 29 00	J1202+4444	05 48 43	32.3	57.2	-6.2		-45.2	49	2527	15 29 00
15 31 00	---	05 50 43	32.6	57.5	-6.2		-45.4	120	2543	15 29 01
15 36 00	J0941-1335	05 55 44	7.6	125.1	-3.8		-30.4	151	2543	15 36 00
15 39 00	=0938-133	05 58 45	8.0	125.8	-3.7		-30.1	180	2566	15 36 01
15 39 00	NGC2992	05 58 45	6.8	125.1	-3.8		-30.5	-18	2566	No stop
15 43 00	---	06 02 45	7.3	126.0	-3.7		-30.1	222	2597	15 39 01
15 43 00	J0941-1335	06 02 45	8.4	126.6	-3.7		-29.7	-18	2597	No stop
15 45 00	=0938-133	06 04 46	8.7	127.0	-3.6		-29.6	102	2612	15 43 01
15 45 00	NGC2992	06 04 46	7.5	126.4	-3.7		-29.9	-17	2612	No stop
15 49 00	---	06 08 46	8.0	127.3	-3.6		-29.6	223	2643	15 45 01
15 50 00	J0941-1335	06 09 47	9.3	128.1	-3.5		-29.1	42	2643	15 50 00
15 52 00	=0938-133	06 11 47	9.5	128.5	-3.5		-28.9	120	2659	15 50 01
15 52 00	NGC2992	06 11 47	8.3	127.9	-3.6		-29.3	-17	2659	No stop
15 56 00	---	06 15 48	8.8	128.8	-3.5		-28.9	223	2690	15 52 01
15 56 00	J0941-1335	06 15 48	10.0	129.4	-3.4		-28.5	-18	2690	No stop
15 58 00	=0938-133	06 17 48	10.2	129.8	-3.4		-28.3	102	2705	15 56 01
15 58 00	NGC2992	06 17 48	9.0	129.2	-3.5		-28.7	-17	2705	No stop
16 02 00	---	06 21 49	9.5	130.1	-3.4		-28.3	223	2736	15 58 01
16 03 00	J0941-1335	06 22 49	10.8	130.9	-3.3		-27.8	42	2736	16 03 00
16 05 00	=0938-133	06 24 49	11.0	131.4	-3.3		-27.6	120	2752	16 03 01
16 05 00	NGC2992	06 24 49	9.8	130.7	-3.4		-28.0	-17	2752	No stop
16 09 00	---	06 28 50	10.3	131.6	-3.3		-27.6	223	2782	16 05 01

Schedule for TORUN (Code Tr) Page 7

e-EVN: EP117A, EN005D

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 7 Apr 2020 Day 98 ---										
16 09 00	J0941-1335	06 28 50	11.5	132.3	-3.2		-27.2	-18	2782	No stop
16 11 00	=0938-133	06 30 50	11.7	132.7	-3.2		-27.0	102	2798	16 09 01
16 11 00	NGC2992	06 30 50	10.5	132.0	-3.3		-27.4	-17	2798	No stop
16 15 00	---	06 34 51	11.0	132.9	-3.2		-27.0	223	2829	16 11 01
16 16 00	J0941-1335	06 35 51	12.2	133.8	-3.1		-26.5	42	2829	16 16 00
16 18 00	=0938-133	06 37 51	12.5	134.3	-3.1		-26.3	120	2844	16 16 01
16 18 00	NGC2992	06 37 51	11.3	133.6	-3.1		-26.7	-17	2844	No stop
16 22 00	---	06 41 52	11.7	134.4	-3.1		-26.3	223	2875	16 18 01
16 22 00	J0941-1335	06 41 52	12.9	135.2	-3.0		-25.8	-18	2875	No stop
16 24 00	=0938-133	06 43 52	13.1	135.6	-3.0		-25.6	102	2891	16 22 01
16 24 00	NGC2992	06 43 52	11.9	134.9	-3.0		-26.1	-17	2891	No stop
16 28 00	---	06 47 53	12.4	135.8	-3.0		-25.6	223	2922	16 24 01
16 29 00	J0941-1335	06 48 53	13.6	136.7	-2.9		-25.1	43	2922	16 29 00
16 31 00	=0938-133	06 50 53	13.8	137.2	-2.9		-24.8	120	2937	16 29 01
16 31 00	NGC2992	06 50 53	12.7	136.5	-2.9		-25.3	-17	2937	No stop
16 35 00	---	06 54 54	13.1	137.4	-2.9		-24.8	223	2968	16 31 01
16 35 00	J0941-1335	06 54 54	14.2	138.1	-2.8		-24.4	-17	2968	No stop
16 37 00	=0938-133	06 56 54	14.4	138.6	-2.8		-24.1	103	2983	16 35 01
16 37 00	NGC2992	06 56 54	13.3	137.8	-2.8		-24.6	-17	2983	No stop
16 41 00	---	07 00 55	13.7	138.7	-2.8		-24.1	223	3014	16 37 01
16 42 00	J0941-1335	07 01 55	14.9	139.7	-2.7		-23.6	43	3014	16 42 00
16 44 00	=0938-133	07 03 55	15.1	140.2	-2.6		-23.3	120	3030	16 42 01
16 44 00	NGC2992	07 03 55	14.0	139.4	-2.7		-23.8	-17	3030	No stop
16 48 00	---	07 07 56	14.4	140.3	-2.6		-23.3	223	3061	16 44 01
16 48 00	J0941-1335	07 07 56	15.5	141.1	-2.6		-22.8	-17	3061	No stop
16 50 00	=0938-133	07 09 56	15.7	141.6	-2.5		-22.6	103	3076	16 48 01
16 50 00	NGC2992	07 09 56	14.6	140.8	-2.6		-23.1	-17	3076	No stop
16 54 00	---	07 13 57	15.0	141.7	-2.5		-22.6	223	3107	16 50 01
16 55 00	J0941-1335	07 14 57	16.1	142.7	-2.5		-22.0	43	3107	16 55 00
16 57 00	=0938-133	07 16 58	16.3	143.2	-2.4		-21.7	120	3123	16 55 01

Schedule for TORUN (Code Tr) Page 8

e-EVN: EP117A, EN005D

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 7 Apr 2020 Day 98 ---										
17 02 00	J1419+2706	07 21 58	13.1	62.2	-7.0		-36.6	122	3123	17 02 00
17 05 00	=1417+273	07 24 59	13.5	62.8	-6.9		-36.8	180	3146	17 02 01
17 05 00	NGC5548	07 24 59	12.2	64.3	-6.9		-36.7	-18	3146	No stop
17 09 00	---	07 29 00	12.8	65.1	-6.8		-37.0	222	3177	17 05 01
17 09 00	J1419+2706	07 29 00	14.1	63.5	-6.9		-37.1	-18	3177	No stop
17 11 00	=1417+273	07 31 00	14.3	63.9	-6.8		-37.2	102	3192	17 09 01
17 11 00	NGC5548	07 31 00	13.0	65.5	-6.8		-37.1	-18	3192	No stop
17 15 00	---	07 35 01	13.6	66.2	-6.7		-37.3	222	3223	17 11 01
17 16 00	J1419+2706	07 36 01	15.0	64.8	-6.7		-37.6	42	3223	17 16 00
17 18 00	=1417+273	07 38 01	15.3	65.2	-6.7		-37.7	120	3239	17 16 01
17 18 00	NGC5548	07 38 01	14.0	66.8	-6.7		-37.5	-18	3239	No stop
17 22 00	---	07 42 02	14.6	67.5	-6.6		-37.8	222	3269	17 18 01
17 22 00	J1419+2706	07 42 02	15.8	65.9	-6.6		-38.0	-18	3269	No stop
17 24 00	=1417+273	07 44 02	16.1	66.3	-6.6		-38.1	102	3285	17 22 01
17 24 00	NGC5548	07 44 02	14.8	67.9	-6.6		-37.9	-18	3285	No stop
17 28 00	---	07 48 03	15.4	68.6	-6.5		-38.1	222	3316	17 24 01
17 29 00	J1419+2706	07 49 03	16.8	67.2	-6.5		-38.4	42	3316	17 29 00
17 31 00	=1417+273	07 51 03	17.1	67.5	-6.5		-38.5	120	3331	17 29 01
17 31 00	NGC5548	07 51 03	15.8	69.2	-6.5		-38.3	-18	3331	No stop
17 35 00	---	07 55 04	16.4	69.9	-6.4		-38.5	222	3362	17 31 01
17 35 00	J1419+2706	07 55 04	17.6	68.3	-6.4		-38.8	-18	3362	No stop
17 37 00	=1417+273	07 57 04	17.9	68.6	-6.4		-38.9	102	3378	17 35 01
17 37 00	NGC5548	07 57 04	16.7	70.3	-6.4		-38.6	-18	3378	No stop
17 41 00	---	08 01 05	17.2	71.0	-6.3		-38.8	222	3409	17 37 01
17 42 00	J1419+2706	08 02 05	18.6	69.5	-6.3		-39.2	42	3409	17 42 00
17 44 00	=1417+273	08 04 05	18.9	69.9	-6.3		-39.3	120	3424	17 42 01
17 49 00	J1244-0446	08 09 06	8.3	109.7	-4.6		-34.6	207	3424	17 49 00
17 52 00	---	08 12 07	8.7	110.4	-4.6		-34.4	180	3447	17 49 01
17 52 00	NGC4593	08 12 07	9.0	111.8	-4.5		-34.1	-16	3447	No stop
17 56 00	---	08 16 07	9.5	112.6	-4.4		-33.8	224	3478	17 52 01

Schedule for TORUN (Code Tr) Page 9

e-EVN: EP117A, EN005D

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 7 Apr 2020 Day 98 ---										
17 56 00	J1244-0446	08 16 07	9.3	111.2	-4.5		-34.2	-15	3478	No stop
17 58 00	---	08 18 08	9.6	111.6	-4.5		-34.1	105	3494	17 56 01
17 58 00	NGC4593	08 18 08	9.8	113.0	-4.4		-33.7	-16	3494	No stop
18 02 00	---	08 22 08	10.4	113.9	-4.3		-33.5	224	3524	17 58 01
18 03 00	J1244-0446	08 23 08	10.3	112.7	-4.4		-33.8	45	3524	18 03 00
18 05 00	---	08 25 09	10.6	113.1	-4.3		-33.7	120	3540	18 03 01
18 05 00	NGC4593	08 25 09	10.8	114.5	-4.3		-33.3	-16	3540	No stop
18 09 00	---	08 29 09	11.3	115.4	-4.2		-33.0	224	3571	18 05 01
18 09 00	J1244-0446	08 29 09	11.1	113.9	-4.3		-33.4	-16	3571	No stop
18 11 00	---	08 31 10	11.4	114.4	-4.2		-33.3	104	3586	18 09 01
18 11 00	NGC4593	08 31 10	11.6	115.8	-4.2		-32.9	-16	3586	No stop
18 15 00	---	08 35 10	12.1	116.6	-4.1		-32.6	224	3617	18 11 01
18 16 00	J1244-0446	08 36 11	12.1	115.4	-4.2		-33.0	44	3617	18 16 00
18 18 00	---	08 38 11	12.3	115.9	-4.1		-32.8	120	3633	18 16 01
18 18 00	NGC4593	08 38 11	12.5	117.3	-4.0		-32.4	-16	3633	No stop
18 22 00	---	08 42 12	13.1	118.2	-4.0		-32.1	224	3664	18 18 01
18 22 00	J1244-0446	08 42 12	12.9	116.7	-4.1		-32.6	-16	3664	No stop
18 24 00	---	08 44 12	13.1	117.2	-4.0		-32.4	104	3679	18 22 01
18 24 00	NGC4593	08 44 12	13.3	118.6	-3.9		-32.0	-16	3679	No stop
18 28 00	---	08 48 12	13.9	119.5	-3.9		-31.7	224	3710	18 24 01
18 29 00	J1244-0446	08 49 13	13.8	118.2	-3.9		-32.1	44	3710	18 29 00
18 31 00	---	08 51 13	14.1	118.7	-3.9		-31.9	120	3725	18 29 01
18 34 00	J0941-1335	08 54 13	22.4	167.4	-0.8		-7.7	68	3725	18 34 00
18 36 00	=0938-133	08 56 14	22.5	168.0	-0.8		-7.4	120	3741	18 34 01
18 36 00	NGC2992	08 56 14	21.6	166.9	-0.8		-8.1	-16	3741	No stop
18 40 00	---	09 00 14	21.7	167.9	-0.8		-7.5	224	3772	18 36 01
18 40 00	J0941-1335	09 00 14	22.6	169.0	-0.7		-6.8	-16	3772	No stop
18 42 00	=0938-133	09 02 15	22.7	169.5	-0.7		-6.5	104	3787	18 40 01
18 42 00	NGC2992	09 02 15	21.8	168.4	-0.7		-7.2	-16	3787	No stop
18 46 00	---	09 06 15	21.9	169.4	-0.7		-6.5	224	3818	18 42 01

Schedule for TORUN (Code Tr) Page 10

e-EVN: EP117A, EN005D

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 7 Apr 2020 Day 98 ---										
18 47 00	J0941-1335	09 07 16	22.8	170.8	-0.6		-5.6	44	3818	18 47 00
18 49 00	=0938-133	09 09 16	22.8	171.4	-0.5		-5.3	120	3834	18 47 01
18 49 00	NGC2992	09 09 16	22.0	170.2	-0.6		-6.0	-16	3834	No stop
18 53 00	---	09 13 17	22.1	171.3	-0.6		-5.4	224	3865	18 49 01
18 53 00	J0941-1335	09 13 17	22.9	172.4	-0.5		-4.7	-16	3865	No stop
18 55 00	=0938-133	09 15 17	23.0	172.9	-0.4		-4.4	104	3880	18 53 01
18 55 00	NGC2992	09 15 17	22.1	171.8	-0.5		-5.1	-15	3880	No stop
18 59 00	---	09 19 18	22.2	172.8	-0.5		-4.4	225	3911	18 55 01
19 00 00	J0941-1335	09 20 18	23.0	174.3	-0.4		-3.5	45	3911	19 00 00
19 02 00	=0938-133	09 22 18	23.1	174.8	-0.3		-3.2	120	3926	19 00 01
19 02 00	NGC2992	09 22 18	22.3	173.6	-0.4		-3.9	-15	3926	No stop
19 06 00	---	09 26 19	22.3	174.7	-0.3		-3.3	225	3957	19 02 01
19 06 00	J0941-1335	09 26 19	23.1	175.9	-0.3		-2.6	-15	3957	No stop
19 08 00	=0938-133	09 28 19	23.1	176.4	-0.2		-2.2	105	3973	19 06 01
19 08 00	NGC2992	09 28 19	22.4	175.2	-0.3		-3.0	-15	3973	No stop
19 12 00	---	09 32 20	22.4	176.2	-0.2		-2.3	225	4004	19 08 01
19 13 00	J0941-1335	09 33 20	23.2	177.7	-0.1		-1.4	45	4004	19 13 00
19 15 00	=0938-133	09 35 20	23.2	178.2	-0.1		-1.1	120	4019	19 13 01
19 15 00	NGC2992	09 35 20	22.4	177.0	-0.2		-1.8	-15	4019	No stop
19 19 00	---	09 39 21	22.5	178.1	-0.1		-1.2	225	4050	19 15 01
19 19 00	J0941-1335	09 39 21	23.2	179.3	-0.0		-0.4	-15	4050	No stop
19 21 00	=0938-133	09 41 21	23.2	179.8	-0.0		-0.1	105	4066	19 19 01
19 21 00	NGC2992	09 41 21	22.5	178.6	-0.1		-0.9	-15	4066	No stop
19 25 00	---	09 45 22	22.5	179.7	-0.0		-0.2	225	4096	19 21 01
19 26 00	J0941-1335	09 46 22	23.2	181.2	0.1		0.7	45	4096	19 26 00
19 28 00	=0938-133	09 48 22	23.2	181.7	0.1		1.0	120	4112	19 26 01
19 28 00	NGC2992	09 48 22	22.5	180.4	0.0		0.3	-15	4112	No stop
19 32 00	---	09 52 23	22.5	181.5	0.1		0.9	225	4143	19 28 01
19 32 00	J0941-1335	09 52 23	23.2	182.7	0.2		1.7	-15	4143	No stop
19 34 00	=0938-133	09 54 23	23.2	183.3	0.2		2.0	105	4158	19 32 01

Schedule for TORUN (Code Tr) Page 11

e-EVN: EP117A, EN005D

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 7 Apr 2020 Day 98 ---										
19 34 00	NGC2992	09 54 23	22.5	182.0	0.1		1.3	-15	4158	No stop
19 38 00	---	09 58 24	22.4	183.1	0.2		1.9	225	4189	19 34 01
19 39 00	J0941-1335	09 59 24	23.1	184.6	0.3		2.8	45	4189	19 39 00
19 41 00	=0938-133	10 01 24	23.1	185.1	0.3		3.2	120	4205	19 39 01
19 44 00	J0956+2515	10 04 25	62.0	183.1	0.1		2.1	20	4205	19 44 00
19 49 00	=OK290	10 09 26	62.0	185.5	0.2		3.7	300	4243	19 44 01
19 53 00	J1202+4444	10 13 26	70.2	104.2	-1.8		-54.9	62	4243	19 53 00
19 55 00	---	10 15 27	70.5	104.9	-1.8		-54.6	120	4259	19 53 01
19 55 00	NGC4051	10 15 27	70.2	105.0	-1.8		-54.3	-11	4259	No stop
19 58 00	---	10 18 27	70.7	106.0	-1.8		-53.9	169	4282	19 55 01
19 58 00	J1202+4444	10 18 27	71.0	105.8	-1.7		-54.3	-11	4282	No stop
20 00 00	---	10 20 28	71.2	106.4	-1.7		-54.0	109	4297	19 58 01
20 00 00	NGC4051	10 20 28	71.0	106.6	-1.7		-53.7	-11	4297	No stop
20 03 00	---	10 23 28	71.4	107.6	-1.7		-53.3	169	4321	20 00 01
20 04 00	J1202+4444	10 24 28	71.8	107.8	-1.6		-53.5	49	4321	20 04 00
20 06 00	---	10 26 29	72.1	108.5	-1.6		-53.2	120	4336	20 04 01
20 08 40	J1419+2706	10 29 09	40.3	97.9	-3.9		-41.9	27	4336	20 08 40
20 10 40	=1417+273	10 31 09	40.6	98.4	-3.8		-41.8	120	4352	20 08 41
20 10 40	NGC5548	10 31 09	39.4	100.5	-3.8		-40.7	-18	4352	No stop
20 14 40	---	10 35 10	40.0	101.4	-3.7		-40.5	222	4382	20 10 41
20 14 40	J1419+2706	10 35 10	41.2	99.3	-3.8		-41.7	-18	4382	No stop
20 16 40	=1417+273	10 37 10	41.5	99.7	-3.7		-41.6	102	4398	20 14 41
20 16 40	NGC5548	10 37 10	40.3	101.9	-3.7		-40.4	-18	4398	No stop
20 20 40	---	10 41 11	40.9	102.8	-3.6		-40.3	222	4429	20 16 41
20 21 40	J1419+2706	10 42 11	42.3	100.8	-3.6		-41.5	42	4429	20 21 40
20 23 40	=1417+273	10 44 11	42.6	101.3	-3.6		-41.4	120	4444	20 21 41
20 23 40	NGC5548	10 44 11	41.4	103.5	-3.6		-40.1	-18	4444	No stop
20 27 40	---	10 48 12	41.9	104.4	-3.5		-39.9	222	4475	20 23 41
20 27 40	J1419+2706	10 48 12	43.1	102.2	-3.5		-41.2	-18	4475	No stop
20 29 40	=1417+273	10 50 12	43.4	102.7	-3.5		-41.1	102	4491	20 27 41

Schedule for TORUN (Code Tr) Page 12

e-EVN: EP117A, EN005D

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 7 Apr 2020 Day 98 ---										
20 29 40	NGC5548	10 50 12	42.2	104.9	-3.5		-39.8	-18	4491	No stop
20 33 40	---	10 54 13	42.8	105.8	-3.4		-39.6	222	4522	20 29 41
20 34 40	J1419+2706	10 55 13	44.2	103.8	-3.4		-40.9	42	4522	20 34 40
20 36 40	=1417+273	10 57 14	44.5	104.3	-3.4		-40.8	120	4537	20 34 41
20 41 40	J1244-0446	11 02 14	28.0	150.4	-1.7		-17.3	194	4537	20 41 40
20 44 40	---	11 05 15	28.3	151.3	-1.7		-16.8	180	4560	20 41 41
20 44 40	NGC4593	11 05 15	28.1	152.8	-1.6		-16.0	-16	4560	No stop
20 48 40	---	11 09 16	28.3	153.9	-1.5		-15.4	224	4591	20 44 41
20 48 40	J1244-0446	11 09 16	28.5	152.3	-1.6		-16.2	-16	4591	No stop
20 50 40	---	11 11 16	28.7	152.9	-1.6		-15.9	104	4607	20 48 41
20 50 40	NGC4593	11 11 16	28.5	154.5	-1.5		-15.1	-16	4607	No stop
20 54 40	---	11 15 17	28.7	155.6	-1.4		-14.4	224	4637	20 50 41
20 55 40	J1244-0446	11 16 17	29.0	154.3	-1.5		-15.2	44	4637	20 55 40
20 57 40	---	11 18 17	29.2	154.8	-1.5		-14.9	120	4653	20 55 41
20 57 40	NGC4593	11 18 17	28.9	156.4	-1.4		-14.0	-16	4653	No stop
21 01 40	---	11 22 18	29.1	157.5	-1.3		-13.3	224	4684	20 57 41
21 01 40	J1244-0446	11 22 18	29.4	155.9	-1.4		-14.2	-16	4684	No stop
21 03 40	---	11 24 18	29.5	156.5	-1.4		-13.9	104	4699	21 01 41
21 03 40	NGC4593	11 24 18	29.3	158.1	-1.3		-13.0	-16	4699	No stop
21 07 40	---	11 28 19	29.5	159.2	-1.2		-12.4	224	4730	21 03 41
21 08 40	J1244-0446	11 29 19	29.8	157.9	-1.3		-13.1	44	4730	21 08 40
21 10 40	---	11 31 19	29.9	158.4	-1.2		-12.8	120	4746	21 08 41
21 10 40	NGC4593	11 31 19	29.6	160.0	-1.2		-11.9	-16	4746	No stop
21 14 40	---	11 35 20	29.8	161.2	-1.1		-11.2	224	4777	21 10 41
21 14 40	J1244-0446	11 35 20	30.1	159.6	-1.2		-12.1	-16	4777	No stop
21 16 40	---	11 37 20	30.2	160.1	-1.1		-11.8	104	4792	21 14 41
21 16 40	NGC4593	11 37 20	29.9	161.7	-1.1		-10.9	-16	4792	No stop
21 20 40	---	11 41 21	30.1	162.9	-1.0		-10.2	224	4823	21 16 41
21 21 40	J1244-0446	11 42 21	30.5	161.6	-1.1		-11.0	44	4823	21 21 40
21 23 40	---	11 44 21	30.6	162.1	-1.0		-10.7	120	4838	21 21 41

Schedule for TORUN (Code Tr) Page 13

e-EVN: EP117A, EN005D

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 7 Apr 2020 Day 98 ---										
21 23 40	NGC4593	11 44 21	30.2	163.7	-0.9		-9.7	-16	4838	No stop
21 27 40	---	11 48 22	30.4	164.9	-0.9		-9.1	224	4869	21 23 41
21 27 40	J1244-0446	11 48 22	30.8	163.3	-1.0		-10.0	-16	4869	No stop
21 29 40	---	11 50 22	30.9	163.8	-0.9		-9.7	104	4885	21 27 41
21 29 40	NGC4593	11 50 22	30.5	165.4	-0.8		-8.7	-16	4885	No stop
21 33 40	---	11 54 23	30.6	166.6	-0.8		-8.1	224	4916	21 29 41
21 34 40	J1244-0446	11 55 23	31.1	165.3	-0.8		-8.8	44	4916	21 34 40
21 36 40	---	11 57 23	31.1	165.9	-0.8		-8.5	120	4931	21 34 41
21 41 10	J0941-1335	12 01 54	16.8	215.6	2.3		21.1	157	4931	21 41 10
21 43 10	=0938-133	12 03 55	16.6	216.0	2.4		21.3	120	4947	21 41 11
21 43 10	NGC2992	12 03 55	16.3	214.7	2.3		20.7	-15	4947	No stop
21 47 10	---	12 07 55	16.0	215.6	2.4		21.2	225	4978	21 43 11
21 47 10	J0941-1335	12 07 55	16.3	217.0	2.4		21.8	-16	4978	No stop
21 49 10	=0938-133	12 09 56	16.1	217.5	2.5		22.1	104	4993	21 47 11
21 49 10	NGC2992	12 09 56	15.8	216.1	2.4		21.4	-15	4993	No stop
21 53 10	---	12 13 56	15.5	217.0	2.5		21.9	225	5024	21 49 11
21 54 10	J0941-1335	12 14 56	15.6	218.6	2.5		22.7	44	5024	21 54 10
21 56 10	=0938-133	12 16 57	15.4	219.1	2.6		22.9	120	5039	21 54 11
21 56 10	NGC2992	12 16 57	15.2	217.7	2.5		22.3	-15	5039	No stop
22 00 10	---	12 20 57	14.8	218.7	2.6		22.8	225	5070	21 56 11
22 00 10	J0941-1335	12 20 57	15.0	220.0	2.6		23.4	-16	5070	No stop
22 02 10	=0938-133	12 22 58	14.8	220.5	2.7		23.7	104	5086	22 00 11
22 02 10	NGC2992	12 22 58	14.6	219.1	2.6		23.0	-15	5086	No stop
22 06 10	---	12 26 58	14.2	220.0	2.7		23.5	225	5117	22 02 11
22 07 10	J0941-1335	12 27 59	14.3	221.6	2.8		24.2	44	5117	22 07 10
22 09 10	=0938-133	12 29 59	14.1	222.1	2.8		24.5	120	5132	22 07 11
22 09 10	NGC2992	12 29 59	13.9	220.7	2.7		23.9	-15	5132	No stop
22 13 10	---	12 33 59	13.5	221.6	2.8		24.3	225	5163	22 09 11
22 13 10	J0941-1335	12 33 59	13.7	223.0	2.9		24.9	-16	5163	No stop
22 15 10	=0938-133	12 36 00	13.5	223.5	2.9		25.2	104	5179	22 13 11

Schedule for TORUN (Code Tr) Page 14

e-EVN: EP117A, EN005D

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 7 Apr 2020 Day 98 ---										
22 15 10	NGC2992	12 36 00	13.3	222.1	2.8		24.6	-15	5179	No stop
22 19 10	---	12 40 00	12.9	223.0	2.9		25.0	225	5209	22 15 11
22 20 10	J0941-1335	12 41 01	13.0	224.6	3.0		25.7	44	5209	22 20 10
22 22 10	=0938-133	12 43 01	12.8	225.0	3.0		25.9	120	5225	22 20 11
22 26 10	J1202+4444	12 47 02	78.9	224.7	0.7		36.4	-22	5225	22 26 10
22 28 10	---	12 49 02	78.7	226.1	0.8		37.5	98	5240	22 26 11
22 28 10	NGC4051	12 49 02	78.6	224.8	0.7		36.3	-15	5240	No stop
22 31 10	---	12 52 02	78.3	226.9	0.8		37.9	165	5264	22 28 11
22 31 10	J1202+4444	12 52 02	78.4	228.3	0.8		39.0	-16	5264	No stop
22 33 10	---	12 54 03	78.1	229.6	0.8		40.0	104	5279	22 31 11
22 33 10	NGC4051	12 54 03	78.1	228.3	0.8		38.9	-15	5279	No stop
22 36 10	---	12 57 03	77.7	230.3	0.9		40.3	165	5302	22 33 11
22 37 10	J1202+4444	12 58 03	77.7	232.2	0.9		41.8	44	5302	22 37 10
22 39 10	---	13 00 04	77.4	233.4	0.9		42.6	120	5318	22 37 11
22 41 50	J1419+2706	13 02 44	60.2	143.2	-1.3		-23.8	-35	5318	22 41 50
22 43 50	=1417+273	13 04 45	60.3	144.0	-1.3		-23.3	85	5333	22 41 51
22 43 50	NGC5548	13 04 45	58.7	146.3	-1.2		-21.6	-20	5333	No stop
22 47 50	---	13 08 45	59.0	148.0	-1.2		-20.6	220	5364	22 43 51
22 47 50	J1419+2706	13 08 45	60.7	145.7	-1.2		-22.3	-20	5364	No stop
22 49 50	=1417+273	13 10 46	60.8	146.6	-1.2		-21.8	100	5379	22 47 51
22 49 50	NGC5548	13 10 46	59.2	148.8	-1.1		-20.1	-20	5379	No stop
22 53 50	---	13 14 46	59.5	150.5	-1.1		-19.1	220	5410	22 49 51
22 54 50	J1419+2706	13 15 46	61.2	148.7	-1.1		-20.5	40	5410	22 54 50
22 56 50	=1417+273	13 17 47	61.4	149.6	-1.1		-19.9	120	5426	22 54 51
22 56 50	NGC5548	13 17 47	59.7	151.8	-1.0		-18.3	-20	5426	No stop
23 00 50	---	13 21 47	60.0	153.5	-1.0		-17.2	220	5457	22 56 51
23 00 50	J1419+2706	13 21 47	61.7	151.4	-1.0		-18.8	-20	5457	No stop
23 02 50	=1417+273	13 23 48	61.8	152.3	-1.0		-18.3	100	5472	23 00 51
23 02 50	NGC5548	13 23 48	60.1	154.3	-0.9		-16.7	-20	5472	No stop
23 06 50	---	13 27 48	60.3	156.1	-0.9		-15.6	220	5503	23 02 51

Schedule for TORUN (Code Tr) Page 15

e-EVN: EP117A, EN005D

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 7 Apr 2020 Day 98 ---										
23 07 50	J1419+2706	13 28 48	62.2	154.5	-0.9		-16.9	40	5503	23 07 50
23 09 50	=1417+273	13 30 49	62.3	155.4	-0.8		-16.3	120	5519	23 07 51
23 14 50	J1244-0446	13 35 50	31.1	194.6	0.8		8.7	169	5519	23 14 50
23 17 50	---	13 38 50	31.0	195.4	0.9		9.2	180	5542	23 14 51
23 17 50	NGC4593	13 38 50	30.2	196.8	1.0		10.0	-16	5542	No stop
23 21 50	---	13 42 51	30.0	197.9	1.0		10.7	224	5573	23 17 51
23 21 50	J1244-0446	13 42 51	30.8	196.6	0.9		9.9	-15	5573	No stop
23 23 50	---	13 44 51	30.7	197.2	1.0		10.2	105	5588	23 21 51
23 23 50	NGC4593	13 44 51	29.9	198.5	1.1		11.0	-16	5588	No stop
23 27 50	---	13 48 52	29.7	199.6	1.1		11.7	224	5619	23 23 51
23 28 50	J1244-0446	13 49 52	30.5	198.6	1.1		11.1	45	5619	23 28 50
23 30 50	---	13 51 52	30.4	199.1	1.1		11.4	120	5635	23 28 51
23 30 50	NGC4593	13 51 52	29.5	200.5	1.2		12.2	-16	5635	No stop
23 34 50	---	13 55 53	29.3	201.6	1.3		12.8	224	5665	23 30 51
23 34 50	J1244-0446	13 55 53	30.2	200.3	1.2		12.1	-16	5665	No stop
23 36 50	---	13 57 53	30.1	200.8	1.2		12.4	104	5681	23 34 51
23 36 50	NGC4593	13 57 53	29.2	202.1	1.3		13.1	-16	5681	No stop
23 40 50	---	14 01 54	29.0	203.3	1.4		13.8	224	5712	23 36 51
23 41 50	J1244-0446	14 02 54	29.8	202.3	1.3		13.2	44	5712	23 41 50
23 43 50	---	14 04 54	29.7	202.8	1.3		13.5	120	5727	23 41 51
23 43 50	NGC4593	14 04 54	28.8	204.1	1.4		14.2	-16	5727	No stop
23 47 50	---	14 08 55	28.6	205.2	1.5		14.9	224	5758	23 43 51
23 47 50	J1244-0446	14 08 55	29.4	203.9	1.4		14.1	-16	5758	No stop
23 49 50	---	14 10 55	29.3	204.5	1.4		14.5	104	5774	23 47 51
23 49 50	NGC4593	14 10 55	28.4	205.7	1.5		15.2	-16	5774	No stop
23 53 50	---	14 14 56	28.2	206.8	1.6		15.8	224	5805	23 49 51
23 54 50	J1244-0446	14 15 56	29.0	205.9	1.5		15.2	44	5805	23 54 50
23 56 50	---	14 17 57	28.9	206.4	1.5		15.6	120	5820	23 54 51

Schedule for TORUN (Code Tr) Page 16

e-EVN: EP117A, EN005D

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 8 Apr 2020 Day 99 ---										
00 00 50	J1202+4444	14 21 57	65.9	263.5	2.3		57.0	86	5820	00 00 50
00 02 50	---	14 23 58	65.6	264.0	2.3		57.0	120	5836	00 00 51
00 02 50	NGC4051	14 23 58	65.7	263.3	2.3		56.6	-12	5836	No stop
00 05 50	---	14 26 58	65.2	264.0	2.4		56.7	168	5859	00 02 51
00 05 50	J1202+4444	14 26 58	65.2	264.7	2.4		57.2	-12	5859	No stop
00 07 50	---	14 28 58	64.9	265.1	2.4		57.2	108	5874	00 05 51
00 07 50	NGC4051	14 28 58	64.9	264.5	2.4		56.8	-12	5874	No stop
00 10 50	---	14 31 59	64.5	265.2	2.5		56.9	168	5897	00 07 51
00 11 50	J1202+4444	14 32 59	64.3	266.0	2.5		57.3	48	5897	00 11 50
00 13 50	---	14 34 59	64.0	266.5	2.5		57.4	120	5913	00 11 51
00 16 30	J1419+2706	14 37 40	63.7	188.5	0.3		5.7	-11	5913	00 16 30
00 18 30	=1417+273	14 39 40	63.7	189.5	0.3		6.4	109	5928	00 16 31
00 18 30	NGC5548	14 39 40	61.7	189.9	0.3		6.6	-21	5928	No stop
00 22 30	---	14 43 41	61.6	191.8	0.4		7.8	219	5959	00 18 31
00 22 30	J1419+2706	14 43 41	63.6	191.5	0.4		7.7	-21	5959	No stop
00 24 30	=1417+273	14 45 41	63.5	192.5	0.4		8.4	99	5975	00 22 31
00 24 30	NGC5548	14 45 41	61.5	192.8	0.4		8.4	-21	5975	No stop
00 28 30	---	14 49 42	61.4	194.7	0.5		9.7	219	6006	00 24 31
00 29 30	J1419+2706	14 50 42	63.3	194.9	0.5		10.0	39	6006	00 29 30
00 31 30	=1417+273	14 52 42	63.3	195.9	0.5		10.6	120	6021	00 29 31
00 31 30	NGC5548	14 52 42	61.2	196.1	0.6		10.6	-21	6021	No stop
00 35 30	---	14 56 43	61.1	197.9	0.6		11.8	219	6052	00 31 31
00 35 30	J1419+2706	14 56 43	63.1	197.8	0.6		11.9	-21	6052	No stop
00 37 30	=1417+273	14 58 43	63.0	198.8	0.6		12.5	99	6067	00 35 31
00 37 30	NGC5548	14 58 43	61.0	198.8	0.7		12.3	-21	6067	No stop
00 41 30	---	15 02 44	60.8	200.6	0.7		13.5	219	6098	00 37 31
00 42 30	J1419+2706	15 03 44	62.7	201.2	0.7		14.1	39	6098	00 42 30
00 44 30	=1417+273	15 05 44	62.6	202.1	0.7		14.7	120	6114	00 42 31
00 44 30	NGC5548	15 05 44	60.6	202.0	0.8		14.4	-21	6114	No stop
00 48 30	---	15 09 45	60.4	203.8	0.8		15.5	219	6145	00 44 31

```
Schedule for TORUN     (Code Tr )                                  Page  17
               e-EVN: EP117A, EN005D
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   8 Apr 2020   Day  99 ---

00 49 30  J1419+2706   15 10 45  62.3 204.4  0.8      16.2    39     6145   00 49 30
00 51 30  =1417+273    15 12 45  62.2 205.4  0.9      16.8   120     6160   00 49 31

 ---------- EN005D ----------

01 01 30  J2005+7752   15 22 47  55.5 380.4 -4.7     -92.9   235     6160   01 01 30
01 04 30  =2007+777    15 25 48  55.6 380.3 -4.6     -93.7   180     6183   01 01 31

01 07 20  J0347+5557   15 28 38  19.2 356.9 11.7       3.3    19     6183   01 07 20
01 08 20  =0344+558    15 29 38  19.2 357.1 11.7       3.2    60     6191   01 07 21

01 08 20  B0329+54     15 29 38  17.7 359.3 11.9       0.8   -19     6191   No stop
01 10 20  ---          15 31 39  17.7 359.6 12.0       0.4   101     6207   01 08 21

01 10 20  J0347+5557   15 31 39  19.2 357.4 11.7       2.8   -19     6207   No stop
01 12 20  =0344+558    15 33 39  19.2 357.7 11.7       2.5   101     6222   01 10 21

01 13 40  J0207+6246   15 34 59  27.2 370.9-10.6     -14.4    36     6222   01 13 40
01 15 10  =0203+625    15 36 29  27.2 371.1-10.5     -14.7    90     6234   01 13 41

01 15 10  R3           15 36 29  30.3 371.2-10.4     -16.6   -26     6234   No stop
01 20 10  ---          15 41 30  30.5 371.8-10.3     -17.5   274     6272   01 15 11

01 20 10  J0207+6246   15 41 30  27.4 371.7-10.4     -15.5   -25     6272   No stop
01 22 10  =0203+625    15 43 31  27.4 371.9-10.4     -15.8    95     6288   01 20 11

01 22 10  R3           15 43 31  30.6 372.0-10.3     -17.8   -26     6288   No stop
01 27 10  ---          15 48 31  30.7 372.6-10.2     -18.7   274     6326   01 22 11

01 28 00  J0207+6246   15 49 21  27.6 372.7-10.3     -16.8    25     6326   01 28 00
01 29 30  =0203+625    15 50 52  27.7 372.9-10.3     -17.0    90     6338   01 28 01

01 29 30  R3           15 50 52  30.8 372.9-10.1     -19.1   -26     6338   No stop
01 34 30  ---          15 55 53  31.0 373.4-10.1     -19.9   274     6377   01 29 31

01 34 30  J0207+6246   15 55 53  27.9 373.5-10.2     -17.9   -25     6377   No stop
01 36 30  =0203+625    15 57 53  27.9 373.7-10.2     -18.2    95     6392   01 34 31

01 36 30  R3           15 57 53  31.0 373.7-10.0     -20.3   -26     6392   No stop
01 40 30  ---          16 01 54  31.2 374.1-10.0     -20.9   214     6423   01 36 31

01 41 20  J0207+6246   16 02 44  28.1 374.3-10.1     -19.0    25     6423   01 41 20
01 42 50  =0203+625    16 04 14  28.2 374.5-10.1     -19.2    90     6435   01 41 21
```

Schedule for TORUN (Code Tr) Page 18

e-EVN: EP117A, EN005D

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 8 Apr 2020 Day 99 ---										
01 42 50	J0140+6346	16 04 14	30.2	377.2	-9.6		-23.8	-21	6435	No stop
01 45 50	=0137+635	16 07 14	30.3	377.6	-9.6		-24.3	159	6458	01 42 51
01 45 50	J0207+6246	16 07 14	28.3	374.9	-10.0		-19.7	-21	6458	No stop
01 47 50	=0203+625	16 09 15	28.4	375.1	-10.0		-20.1	99	6473	01 45 51
01 47 50	J0501+7128	16 09 15	35.0	354.7	11.1		10.0	-56	6473	No stop
01 50 50	=0456+714	16 12 15	34.9	355.0	11.1		9.4	124	6496	01 47 51
01 50 50	R2	16 12 15	36.8	358.9	11.8		2.3	-23	6496	No stop
01 55 50	---	16 17 16	36.8	359.3	11.9		1.4	277	6535	01 50 51
01 56 50	J0501+7128	16 18 16	34.9	355.6	11.2		8.3	38	6535	01 56 50
01 58 20	=0456+714	16 19 46	34.8	355.7	11.3		8.1	90	6547	01 56 51
01 58 20	R2	16 19 46	36.8	359.6	11.9		0.9	-23	6547	No stop
02 03 20	---	16 24 47	36.8	360.0	-12.0		-0.0	277	6585	01 58 21
02 03 20	J0501+7128	16 24 47	34.8	356.2	11.3		7.2	-22	6585	No stop
02 05 20	=0456+714	16 26 48	34.8	356.4	11.4		6.8	98	6601	02 03 21
02 05 20	R2	16 26 48	36.8	360.2	-12.0		-0.4	-22	6601	No stop
02 10 20	---	16 31 48	36.8	360.6	-11.9		-1.3	278	6639	02 05 21
02 11 20	J0501+7128	16 32 49	34.7	357.0	11.5		5.7	38	6639	02 11 20
02 12 50	=0456+714	16 34 19	34.7	357.1	11.5		5.4	90	6651	02 11 21
02 12 50	R2	16 34 19	36.8	360.8	-11.8		-1.8	-22	6651	No stop
02 17 00	---	16 38 30	36.8	361.2	-11.8		-2.6	228	6683	02 12 51
02 17 00	J0501+7128	16 38 30	34.7	357.5	11.6		4.7	-22	6683	No stop
02 19 00	=0456+714	16 40 30	34.7	357.7	11.6		4.3	98	6699	02 17 01
02 19 00	R2	16 40 30	36.8	361.4	-11.7		-3.0	-22	6699	No stop
02 23 00	---	16 44 31	36.9	361.7	-11.7		-3.7	218	6730	02 19 01
02 23 50	J0501+7128	16 45 21	34.6	358.2	11.7		3.4	28	6730	02 23 50
02 25 20	=0456+714	16 46 51	34.6	358.3	11.7		3.1	90	6741	02 23 51
02 25 20	J0410+7656	16 46 51	40.2	362.5	-11.4		-6.6	-35	6741	No stop
02 28 20	=0403+768	16 49 51	40.2	362.7	-11.4		-7.2	145	6764	02 25 21
02 28 20	J0501+7128	16 49 51	34.6	358.6	11.8		2.6	-35	6764	No stop
02 30 20	=0456+714	16 51 52	34.6	358.8	11.8		2.2	85	6780	02 28 21

```
Schedule for TORUN     (Code Tr )                                  Page  19
               e-EVN: EP117A, EN005D
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   8 Apr 2020   Day  99 ---

02 31 10  J0449+6332   16 52 42  26.7 360.2-12.0      -0.2     6     6780   02 31 10
02 33 10  =0444+634    16 54 42  26.7 360.4-11.9      -0.6   120     6795   02 31 11

02 33 10  R5           16 54 42  26.5 359.6 11.9       0.5   -13     6795   No stop
02 38 10  ---          16 59 43  26.5 360.2-12.0      -0.3   287     6834   02 33 11

02 38 10  J0449+6332   16 59 43  26.7 361.1-11.9      -1.4   -13     6834   No stop
02 40 10  =0444+634    17 01 43  26.7 361.3-11.8      -1.8   107     6849   02 38 11

02 40 10  R5           17 01 43  26.5 360.5-11.9      -0.7   -13     6849   No stop
02 45 10  ---          17 06 44  26.5 361.1-11.9      -1.5   287     6888   02 40 11

02 45 50  J0449+6332   17 07 24  26.7 362.0-11.7      -2.7    27     6888   02 45 50
02 47 20  =0444+634    17 08 55  26.7 362.2-11.7      -3.0    90     6900   02 45 51

02 47 20  R5           17 08 55  26.5 361.4-11.8      -1.9   -13     6900   No stop
02 52 20  ---          17 13 55  26.6 362.0-11.7      -2.7   287     6938   02 47 21

02 52 20  J0449+6332   17 13 55  26.8 362.8-11.6      -3.8   -13     6938   No stop
02 54 20  =0444+634    17 15 56  26.8 363.1-11.6      -4.1   107     6954   02 52 21

02 54 20  R5           17 15 56  26.6 362.3-11.7      -3.0   -13     6954   No stop
02 59 20  ---          17 20 56  26.6 362.9-11.6      -3.9   287     6992   02 54 21

03 00 00  J0449+6332   17 21 37  26.8 363.8-11.5      -5.1    27     6992   03 00 00
03 01 30  =0444+634    17 23 07  26.8 364.0-11.5      -5.4    90     7004   03 00 01

03 01 30  R5           17 23 07  26.6 363.2-11.6      -4.2   -13     7004   No stop
03 05 30  ---          17 27 08  26.7 363.7-11.5      -4.9   227     7035   03 01 31

03 05 30  J0449+6332   17 27 08  26.9 364.5-11.4      -6.0   -13     7035   No stop
03 07 30  =0444+634    17 29 08  26.9 364.7-11.4      -6.4   107     7050   03 05 31

03 07 30  J0508+6056   17 29 08  24.1 362.5-11.7      -3.1   -24     7050   No stop
03 11 30  =0503+608    17 33 08  24.2 363.0-11.6      -3.8   216     7081   03 07 31

03 12 10  J0449+6332   17 33 49  27.0 365.3-11.3      -7.1    16     7081   03 12 10
03 13 40  =0444+634    17 35 19  27.0 365.5-11.3      -7.4    90     7093   03 12 11

03 16 20  J1229+6335   17 37 59  50.9 316.4  5.1      68.0    47     7093   03 16 20
03 17 50  =1226+638    17 39 30  50.7 316.5  5.2      67.8    90     7104   03 16 21

03 17 50  R6POS2       17 39 30  51.4 318.7  5.1      69.7   -18     7104   No stop
03 22 50  ---          17 44 30  50.9 319.0  5.2      68.8   282     7143   03 17 51
```

Schedule for TORUN (Code Tr) Page 20

e-EVN: EP117A, EN005D

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 8 Apr 2020 Day 99 ---										
03 22 50	J1229+6335	17 44 30	50.2	316.8	5.2		66.9	-18	7143	No stop
03 24 50	=1226+638	17 46 31	50.0	317.0	5.3		66.6	102	7158	03 22 51
03 24 50	R6POS2	17 46 31	50.7	319.1	5.3		68.4	-18	7158	No stop
03 29 50	---	17 51 32	50.2	319.4	5.3		67.5	282	7197	03 24 51
03 30 40	J1229+6335	17 52 22	49.4	317.4	5.4		65.6	32	7197	03 30 40
03 32 10	=1226+638	17 53 52	49.3	317.5	5.4		65.3	90	7209	03 30 41
03 32 10	R6POS2	17 53 52	50.0	319.6	5.4		67.1	-18	7209	No stop
03 37 10	---	17 58 53	49.5	319.9	5.5		66.2	282	7247	03 32 11
03 37 10	J1229+6335	17 58 53	48.7	317.8	5.5		64.5	-18	7247	No stop
03 39 10	=1226+638	18 00 53	48.5	318.0	5.5		64.1	102	7263	03 37 11
03 39 10	R6POS2	18 00 53	49.3	320.0	5.5		65.9	-18	7263	No stop
03 44 10	---	18 05 54	48.8	320.4	5.6		65.0	282	7301	03 39 11
03 45 00	J1229+6335	18 06 44	48.0	318.4	5.6		63.1	32	7301	03 45 00
03 46 30	=1226+638	18 08 14	47.8	318.5	5.6		62.9	90	7313	03 45 01
03 46 30	J1219+6600	18 08 14	48.0	322.5	5.8		63.6	-23	7313	No stop
03 49 30	=1217+662	18 11 15	47.7	322.7	5.8		63.1	157	7336	03 46 31
03 49 30	J1229+6335	18 11 15	47.5	318.8	5.7		62.4	-23	7336	No stop
03 51 30	=1226+638	18 13 15	47.3	318.9	5.7		62.0	97	7352	03 49 31
03 51 30	R6POS2	18 13 15	48.1	320.9	5.7		63.7	-18	7352	No stop
03 55 30	---	18 17 16	47.7	321.2	5.8		63.0	222	7383	03 51 31
03 56 20	J1229+6335	18 18 06	46.8	319.3	5.8		61.2	33	7383	03 56 20
03 57 50	=1226+638	18 19 36	46.7	319.4	5.8		61.0	90	7394	03 56 21
03 57 50	R6POS1	18 19 36	48.6	320.5	5.6		64.7	-21	7394	No stop
04 02 50	---	18 24 37	48.2	320.9	5.7		63.8	279	7433	03 57 51
04 02 50	J1229+6335	18 24 37	46.2	319.8	5.9		60.2	-21	7433	No stop
04 04 50	=1226+638	18 26 37	46.0	320.0	5.9		59.8	99	7448	04 02 51
04 04 50	R6POS1	18 26 37	48.0	321.0	5.7		63.5	-21	7448	No stop
04 09 50	---	18 31 38	47.5	321.4	5.8		62.6	279	7487	04 04 51
04 10 40	J1229+6335	18 32 28	45.4	320.5	6.0		58.9	29	7487	04 10 40
04 12 10	=1226+638	18 33 58	45.3	320.6	6.1		58.6	90	7499	04 10 41

Schedule for TORUN (Code Tr) Page 21

e-EVN: EP117A, EN005D

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 8 Apr 2020 Day 99 ---										
04 12 10	R6POS1	18 33 58	47.3	321.5	5.9		62.2	-21	7499	No stop
04 17 10	---	18 38 59	46.8	321.9	5.9		61.3	279	7537	04 12 11
04 17 10	J1229+6335	18 38 59	44.8	321.0	6.1		57.8	-21	7537	No stop
04 19 10	=1226+638	18 41 00	44.6	321.2	6.2		57.5	99	7553	04 17 11
04 19 10	R6POS1	18 41 00	46.6	322.1	6.0		61.0	-21	7553	No stop
04 24 10	---	18 46 00	46.2	322.4	6.1		60.1	279	7591	04 19 11
04 25 00	J1229+6335	18 46 51	44.1	321.7	6.3		56.5	29	7591	04 25 00
04 26 30	=1226+638	18 48 21	44.0	321.8	6.3		56.2	90	7603	04 25 01
04 26 30	R6POS1	18 48 21	46.0	322.6	6.1		59.7	-21	7603	No stop
04 30 30	---	18 52 21	45.6	322.9	6.2		59.0	219	7634	04 26 31
04 30 30	J1229+6335	18 52 21	43.6	322.1	6.4		55.6	-21	7634	No stop
04 32 30	=1226+638	18 54 22	43.4	322.3	6.4		55.3	99	7649	04 30 31
04 35 30	J1700+6830	18 57 22	69.4	329.3	2.0		123.4	68	7649	04 35 30
04 37 30	=1700+685	18 59 23	69.2	329.0	2.0		122.6	120	7665	04 35 31
04 37 30	R9	18 59 23	69.7	329.2	1.9		123.9	-13	7665	No stop
04 42 30	---	19 04 23	69.3	328.5	2.0		122.1	287	7703	04 37 31
04 42 30	J1700+6830	19 04 23	68.8	328.3	2.1		120.8	-13	7703	No stop
04 44 30	=1700+685	19 06 24	68.7	328.1	2.1		120.1	107	7719	04 42 31
04 44 30	R9	19 06 24	69.2	328.2	2.0		121.4	-13	7719	No stop
04 49 30	---	19 11 25	68.8	327.5	2.1		119.6	287	7758	04 44 31
04 50 10	J1700+6830	19 12 05	68.2	327.4	2.2		118.2	27	7758	04 50 10
04 51 40	=1700+685	19 13 35	68.1	327.2	2.2		117.7	90	7769	04 50 11
04 51 40	R9	19 13 35	68.6	327.3	2.1		118.8	-13	7769	No stop
04 56 40	---	19 18 36	68.2	326.7	2.2		117.1	287	7808	04 51 41
04 56 40	J1700+6830	19 18 36	67.7	326.7	2.3		116.0	-13	7808	No stop
04 58 40	=1700+685	19 20 36	67.5	326.5	2.3		115.3	107	7823	04 56 41
04 58 40	R9	19 20 36	68.0	326.5	2.3		116.4	-13	7823	No stop
05 03 40	---	19 25 37	67.6	325.9	2.3		114.8	287	7862	04 58 41
05 04 20	J1700+6830	19 26 17	67.1	325.9	2.4		113.5	27	7862	05 04 20
05 05 50	=1700+685	19 27 47	66.9	325.8	2.5		113.0	90	7873	05 04 21

Schedule for TORUN (Code Tr) Page 22

e-EVN: EP117A, EN005D

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes 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 8 Apr 2020 Day 99 ---										
05 05 50	R9	19 27 47	67.4	325.7	2.4		114.1	-13	7873	No stop
05 09 50	---	19 31 48	67.1	325.3	2.4		112.8	227	7904	05 05 51
05 09 50	J1700+6830	19 31 48	66.6	325.4	2.5		111.7	-13	7904	No stop
05 11 50	=1700+685	19 33 48	66.4	325.2	2.6		111.1	107	7920	05 09 51
05 11 50	J1716+6836	19 33 48	67.7	327.0	2.3		116.5	-18	7920	No stop
05 14 50	=1716+686	19 36 49	67.5	326.7	2.3		115.5	162	7943	05 11 51
05 15 30	J1700+6830	19 37 29	66.1	324.9	2.6		110.0	22	7943	05 15 30
05 17 10	=1700+685	19 39 09	66.0	324.8	2.7		109.5	100	7956	05 15 31
05 20 10	J2009+7229	19 42 10	70.3	366.1	-0.5		-167.7	82	7956	05 20 10
05 21 40	=2010+723	19 43 40	70.4	365.8	-0.4		-168.3	90	7967	05 20 11
05 21 40	R12	19 43 40	71.5	378.5	-1.1		-146.2	-40	7967	No stop
05 25 40	---	19 47 41	71.7	377.6	-1.1		-148.0	200	7998	05 21 41
05 25 40	J2009+7229	19 47 41	70.4	364.9	-0.4		-170.1	-41	7998	No stop
05 27 40	=2010+723	19 49 41	70.4	364.5	-0.3		-171.0	79	8014	05 25 41
05 27 40	R12	19 49 41	71.7	377.2	-1.0		-149.0	-40	8014	No stop
05 31 40	---	19 53 42	71.9	376.2	-1.0		-150.8	200	8045	05 27 41
05 32 50	J2009+7229	19 54 52	70.5	363.3	-0.2		-173.3	29	8045	05 32 50
05 34 20	=2010+723	19 56 22	70.5	363.0	-0.2		-174.0	90	8056	05 32 51
05 34 20	R12	19 56 22	72.0	375.6	-0.9		-152.1	-40	8056	No stop
05 38 20	---	20 00 23	72.2	374.6	-0.9		-153.9	200	8087	05 34 21
05 38 20	J2009+7229	20 00 23	70.5	362.1	-0.2		-175.8	-40	8087	No stop
05 40 20	=2010+723	20 02 23	70.5	361.6	-0.1		-176.7	80	8103	05 38 21
05 40 20	R12	20 02 23	72.3	374.0	-0.8		-154.9	-40	8103	No stop
05 44 20	---	20 06 24	72.4	373.0	-0.8		-156.8	200	8134	05 40 21
05 45 30	J2009+7229	20 07 34	70.6	360.5	-0.0		-179.0	30	8134	05 45 30
05 47 00	=2010+723	20 09 04	70.6	360.1	-0.0		-179.7	90	8145	05 45 31
05 47 00	J1941+7221	20 09 04	70.5	353.7	0.5		167.4	-28	8145	No stop
05 50 00	=1942+722	20 12 05	70.4	353.0	0.5		166.1	152	8168	05 47 01
05 50 00	J2009+7229	20 12 05	70.6	359.5	0.0		178.9	-28	8168	No stop
05 52 00	=2010+723	20 14 05	70.5	359.0	0.1		178.0	92	8184	05 50 01

```
Schedule for TORUN     (Code Tr )                                Page  23
               e-EVN: EP117A, EN005D
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes 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   8 Apr 2020   Day  99 ---

05 52 00  R12          20 14 05  72.6 371.0 -0.6    -160.6   -39     8184   No stop
05 56 00  ---          20 18 06  72.7 369.9 -0.6    -162.6   201     8215   05 52 01

05 56 00  J2009+7229   20 18 06  70.5 358.1  0.1     176.2   -39     8215   No stop
05 58 00  =2010+723    20 20 06  70.5 357.7  0.2     175.3    81     8230   05 56 01

05 58 00  J2005+7752   20 20 06  65.1 358.1  0.3     174.5   -34     8230   No stop
06 00 00  =2007+777    20 22 06  65.1 357.8  0.3     173.8    86     8246   05 58 01



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


 ======== Setup file: sess120.L1024

   Setup group:    8         Station: TORUN            Total bit rate:  1024
   Format: VDIF              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         9         1         9         2        10         2        10
                  3        11         3        11         4        12         4        12
  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=   1,  2,  3,  4,  5,  6,  7,  8,  9, 10, 11, 12, 13, 14, 15, 16
   barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* NGC2992	09 43 17.731721	* 09 45 42.050000	09 46 40.314806	0.00
	-14 05 42.92947	*-14 19 34.98000	-14 25 19.03650	0.00
* NGC4051	12 00 36.397532	* 12 03 09.614000	12 04 12.110875	0.00
	44 48 34.64046	* 44 31 52.80000	44 25 12.24389	0.00
* NGC4593	12 37 04.645996	* 12 39 39.425000	12 40 42.335692	0.00
	-05 04 11.21737	*-05 20 39.34000	-05 27 20.27049	0.00
* NGC5548	14 15 43.477858	* 14 17 59.534000	14 18 55.019130	0.00
	25 22 00.97942	* 25 08 12.44000	25 02 34.66069	0.00
* J1202+4444	11 59 35.154674	* 12 02 08.662600	12 03 11.276669	0.00
	45 01 04.34257	* 44 44 22.47600	44 37 41.98680	0.00
* J1244-0446	12 42 14.239703	* 12 44 49.026700	12 45 51.942863	0.00
	-04 29 44.82642	*-04 46 08.93600	-04 52 48.14770	0.00
* R2	04 16 22.732057	* 04 22 22.000000	04 24 43.154840	0.00
	73 32 54.17098	* 73 40 00.00000	73 42 54.38188	0.00
* R3	01 54 15.539030	* 01 58 00.750170	01 59 28.201589	0.00
	65 28 24.40016	* 65 43 00.31520	65 48 47.24765	0.00

```
* R5                 04 51 18.729512   * 04 56 00.000000     04 57 50.756271       0.00
                     63 18 14.06388    * 63 23 00.00000      63 24 59.11456        0.00

* R6POS1             12 39 52.005822   * 12 42 00.000000     12 42 53.664811       0.00
                     65 24 25.86765    * 65 08 00.00000      65 01 26.80190        0.00

* R6POS2             12 27 44.436007   * 12 30 00.000000     12 30 56.601324       0.00
                     65 22 33.86906    * 65 06 00.00000      64 59 24.38744        0.00

* R9                 17 05 09.401167   * 17 05 00.000000     17 04 58.212191       0.00
                     68 20 57.71887    * 68 17 00.00000      68 15 07.20509        0.00

* R12                20 51 38.636621   * 20 52 00.000000     20 52 06.607925       0.00
                     69 38 37.26673    * 69 50 00.00000      69 54 13.26305        0.00

* B0329+54           03 29 11.066308   * 03 32 59.368000     03 34 28.874387       0.00
                     54 24 37.47697    * 54 34 43.57000      54 38 45.77556        0.00

  0137+635           01 37 12.892378   * 01 40 43.077878     01 42 04.604502       0.29
* J0140+6346         63 30 57.03309    * 63 46 06.89082      63 52 06.19952        0.13
                     /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                     GSFC 2016a X/S astro solution,     88 observations.

  0203+625           02 03 22.157591   * 02 07 03.016744     02 08 28.939189       0.12
* J0207+6246         62 31 56.07851    * 62 46 12.06757      62 51 51.16026        0.05
                     /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                     GSFC 2016a X/S astro solution,    450 observations.

  0234+285           02 34 55.589590   * 02 37 52.405677     02 39 01.620786       0.00
* J0237+2848         28 35 11.40773    * 28 48 08.98999      28 53 12.98122        0.00
  J0237+28           /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                     GSFC 2016a X/S astro solution,  58420 observations.

  0344+558           03 44 00.851036   * 03 47 56.812076     03 49 29.396476       0.21
* J0347+5557         55 48 18.57372    * 55 57 31.57844      56 01 13.46679        0.11
                     /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                     GSFC 2016a X/S astro solution,    168 observations.

  0403+768           04 03 59.194150   * 04 10 45.610833     04 13 25.293259       0.47
* J0410+7656         76 48 52.60769    * 76 56 45.31305      76 59 57.67513        0.09
                     /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                     GSFC 2016a X/S astro solution,    102 observations.

  0444+634           04 44 42.365041   * 04 49 23.310568     04 51 13.895268       0.04
* J0449+6332         63 26 55.93297    * 63 32 09.43401      63 34 19.33847        0.02
  J0449+63           /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                     GSFC 2016a X/S astro solution,   1127 observations.

  0456+714           04 56 00.138560   * 05 01 45.779870     05 04 01.860305       0.33
* J0501+7128         71 24 10.00560    * 71 28 33.96359      71 30 25.15405        0.11
                     /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                     GSFC 2016a X/S astro solution,    134 observations.

  0503+608           05 03 56.755388   * 05 08 27.259423     05 10 13.871694       0.34
* J0508+6056         60 52 34.35269    * 60 56 27.33637      60 58 05.37041        0.17
                     /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                     GSFC 2016a X/S astro solution,    120 observations.

  0528+134           05 28 06.759216   * 05 30 56.416746     05 32 03.434183       0.21
* J0530+1331         13 29 42.28882    * 13 31 55.14948      13 32 41.22677        0.24
  J0530+13           /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                     GSFC 2016a X/S astro solution, 138236 observations.

  0938-133           09 38 37.998631   * 09 41 02.549471     09 42 00.880566       0.06
```

```
* J0941-1335       -13 22 10.46775    *-13 35 50.98457     -13 41 30.39548        0.13
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,    286 observations.

  OK290             09 53 59.738482   * 09 56 49.875376     09 57 58.397174       0.41
* J0956+2515        25 29 33.58581    * 25 15 16.04991      25 09 31.89142        0.37
  0953+254          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
  J0956+25          GSFC 2016a X/S astro solution,  26975 observations.

  1217+662          12 17 14.164536   * 12 19 35.794315     12 20 34.830607       0.35
* J1219+6600        66 17 10.42158    * 66 00 31.84614      65 53 55.15193        0.12
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,     86 observations.

  1226+638          12 26 48.728842   * 12 29 06.026091     12 30 03.169795       0.42
* J1229+6335        63 51 35.35043    * 63 35 00.98393      63 28 25.00744        0.17
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,     89 observations.

  1417+273          14 17 45.094593   * 14 19 59.297078     14 20 54.060671       0.03
* J1419+2706        27 20 09.10604    * 27 06 25.55282      27 00 49.63485        0.04
  J1419+27          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,   1160 observations.

  1700+685          17 00 19.661416   * 17 00 09.292760     17 00 07.215899       0.68
* J1700+6830        68 34 25.16470    * 68 30 06.95981      68 28 06.19592        0.26
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,     65 observations.

  1716+686          17 16 27.828740   * 17 16 13.938040     17 16 10.218212       0.25
* J1716+6836        68 39 48.33942    * 68 36 38.74534      68 35 04.59061        0.08
  J1716+68          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,    197 observations.

  1942+722          19 42 02.218480   * 19 41 26.984737     19 41 11.966370       0.88
* J1941+7221        72 14 31.86737    * 72 21 42.22350      72 24 12.54473        0.11
                    /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,     98 observations.

  2007+777          20 07 20.430197   * 20 05 30.998526     20 04 44.756052       0.04
* J2005+7752        77 43 58.12301    * 77 52 43.24754      77 55 50.64723        0.01
  J2005+77          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,  15674 observations.

  2010+723          20 10 16.209274   * 20 09 52.303818     20 09 41.213765       0.34
* J2009+7229        72 20 20.74093    * 72 29 19.35061      72 32 33.44440        0.07
  J2009+72          /home/guest/rmc/SCHED/sched11.5/catalogs/sources.gsfc
                    GSFC 2016a X/S astro solution,    195 observations.
```

Contents

Graphical Plan of Experiments in Feb 2020 1
Experiment Listing 3
`n20c1tr` – Network Monitoring Experiment 5
`em141atr` – EVN-6CM-CGCG-N 8
`ec070itr` – AGN Cores 16
`ec070jtr` – AGN Cores 23
`eg109atr` – A dual AGN candidate with 0.13 arcsec separation 32
`ec071ctr` – EVN 5 GHz and 22 GHz study of 43 compact radio sources 37
`ec070ktr` – AGN Cores 47
`ec070ltr` – AGN Cores 55
`em140btr` – Revealing the radio structure of TDE AT2019dsg 62
`en006atr` – EN006A 79
`ek046ftr` – Resolving the mystery of large VLBI-Gaia offsets 85
`rg011tr` – Are g-ray blazars associated with neutrinos? The case of IC 200109A 96
`n20k1tr` – Network Monitoring Experiment 111
`ek044tr` – M87 high-resolution jet imaging 114
`ek046gtr` – Resolving the mystery of large VLBI-Gaia offsets 120
`en006btr` – EN006B 131
`ec071dtr` – EVN 5 GHz and 22 GHz study of 43 compact radio sources 143
`ec071etr` – EVN 5 GHz and 22 GHz study of 43 compact radio sources 157
`n20m1tr` – Network Monitoring Experiment 195
`eo016ctr` – Relative motions and evolution of periodic maser 199
`em117otr` – A 3D View of high-mass star formation: gas Kinematics and Magnetic 222
`rd001tr` – EVN mapping of 6.7 GHz maser in accretion burst candidate. 233
`em117ptr` – A 3D View of high-mass star formation: gas Kinematics and Magnetic 243
`n20l1tr` – Network Monitoring Experiment 256
`em141btr` – EVN-18CM-CGCG-N 259
`ek046htr` – Resolving the mystery of large VLBI-Gaia offsets 267
`er047dtr` – EVN-COSMOS - Taming AGN and star-formation across cosmic time 278
`ep119tr` – HE0040-1105 at 1 Gb/s - L band 290
`eg109btr` – A dual AGN candidate with 0.13 arcsec separation 302
`ey029btr` – e-EVN: EY029B, EN005C 308
`ep117atr` – e-EVN: EP117A, EN005D 341