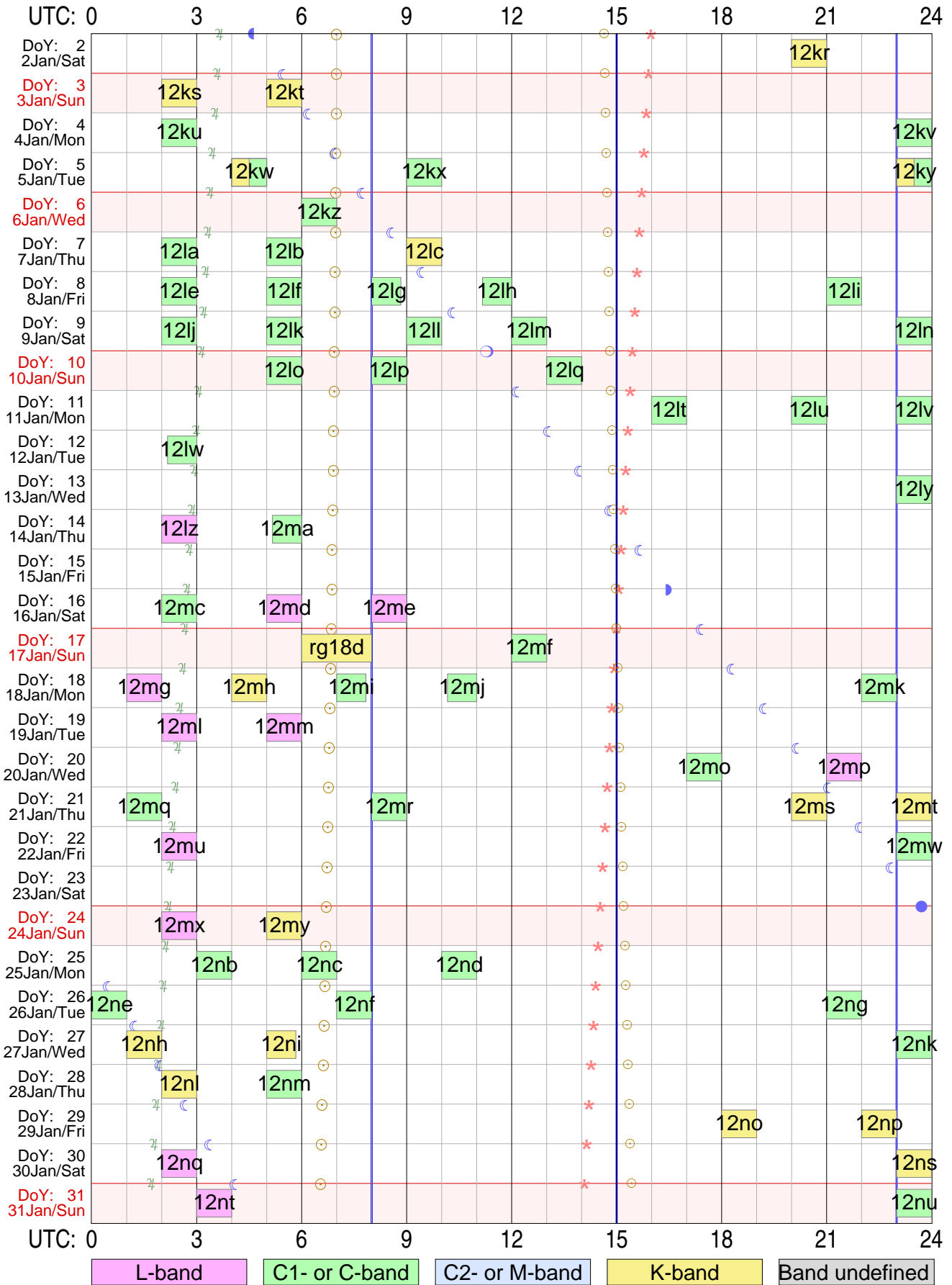


Tr VLBI plan for Jan 2016



Version: 2015.12.30

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: 70.8 hours in 71 experiments scheduled

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

Strona zostawiona celowo pusta

RadioAstron & EVN Experiments

Dec 2015

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
2015	D M DoW	hh mm	hh mm	name	
1	2.01	1.0	12kr		K
2	3.01	1.0	12ks		K
3	3.01	1.0	12kt		K
4	4.01	1.0	12ku		C
5	4.01	1.0	12kv		C
6	5.01	1.0	12kw		K->C
7	5.01	1.0	12kx		C
8	5.01	1.0	12ky		K->C
9	6.01	1.0	12kz		C
10	7.01	1.0	12la		C
11	7.01	1.0	12lb		C
12	7.01	1.0	12lc		K
13	8.01	1.0	12le		C
14	8.01	1.0	12lf		C
15	8.01	0.8	12lg		C
16	8.01	0.8	12lh		C
17	8.01	1.0	12li		C
18	9.01	1.0	12lj		C
19	9.01	1.0	12lk		C
20	9.01	1.0	12ll		C
21	9.01	1.0	12lm		C
22	9.01	1.0	12ln		C
23	10.01	1.0	12lo		C
24	10.01	1.0	12lp		C
25	10.01	1.0	12lq		C
26	11.01	1.0	12lt		C
27	11.01	1.0	12lu		C
28	11.01	1.0	12lv		C
29	12.01	0.8	12lw		C
30	13.01	1.0	12ly		C
31	14.01	1.0	12lz		L
32	14.01	0.8	12ma		C
33	16.01	1.0	12mc		C
34	16.01	1.0	12md		L
35	16.01	1.0	12me		L
36	17.01	2.0	rg18d		K
37	17.01	1.0	12mf		C
38	18.01	1.0	12mg		L
39	18.01	1.0	12mh		K

40	18.01	0.8	12mi	C
41	18.01	0.8	12mj	C
42	18.01	1.0	12mk	C
43	19.01	1.0	12ml	L
44	19.01	1.0	12mm	L
45	20.01	1.0	12mo	C
46	20.01	1.0	12mp	L
47	21.01	1.0	12mq	C
48	21.01	1.0	12mr	C
49	21.01	1.0	12ms	K
50	21.01	1.0	12mt	K
51	22.01	1.0	12mu	L
52	22.01	1.0	12mw	C
53	24.01	1.0	12mx	L
54	24.01	1.0	12my	K
55	25.01	1.0	12nb	C
56	25.01	1.0	12nc	C
57	25.01	1.0	12nd	C
58	26.01	1.0	12ne	C
59	26.01	1.0	12nf	C
60	26.01	1.0	12ng	C
61	27.01	1.0	12nh	K
62	27.01	0.8	12ni	K
63	27.01	1.0	12nk	C
64	28.01	1.0	12nl	K
65	28.01	1.0	12nm	C
66	29.01	1.0	12no	K
67	29.01	1.0	12np	K
68	30.01	1.0	12nq	L
69	30.01	1.0	12ns	K
70	31.01	1.0	12nt	L
71	31.01	1.0	12nu	C

Total observing time: 70.8 hours in 71 experiments

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

<http://paulo.astro.uni.torun.pl/~pw/VLBI/schedules/jan16.pdf>

rk12krtr

RADIOASTRON AGN SURVEY

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Sat 2 Jan 2016 Day 2 ---

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

Next scan frequencies:	22236.00	22236.00	22236.00	22236.00				
Next BBC frequencies:	736.00	736.00	736.00	736.00				
Next scan bandwidths:	16.00	16.00	16.00	16.00				
20 00 00	0215+015	04 01 51	34.5 211.8	1.7	18.5	0	0	20 00 00
20 14 30	---	04 16 23	33.2 216.0	2.0	20.7	870	28	20 00 01
20 15 00	0215+015	04 16 53	33.2 216.1	2.0	20.7	24	28	20 15 00
20 29 30	---	04 31 26	31.8 220.1	2.2	22.8	870	56	20 15 01
20 30 00	0215+015	04 31 56	31.8 220.2	2.2	22.8	24	56	20 30 00
20 44 30	---	04 46 28	30.3 224.1	2.5	24.7	870	84	20 30 01
20 45 00	0215+015	04 46 58	30.3 224.3	2.5	24.8	24	84	20 45 00
21 00 00	---	05 02 01	28.6 228.1	2.7	26.6	900	112	20 45 01

SETUP FILE INFORMATION:

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

=====
Setup file: ra1cm2.set

Matching groups in ./rk12kr_freq.dat:

tr1cm

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 44.320854	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.21510	0.00
	fake circumpolar target for a TS to look at			
* 0215+015	02 15 14.130235	* 02 17 48.954755	02 18 39.057329	0.00
J0217+0144	01 31 00.16093	* 01 44 49.69903	01 49 06.87874	0.00
	./rk12kr_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 14210 observations, RA-A03-04, RA-A02-1			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
0215+015	110.7

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

rk12kstr

RADIOASTRON AGN SURVEY

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Sun 3 Jan 2016 Day 3 ---

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

Next scan frequencies:	22236.00	22236.00	22236.00	22236.00			
Next BBC frequencies:	736.00	736.00	736.00	736.00			
Next scan bandwidths:	16.00	16.00	16.00	16.00			
02 00 00	1127-145	10 02 50	19.4 157.4 -1.5	-13.8	0	0	02 00 00
02 14 30	---	10 17 22	20.2 161.0 -1.2	-11.6	870	28	02 00 01
02 15 00	1127-145	10 17 53	20.2 161.2 -1.2	-11.6	24	28	02 15 00
02 29 30	---	10 32 25	20.8 164.9 -1.0	-9.3	870	56	02 15 01
02 30 00	1127-145	10 32 55	20.9 165.0 -1.0	-9.3	24	56	02 30 00
02 44 30	---	10 47 27	21.4 168.7 -0.7	-7.0	870	84	02 30 01
02 45 00	1127-145	10 47 57	21.4 168.8 -0.7	-6.9	24	84	02 45 00
03 00 00	---	11 03 00	21.7 172.7 -0.5	-4.5	900	112	02 45 01

SETUP FILE INFORMATION:

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

=====
Setup file: ra1cm2.set

Matching groups in ./rk12ks_freq.dat:

tr1cm

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 44.381986	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.22034	0.00
	fake circumpolar target for a TS to look at			
* 1127-145	11 27 35.667215	* 11 30 07.052575	11 30 56.100188	0.00
J1130-1449	-14 32 54.44317	*-14 49 27.38834	-14 54 42.93406	0.00
	./rk12ks_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 1399 observations, RA-A03-04			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
1127-145	102.2

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

rk12kttr

RADIOASTRON AGN SURVEY

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Sun 3 Jan 2016 Day 3 ---

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

Next scan frequencies:	22236.00	22236.00	22236.00	22236.00							
Next BBC frequencies:	736.00	736.00	736.00	736.00							
Next scan bandwidths:	16.00	16.00	16.00	16.00							
05 00 00	1226+023	13 03 20	38.4	190.7	0.6		6.4	0	0	05 00 00	
05 14 30	---	13 17 52	37.9	195.2	0.8		9.1	870	28	05 00 01	
05 15 00	1226+023	13 18 22	37.9	195.4	0.8		9.2	24	28	05 15 00	
05 29 30	---	13 32 54	37.2	199.9	1.0		11.8	870	56	05 15 01	
05 30 00	1226+023	13 33 25	37.2	200.1	1.1		11.9	24	56	05 30 00	
05 44 30	---	13 47 57	36.4	204.5	1.3		14.4	870	84	05 30 01	
05 45 00	1226+023	13 48 27	36.3	204.6	1.3		14.5	24	84	05 45 00	
06 00 00	---	14 03 29	35.3	209.1	1.6		17.0	900	112	05 45 01	

SETUP FILE INFORMATION:

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

=====
Setup file: ra1cm2.set

Matching groups in ./rk12kt_freq.dat:

tr1cm

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 44.412403	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.22293	0.00
	fake circumpolar target for a TS to look at			
* 1226+023	12 26 33.245835	* 12 29 06.699731	12 29 55.824140	0.00
J1229+0203	02 19 43.30547	* 02 03 08.59797	01 57 49.70260	0.00
3C273B	./rk12kt_sources.radioastron			
3C273	AGN, rfc_2013d Petrov, 2013, unpublished 32011 observations, RA-A03-04, RA-A03-0			

EFFECT OF SOLAR CORONA

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

```

Source          Sun distance (deg)
1226+023        96.1

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

```

rk12kutr

RADIOASTRON AGN SURVEY

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Mon 4 Jan 2016 Day 4 ---

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

Next scan frequencies:	4836.00	4836.00	4836.00	4836.00						
Next BBC frequencies:	736.00	736.00	736.00	736.00						
Next scan bandwidths:	16.00	16.00	16.00	16.00						
02 00 00	1127-145	10 06 47	19.6	158.4	-1.4		-13.2	0	0	02 00 00
02 14 30	---	10 21 19	20.4	162.0	-1.2		-11.0	870	28	02 00 01
02 15 00	1127-145	10 21 49	20.4	162.2	-1.2		-11.0	24	28	02 15 00
02 29 30	---	10 36 21	21.0	165.9	-0.9		-8.7	870	56	02 15 01
02 30 00	1127-145	10 36 52	21.0	166.0	-0.9		-8.6	24	56	02 30 00
02 44 30	---	10 51 24	21.5	169.7	-0.7		-6.4	870	84	02 30 01
02 45 00	1127-145	10 51 54	21.5	169.9	-0.7		-6.3	24	84	02 45 00
03 00 00	---	11 06 56	21.8	173.8	-0.4		-3.9	900	112	02 45 01

SETUP FILE INFORMATION:

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

=====
Setup file: ra6cm2.set

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 44.623097	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.23985	0.00
	fake circumpolar target for a TS to look at			
* 1127-145	11 27 35.667215	* 11 30 07.052575	11 30 56.128921	0.00
J1130-1449	-14 32 54.44317	*-14 49 27.38834	-14 54 43.14784	0.00
	./rk12ku_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 1399 observations, RA-A03-04			

EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
1127-145    103.2

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

```

rk12kvtr

RADIOASTRON AGN SURVEY

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Mon 4 Jan 2016 Day 4 ---

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

Next scan frequencies:	4836.00	4836.00	4836.00	4836.00							
Next BBC frequencies:	736.00	736.00	736.00	736.00							
Next scan bandwidths:	16.00	16.00	16.00	16.00							
23 00 00	0235+164	07 10 14	26.6	262.4	4.5		38.4	0	0	23 00 00	
23 14 30	---	07 24 46	24.5	265.4	4.8		38.7	870	28	23 00 01	
23 15 00	0235+164	07 25 16	24.4	265.5	4.8		38.7	24	28	23 15 00	
23 29 30	---	07 39 48	22.2	268.5	5.0		38.8	870	56	23 15 01	
23 30 00	0235+164	07 40 19	22.1	268.6	5.0		38.8	24	56	23 30 00	
23 44 30	---	07 54 51	19.9	271.5	5.3		38.8	870	84	23 30 01	
23 45 00	0235+164	07 55 21	19.9	271.6	5.3		38.8	24	84	23 45 00	
23 59 59	---	08 10 23	17.6	274.5	5.5		38.7	899	112	23 45 01	

SETUP FILE INFORMATION:

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

=====
Setup file: ra6cm2.set

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 44.831545	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.25325	0.00
	fake circumpolar target for a TS to look at			
* 0235+164	02 35 52.630215	* 02 38 38.930107	02 39 32.989211	0.00
J0238+1636	16 24 04.01610	* 16 36 59.27452	16 41 02.67557	0.00
	./rk12kv_sources.radioastron			
	AGN, IDV, rfc_2013d Petrov, 2013, unpublished 65224 observations, RA-A03-04, RA-			

EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
0235+164    118.6

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

```


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

The following frequency sets based on these setups were used.

Frequency Set:	3	Setup file default.	Used with PCAL = 1MHz
LO sum=	22236.00	22236.00	22236.00
BBC fr=	736.00	736.00	736.00
Bandwd=	16.00	16.00	16.00
Matching frequency sets:	3		

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

==== Setup file: ra6cm2.set

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

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

Track assignments are:

track1= 2, 18, 3, 19
 barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 44.881121	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.25575	0.00
	fake circumpolar target for a TS to look at			
* 0716+714	07 16 13.029739	* 07 21 53.448474	07 23 45.338015	0.00
J0721+7120	71 26 15.17406	* 71 20 36.36340	71 18 30.61111	0.00
	./rk12kw_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 42370 observations, RA-A03-04, RA-A02-1			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
0716+714	131.3

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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


```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 44.930751	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.25796	0.00
	fake circumpolar target for a TS to look at			
* 1219+044	12 19 49.255032	* 12 22 22.549622	12 23 11.697153	0.00
J1222+0413	04 29 53.60821	* 04 13 15.77600	04 07 54.34067	0.00
	./rk12kx_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 34610 observations, RA-A03-04, RA-A02-1			

EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
1219+044    100.7

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

```

rk12kytr

RADIOASTRON AGN SURVEY

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

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UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are L0 sum (band edge).
SYNC: Time correlator 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 5 Jan 2016 Day 5 ---

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

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

23 00 00 0235+164 07 14 10 26.0 263.2 4.6 38.5 0 0 23 00 00
23 14 30 --- 07 28 43 23.9 266.2 4.8 38.7 870 28 23 00 01
23 15 00 0235+164 07 29 13 23.8 266.3 4.8 38.7 24 28 23 15 00
23 24 30 --- 07 38 44 22.4 268.2 5.0 38.8 570 46 23 15 01

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

Next scan frequencies: 4836.00 4836.00 4836.00 4836.00
Next BBC frequencies: 736.00 736.00 736.00 736.00

23 30 00 0235+164 07 44 15 21.5 269.3 5.1 38.8 323 46 23 30 00
23 44 30 --- 07 58 47 19.3 272.2 5.3 38.8 870 74 23 30 01
23 45 00 0235+164 07 59 18 19.3 272.3 5.3 38.8 24 74 23 45 00
23 59 59 --- 08 14 20 17.0 275.3 5.6 38.6 899 103 23 45 01

SETUP FILE INFORMATION:

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

==== Setup file: ra1cm2.set
Matching groups in ./rk12ky_freq.dat:
tr1cm

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

Frequency Set:	3	Setup file default.	Used with PCAL = 1MHz
LO sum=	22236.00	22236.00	22236.00
BBC fr=	736.00	736.00	736.00
Bandwd=	16.00	16.00	16.00
Matching frequency sets:	3		

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

==== Setup file: ra6cm2.set

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

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

Track assignments are:

track1= 2, 18, 3, 19
 barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 45.070323	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.26256	0.00
	fake circumpolar target for a TS to look at			
* 0235+164	02 35 52.630215	* 02 38 38.930107	02 39 32.979307	0.00
J0238+1636	16 24 04.01610	* 16 36 59.27452	16 41 02.61878	0.00
	./rk12ky_sources.radioastron AGN, IDV, rfc_2013d Petrov, 2013, unpublished 65224 observations, RA-A03-04, RA-			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
0235+164	117.6

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

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

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 45.140634	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.26400	0.00
	fake circumpolar target for a TS to look at			
* 1127-145	11 27 35.667215	* 11 30 07.052575	11 30 56.197069	0.00
J1130-1449	-14 32 54.44317	*-14 49 27.38834	-14 54 43.65656	0.00
	./rk12kz_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 1399 observations, RA-A03-04			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
1127-145	105.3

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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


```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 45.344529	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.26524	0.00
	fake circumpolar target for a TS to look at			
* 1226+023	12 26 33.245835	* 12 29 06.699731	12 29 55.948057	0.00
J1229+0203	02 19 43.30547	* 02 03 08.59797	01 57 48.92810	0.00
3C273B	./rk12la_sources.radioastron			
3C273	AGN, rfc_2013d Petrov, 2013, unpublished 32011 observations, RA-A03-04, RA-A03-0			

EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
1226+023    100.1

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

```



```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  3  Setup file default.  Used with PCAL = 1MHz
LO sum=  4836.00  4836.00  4836.00  4836.00
BBC fr=   736.00   736.00   736.00   736.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  3

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 45.375591	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.26513	0.00
	fake circumpolar target for a TS to look at			
* 0838+133	08 38 01.723597	* 08 40 47.588427	08 41 41.777411	0.00
J0840+1312	13 23 05.67979	* 13 12 23.56368	13 08 44.39460	0.00
	./rk12lb_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 196 observations, RA-A03-04			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
0838+133	156.5

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 $60 \text{ deg } F^{-0.6}$ 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


```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set: 3 Setup file default. Used with PCAL = 1MHz
LO sum= 22236.00 22236.00 22236.00 22236.00
BBC fr= 736.00 736.00 736.00 736.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 3

```

Track assignments are:

```

track1= 2, 18, 3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(Date)	Error (mas)
* FAKERA	11 57 21.769299 * 12 00 00.000000	12 00 45.417232	0.00
	85 16 41.77889 * 85 00 00.000000	84 54 19.26488	0.00
	fake circumpolar target for a TS to look at		
* 1228+126	12 28 17.569280 * 12 30 49.423382	12 31 38.017456	0.00
J1230+1223	12 40 01.74883 * 12 23 28.04365	12 18 05.07415	0.00
3C274	./rk12lc_sources.radioastron		
M87	AGN, rfc_2013d Petrov, 2013, unpublished 55201 observations, RA-A03-04, RA-A03-0		
VIR-A			

EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
1228+126    103.8

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

```


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

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 45.597368	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.26310	0.00
	fake circumpolar target for a TS to look at			
* 1127-145	11 27 35.667215	* 11 30 07.052575	11 30 56.260708	0.00
J1130-1449	-14 32 54.44317	*-14 49 27.38834	-14 54 44.13336	0.00
	./rk12le_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 1399 observations, RA-A03-04			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
1127-145	107.1

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

rk12lfr

RADIOASTRON AGN SURVEY

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Fri 8 Jan 2016 Day 8 ---

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

Next scan frequencies:	4836.00	4836.00	4836.00	4836.00							
Next BBC frequencies:	736.00	736.00	736.00	736.00							
Next scan bandwidths:	16.00	16.00	16.00	16.00							
05 00 00	0851+202	13 23 02	29.7	264.1	4.5		39.5	0	0	05 00 00	
05 14 30	---	13 37 35	27.6	267.1	4.7		39.7	870	28	05 00 01	
05 15 00	0851+202	13 38 05	27.5	267.2	4.7		39.7	24	28	05 15 00	
05 29 30	---	13 52 37	25.3	270.1	4.9		39.7	870	56	05 15 01	
05 30 00	0851+202	13 53 07	25.2	270.2	5.0		39.7	24	56	05 30 00	
05 44 30	---	14 07 40	23.1	273.1	5.2		39.7	870	84	05 30 01	
05 45 00	0851+202	14 08 10	23.0	273.2	5.2		39.7	24	84	05 45 00	
06 00 00	---	14 23 12	20.7	276.1	5.5		39.5	900	112	05 45 01	

SETUP FILE INFORMATION:

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

=====
Setup file: ra6cm2.set

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(Date)	Error (mas)	
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 45.629728	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.26276	0.00
	fake circumpolar target for a TS to look at			
* 0851+202	08 51 57.250618	* 08 54 48.874930	08 55 44.850094	0.00
J0854+2006	20 17 58.41733	* 20 06 30.64078	20 02 35.87282	0.00
OJ287	./rk12lf_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 213710 observations, RA-A03-04, RA-A03-			

EFFECT OF SOLAR CORONA

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

```

Source          Sun distance (deg)
0851+202        156.5

```

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 $60 \text{ deg } F^{-0.6}$ 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

```


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

The following frequency sets based on these setups were used.

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

Track assignments are:

track1= 2, 18, 3, 19
 barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 45.661814	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.26244	0.00
	fake circumpolar target for a TS to look at			
* 1403+411	14 03 04.025300	* 14 05 07.795440	14 05 46.390137	0.00
J1405+4056	41 11 16.37060	* 40 56 57.83098	40 52 14.18099	0.00
	./rk12lg_sources.radioastron AGN, BAL QSO, rfc_2013d Petrov, 2013, unpublished 90 observations, RA-A03-04, RA			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
1403+411	95.6

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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


```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(Date)	Error (mas)
* FAKERA	11 57 21.769299 * 12 00 00.000000	12 00 45.696357	0.00
	85 16 41.77889 * 85 00 00.000000	84 54 19.26214	0.00
	fake circumpolar target for a TS to look at		
* 1417+385	14 17 43.055732 * 14 19 46.613761	14 20 25.127484	0.00
J1419+3821	38 35 32.28529 * 38 21 48.47497	38 17 17.40167	0.00
	./rk12lh_sources.radioastron AGN, rfc_2013d Petrov, 2013, unpublished 21334 observations, RA-A03-04		

EFFECT OF SOLAR CORONA

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

```

Source          Sun distance (deg)
1417+385        92.0

```

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 $60 \text{ deg } F^{-0.6}$ 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

```

rk12litr

RADIOASTRON AGN SURVEY

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are LO sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Fri 8 Jan 2016 Day 8 ---

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

Next scan frequencies: 4836.00 4836.00 4836.00 4836.00

Next BBC frequencies: 736.00 736.00 736.00 736.00

Next scan bandwidths: 16.00 16.00 16.00 16.00

21 00 00	0336-019	05 25 40	30.9	211.1	1.8	18.1	0	0	21 00 00
21 14 30	---	05 40 12	29.7	215.1	2.0	20.2	870	28	21 00 01
21 15 00	0336-019	05 40 43	29.7	215.2	2.0	20.3	24	28	21 15 00
21 29 30	---	05 55 15	28.4	219.1	2.2	22.3	870	56	21 15 01
21 30 00	0336-019	05 55 45	28.3	219.2	2.3	22.3	24	56	21 30 00
21 44 30	---	06 10 17	26.9	223.0	2.5	24.2	870	84	21 30 01
21 45 00	0336-019	06 10 47	26.8	223.1	2.5	24.2	24	84	21 45 00
22 00 00	---	06 25 50	25.2	226.9	2.8	26.0	900	112	21 45 01

SETUP FILE INFORMATION:

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

=====
Setup file: ra6cm2.set

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

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

Track assignments are:

track1= 2, 18, 3, 19
 barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 45.805393	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.26160	0.00
	fake circumpolar target for a TS to look at			
* 0336-019	03 36 58.953148	* 03 39 30.937788	03 40 20.467242	0.00
J0339-0146	-01 56 16.89659	*-01 46 35.80419	-01 43 42.81474	0.00
CTA26	./rk12li_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 81923 observations, RA-A03-04, RA-A02-1			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
0336-019	121.8

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

rk12ljtr

RADIOASTRON AGN SURVEY

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Fax: +7-495-3332378 Phone during observation: +7-903-6614865

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

Schedule for TORUN (Code Tr) Page 2
RadioAstron AGN Survey

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

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Sat 9 Jan 2016 Day 9 ---

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

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

Table with columns: Start UT, Stop UT, Source, LST, EL, AZ, HA, UP, ParA, Dwell, Disk GBytes, TPStart SYNC. Contains scan data for 02:00:00 to 03:00:00.

SETUP FILE INFORMATION:

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

==== Setup file: ra6cm2.set

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

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

Track assignments are:

track1= 2, 18, 3, 19
 barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 45.861362	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.26168	0.00
	fake circumpolar target for a TS to look at			
* 1219+285	12 19 01.115600	* 12 21 31.690520	12 22 19.768251	0.00
J1221+2813	28 30 36.52556	* 28 13 58.50011	28 08 28.28388	0.00
	./rk12lj_sources.radioastron AGN, rfc_2013d Petrov, 2013, unpublished 880 observations, RA-A03-04			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
1219+285	112.2

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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


```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 45.895185	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.26189	0.00
	fake circumpolar target for a TS to look at			
* 0716+714	07 16 13.029739	* 07 21 53.448474	07 23 45.471144	0.00
J0721+7120	71 26 15.17406	* 71 20 36.36340	71 18 31.57504	0.00
	./rk12lk_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 42370 observations, RA-A03-04, RA-A02-1			

EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
0716+714    130.9

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

```



```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(Date)	Error (mas)
* FAKERA	11 57 21.769299 * 12 00 00.000000	12 00 45.940560	0.00
	85 16 41.77889 * 85 00 00.000000	84 54 19.26237	0.00
	fake circumpolar target for a TS to look at		
* 1417+385	14 17 43.055732 * 14 19 46.613761	14 20 25.164573	0.00
J1419+3821	38 35 32.28529 * 38 21 48.47497	38 17 17.16834	0.00
	./rk12ll_sources.radioastron		
	AGN, rfc_2013d Petrov, 2013, unpublished 21334 observations, RA-A03-04		

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
1417+385	92.6

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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


```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 45.974794	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.26292	0.00
	fake circumpolar target for a TS to look at			
* 1403+411	14 03 04.025300	* 14 05 07.795440	14 05 46.439558	0.00
J1405+4056	41 11 16.37060	* 40 56 57.83098	40 52 13.89610	0.00
	./rk12lm_sources.radioastron			
	AGN, BAL QSO, rfc_2013d Petrov, 2013, unpublished 90 observations, RA-A03-04, RA			

EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
1403+411    96.3

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

```



```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 46.101721	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.26647	0.00
	fake circumpolar target for a TS to look at			
* 0235+164	02 35 52.630215	* 02 38 38.930107	02 39 32.952609	0.00
J0238+1636	16 24 04.01610	* 16 36 59.27452	16 41 02.51876	0.00
	./rk12ln_sources.radioastron			
	AGN, IDV, rfc_2013d Petrov, 2013, unpublished 65224 observations, RA-A03-04, RA-			

EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
0235+164    113.5

```

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 $60 \text{ deg } F^{-0.6}$ 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

```



```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 46.171800	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.26965	0.00
	fake circumpolar target for a TS to look at			
* 1417+385	14 17 43.055732	* 14 19 46.613761	14 20 25.198880	0.00
J1419+3821	38 35 32.28529	* 38 21 48.47497	38 17 16.95308	0.00
	./rk12lo_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 21334 observations, RA-A03-04			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
1417+385	93.2

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

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

The following frequency sets based on these setups were used.

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

Track assignments are:

track1= 2, 18, 3, 19
 barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 46.207038	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.27162	0.00
	fake circumpolar target for a TS to look at			
* 1156+295	11 56 57.786212	* 11 59 31.833913	12 00 21.193297	0.00
J1159+2914	29 31 25.73868	* 29 14 43.82678	29 09 10.94278	0.00
	./rk12lp_sources.radioastron			
	AGN, MASIV, rfc_2013d Petrov, 2013, unpublished 70591 observations, RA-A03-04, R			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
1156+295	118.2

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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


```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 46.266028	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.27550	0.00
	fake circumpolar target for a TS to look at			
* 0716+714	07 16 13.029739	* 07 21 53.448474	07 23 45.517760	0.00
J0721+7120	71 26 15.17406	* 71 20 36.36340	71 18 31.94091	0.00
	./rk12lq_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 42370 observations, RA-A03-04, RA-A02-1			

EFFECT OF SOLAR CORONA

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

```

Source          Sun distance (deg)
0716+714        130.7

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

```


rk12lttr

RADIOASTRON AGN SURVEY

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Mon 11 Jan 2016 Day 11 ---

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

Next scan frequencies:	4836.00	4836.00	4836.00	4836.00							
Next BBC frequencies:	736.00	736.00	736.00	736.00							
Next scan bandwidths:	16.00	16.00	16.00	16.00							
16 00 00	0336-019	00 36 40	23.2	128.6	-3.1		-28.0	0	0	16 00 00	
16 14 30	---	00 51 13	24.8	132.2	-2.8		-26.4	870	28	16 00 01	
16 15 00	0336-019	00 51 43	24.9	132.3	-2.8		-26.4	24	28	16 15 00	
16 29 30	---	01 06 15	26.5	135.9	-2.6		-24.7	870	56	16 15 01	
16 30 00	0336-019	01 06 45	26.5	136.1	-2.6		-24.6	24	56	16 30 00	
16 44 30	---	01 21 18	28.0	139.8	-2.3		-22.8	870	84	16 30 01	
16 45 00	0336-019	01 21 48	28.0	139.9	-2.3		-22.7	24	84	16 45 00	
17 00 00	---	01 36 50	29.4	143.9	-2.1		-20.7	900	112	16 45 01	

SETUP FILE INFORMATION:

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

=====
Setup file: ra6cm2.set

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 46.588014	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.31186	0.00
	fake circumpolar target for a TS to look at			
* 0336-019	03 36 58.953148	* 03 39 30.937788	03 40 20.453196	0.00
J0339-0146	-01 56 16.89659	*-01 46 35.80419	-01 43 42.98288	0.00
CTA26	./rk12lt_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 81923 observations, RA-A03-04, RA-A02-1			

EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
0336-019    119.2

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

```



```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  3  Setup file default.  Used with PCAL = 1MHz
LO sum=  4836.00  4836.00  4836.00  4836.00
BBC fr=   736.00   736.00   736.00   736.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  3

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 46.636840	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.31990	0.00
	fake circumpolar target for a TS to look at			
* 0016+731	00 16 54.195077	* 00 19 45.786355	00 20 42.409379	0.00
J0019+7327	73 10 51.40716	* 73 27 30.01760	73 33 07.27808	0.00
	./rk12lu_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 63799 observations, RA-A03-04, RA-A02-1			

EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
0016+731    106.1

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

```


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

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 46.671676	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.32607	0.00
	fake circumpolar target for a TS to look at			
* 0235+164	02 35 52.630215	* 02 38 38.930107	02 39 32.933758	0.00
J0238+1636	16 24 04.01610	* 16 36 59.27452	16 41 02.50504	0.00
	./rk12lv_sources.radioastron			
	AGN, IDV, rfc_2013d Petrov, 2013, unpublished 65224 observations, RA-A03-04, RA-			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
0235+164	111.5

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 $60 \text{ deg } F^{-0.6}$ 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

rk12lwtr

RADIOASTRON AGN SURVEY

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Tue 12 Jan 2016 Day 12 ---

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

Next scan frequencies:	4836.00	4836.00	4836.00	4836.00						
Next BBC frequencies:	736.00	736.00	736.00	736.00						
Next scan bandwidths:	16.00	16.00	16.00	16.00						
02 10 00	1127-145	10 48 21	21.4	168.9	-0.7		-6.8	0	0	02 10 00
02 22 00	---	11 00 23	21.7	172.1	-0.5		-4.9	720	23	02 10 01
02 22 30	1127-145	11 00 53	21.7	172.2	-0.5		-4.8	24	23	02 22 30
02 34 30	---	11 12 55	21.9	175.3	-0.3		-2.9	720	46	02 22 31
02 35 00	1127-145	11 13 25	21.9	175.4	-0.3		-2.8	24	46	02 35 00
02 47 00	---	11 25 27	22.0	178.6	-0.1		-0.9	720	69	02 35 01
02 47 30	1127-145	11 25 57	22.0	178.7	-0.1		-0.8	24	69	02 47 30
03 00 00	---	11 38 29	22.0	182.0	0.1		1.2	750	93	02 47 31

SETUP FILE INFORMATION:

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

=====
Setup file: ra6cm2.set

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 46.708944	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.33309	0.00
	fake circumpolar target for a TS to look at			
* 1127-145	11 27 35.667215	* 11 30 07.052575	11 30 56.395347	0.00
J1130-1449	-14 32 54.44317	*-14 49 27.38834	-14 54 45.16854	0.00
	./rk12lw_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 1399 observations, RA-A03-04			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
1127-145	110.9

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 $60 \text{ deg } F^{-0.6}$ 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


```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 46.708944	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.33309	0.00
	fake circumpolar target for a TS to look at			
* 1127-145	11 27 35.667215	* 11 30 07.052575	11 30 56.395347	0.00
J1130-1449	-14 32 54.44317	*-14 49 27.38834	-14 54 45.16854	0.00
	./rk12lw_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 1399 observations, RA-A03-04			

EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
1127-145    110.9

```

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 $60 \text{ deg } F^{-0.6}$ 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

```

ec052ftr

E-EVN: EC052F, EC054C

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Observing mode: realtime e-vlbi

Schedule for TORUN (Code Tr) Page 2
e-EVN: ec052f, ec054c

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

Table with columns: Start UT, Source, Stop UT, LST, EL, AZ, HA, UP, ParA, Early Dwell, Disk GBytes, TPStart SYNC. Includes frequency and bandwidth data for various times and source IDs like 3C454.3.

Schedule for TORUN (Code Tr)

Page 3

e-EVN: ec052f, ec054c

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator 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 12 Jan 2016	Day	12	---						
12 30 40	3C454.3	21 10 43	47.9	141.1	-1.7		-23.1	34	1328	12 30 40
12 45 00	---	21 25 05	49.2	146.0	-1.5		-20.5	860	1438	12 30 41
12 45 40	3C454.3	21 25 45	49.2	146.2	-1.5		-20.4	34	1438	12 45 40
13 00 00	---	21 40 07	50.3	151.2	-1.2		-17.5	860	1549	12 45 41
13 00 40	3C454.3	21 40 48	50.4	151.5	-1.2		-17.4	34	1549	13 00 40
13 15 00	---	21 55 10	51.3	156.7	-1.0		-14.3	860	1659	13 00 41
13 15 40	3C454.3	21 55 50	51.4	157.0	-1.0		-14.2	34	1659	13 15 40
13 30 00	---	22 10 12	52.1	162.4	-0.7		-10.9	860	1769	13 15 41
13 34 00	0235+164	22 14 13	27.4	98.8	-4.4		-38.3	97	1769	13 34 00
13 45 00	---	22 25 15	29.0	101.1	-4.2		-38.0	660	1854	13 34 01
13 45 40	0235+164	22 25 55	29.1	101.3	-4.2		-37.9	34	1854	13 45 40
14 00 00	---	22 40 17	31.3	104.4	-4.0		-37.4	860	1964	13 45 41
14 00 40	0235+164	22 40 57	31.3	104.6	-4.0		-37.4	34	1964	14 00 40
14 15 00	---	22 55 20	33.4	107.8	-3.7		-36.6	860	2074	14 00 41
14 15 40	0235+164	22 56 00	33.5	108.0	-3.7		-36.6	34	2074	14 15 40
14 30 00	---	23 10 22	35.5	111.3	-3.5		-35.7	860	2185	14 15 41
14 30 40	0235+164	23 11 02	35.6	111.5	-3.5		-35.7	34	2185	14 30 40
14 45 00	---	23 25 25	37.6	115.0	-3.2		-34.6	860	2295	14 30 41
14 45 40	0235+164	23 26 05	37.7	115.2	-3.2		-34.6	34	2295	14 45 40
15 00 00	---	23 40 27	39.6	118.8	-3.0		-33.3	860	2405	14 45 41
15 00 40	0235+164	23 41 07	39.7	119.0	-3.0		-33.2	34	2405	15 00 40
15 15 00	---	23 55 30	41.6	122.8	-2.7		-31.8	860	2515	15 00 41
15 15 40	0235+164	23 56 10	41.7	123.0	-2.7		-31.7	34	2515	15 15 40
15 30 00	---	00 10 32	43.4	127.0	-2.5		-30.0	860	2626	15 15 41
15 30 40	0235+164	00 11 12	43.5	127.2	-2.5		-29.9	34	2626	15 30 40
15 45 00	---	00 25 35	45.2	131.4	-2.2		-28.0	860	2736	15 30 41
15 45 40	0235+164	00 26 15	45.3	131.6	-2.2		-27.9	34	2736	15 45 40
16 00 00	---	00 40 37	46.8	136.0	-2.0		-25.8	860	2846	15 45 41
16 00 40	0235+164	00 41 17	46.9	136.3	-2.0		-25.7	34	2846	16 00 40
16 15 00	---	00 55 39	48.3	140.9	-1.7		-23.3	860	2956	16 00 41
16 15 40	0235+164	00 56 20	48.4	141.1	-1.7		-23.2	34	2956	16 15 40
16 30 00	---	01 10 42	49.6	146.0	-1.5		-20.5	860	3067	16 15 41

Schedule for TORUN (Code Tr)

Page 4

e-EVN: ec052f, ec054c

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator 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 12 Jan 2016 Day 12 ---										
16 30 40	0235+164	01 11 22	49.7	146.2	-1.5		-20.4	34	3067	16 30 40
16 45 00	---	01 25 44	50.8	151.3	-1.2		-17.5	860	3177	16 30 41
16 45 40	0235+164	01 26 25	50.9	151.6	-1.2		-17.4	34	3177	16 45 40
17 00 00	---	01 40 47	51.8	156.9	-1.0		-14.3	860	3287	16 45 41
17 03 00	0528+134	01 43 47	30.3	109.1	-3.8		-35.7	69	3287	17 03 00
17 15 00	---	01 55 49	32.0	111.9	-3.6		-35.0	720	3379	17 03 01
17 15 40	0528+134	01 56 29	32.1	112.1	-3.6		-34.9	34	3379	17 15 40
17 30 00	---	02 10 52	34.1	115.5	-3.4		-33.9	860	3490	17 15 41
17 30 40	0528+134	02 11 32	34.2	115.7	-3.3		-33.8	34	3490	17 30 40
17 45 00	---	02 25 54	36.1	119.2	-3.1		-32.6	860	3600	17 30 41
17 45 40	0528+134	02 26 34	36.2	119.4	-3.1		-32.6	34	3600	17 45 40
18 00 00	---	02 40 57	38.0	123.1	-2.8		-31.1	860	3710	17 45 41
18 00 40	0528+134	02 41 37	38.1	123.3	-2.8		-31.1	34	3710	18 00 40
18 15 00	---	02 55 59	39.9	127.2	-2.6		-29.5	860	3821	18 00 41
18 15 40	0528+134	02 56 39	40.0	127.4	-2.6		-29.4	34	3821	18 15 40
18 30 00	---	03 11 02	41.6	131.4	-2.3		-27.6	860	3931	18 15 41
18 30 40	0528+134	03 11 42	41.7	131.6	-2.3		-27.5	34	3931	18 30 40
18 45 00	---	03 26 04	43.3	135.9	-2.1		-25.5	860	4041	18 30 41
18 45 40	0528+134	03 26 44	43.3	136.1	-2.1		-25.4	34	4041	18 45 40
19 00 00	---	03 41 07	44.8	140.5	-1.8		-23.1	860	4151	18 45 41
19 00 40	0528+134	03 41 47	44.8	140.7	-1.8		-23.0	34	4151	19 00 40
19 15 00	---	03 56 09	46.1	145.3	-1.6		-20.6	860	4262	19 00 41
19 15 40	0528+134	03 56 49	46.2	145.5	-1.6		-20.5	34	4262	19 15 40
19 30 00	---	04 11 12	47.3	150.4	-1.3		-17.8	860	4372	19 15 41
19 30 40	0528+134	04 11 52	47.4	150.6	-1.3		-17.7	34	4372	19 30 40
19 45 00	---	04 26 14	48.4	155.6	-1.1		-14.8	860	4482	19 30 41
19 48 00	OJ287	04 29 14	29.9	96.1	-4.4		-39.5	46	4482	19 48 00
20 00 00	---	04 41 16	31.6	98.6	-4.2		-39.2	720	4574	19 48 01
20 00 40	OJ287	04 41 57	31.7	98.8	-4.2		-39.2	34	4574	20 00 40
20 15 00	---	04 56 19	33.9	101.9	-4.0		-38.7	860	4685	20 00 41

Schedule for TORUN (Code Tr)

Page 5

e-EVN: ec052f, ec054c

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator 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 12 Jan 2016 Day 12 ---										
20 15 40	OJ287	04 56 59	34.0	102.1	-4.0		-38.7	34	4685	20 15 40
20 30 00	---	05 11 21	36.1	105.3	-3.7		-38.1	860	4795	20 15 41
20 30 40	OJ287	05 12 01	36.2	105.4	-3.7		-38.0	34	4795	20 30 40
20 45 00	---	05 26 24	38.2	108.8	-3.5		-37.2	860	4905	20 30 41
20 47 00	J1023+2856	05 28 24	32.1	83.5	-4.9		-42.9	54	4905	20 47 00
20 50 00	=1020+292	05 31 25	32.5	84.0	-4.9		-43.0	180	4928	20 47 01
20 50 00	1013+2811	05 31 25	33.4	86.5	-4.7		-42.8	-19	4928	No stop
20 53 30	---	05 34 55	34.0	87.2	-4.7		-42.8	191	4955	20 50 01
20 53 30	J1023+2856	05 34 55	33.1	84.7	-4.8		-43.1	-19	4955	No stop
20 55 00	=1020+292	05 36 25	33.3	85.0	-4.8		-43.1	71	4967	20 53 31
20 55 00	1013+2811	05 36 25	34.2	87.5	-4.6		-42.9	-19	4967	No stop
20 58 30	---	05 39 56	34.7	88.2	-4.6		-42.9	191	4994	20 55 01
20 59 15	J1023+2856	05 40 41	33.9	85.8	-4.7		-43.1	26	4994	20 59 15
21 00 00	=1020+292	05 41 26	34.0	85.9	-4.7		-43.2	45	4999	20 59 16
21 00 00	1013+2811	05 41 26	34.9	88.5	-4.6		-42.9	-19	4999	No stop
21 03 30	---	05 44 57	35.5	89.2	-4.5		-42.9	191	5026	21 00 01
21 03 30	J1023+2856	05 44 57	34.6	86.6	-4.7		-43.2	-19	5026	No stop
21 05 00	=1020+292	05 46 27	34.8	86.9	-4.6		-43.2	71	5038	21 03 31
21 05 00	1013+2811	05 46 27	35.7	89.5	-4.5		-42.9	-19	5038	No stop
21 08 30	---	05 49 58	36.2	90.2	-4.4		-42.9	191	5065	21 05 01
21 09 15	J1023+2856	05 50 43	35.4	87.7	-4.6		-43.2	26	5065	21 09 15
21 10 00	=1020+292	05 51 28	35.5	87.9	-4.5		-43.3	45	5071	21 09 16
21 10 00	1013+2811	05 51 28	36.5	90.5	-4.4		-42.9	-20	5071	No stop
21 13 30	---	05 54 59	37.0	91.2	-4.3		-42.9	190	5097	21 10 01
21 13 30	J1023+2856	05 54 59	36.1	88.6	-4.5		-43.3	-19	5097	No stop
21 15 00	=1020+292	05 56 29	36.3	88.9	-4.5		-43.3	71	5109	21 13 31
21 15 00	1013+2811	05 56 29	37.2	91.5	-4.3		-42.9	-20	5109	No stop
21 18 30	---	05 59 59	37.7	92.2	-4.2		-42.9	190	5136	21 15 01
21 19 15	J1023+2856	06 00 44	36.9	89.7	-4.4		-43.3	26	5136	21 19 15
21 20 00	=1020+292	06 01 30	37.0	89.9	-4.4		-43.3	45	5142	21 19 16

Schedule for TORUN (Code Tr)

Page 6

e-EVN: ec052f, ec054c

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator 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 12 Jan 2016 Day 12 ---										
21 20 00	1013+2811	06 01 30	38.0	92.5	-4.2		-42.9	-20	5142	No stop
21 23 30	---	06 05 00	38.5	93.2	-4.2		-42.8	190	5169	21 20 01
21 23 30	J1023+2856	06 05 00	37.6	90.6	-4.3		-43.3	-19	5169	No stop
21 25 00	=1020+292	06 06 30	37.8	90.9	-4.3		-43.3	71	5180	21 23 31
21 25 00	1013+2811	06 06 30	38.7	93.5	-4.1		-42.8	-20	5180	No stop
21 28 30	---	06 10 01	39.2	94.3	-4.1		-42.8	190	5207	21 25 01
21 29 15	J1023+2856	06 10 46	38.4	91.7	-4.2		-43.3	25	5207	21 29 15
21 30 00	=1020+292	06 11 31	38.5	91.9	-4.2		-43.3	45	5213	21 29 16
21 30 00	1013+2811	06 11 31	39.5	94.6	-4.0		-42.7	-20	5213	No stop
21 33 30	---	06 15 02	40.0	95.3	-4.0		-42.7	190	5240	21 30 01
21 33 30	J1023+2856	06 15 02	39.1	92.6	-4.2		-43.2	-20	5240	No stop
21 35 00	=1020+292	06 16 32	39.3	92.9	-4.1		-43.2	70	5251	21 33 31
21 35 00	1013+2811	06 16 32	40.2	95.6	-4.0		-42.6	-20	5251	No stop
21 38 30	---	06 20 03	40.7	96.4	-3.9		-42.6	190	5278	21 35 01
21 39 15	J1023+2856	06 20 48	39.9	93.8	-4.1		-43.2	25	5278	21 39 15
21 40 00	=1020+292	06 21 33	40.0	94.0	-4.0		-43.2	45	5284	21 39 16
21 40 00	1013+2811	06 21 33	41.0	96.7	-3.9		-42.5	-20	5284	No stop
21 43 30	---	06 25 03	41.5	97.5	-3.8		-42.5	190	5311	21 40 01
21 43 30	J1023+2856	06 25 03	40.6	94.7	-4.0		-43.1	-20	5311	No stop
21 45 00	=1020+292	06 26 34	40.8	95.0	-4.0		-43.1	70	5322	21 43 31
21 45 00	1013+2811	06 26 34	41.7	97.8	-3.8		-42.4	-20	5322	No stop
21 48 30	---	06 30 04	42.2	98.6	-3.7		-42.3	190	5349	21 45 01
21 49 15	J1023+2856	06 30 49	41.4	95.9	-3.9		-43.0	25	5349	21 49 15
21 50 00	=1020+292	06 31 35	41.5	96.1	-3.9		-43.0	45	5355	21 49 16
21 50 00	1013+2811	06 31 35	42.4	98.9	-3.7		-42.3	-20	5355	No stop
21 53 30	---	06 35 05	43.0	99.7	-3.7		-42.1	190	5382	21 50 01
21 53 30	J1023+2856	06 35 05	42.1	96.8	-3.8		-42.9	-20	5382	No stop
21 55 00	=1020+292	06 36 35	42.3	97.2	-3.8		-42.9	70	5394	21 53 31
21 55 00	1013+2811	06 36 35	43.2	100.0	-3.6		-42.1	-20	5394	No stop
21 58 30	---	06 40 06	43.7	100.8	-3.6		-42.0	190	5420	21 55 01

Schedule for TORUN (Code Tr)

Page 7

e-EVN: ec052f, ec054c

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

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Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator 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 12 Jan 2016 Day 12 ---										
21 59 15	J1023+2856	06 40 51	42.9	98.1	-3.7		-42.8	25	5420	21 59 15
22 00 00	=1020+292	06 41 36	43.0	98.3	-3.7		-42.7	45	5426	21 59 16
22 00 00	1013+2811	06 41 36	43.9	101.2	-3.5		-41.9	-20	5426	No stop
22 03 30	---	06 45 07	44.4	102.0	-3.5		-41.8	190	5453	22 00 01
22 03 30	J1023+2856	06 45 07	43.6	99.0	-3.7		-42.6	-20	5453	No stop
22 05 00	=1020+292	06 46 37	43.8	99.4	-3.6		-42.6	70	5465	22 03 31
22 05 00	1013+2811	06 46 37	44.7	102.3	-3.5		-41.7	-20	5465	No stop
22 08 30	---	06 50 08	45.2	103.1	-3.4		-41.5	190	5492	22 05 01
22 09 15	J1023+2856	06 50 53	44.4	100.3	-3.6		-42.4	25	5492	22 09 15
22 10 00	=1020+292	06 51 38	44.5	100.5	-3.5		-42.4	45	5497	22 09 16
22 10 00	1013+2811	06 51 38	45.4	103.5	-3.4		-41.5	-21	5497	No stop
22 13 30	---	06 55 08	45.9	104.3	-3.3		-41.3	189	5524	22 10 01
22 13 30	J1023+2856	06 55 08	45.0	101.3	-3.5		-42.2	-20	5524	No stop
22 15 00	=1020+292	06 56 39	45.3	101.6	-3.5		-42.2	70	5536	22 13 31
22 15 00	1013+2811	06 56 39	46.1	104.7	-3.3		-41.2	-21	5536	No stop
22 18 30	---	07 00 09	46.6	105.5	-3.2		-41.0	189	5563	22 15 01
22 19 15	J1023+2856	07 00 54	45.9	102.6	-3.4		-42.0	25	5563	22 19 15
22 20 00	=1020+292	07 01 39	46.0	102.8	-3.4		-42.0	45	5569	22 19 16
22 20 00	1013+2811	07 01 39	46.9	105.9	-3.2		-40.9	-21	5569	No stop
22 23 30	---	07 05 10	47.4	106.7	-3.2		-40.7	189	5595	22 20 01
22 23 30	J1023+2856	07 05 10	46.5	103.6	-3.3		-41.8	-21	5595	No stop
22 25 00	=1020+292	07 06 40	46.7	104.0	-3.3		-41.7	69	5607	22 23 31
22 25 00	1013+2811	07 06 40	47.6	107.1	-3.1		-40.6	-21	5607	No stop
22 28 30	---	07 10 11	48.1	108.0	-3.1		-40.4	189	5634	22 25 01
22 29 15	J1023+2856	07 10 56	47.4	105.0	-3.2		-41.5	24	5634	22 29 15
22 30 00	=1020+292	07 11 41	47.5	105.2	-3.2		-41.4	45	5640	22 29 16
22 30 00	1013+2811	07 11 41	48.3	108.4	-3.0		-40.2	-21	5640	No stop
22 33 30	---	07 15 12	48.8	109.3	-3.0		-40.0	189	5667	22 30 01
22 33 30	J1023+2856	07 15 12	48.0	106.1	-3.2		-41.2	-21	5667	No stop
22 35 00	=1020+292	07 16 42	48.2	106.4	-3.1		-41.1	69	5678	22 33 31

Schedule for TORUN (Code Tr)

Page 8

e-EVN: ec052f, ec054c

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator 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 12 Jan 2016 Day 12 ---										
22 35 00	1013+2811	07 16 42	49.0	109.7	-3.0		-39.9	-21	5678	No stop
22 38 30	---	07 20 12	49.5	110.6	-2.9		-39.6	189	5705	22 35 01
22 39 15	J1023+2856	07 20 58	48.8	107.5	-3.1		-40.8	24	5705	22 39 15
22 40 00	=1020+292	07 21 43	48.9	107.7	-3.0		-40.8	45	5711	22 39 16
22 40 00	1013+2811	07 21 43	49.7	111.0	-2.9		-39.5	-21	5711	No stop
22 43 30	---	07 25 13	50.2	111.9	-2.8		-39.2	189	5738	22 40 01
22 43 30	J1023+2856	07 25 13	49.4	108.6	-3.0		-40.5	-21	5738	No stop
22 45 00	=1020+292	07 26 44	49.6	109.0	-3.0		-40.4	69	5749	22 43 31
22 45 00	1013+2811	07 26 44	50.4	112.3	-2.8		-39.0	-22	5749	No stop
22 48 30	---	07 30 14	50.9	113.2	-2.7		-38.7	188	5776	22 45 01
22 49 15	J1023+2856	07 30 59	50.2	110.1	-2.9		-40.1	24	5776	22 49 15
22 50 00	=1020+292	07 31 44	50.3	110.3	-2.9		-40.0	45	5782	22 49 16
22 50 00	1013+2811	07 31 44	51.1	113.7	-2.7		-38.6	-22	5782	No stop
22 53 30	---	07 35 15	51.6	114.6	-2.7		-38.2	188	5809	22 50 01
22 53 30	J1023+2856	07 35 15	50.8	111.2	-2.8		-39.7	-21	5809	No stop
22 55 00	=1020+292	07 36 45	51.0	111.6	-2.8		-39.6	69	5820	22 53 31
22 55 00	1013+2811	07 36 45	51.8	115.0	-2.6		-38.1	-22	5820	No stop
22 58 30	---	07 40 16	52.3	116.0	-2.6		-37.7	188	5847	22 55 01
22 59 15	J1023+2856	07 41 01	51.6	112.7	-2.7		-39.2	23	5847	22 59 15
23 00 00	=1020+292	07 41 46	51.7	113.0	-2.7		-39.2	45	5853	22 59 16
23 00 00	1013+2811	07 41 46	52.5	116.5	-2.5		-37.5	-22	5853	No stop
23 03 30	---	07 45 17	52.9	117.5	-2.5		-37.2	188	5880	23 00 01
23 03 30	J1023+2856	07 45 17	52.2	113.9	-2.7		-38.8	-22	5880	No stop
23 05 00	=1020+292	07 46 47	52.4	114.3	-2.6		-38.7	68	5892	23 03 31
23 05 00	1013+2811	07 46 47	53.1	117.9	-2.5		-37.0	-22	5892	No stop
23 08 30	---	07 50 17	53.6	119.0	-2.4		-36.6	188	5919	23 05 01
23 09 15	J1023+2856	07 51 03	53.0	115.6	-2.6		-38.2	23	5919	23 09 15
23 10 00	=1020+292	07 51 48	53.1	115.8	-2.5		-38.1	45	5924	23 09 16
23 10 00	1013+2811	07 51 48	53.8	119.4	-2.4		-36.4	-22	5924	No stop
23 13 30	---	07 55 18	54.3	120.5	-2.3		-35.9	188	5951	23 10 01

Schedule for TORUN (Code Tr)

Page 9

e-EVN: ec052f, ec054c

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

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TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator 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 12 Jan 2016 Day 12 ---										
23 13 30	J1023+2856	07 55 18	53.6	116.8	-2.5		-37.7	-22	5951	No stop
23 15 00	=1020+292	07 56 48	53.8	117.2	-2.5		-37.6	68	5963	23 13 31
23 15 00	1013+2811	07 56 48	54.5	120.9	-2.3		-35.7	-22	5963	No stop
23 18 30	---	08 00 19	54.9	122.0	-2.2		-35.2	188	5990	23 15 01
23 19 15	J1023+2856	08 01 04	54.3	118.5	-2.4		-37.1	23	5990	23 19 15
23 20 00	=1020+292	08 01 49	54.4	118.7	-2.4		-37.0	45	5995	23 19 16
23 20 00	1013+2811	08 01 49	55.1	122.5	-2.2		-35.0	-23	5995	No stop
23 23 30	---	08 05 20	55.5	123.6	-2.2		-34.5	187	6022	23 20 01
23 23 30	J1023+2856	08 05 20	54.9	119.8	-2.3		-36.5	-22	6022	No stop
23 25 00	=1020+292	08 06 50	55.1	120.2	-2.3		-36.3	68	6034	23 23 31
23 25 00	1013+2811	08 06 50	55.7	124.1	-2.1		-34.3	-23	6034	No stop
23 28 30	---	08 10 21	56.2	125.2	-2.1		-33.8	187	6061	23 25 01
23 29 15	J1023+2856	08 11 06	55.6	121.6	-2.2		-35.7	22	6061	23 29 15
23 30 00	=1020+292	08 11 51	55.7	121.8	-2.2		-35.6	45	6067	23 29 16
23 32 00	J0950+0615	08 13 51	39.1	148.2	-1.6		-18.5	43	6067	23 32 00
23 35 00	=0947+064	08 16 52	39.3	149.2	-1.6		-18.0	180	6090	23 32 01
23 35 00	0940+0526	08 16 52	39.3	152.5	-1.4		-16.2	-22	6090	No stop
23 38 30	---	08 20 22	39.5	153.6	-1.3		-15.5	188	6117	23 35 01
23 38 30	J0950+0615	08 20 22	39.6	150.2	-1.5		-17.4	-21	6117	No stop
23 39 50	=0947+064	08 21 43	39.7	150.7	-1.5		-17.2	59	6127	23 38 31
23 39 50	0940+0526	08 21 43	39.6	154.0	-1.3		-15.3	-22	6127	No stop
23 43 20	---	08 25 13	39.8	155.1	-1.3		-14.7	188	6154	23 39 51
23 44 10	J0950+0615	08 26 03	40.0	152.0	-1.4		-16.5	29	6154	23 44 10
23 45 00	=0947+064	08 26 53	40.0	152.3	-1.4		-16.3	50	6160	23 44 11
23 45 00	0940+0526	08 26 53	39.9	155.7	-1.2		-14.4	-22	6160	No stop
23 48 30	---	08 30 24	40.1	156.8	-1.2		-13.8	188	6187	23 45 01
23 48 30	J0950+0615	08 30 24	40.3	153.4	-1.3		-15.7	-21	6187	No stop
23 49 50	=0947+064	08 31 44	40.4	153.8	-1.3		-15.5	59	6197	23 48 31
23 49 50	0940+0526	08 31 44	40.2	157.2	-1.2		-13.5	-22	6197	No stop
23 53 20	---	08 35 15	40.4	158.3	-1.1		-12.9	188	6224	23 49 51

Schedule for TORUN (Code Tr)

Page 10

e-EVN: ec052f, ec054c

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator 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 12 Jan 2016 Day 12 ---										
23 54 10	J0950+0615	08 36 05	40.7	155.1	-1.2		-14.7	29	6224	23 54 10
23 55 00	=0947+064	08 36 55	40.7	155.4	-1.2		-14.6	50	6231	23 54 11
23 55 00	0940+0526	08 36 55	40.5	158.8	-1.1		-12.6	-22	6231	No stop
23 58 30	---	08 40 26	40.7	160.0	-1.0		-11.9	188	6258	23 55 01
23 58 30	J0950+0615	08 40 26	40.9	156.5	-1.2		-13.9	-21	6258	No stop
23 59 50	=0947+064	08 41 46	41.0	157.0	-1.2		-13.7	59	6268	23 58 31
--- Start: Tue 12 Jan 2016 Day 12 -- Stop: Wed 13 Jan 2016 Day 13 ---										
23 59 50	0940+0526	08 41 46	40.8	160.4	-1.0		-11.7	-22	6268	No stop
00 03 20	---	08 45 16	40.9	161.5	-0.9		-11.0	188	6295	23 59 51
00 04 10	J0950+0615	08 46 07	41.2	158.3	-1.1		-12.9	29	6295	00 04 10
00 05 00	=0947+064	08 46 57	41.3	158.6	-1.1		-12.7	50	6301	00 04 11
00 05 00	0940+0526	08 46 57	41.0	162.1	-0.9		-10.7	-22	6301	No stop
00 08 30	---	08 50 27	41.2	163.2	-0.8		-10.0	188	6328	00 05 01
00 08 30	J0950+0615	08 50 27	41.5	159.8	-1.0		-12.1	-21	6328	No stop
00 09 50	=0947+064	08 51 47	41.5	160.2	-1.0		-11.8	59	6338	00 08 31
00 09 50	0940+0526	08 51 47	41.2	163.6	-0.8		-9.8	-22	6338	No stop
00 13 20	---	08 55 18	41.4	164.8	-0.8		-9.1	188	6365	00 09 51
00 14 10	J0950+0615	08 56 08	41.8	161.6	-0.9		-11.0	29	6365	00 14 10
00 15 00	=0947+064	08 56 58	41.8	161.9	-0.9		-10.8	50	6372	00 14 11
00 15 00	0940+0526	08 56 58	41.4	165.3	-0.7		-8.8	-22	6372	No stop
00 18 30	---	09 00 29	41.6	166.5	-0.7		-8.1	188	6399	00 15 01
00 18 30	J0950+0615	09 00 29	42.0	163.0	-0.8		-10.2	-21	6399	No stop
00 19 50	=0947+064	09 01 49	42.0	163.5	-0.8		-9.9	59	6409	00 18 31
00 19 50	0940+0526	09 01 49	41.6	166.9	-0.7		-7.8	-22	6409	No stop
00 23 20	---	09 05 20	41.7	168.1	-0.6		-7.2	188	6436	00 19 51
00 24 10	J0950+0615	09 06 10	42.2	164.9	-0.7		-9.0	29	6436	00 24 10
00 25 00	=0947+064	09 07 00	42.2	165.2	-0.7		-8.9	50	6442	00 24 11
00 25 00	0940+0526	09 07 00	41.8	168.6	-0.6		-6.8	-22	6442	No stop
00 28 30	---	09 10 31	41.9	169.8	-0.5		-6.1	188	6469	00 25 01

Schedule for TORUN (Code Tr)

Page 11

e-EVN: ec052f, ec054c

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
 Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator 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 13 Jan 2016 Day 13 ---										
00 28 30	J0950+0615	09 10 31	42.4	166.4	-0.7		-8.2	-21	6469	No stop
00 29 50	=0947+064	09 11 51	42.4	166.8	-0.7		-7.9	59	6479	00 28 31
00 29 50	0940+0526	09 11 51	41.9	170.3	-0.5		-5.9	-22	6479	No stop
00 33 20	---	09 15 21	42.0	171.4	-0.4		-5.2	188	6506	00 29 51
00 34 10	J0950+0615	09 16 11	42.5	168.2	-0.6		-7.1	29	6506	00 34 10
00 35 00	=0947+064	09 17 02	42.6	168.5	-0.6		-6.9	50	6513	00 34 11
00 35 00	0940+0526	09 17 02	42.0	172.0	-0.4		-4.8	-22	6513	No stop
00 38 30	---	09 20 32	42.1	173.2	-0.3		-4.1	188	6540	00 35 01
00 38 30	J0950+0615	09 20 32	42.7	169.7	-0.5		-6.2	-21	6540	No stop
00 39 50	=0947+064	09 21 52	42.7	170.2	-0.5		-5.9	59	6550	00 38 31
00 39 50	0940+0526	09 21 52	42.1	173.6	-0.3		-3.9	-22	6550	No stop
00 43 20	---	09 25 23	42.2	174.8	-0.3		-3.1	188	6577	00 39 51
00 44 10	J0950+0615	09 26 13	42.8	171.6	-0.4		-5.1	29	6577	00 44 10
00 45 00	=0947+064	09 27 03	42.8	171.9	-0.4		-4.9	50	6583	00 44 11
00 45 00	0940+0526	09 27 03	42.2	175.3	-0.2		-2.8	-22	6583	No stop
00 48 30	---	09 30 34	42.2	176.5	-0.2		-2.1	188	6610	00 45 01
00 48 30	J0950+0615	09 30 34	42.9	173.1	-0.3		-4.2	-21	6610	No stop
00 49 50	=0947+064	09 31 54	42.9	173.5	-0.3		-3.9	59	6620	00 48 31
00 49 50	0940+0526	09 31 54	42.2	177.0	-0.2		-1.8	-22	6620	No stop
00 53 20	---	09 35 25	42.3	178.1	-0.1		-1.1	188	6647	00 49 51
00 54 10	J0950+0615	09 36 15	43.0	175.0	-0.2		-3.0	29	6647	00 54 10
00 55 00	=0947+064	09 37 05	43.0	175.3	-0.2		-2.8	50	6654	00 54 11
00 55 00	0940+0526	09 37 05	42.3	178.7	-0.1		-0.8	-22	6654	No stop
00 58 30	---	09 40 35	42.3	179.9	-0.0		-0.1	188	6681	00 55 01
00 58 30	J0950+0615	09 40 35	43.0	176.5	-0.2		-2.1	-21	6681	No stop
00 59 50	=0947+064	09 41 56	43.0	176.9	-0.1		-1.8	59	6691	00 58 31
00 59 50	0940+0526	09 41 56	42.3	180.3	0.0		0.2	-22	6691	No stop
01 03 20	---	09 45 26	42.3	181.5	0.1		0.9	188	6718	00 59 51
01 04 10	J0950+0615	09 46 16	43.1	178.4	-0.1		-1.0	29	6718	01 04 10
01 05 00	=0947+064	09 47 07	43.1	178.7	-0.1		-0.8	50	6724	01 04 11

Schedule for TORUN (Code Tr)

Page 12

e-EVN: ec052f, ec054c

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator 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 13 Jan 2016 Day 13 ---										
01 05 00	0940+0526	09 47 07	42.3	182.1	0.1		1.3	-22	6724	No stop
01 08 30	---	09 50 37	42.2	183.3	0.2		2.0	188	6751	01 05 01
01 08 30	J0950+0615	09 50 37	43.1	179.9	-0.0		-0.1	-21	6751	No stop
01 09 50	=0947+064	09 51 57	43.1	180.4	0.0		0.2	59	6762	01 08 31
01 09 50	0940+0526	09 51 57	42.2	183.7	0.2		2.2	-22	6762	No stop
01 13 20	---	09 55 28	42.2	184.9	0.2		2.9	188	6788	01 09 51
01 14 10	J0950+0615	09 56 18	43.1	181.8	0.1		1.1	29	6788	01 14 10
01 15 00	=0947+064	09 57 08	43.1	182.1	0.1		1.3	50	6795	01 14 11
01 15 00	0940+0526	09 57 08	42.2	185.4	0.3		3.3	-22	6795	No stop
01 18 30	---	10 00 39	42.1	186.6	0.3		4.0	188	6822	01 15 01
01 18 30	J0950+0615	10 00 39	43.0	183.3	0.2		2.0	-21	6822	No stop
01 19 50	=0947+064	10 01 59	43.0	183.8	0.2		2.3	59	6832	01 18 31
01 19 50	0940+0526	10 01 59	42.1	187.1	0.4		4.3	-21	6832	No stop
01 23 20	---	10 05 30	42.0	188.2	0.4		5.0	189	6859	01 19 51
01 24 10	J0950+0615	10 06 20	43.0	185.2	0.3		3.2	29	6859	01 24 10
01 25 00	=0947+064	10 07 10	43.0	185.5	0.3		3.3	50	6865	01 24 11
01 25 00	0940+0526	10 07 10	42.0	188.8	0.4		5.3	-21	6865	No stop
01 28 30	---	10 10 40	41.9	190.0	0.5		6.0	189	6892	01 25 01
01 28 30	J0950+0615	10 10 40	42.9	186.7	0.3		4.0	-21	6892	No stop
01 29 50	=0947+064	10 12 01	42.9	187.2	0.4		4.3	59	6903	01 28 31
01 29 50	0940+0526	10 12 01	41.8	190.4	0.5		6.3	-21	6903	No stop
01 33 20	---	10 15 31	41.7	191.6	0.6		6.9	189	6929	01 29 51
01 34 10	J0950+0615	10 16 21	42.8	188.6	0.4		5.2	29	6929	01 34 10
01 35 00	=0947+064	10 17 11	42.8	188.9	0.4		5.4	50	6936	01 34 11
01 35 00	0940+0526	10 17 11	41.7	192.1	0.6		7.3	-21	6936	No stop
01 38 30	---	10 20 42	41.6	193.3	0.7		8.0	189	6963	01 35 01
01 38 30	J0950+0615	10 20 42	42.7	190.1	0.5		6.1	-21	6963	No stop
01 39 50	=0947+064	10 22 02	42.6	190.5	0.5		6.3	59	6973	01 38 31
01 39 50	0940+0526	10 22 02	41.5	193.7	0.7		8.2	-21	6973	No stop
01 43 20	---	10 25 33	41.4	194.9	0.7		8.9	189	7000	01 39 51

Schedule for TORUN (Code Tr)

Page 13

e-EVN: ec052f, ec054c

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator 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 13 Jan 2016 Day 13 ---										
01 44 10	J0950+0615	10 26 23	42.5	192.0	0.6		7.2	29	7000	01 44 10
01 45 00	=0947+064	10 27 13	42.5	192.3	0.6		7.4	50	7006	01 44 11
01 45 00	0940+0526	10 27 13	41.3	195.4	0.8		9.2	-21	7006	No stop
01 48 30	---	10 30 44	41.2	196.6	0.8		9.9	189	7033	01 45 01
01 48 30	J0950+0615	10 30 44	42.4	193.5	0.7		8.1	-21	7033	No stop
01 49 50	=0947+064	10 32 04	42.3	193.9	0.7		8.3	59	7044	01 48 31
01 49 50	0940+0526	10 32 04	41.1	197.0	0.9		10.2	-21	7044	No stop
01 53 20	---	10 35 34	41.0	198.1	0.9		10.8	189	7070	01 49 51
01 54 10	J0950+0615	10 36 25	42.2	195.3	0.8		9.2	30	7070	01 54 10
01 55 00	=0947+064	10 37 15	42.1	195.6	0.8		9.4	50	7077	01 54 11
01 55 00	0940+0526	10 37 15	40.9	198.7	0.9		11.1	-21	7077	No stop
01 58 30	---	10 40 45	40.7	199.8	1.0		11.8	189	7104	01 55 01
01 58 30	J0950+0615	10 40 45	42.0	196.8	0.8		10.0	-20	7104	No stop
01 59 50	=0947+064	10 42 06	41.9	197.2	0.9		10.3	60	7114	01 58 31
01 59 50	0940+0526	10 42 06	40.7	200.2	1.0		12.0	-21	7114	No stop
02 03 20	---	10 45 36	40.5	201.4	1.1		12.7	189	7141	01 59 51
02 04 10	J0950+0615	10 46 26	41.7	198.6	0.9		11.1	30	7141	02 04 10
02 05 00	=0947+064	10 47 16	41.7	198.9	0.9		11.3	50	7147	02 04 11
02 05 00	0940+0526	10 47 16	40.4	201.9	1.1		13.0	-21	7147	No stop
02 08 30	---	10 50 47	40.2	203.0	1.2		13.6	189	7174	02 05 01
02 08 30	J0950+0615	10 50 47	41.5	200.1	1.0		12.0	-20	7174	No stop
02 09 50	=0947+064	10 52 07	41.4	200.5	1.0		12.2	60	7185	02 08 31
02 09 50	0940+0526	10 52 07	40.1	203.4	1.2		13.9	-21	7185	No stop
02 13 20	---	10 55 38	39.9	204.5	1.2		14.5	189	7212	02 09 51
02 14 10	J0950+0615	10 56 28	41.2	201.9	1.1		13.0	30	7212	02 14 10
02 15 00	=0947+064	10 57 18	41.2	202.2	1.1		13.2	50	7218	02 14 11
02 15 00	0940+0526	10 57 18	39.8	205.1	1.3		14.8	-20	7218	No stop
02 18 30	---	11 00 49	39.5	206.2	1.3		15.4	190	7245	02 15 01
02 18 30	J0950+0615	11 00 49	41.0	203.3	1.2		13.8	-20	7245	No stop
02 19 50	=0947+064	11 02 09	40.9	203.7	1.2		14.1	60	7255	02 18 31

Schedule for TORUN (Code Tr)

Page 14

e-EVN: ec052f, ec054c

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator 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 13 Jan 2016 Day 13 ---										
02 19 50	0940+0526	11 02 09	39.5	206.6	1.4		15.7	-20	7255	No stop
02 23 20	---	11 05 39	39.2	207.7	1.4		16.3	190	7282	02 19 51
02 24 10	J0950+0615	11 06 30	40.6	205.1	1.3		14.8	30	7282	02 24 10
02 25 00	=0947+064	11 07 20	40.6	205.4	1.3		15.0	50	7288	02 24 11
02 30 00	0Q208	11 12 21	49.6	110.0	-2.9		-39.9	93	7288	02 30 00
02 33 00	---	11 15 21	50.0	110.8	-2.9		-39.6	180	7312	02 30 01
02 35 00	J1544+3240	11 17 21	39.1	85.7	-4.5		-45.3	54	7312	02 35 00
02 38 00	=1542+328	11 20 22	39.5	86.2	-4.4		-45.4	180	7335	02 35 01
02 38 00	1548+3335	11 20 22	39.5	84.6	-4.5		-45.8	-16	7335	No stop
02 41 30	---	11 23 52	40.0	85.2	-4.4		-45.9	194	7362	02 38 01
02 41 30	J1544+3240	11 23 52	40.0	86.9	-4.3		-45.4	-17	7362	No stop
02 43 00	=1542+328	11 25 23	40.3	87.2	-4.3		-45.4	73	7373	02 41 31
02 43 00	1548+3335	11 25 23	40.2	85.5	-4.4		-45.9	-16	7373	No stop
02 46 30	---	11 28 53	40.8	86.2	-4.3		-46.0	194	7400	02 43 01
02 47 10	J1544+3240	11 29 33	40.9	88.0	-4.3		-45.4	23	7400	02 47 10
02 48 00	=1542+328	11 30 23	41.0	88.2	-4.2		-45.5	50	7406	02 47 11
02 48 00	1548+3335	11 30 23	41.0	86.5	-4.3		-46.0	-17	7406	No stop
02 51 30	---	11 33 54	41.5	87.2	-4.3		-46.0	193	7433	02 48 01
02 51 30	J1544+3240	11 33 54	41.5	88.9	-4.2		-45.5	-17	7433	No stop
02 53 00	=1542+328	11 35 24	41.8	89.2	-4.2		-45.5	73	7445	02 51 31
02 53 00	1548+3335	11 35 24	41.7	87.4	-4.2		-46.0	-17	7445	No stop
02 56 30	---	11 38 55	42.3	88.1	-4.2		-46.1	193	7472	02 53 01
02 57 10	J1544+3240	11 39 35	42.4	90.0	-4.1		-45.5	23	7472	02 57 10
02 58 00	=1542+328	11 40 25	42.5	90.2	-4.1		-45.5	50	7478	02 57 11
02 58 00	1548+3335	11 40 25	42.5	88.4	-4.1		-46.1	-17	7478	No stop
03 01 30	---	11 43 56	43.0	89.1	-4.1		-46.1	193	7505	02 58 01
03 01 30	J1544+3240	11 43 56	43.0	90.9	-4.0		-45.5	-17	7505	No stop
03 03 00	=1542+328	11 45 26	43.3	91.2	-4.0		-45.5	73	7517	03 01 31
03 03 00	1548+3335	11 45 26	43.3	89.4	-4.1		-46.1	-17	7517	No stop
03 06 30	---	11 48 57	43.8	90.1	-4.0		-46.1	193	7544	03 03 01

Schedule for TORUN (Code Tr)

Page 15

e-EVN: ec052f, ec054c

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator 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 13 Jan 2016  Day 13 ---

03 07 10  J1544+3240  11 49 37  43.9 92.0 -3.9  -45.4  23  7544  03 07 10
03 08 00  =1542+328    11 50 27  44.0 92.2 -3.9  -45.4  50  7550  03 07 11

03 08 00  1548+3335  11 50 27  44.0 90.4 -4.0  -46.1  -17  7550  No stop
03 11 30  ---          11 53 57  44.5 91.1 -3.9  -46.1  193  7577  03 08 01

03 11 30  J1544+3240  11 53 57  44.5 92.9 -3.8  -45.4  -17  7577  No stop
03 13 00  =1542+328    11 55 28  44.8 93.2 -3.8  -45.4  73  7588  03 11 31

03 13 00  1548+3335  11 55 28  44.8 91.4 -3.9  -46.1  -17  7588  No stop
03 16 30  ---          11 58 58  45.3 92.1 -3.8  -46.0  193  7615  03 13 01

03 17 10  J1544+3240  11 59 38  45.4 94.1 -3.8  -45.3  23  7615  03 17 10
03 18 00  =1542+328    12 00 28  45.5 94.3 -3.7  -45.3  50  7622  03 17 11

03 18 00  1548+3335  12 00 28  45.5 92.5 -3.8  -46.0  -17  7622  No stop
03 21 30  ---          12 03 59  46.0 93.2 -3.8  -46.0  193  7649  03 18 01

03 21 30  J1544+3240  12 03 59  46.0 95.0 -3.7  -45.3  -17  7649  No stop
03 23 00  =1542+328    12 05 29  46.3 95.3 -3.7  -45.2  73  7660  03 21 31

03 23 00  1548+3335  12 05 29  46.3 93.5 -3.7  -46.0  -17  7660  No stop
03 26 30  ---          12 09 00  46.8 94.2 -3.7  -45.9  193  7687  03 23 01

03 27 10  J1544+3240  12 09 40  46.9 96.2 -3.6  -45.1  23  7687  03 27 10
03 28 00  =1542+328    12 10 30  47.0 96.4 -3.6  -45.1  50  7694  03 27 11

03 28 00  1548+3335  12 10 30  47.0 94.6 -3.6  -45.9  -17  7694  No stop
03 31 30  ---          12 14 01  47.5 95.3 -3.6  -45.8  193  7720  03 28 01

03 31 30  J1544+3240  12 14 01  47.5 97.2 -3.5  -45.0  -17  7720  No stop
03 33 00  =1542+328    12 15 31  47.8 97.5 -3.5  -45.0  73  7732  03 31 31

03 33 00  1548+3335  12 15 31  47.8 95.6 -3.6  -45.8  -17  7732  No stop
03 36 30  ---          12 19 01  48.3 96.4 -3.5  -45.7  193  7759  03 33 01

03 37 10  J1544+3240  12 19 42  48.4 98.5 -3.4  -44.9  22  7759  03 37 10
03 38 00  =1542+328    12 20 32  48.5 98.6 -3.4  -44.8  50  7765  03 37 11

03 38 00  1548+3335  12 20 32  48.5 96.7 -3.5  -45.7  -17  7765  No stop
03 41 30  ---          12 24 02  49.0 97.5 -3.4  -45.6  193  7792  03 38 01

03 41 30  J1544+3240  12 24 02  49.0 99.4 -3.3  -44.7  -18  7792  No stop
03 43 00  =1542+328    12 25 33  49.3 99.8 -3.3  -44.6  72  7804  03 41 31

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Schedule for TORUN (Code Tr)

Page 16

e-EVN: ec052f, ec054c

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator 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 13 Jan 2016 Day 13 ---										
03 43 00	1548+3335	12 25 33	49.3	97.8	-3.4		-45.5	-17	7804	No stop
03 46 30	---	12 29 03	49.8	98.6	-3.3		-45.4	193	7831	03 43 01
03 47 10	J1544+3240	12 29 43	49.9	100.8	-3.2		-44.5	22	7831	03 47 10
03 48 00	=1542+328	12 30 33	50.0	101.0	-3.2		-44.4	50	7837	03 47 11
03 48 00	1548+3335	12 30 33	50.0	99.0	-3.3		-45.4	-17	7837	No stop
03 51 30	---	12 34 04	50.5	99.8	-3.2		-45.2	193	7864	03 48 01
03 51 30	J1544+3240	12 34 04	50.5	101.8	-3.2		-44.3	-18	7864	No stop
03 53 00	=1542+328	12 35 34	50.7	102.1	-3.2		-44.2	72	7876	03 51 31
03 53 00	1548+3335	12 35 34	50.7	100.1	-3.2		-45.2	-18	7876	No stop
03 56 30	---	12 39 05	51.3	100.9	-3.2		-45.0	192	7903	03 53 01
03 57 10	J1544+3240	12 39 45	51.3	103.1	-3.1		-44.0	22	7903	03 57 10
03 58 00	=1542+328	12 40 35	51.5	103.3	-3.1		-43.9	50	7909	03 57 11
03 58 00	1548+3335	12 40 35	51.5	101.3	-3.1		-44.9	-18	7909	No stop
04 01 30	---	12 44 06	52.0	102.1	-3.1		-44.8	192	7936	03 58 01
04 01 30	J1544+3240	12 44 06	52.0	104.2	-3.0		-43.7	-18	7936	No stop
04 03 00	=1542+328	12 45 36	52.2	104.6	-3.0		-43.6	72	7947	04 01 31
04 03 00	1548+3335	12 45 36	52.2	102.5	-3.1		-44.7	-18	7947	No stop
04 06 30	---	12 49 06	52.7	103.3	-3.0		-44.5	192	7974	04 03 01
04 07 10	J1544+3240	12 49 46	52.8	105.6	-2.9		-43.4	22	7974	04 07 10
04 08 00	=1542+328	12 50 37	52.9	105.8	-2.9		-43.3	50	7981	04 07 11
04 08 00	1548+3335	12 50 37	53.0	103.7	-3.0		-44.4	-18	7981	No stop
04 11 30	---	12 54 07	53.5	104.6	-2.9		-44.2	192	8008	04 08 01
04 11 30	J1544+3240	12 54 07	53.4	106.7	-2.8		-43.1	-18	8008	No stop
04 13 00	=1542+328	12 55 37	53.6	107.1	-2.8		-43.0	72	8019	04 11 31
04 13 00	1548+3335	12 55 37	53.7	105.0	-2.9		-44.1	-18	8019	No stop
04 16 30	---	12 59 08	54.2	105.9	-2.8		-43.9	192	8046	04 13 01
04 17 10	J1544+3240	12 59 48	54.2	108.2	-2.7		-42.6	22	8046	04 17 10
04 18 00	=1542+328	13 00 38	54.4	108.4	-2.7		-42.6	50	8053	04 17 11
04 18 00	1548+3335	13 00 38	54.4	106.3	-2.8		-43.8	-18	8053	No stop
04 21 30	---	13 04 09	54.9	107.2	-2.7		-43.5	192	8079	04 18 01

Schedule for TORUN (Code Tr)

Page 17

e-EVN: ec052f, ec054c

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator 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 13 Jan 2016 Day 13 ---										
04 21 30	J1544+3240	13 04 09	54.9	109.4	-2.7		-42.3	-18	8079	No stop
04 23 00	=1542+328	13 05 39	55.1	109.8	-2.7		-42.1	72	8091	04 21 31
04 23 00	1548+3335	13 05 39	55.1	107.6	-2.7		-43.4	-18	8091	No stop
04 26 30	---	13 09 10	55.6	108.5	-2.7		-43.1	192	8118	04 23 01
04 27 10	J1544+3240	13 09 50	55.7	110.9	-2.6		-41.8	21	8118	04 27 10
04 28 00	=1542+328	13 10 40	55.8	111.2	-2.6		-41.7	50	8124	04 27 11
04 28 00	1548+3335	13 10 40	55.8	108.9	-2.6		-43.0	-18	8124	No stop
04 31 30	---	13 14 10	56.3	109.9	-2.6		-42.6	192	8151	04 28 01
04 31 30	J1544+3240	13 14 10	56.3	112.2	-2.5		-41.3	-19	8151	No stop
04 33 00	=1542+328	13 15 41	56.5	112.6	-2.5		-41.2	71	8163	04 31 31
04 33 00	1548+3335	13 15 41	56.6	110.3	-2.6		-42.5	-18	8163	No stop
04 36 30	---	13 19 11	57.0	111.3	-2.5		-42.2	192	8190	04 33 01
04 37 10	J1544+3240	13 19 51	57.1	113.8	-2.4		-40.7	21	8190	04 37 10
04 38 00	=1542+328	13 20 42	57.2	114.1	-2.4		-40.6	50	8196	04 37 11
04 38 00	1548+3335	13 20 42	57.3	111.7	-2.5		-42.0	-19	8196	No stop
04 41 30	---	13 24 12	57.7	112.7	-2.4		-41.6	191	8223	04 38 01
04 41 30	J1544+3240	13 24 12	57.6	115.1	-2.3		-40.2	-19	8223	No stop
04 43 00	=1542+328	13 25 42	57.9	115.6	-2.3		-40.0	71	8235	04 41 31
04 43 00	1548+3335	13 25 42	58.0	113.2	-2.4		-41.5	-19	8235	No stop
04 46 30	---	13 29 13	58.4	114.2	-2.3		-41.1	191	8262	04 43 01
04 47 10	J1544+3240	13 29 53	58.4	116.8	-2.2		-39.5	21	8262	04 47 10
04 48 00	=1542+328	13 30 43	58.5	117.1	-2.2		-39.4	50	8268	04 47 11
04 48 00	1548+3335	13 30 43	58.6	114.7	-2.3		-40.9	-19	8268	No stop
04 51 30	---	13 34 14	59.1	115.7	-2.2		-40.5	191	8295	04 48 01
04 51 30	J1544+3240	13 34 14	59.0	118.2	-2.2		-38.9	-19	8295	No stop
04 53 00	=1542+328	13 35 44	59.2	118.7	-2.1		-38.7	71	8306	04 51 31
04 53 00	1548+3335	13 35 44	59.3	116.2	-2.2		-40.3	-19	8306	No stop
04 56 30	---	13 39 15	59.8	117.3	-2.2		-39.8	191	8333	04 53 01
04 57 10	J1544+3240	13 39 55	59.7	120.0	-2.1		-38.1	21	8333	04 57 10
04 58 00	=1542+328	13 40 45	59.8	120.3	-2.1		-38.0	50	8340	04 57 11

Schedule for TORUN (Code Tr)

Page 18

e-EVN: ec052f, ec054c

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator 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 13 Jan 2016 Day 13 ---										
04 58 00	1548+3335	13 40 45	60.0	117.8	-2.1		-39.6	-19	8340	No stop
05 01 30	---	13 44 15	60.5	118.9	-2.1		-39.1	191	8367	04 58 01
05 01 30	J1544+3240	13 44 15	60.3	121.5	-2.0		-37.4	-20	8367	No stop
05 03 00	=1542+328	13 45 46	60.5	122.0	-2.0		-37.2	70	8378	05 01 31
05 03 00	1548+3335	13 45 46	60.6	119.4	-2.1		-38.9	-19	8378	No stop
05 06 30	---	13 49 16	61.1	120.6	-2.0		-38.3	191	8405	05 03 01
05 07 10	J1544+3240	13 49 56	61.0	123.4	-1.9		-36.5	20	8405	05 07 10
05 08 00	=1542+328	13 50 46	61.1	123.7	-1.9		-36.4	50	8411	05 07 11
05 08 00	1548+3335	13 50 46	61.3	121.1	-2.0		-38.1	-19	8411	No stop
05 11 30	---	13 54 17	61.7	122.3	-1.9		-37.5	191	8438	05 08 01
05 11 30	J1544+3240	13 54 17	61.6	125.0	-1.8		-35.8	-20	8438	No stop
05 13 00	=1542+328	13 55 47	61.7	125.5	-1.8		-35.5	70	8450	05 11 31
05 13 00	1548+3335	13 55 47	61.9	122.8	-1.9		-37.2	-19	8450	No stop
05 16 30	---	13 59 18	62.4	124.1	-1.8		-36.6	191	8477	05 13 01
05 17 10	J1544+3240	13 59 58	62.2	127.0	-1.7		-34.7	20	8477	05 17 10
05 18 00	=1542+328	14 00 48	62.3	127.4	-1.7		-34.5	50	8483	05 17 11
05 18 00	1548+3335	14 00 48	62.6	124.6	-1.8		-36.3	-20	8483	No stop
05 21 30	---	14 04 19	63.0	125.9	-1.7		-35.7	190	8510	05 18 01
05 21 30	J1544+3240	14 04 19	62.8	128.7	-1.7		-33.8	-20	8510	No stop
05 23 00	=1542+328	14 05 49	62.9	129.3	-1.6		-33.5	70	8522	05 21 31
05 23 00	1548+3335	14 05 49	63.2	126.5	-1.7		-35.4	-20	8522	No stop
05 26 30	---	14 09 20	63.6	127.8	-1.7		-34.7	190	8549	05 23 01
05 27 10	J1544+3240	14 10 00	63.4	130.9	-1.6		-32.6	20	8549	05 27 10
05 28 00	=1542+328	14 10 50	63.5	131.2	-1.6		-32.4	50	8555	05 27 11
05 28 00	1548+3335	14 10 50	63.8	128.4	-1.6		-34.4	-20	8555	No stop
05 31 30	---	14 14 20	64.2	129.8	-1.6		-33.6	190	8582	05 28 01
05 31 30	J1544+3240	14 14 20	63.9	132.6	-1.5		-31.6	-20	8582	No stop
05 33 00	=1542+328	14 15 51	64.1	133.3	-1.5		-31.3	70	8594	05 31 31
05 33 00	1548+3335	14 15 51	64.4	130.4	-1.6		-33.3	-20	8594	No stop
05 36 30	---	14 19 21	64.8	131.8	-1.5		-32.5	190	8620	05 33 01

Schedule for TORUN (Code Tr)

Page 19

e-EVN: ec052f, ec054c

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator 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 13 Jan 2016 Day 13 ---										
05 37 10	J1544+3240	14 20 01	64.5	135.0	-1.4		-30.3	20	8620	05 37 10
05 38 00	=1542+328	14 20 51	64.6	135.4	-1.4		-30.1	50	8627	05 37 11
05 38 00	1548+3335	14 20 51	64.9	132.5	-1.5		-32.1	-20	8627	No stop
05 41 30	---	14 24 22	65.3	133.9	-1.4		-31.3	190	8654	05 38 01
05 41 30	J1544+3240	14 24 22	65.0	136.9	-1.3		-29.2	-21	8654	No stop
05 43 00	=1542+328	14 25 52	65.1	137.5	-1.3		-28.8	69	8665	05 41 31
05 43 00	1548+3335	14 25 52	65.5	134.6	-1.4		-30.9	-20	8665	No stop
05 46 30	---	14 29 23	65.8	136.1	-1.3		-30.0	190	8692	05 43 01
05 47 10	J1544+3240	14 30 03	65.5	139.4	-1.2		-27.7	19	8692	05 47 10
05 48 00	=1542+328	14 30 53	65.6	139.8	-1.2		-27.4	50	8699	05 47 11
05 48 00	1548+3335	14 30 53	66.0	136.8	-1.3		-29.6	-20	8699	No stop
05 51 30	---	14 34 24	66.3	138.4	-1.2		-28.6	190	8726	05 48 01
05 51 30	J1544+3240	14 34 24	66.0	141.4	-1.2		-26.4	-21	8726	No stop
05 53 00	=1542+328	14 35 54	66.1	142.1	-1.1		-26.0	69	8737	05 51 31
05 53 00	1548+3335	14 35 54	66.5	139.0	-1.2		-28.2	-20	8737	No stop
05 56 30	---	14 39 24	66.8	140.7	-1.2		-27.2	190	8764	05 53 01
05 57 10	J1544+3240	14 40 05	66.5	144.0	-1.1		-24.8	19	8764	05 57 10
05 58 00	=1542+328	14 40 55	66.6	144.4	-1.1		-24.5	50	8770	05 57 11
05 58 00	1548+3335	14 40 55	67.0	141.4	-1.1		-26.7	-20	8770	No stop
06 01 30	---	14 44 25	67.3	143.1	-1.1		-25.6	190	8797	05 58 01
06 01 30	J1544+3240	14 44 25	66.9	146.1	-1.0		-23.4	-21	8797	No stop
06 03 00	=1542+328	14 45 56	67.0	146.9	-1.0		-22.9	69	8809	06 01 31
06 03 00	1548+3335	14 45 56	67.4	143.8	-1.1		-25.2	-20	8809	No stop
06 06 30	---	14 49 26	67.7	145.6	-1.0		-24.0	190	8836	06 03 01
06 07 10	J1544+3240	14 50 06	67.3	149.0	-0.9		-21.6	19	8836	06 07 10
06 08 00	=1542+328	14 50 56	67.4	149.4	-0.9		-21.3	50	8842	06 07 11
06 08 00	1548+3335	14 50 56	67.9	146.3	-1.0		-23.5	-20	8842	No stop
06 11 30	---	14 54 27	68.2	148.1	-0.9		-22.4	190	8869	06 08 01
06 11 30	J1544+3240	14 54 27	67.6	151.2	-0.8		-20.1	-21	8869	No stop
06 13 00	=1542+328	14 55 57	67.7	152.0	-0.8		-19.6	69	8881	06 11 31

Schedule for TORUN (Code Tr)

Page 20

e-EVN: ec052f, ec054c

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator 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 13 Jan 2016 Day 13 ---										
06 13 00	1548+3335	14 55 57	68.3	148.9	-0.9		-21.8	-20	8881	No stop
06 16 30	---	14 59 28	68.5	150.8	-0.8		-20.6	190	8908	06 13 01
06 17 10	J1544+3240	15 00 08	68.0	154.2	-0.7		-18.1	19	8908	06 17 10
06 18 00	=1542+328	15 00 58	68.1	154.7	-0.7		-17.8	50	8914	06 17 11
06 20 00	3C345	15 02 58	68.3	117.8	-1.7		-43.7	31	8914	06 20 00
06 23 00	---	15 05 59	68.7	119.0	-1.6		-43.1	180	8937	06 20 01
06 25 00	J1544+3240	15 07 59	68.5	158.5	-0.6		-15.2	26	8937	06 25 00
06 28 00	=1542+328	15 11 00	68.7	160.2	-0.6		-14.0	180	8960	06 25 01
06 28 00	1548+3335	15 11 00	69.3	157.1	-0.6		-16.3	-20	8960	No stop
06 31 30	---	15 14 30	69.5	159.1	-0.6		-14.9	190	8987	06 28 01
06 31 30	J1544+3240	15 14 30	68.8	162.2	-0.5		-12.6	-21	8987	No stop
06 33 00	=1542+328	15 16 00	68.9	163.0	-0.5		-12.0	69	8999	06 31 31
06 33 00	1548+3335	15 16 00	69.6	160.0	-0.5		-14.3	-20	8999	No stop
06 36 30	---	15 19 31	69.7	162.0	-0.5		-12.9	190	9026	06 33 01
06 37 10	J1544+3240	15 20 11	69.1	165.4	-0.4		-10.3	19	9026	06 37 10
06 38 00	=1542+328	15 21 01	69.1	165.9	-0.4		-10.0	50	9032	06 37 11
06 38 00	1548+3335	15 21 01	69.8	162.9	-0.5		-12.2	-20	9032	No stop
06 41 30	---	15 24 32	70.0	165.0	-0.4		-10.8	190	9059	06 38 01
06 41 30	J1544+3240	15 24 32	69.2	168.0	-0.3		-8.6	-21	9059	No stop
06 43 00	=1542+328	15 26 02	69.3	168.8	-0.3		-7.9	69	9070	06 41 31
06 43 00	1548+3335	15 26 02	70.0	165.9	-0.4		-10.1	-20	9070	No stop
06 46 30	---	15 29 33	70.1	168.0	-0.3		-8.6	190	9097	06 43 01
06 47 10	J1544+3240	15 30 13	69.4	171.3	-0.2		-6.2	19	9097	06 47 10
06 48 00	=1542+328	15 31 03	69.4	171.8	-0.2		-5.8	50	9104	06 47 11
06 48 00	1548+3335	15 31 03	70.2	168.9	-0.3		-8.0	-20	9104	No stop
06 51 30	---	15 34 33	70.3	171.1	-0.2		-6.4	190	9131	06 48 01
06 51 30	J1544+3240	15 34 33	69.5	173.9	-0.2		-4.3	-20	9131	No stop
06 53 00	=1542+328	15 36 04	69.5	174.8	-0.1		-3.7	70	9142	06 51 31
06 53 00	1548+3335	15 36 04	70.3	172.0	-0.2		-5.8	-20	9142	No stop
06 56 30	---	15 39 34	70.4	174.1	-0.2		-4.2	190	9169	06 53 01

Schedule for TORUN (Code Tr)

Page 21

e-EVN: ec052f, ec054c

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator 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 13 Jan 2016 Day 13 ---										
06 57 10	J1544+3240	15 40 14	69.5	177.3	-0.1		-1.9	20	9169	06 57 10
06 58 00	=1542+328	15 41 05	69.5	177.8	-0.1		-1.6	50	9176	06 57 11
06 58 00	1548+3335	15 41 05	70.4	175.1	-0.1		-3.5	-19	9176	No stop
07 01 30	---	15 44 35	70.4	177.3	-0.1		-2.0	191	9203	06 58 01
07 01 30	J1544+3240	15 44 35	69.5	179.9	-0.0		-0.1	-20	9203	No stop
07 03 00	=1542+328	15 46 05	69.5	180.8	0.0		0.6	70	9214	07 01 31
07 03 00	1548+3335	15 46 05	70.4	178.2	-0.0		-1.3	-19	9214	No stop
07 06 30	---	15 49 36	70.4	180.4	0.0		0.3	191	9241	07 03 01
07 07 10	J1544+3240	15 50 16	69.5	183.3	0.1		2.4	20	9241	07 07 10
07 08 00	=1542+328	15 51 06	69.5	183.8	0.1		2.7	50	9247	07 07 11
07 08 00	1548+3335	15 51 06	70.4	181.3	0.0		0.9	-19	9247	No stop
07 11 30	---	15 54 37	70.4	183.5	0.1		2.5	191	9274	07 08 01
07 11 30	J1544+3240	15 54 37	69.5	186.0	0.2		4.2	-19	9274	No stop
07 13 00	=1542+328	15 56 07	69.4	186.9	0.2		4.9	71	9286	07 11 31
07 13 00	1548+3335	15 56 07	70.4	184.4	0.1		3.2	-19	9286	No stop
07 16 30	---	15 59 38	70.3	186.6	0.2		4.7	191	9313	07 13 01
07 17 10	J1544+3240	16 00 18	69.3	189.3	0.3		6.6	21	9313	07 17 10
07 18 00	=1542+328	16 01 08	69.3	189.8	0.3		7.0	50	9319	07 17 11
07 18 00	1548+3335	16 01 08	70.3	187.5	0.2		5.4	-18	9319	No stop
07 21 30	---	16 04 38	70.2	189.7	0.3		7.0	192	9346	07 18 01
07 21 30	J1544+3240	16 04 38	69.2	191.9	0.3		8.5	-19	9346	No stop
07 23 00	=1542+328	16 06 09	69.2	192.8	0.4		9.1	71	9358	07 21 31
07 23 00	1548+3335	16 06 09	70.2	190.6	0.3		7.6	-18	9358	No stop
07 26 30	---	16 09 39	70.1	192.7	0.3		9.1	192	9385	07 23 01
07 27 10	J1544+3240	16 10 19	69.0	195.2	0.4		10.8	22	9385	07 27 10
07 28 00	=1542+328	16 11 09	69.0	195.7	0.4		11.1	50	9391	07 27 11
07 28 00	1548+3335	16 11 09	70.0	193.6	0.4		9.8	-17	9391	No stop
07 31 30	---	16 14 40	69.9	195.7	0.4		11.3	193	9418	07 28 01
07 31 30	J1544+3240	16 14 40	68.8	197.7	0.5		12.5	-18	9418	No stop
07 33 00	=1542+328	16 16 10	68.8	198.6	0.5		13.1	72	9429	07 31 31

Schedule for TORUN (Code Tr)

Page 22

e-EVN: ec052f, ec054c

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator 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 13 Jan 2016 Day 13 ---										
07 33 00	1548+3335	16 16 10	69.8	196.6	0.5		11.9	-17	9429	No stop
07 36 30	---	16 19 41	69.7	198.7	0.5		13.3	193	9456	07 33 01
07 37 10	J1544+3240	16 20 21	68.6	200.9	0.6		14.7	22	9456	07 37 10
07 38 00	=1542+328	16 21 11	68.5	201.4	0.6		15.1	50	9463	07 37 11
07 38 00	1548+3335	16 21 11	69.6	199.6	0.5		14.0	-17	9463	No stop
07 41 30	---	16 24 42	69.4	201.6	0.6		15.4	193	9490	07 38 01
07 41 30	J1544+3240	16 24 42	68.3	203.3	0.7		16.4	-17	9490	No stop
07 43 00	=1542+328	16 26 12	68.2	204.1	0.7		16.9	73	9501	07 41 31
07 43 00	1548+3335	16 26 12	69.3	202.4	0.6		16.0	-17	9501	No stop
07 46 30	---	16 29 43	69.1	204.4	0.7		17.3	193	9528	07 43 01
07 47 10	J1544+3240	16 30 23	68.0	206.4	0.8		18.5	23	9528	07 47 10
07 48 00	=1542+328	16 31 13	67.9	206.8	0.8		18.8	50	9535	07 47 11
07 48 00	1548+3335	16 31 13	69.0	205.3	0.7		17.9	-17	9535	No stop
07 51 30	---	16 34 43	68.8	207.2	0.8		19.2	193	9561	07 48 01
07 51 30	J1544+3240	16 34 43	67.7	208.7	0.8		20.0	-17	9561	No stop
07 53 00	=1542+328	16 36 14	67.5	209.4	0.9		20.5	73	9573	07 51 31
07 53 00	1548+3335	16 36 14	68.7	208.0	0.8		19.8	-17	9573	No stop
07 56 30	---	16 39 44	68.4	209.9	0.8		21.0	193	9600	07 53 01
07 57 10	J1544+3240	16 40 24	67.2	211.6	0.9		21.9	22	9600	07 57 10
07 58 00	=1542+328	16 41 14	67.2	212.0	0.9		22.2	50	9606	07 57 11
07 58 00	1548+3335	16 41 14	68.3	210.7	0.9		21.6	-17	9606	No stop
08 01 30	---	16 44 45	68.1	212.5	0.9		22.8	193	9633	07 58 01
08 01 30	J1544+3240	16 44 45	66.9	213.7	1.0		23.3	-18	9633	No stop
08 03 00	=1542+328	16 46 15	66.7	214.5	1.0		23.8	72	9645	08 01 31
08 03 00	1548+3335	16 46 15	67.9	213.3	1.0		23.3	-17	9645	No stop
08 06 30	---	16 49 46	67.6	215.0	1.0		24.4	193	9672	08 03 01
08 07 10	J1544+3240	16 50 26	66.4	216.5	1.1		25.1	22	9672	08 07 10
08 08 00	=1542+328	16 51 16	66.3	216.9	1.1		25.3	50	9678	08 07 11
08 08 00	1548+3335	16 51 16	67.5	215.8	1.0		24.9	-18	9678	No stop
08 11 30	---	16 54 47	67.2	217.5	1.1		26.0	192	9705	08 08 01

Schedule for TORUN (Code Tr)

Page 23

e-EVN: ec052f, ec054c

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator 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 13 Jan 2016 Day 13 ---										
08 11 30	J1544+3240	16 54 47	66.0	218.5	1.2		26.4	-18	9705	No stop
08 13 00	=1542+328	16 56 17	65.8	219.2	1.2		26.8	72	9717	08 11 31
08 13 00	1548+3335	16 56 17	67.1	218.2	1.1		26.5	-18	9717	No stop
08 16 30	---	16 59 47	66.7	219.9	1.2		27.5	192	9744	08 13 01
08 17 10	J1544+3240	17 00 28	65.4	221.1	1.3		28.0	22	9744	08 17 10
08 18 00	=1542+328	17 01 18	65.4	221.5	1.3		28.2	50	9750	08 17 11
08 18 00	1548+3335	17 01 18	66.6	220.6	1.2		27.9	-18	9750	No stop
08 21 30	---	17 04 48	66.2	222.2	1.3		28.9	192	9777	08 18 01
08 22 00	J1544+3240	17 05 18	64.9	223.2	1.3		29.2	12	9777	08 22 00
08 25 00	=1542+328	17 08 19	64.6	224.5	1.4		30.0	180	9800	08 22 01
08 27 00	3C345	17 10 19	75.9	201.6	0.4		16.8	58	9800	08 27 00
08 30 00	---	17 13 20	75.7	203.9	0.5		18.5	180	9823	08 27 01
08 34 00	2029+121	17 17 20	33.9	117.7	-3.3		-33.0	52	9823	08 34 00
08 45 00	---	17 28 22	35.3	120.4	-3.1		-32.0	660	9908	08 34 01
08 45 40	2029+121	17 29 02	35.4	120.6	-3.1		-32.0	34	9908	08 45 40
09 00 00	---	17 43 25	37.2	124.3	-2.8		-30.5	860	10018	08 45 41
09 00 40	2029+121	17 44 05	37.3	124.5	-2.8		-30.4	34	10018	09 00 40
09 15 00	---	17 58 27	39.1	128.4	-2.6		-28.8	860	10128	09 00 41
09 15 40	2029+121	17 59 07	39.1	128.6	-2.6		-28.7	34	10128	09 15 40
09 30 00	---	18 13 30	40.8	132.6	-2.3		-26.9	860	10238	09 15 41
09 30 40	2029+121	18 14 10	40.9	132.8	-2.3		-26.8	34	10238	09 30 40
09 45 00	---	18 28 32	42.4	137.0	-2.1		-24.8	860	10349	09 30 41
09 47 30	3C454.3	18 31 02	27.3	99.4	-4.4		-38.1	59	10349	09 47 30
10 00 00	---	18 43 34	29.2	102.1	-4.2		-37.7	750	10445	09 47 31
10 00 40	3C454.3	18 44 15	29.3	102.3	-4.2		-37.7	34	10445	10 00 40
10 15 00	---	18 58 37	31.3	105.4	-3.9		-37.1	860	10555	10 00 41
10 15 40	3C454.3	18 59 17	31.4	105.6	-3.9		-37.0	34	10555	10 15 40
10 30 00	---	19 13 39	33.5	108.9	-3.7		-36.3	860	10665	10 15 41
10 32 00	J2226+0052	19 15 40	24.5	125.3	-3.2		-29.4	72	10665	10 32 00
10 35 00	=2224+006	19 18 40	24.9	126.0	-3.1		-29.1	180	10688	10 32 01

Schedule for TORUN (Code Tr)

Page 24

e-EVN: ec052f, ec054c

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator 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 13 Jan 2016 Day 13 ---										
10 35 00	J2220+0025	19 18 40	25.3	127.7	-3.0		-28.4	-17	10688	No stop
10 38 30	---	19 22 11	25.7	128.6	-3.0		-28.0	193	10715	10 35 01
10 38 30	J2226+0052	19 22 11	25.3	126.8	-3.1		-28.7	-17	10715	No stop
10 40 00	=2224+006	19 23 41	25.5	127.2	-3.1		-28.6	73	10727	10 38 31
10 40 00	J2220+0025	19 23 41	25.8	129.0	-3.0		-27.8	-17	10727	No stop
10 43 30	---	19 27 12	26.3	129.8	-2.9		-27.5	193	10754	10 40 01
10 44 10	J2226+0052	19 27 52	26.0	128.2	-3.0		-28.2	23	10754	10 44 10
10 45 00	=2224+006	19 28 42	26.1	128.4	-3.0		-28.1	50	10760	10 44 11
10 45 00	J2220+0025	19 28 42	26.4	130.2	-2.9		-27.3	-17	10760	No stop
10 48 30	---	19 32 12	26.8	131.1	-2.8		-26.9	193	10787	10 45 01
10 48 30	J2226+0052	19 32 12	26.5	129.3	-2.9		-27.7	-17	10787	No stop
10 50 00	=2224+006	19 33 43	26.7	129.7	-2.9		-27.5	73	10799	10 48 31
10 50 00	J2220+0025	19 33 43	27.0	131.4	-2.8		-26.8	-17	10799	No stop
10 53 30	---	19 37 13	27.4	132.3	-2.7		-26.4	193	10826	10 50 01
10 54 10	J2226+0052	19 37 53	27.2	130.7	-2.8		-27.1	23	10826	10 54 10
10 55 00	=2224+006	19 38 43	27.3	130.9	-2.8		-27.0	50	10832	10 54 11
10 55 00	J2220+0025	19 38 43	27.6	132.7	-2.7		-26.2	-17	10832	No stop
10 58 30	---	19 42 14	27.9	133.6	-2.7		-25.8	193	10859	10 55 01
10 58 30	J2226+0052	19 42 14	27.7	131.8	-2.8		-26.6	-17	10859	No stop
11 00 00	=2224+006	19 43 44	27.8	132.2	-2.7		-26.4	73	10870	10 58 31
11 00 00	J2220+0025	19 43 44	28.1	134.0	-2.6		-25.6	-17	10870	No stop
11 03 30	---	19 47 15	28.5	134.9	-2.6		-25.2	193	10897	11 00 01
11 04 10	J2226+0052	19 47 55	28.3	133.2	-2.7		-25.9	23	10897	11 04 10
11 05 00	=2224+006	19 48 45	28.4	133.5	-2.6		-25.8	50	10904	11 04 11
11 05 00	J2220+0025	19 48 45	28.6	135.3	-2.5		-25.0	-17	10904	No stop
11 08 30	---	19 52 16	29.0	136.2	-2.5		-24.6	193	10931	11 05 01
11 08 30	J2226+0052	19 52 16	28.8	134.4	-2.6		-25.4	-17	10931	No stop
11 10 00	=2224+006	19 53 46	28.9	134.7	-2.6		-25.3	73	10942	11 08 31
11 10 00	J2220+0025	19 53 46	29.2	136.6	-2.5		-24.4	-17	10942	No stop
11 13 30	---	19 57 17	29.5	137.5	-2.4		-23.9	193	10969	11 10 01

Schedule for TORUN (Code Tr)

Page 25

e-EVN: ec052f, ec054c

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator 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 13 Jan 2016 Day 13 ---										
11 14 10	J2226+0052	19 57 57	29.4	135.8	-2.5		-24.7	23	10969	11 14 10
11 15 00	=2224+006	19 58 47	29.4	136.0	-2.5		-24.6	50	10976	11 14 11
11 15 00	J2220+0025	19 58 47	29.7	137.9	-2.4		-23.7	-17	10976	No stop
11 18 30	---	20 02 17	30.0	138.8	-2.3		-23.3	193	11003	11 15 01
11 18 30	J2226+0052	20 02 17	29.8	137.0	-2.4		-24.2	-17	11003	No stop
11 20 00	=2224+006	20 03 48	30.0	137.4	-2.4		-24.0	73	11014	11 18 31
11 20 00	J2220+0025	20 03 48	30.2	139.2	-2.3		-23.1	-17	11014	No stop
11 23 30	---	20 07 18	30.5	140.1	-2.2		-22.6	193	11041	11 20 01
11 24 10	J2226+0052	20 07 58	30.4	138.5	-2.3		-23.5	23	11041	11 24 10
11 25 00	=2224+006	20 08 48	30.5	138.7	-2.3		-23.4	50	11047	11 24 11
11 25 00	J2220+0025	20 08 48	30.7	140.6	-2.2		-22.4	-17	11047	No stop
11 28 30	---	20 12 19	31.0	141.5	-2.2		-22.0	193	11074	11 25 01
11 28 30	J2226+0052	20 12 19	30.8	139.6	-2.3		-22.9	-17	11074	No stop
11 30 00	=2224+006	20 13 49	31.0	140.0	-2.2		-22.7	73	11086	11 28 31
11 30 00	J2220+0025	20 13 49	31.1	141.9	-2.1		-21.7	-17	11086	No stop
11 33 30	---	20 17 20	31.5	142.9	-2.1		-21.3	193	11113	11 30 01
11 34 10	J2226+0052	20 18 00	31.3	141.2	-2.2		-22.1	23	11113	11 34 10
11 35 00	=2224+006	20 18 50	31.4	141.4	-2.1		-22.0	50	11119	11 34 11
11 35 00	J2220+0025	20 18 50	31.6	143.3	-2.0		-21.0	-17	11119	No stop
11 38 30	---	20 22 21	31.9	144.2	-2.0		-20.5	193	11146	11 35 01
11 38 30	J2226+0052	20 22 21	31.8	142.3	-2.1		-21.5	-17	11146	No stop
11 40 00	=2224+006	20 23 51	31.9	142.7	-2.1		-21.3	73	11158	11 38 31
11 40 00	J2220+0025	20 23 51	32.0	144.6	-2.0		-20.3	-18	11158	No stop
11 43 30	---	20 27 21	32.3	145.6	-1.9		-19.8	192	11185	11 40 01
11 44 10	J2226+0052	20 28 02	32.3	143.9	-2.0		-20.7	23	11185	11 44 10
11 45 00	=2224+006	20 28 52	32.3	144.1	-2.0		-20.6	50	11191	11 44 11
11 45 00	J2220+0025	20 28 52	32.5	146.0	-1.9		-19.6	-18	11191	No stop
11 48 30	---	20 32 22	32.7	147.0	-1.8		-19.1	192	11218	11 45 01
11 48 30	J2226+0052	20 32 22	32.6	145.1	-1.9		-20.1	-17	11218	No stop
11 50 00	=2224+006	20 33 53	32.8	145.5	-1.9		-19.9	73	11229	11 48 31

Schedule for TORUN (Code Tr)

Page 26

e-EVN: ec052f, ec054c

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator 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 13 Jan 2016 Day 13 ---										
11 50 00	J2220+0025	20 33 53	32.9	147.4	-1.8		-18.9	-18	11229	No stop
11 53 30	---	20 37 23	33.1	148.4	-1.7		-18.3	192	11256	11 50 01
11 54 10	J2226+0052	20 38 03	33.1	146.7	-1.8		-19.3	23	11256	11 54 10
11 55 00	=2224+006	20 38 53	33.2	146.9	-1.8		-19.1	50	11263	11 54 11
11 55 00	J2220+0025	20 38 53	33.3	148.9	-1.7		-18.1	-18	11263	No stop
11 58 30	---	20 42 24	33.5	149.9	-1.6		-17.5	192	11290	11 55 01
11 58 30	J2226+0052	20 42 24	33.5	147.9	-1.8		-18.6	-17	11290	No stop
12 00 00	=2224+006	20 43 54	33.6	148.4	-1.7		-18.4	73	11301	11 58 31
12 00 00	J2220+0025	20 43 54	33.6	150.3	-1.6		-17.3	-18	11301	No stop
12 03 30	---	20 47 25	33.9	151.3	-1.6		-16.8	192	11328	12 00 01
12 04 10	J2226+0052	20 48 05	33.9	149.5	-1.7		-17.7	23	11328	12 04 10
12 05 00	=2224+006	20 48 55	34.0	149.8	-1.6		-17.6	50	11335	12 04 11
12 06 30	CTA102	20 50 25	43.9	143.9	-1.7		-21.2	39	11335	12 06 30
12 09 30	---	20 53 26	44.1	144.8	-1.7		-20.7	180	11358	12 06 31
12 10 30	J2226+0052	20 54 26	34.4	151.4	-1.6		-16.7	9	11358	12 10 30
12 13 30	=2224+006	20 57 26	34.6	152.3	-1.5		-16.2	180	11381	12 10 31
12 13 30	J2220+0025	20 57 26	34.6	154.2	-1.4		-15.1	-18	11381	No stop
12 17 00	---	21 00 57	34.8	155.3	-1.3		-14.6	192	11408	12 13 31
12 17 00	J2226+0052	21 00 57	34.8	153.3	-1.4		-15.7	-17	11408	No stop
12 18 30	=2224+006	21 02 27	34.9	153.7	-1.4		-15.4	73	11419	12 17 01
12 18 30	J2220+0025	21 02 27	34.9	155.7	-1.3		-14.3	-18	11419	No stop
12 22 00	---	21 05 58	35.1	156.7	-1.3		-13.7	192	11446	12 18 31
12 22 40	J2226+0052	21 06 38	35.2	155.0	-1.3		-14.7	23	11446	12 22 40
12 23 30	=2224+006	21 07 28	35.3	155.2	-1.3		-14.6	50	11452	12 22 41
12 23 30	J2220+0025	21 07 28	35.2	157.2	-1.2		-13.5	-18	11452	No stop
12 27 00	---	21 10 59	35.4	158.2	-1.2		-12.9	192	11479	12 23 31
12 27 00	J2226+0052	21 10 59	35.5	156.2	-1.3		-14.0	-17	11479	No stop
12 28 30	=2224+006	21 12 29	35.6	156.7	-1.3		-13.7	73	11491	12 27 01
12 28 30	J2220+0025	21 12 29	35.5	158.7	-1.1		-12.6	-18	11491	No stop
12 32 00	---	21 15 59	35.7	159.7	-1.1		-12.0	192	11518	12 28 31

Schedule for TORUN (Code Tr)

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e-EVN: ec052f, ec054c

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator 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 13 Jan 2016 Day 13 ---										
12 32 40	J2226+0052	21 16 40	35.8	157.9	-1.2		-13.0	23	11518	12 32 40
12 33 30	=2224+006	21 17 30	35.9	158.2	-1.2		-12.9	50	11524	12 32 41
12 33 30	J2220+0025	21 17 30	35.8	160.2	-1.1		-11.7	-18	11524	No stop
12 37 00	---	21 21 00	35.9	161.3	-1.0		-11.1	192	11551	12 33 31
12 37 00	J2226+0052	21 21 00	36.1	159.3	-1.1		-12.3	-17	11551	No stop
12 38 30	=2224+006	21 22 30	36.1	159.7	-1.1		-12.0	73	11563	12 37 01
12 38 30	J2220+0025	21 22 30	36.0	161.7	-1.0		-10.9	-18	11563	No stop
12 42 00	---	21 26 01	36.2	162.8	-0.9		-10.2	192	11590	12 38 31
12 42 40	J2226+0052	21 26 41	36.3	161.0	-1.0		-11.3	23	11590	12 42 40
12 43 30	=2224+006	21 27 31	36.4	161.2	-1.0		-11.1	50	11596	12 42 41
12 43 30	J2220+0025	21 27 31	36.2	163.2	-0.9		-10.0	-18	11596	No stop
12 47 00	---	21 31 02	36.4	164.3	-0.8		-9.3	192	11623	12 43 31
12 47 00	J2226+0052	21 31 02	36.5	162.3	-0.9		-10.5	-17	11623	No stop
12 48 30	=2224+006	21 32 32	36.6	162.8	-0.9		-10.3	73	11635	12 47 01
12 48 30	J2220+0025	21 32 32	36.4	164.8	-0.8		-9.1	-18	11635	No stop
12 52 00	---	21 36 03	36.6	165.8	-0.8		-8.4	192	11661	12 48 31
12 52 40	J2226+0052	21 36 43	36.8	164.0	-0.8		-9.5	23	11661	12 52 40
12 53 30	=2224+006	21 37 33	36.8	164.3	-0.8		-9.4	50	11668	12 52 41
12 53 30	J2220+0025	21 37 33	36.6	166.3	-0.7		-8.2	-18	11668	No stop
12 57 00	---	21 41 04	36.7	167.4	-0.7		-7.5	192	11695	12 53 31
12 57 00	J2226+0052	21 41 04	37.0	165.4	-0.8		-8.7	-17	11695	No stop
12 58 30	=2224+006	21 42 34	37.0	165.9	-0.8		-8.4	73	11706	12 57 01
12 58 30	J2220+0025	21 42 34	36.8	167.9	-0.6		-7.3	-18	11706	No stop
13 02 00	---	21 46 04	36.9	168.9	-0.6		-6.6	192	11733	12 58 31
13 02 40	J2226+0052	21 46 44	37.2	167.1	-0.7		-7.7	23	11733	13 02 40
13 03 30	=2224+006	21 47 35	37.2	167.4	-0.7		-7.5	50	11740	13 02 41
13 03 30	J2220+0025	21 47 35	36.9	169.4	-0.6		-6.3	-18	11740	No stop
13 07 00	---	21 51 05	37.0	170.5	-0.5		-5.7	192	11767	13 03 31
13 07 00	J2226+0052	21 51 05	37.3	168.5	-0.6		-6.9	-17	11767	No stop
13 08 30	=2224+006	21 52 35	37.4	169.0	-0.6		-6.6	73	11778	13 07 01

Schedule for TORUN (Code Tr)

Page 28

e-EVN: ec052f, ec054c

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator 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 13 Jan 2016  Day 13 ---

13 08 30  J2220+0025  21 52 35  37.1 171.0 -0.5    -5.4  -18   11778  No stop
13 12 00  ---          21 56 06  37.2 172.1 -0.4    -4.8   192   11805  13 08 31

13 12 40  J2226+0052  21 56 46  37.5 170.3 -0.5    -5.8   23   11805  13 12 40
13 13 30  =2224+006   21 57 36  37.5 170.5 -0.5    -5.7   50   11811  13 12 41

13 13 30  J2220+0025  21 57 36  37.2 172.5 -0.4    -4.5  -18   11811  No stop
13 17 00  ---          22 01 07  37.2 173.6 -0.3    -3.8   192   11838  13 13 31

13 17 00  J2226+0052  22 01 07  37.6 171.6 -0.4    -5.0  -17   11838  No stop
13 18 30  =2224+006   22 02 37  37.6 172.1 -0.4    -4.7   73   11850  13 17 01

13 18 30  J2220+0025  22 02 37  37.3 174.1 -0.3    -3.5  -18   11850  No stop
13 22 00  ---          22 06 08  37.3 175.2 -0.3    -2.9   192   11877  13 18 31

13 22 40  J2226+0052  22 06 48  37.7 173.4 -0.3    -3.9   23   11877  13 22 40
13 23 30  =2224+006   22 07 38  37.7 173.7 -0.3    -3.8   50   11883  13 22 41

13 23 30  J2220+0025  22 07 38  37.3 175.7 -0.2    -2.6  -18   11883  No stop
13 27 00  ---          22 11 08  37.4 176.8 -0.2    -1.9   192   11910  13 23 31

13 27 40  J2226+0052  22 11 49  37.8 175.0 -0.3    -3.0   23   11910  13 27 40
13 30 40  =2224+006   22 14 49  37.8 176.0 -0.2    -2.4   180   11933  13 27 41

```

SETUP FILE INFORMATION:

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

==== Setup file: sess315.L1024

```

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

```

Disk used to record data.

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

The following frequency sets based on these setups were used.

Frequency Set: 6 Setup file default. Used with PCAL = off

LO sum=	1610.49	1610.49	1610.49	1610.49	1642.49	1642.49	1642.49	1642.49
	1674.49	1674.49	1674.49	1674.49	1706.49	1706.49	1706.49	1706.49
BBC fr=	689.51	689.51	689.51	689.51	657.51	657.51	657.51	657.51
	625.51	625.51	625.51	625.51	593.51	593.51	593.51	593.51
Bandwd=	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00

Matching frequency sets: 6

Track assignments are:

track1= 2, 10, 18, 26, 4, 12, 20, 28, 6, 14, 22, 30, 8, 16, 24, 32

barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(Date)	Error (mas)	
* J2220+0025	22 17 58.978317 00 10 29.12917	* 22 20 32.608000 * 00 25 36.03000	22 21 20.839329 00 30 28.72241	0.00 0.00
* 0940+0526	09 37 27.307569 05 40 08.56293	* 09 40 04.812000 * 05 26 30.82000	09 40 56.307736 05 21 57.75824	0.00 0.00
* 1013+2811	10 10 45.377002 28 26 12.42661	* 10 13 35.442000 * 28 11 19.33000	10 14 30.628461 28 06 18.26988	0.00 0.00
* 1548+3335	15 46 27.444086 33 44 07.51799	* 15 48 23.979000 * 33 34 59.78000	15 49 00.075341 33 32 02.31330	0.00 0.00
J0238+1636	02 35 52.630215	* 02 38 38.930107	02 39 32.928034	0.10
* 0235+164	16 24 04.01608	* 16 36 59.27450	16 41 02.49695	0.10
J0238+16	../SCHED/sched11.3u1/catalogs/sources.vlba rfc_2012b Petrov, 2012, unpublished 64883 observations			
J0530+1331	05 28 06.759218	* 05 30 56.416749	05 31 52.072559	0.10
* 0528+134	13 29 42.28877	* 13 31 55.14944	13 32 24.75380	0.10
J0530+13	../SCHED/sched11.3u1/catalogs/sources.vlba rfc_2012b Petrov, 2012, unpublished 138123 observations			
J0854+2006	08 51 57.250618	* 08 54 48.874930	08 55 44.954364	0.11
0851+202	20 17 58.41733	* 20 06 30.64078	20 02 35.63864	0.10

J0854+20	../SCHED/sched11.3u1/catalogs/sources.vlba				
* OJ287	rfc_2012b Petrov, 2012, unpublished 191510 observations				
* J0950+0615	09 47 25.677640 * 09 50 03.467510	09 50 55.009641	0.49		
0947+064	06 29 05.98317 * 06 15 03.81723	06 10 23.12522	1.05		
	../SCHED/sched11.3u1/catalogs/sources.vlba				
	GSFC 2011B astro solution	32 Observations			
* J1023+2856	10 20 34.890703 * 10 23 24.046142	10 24 18.883102	0.14		
1020+292	29 12 02.71224 * 28 56 50.98797	28 51 43.99153	0.14		
	../SCHED/sched11.3u1/catalogs/sources.vlba				
	rfc_2012b Petrov, 2012, unpublished 389 observations				
J1407+2827	14 04 45.615156 * 14 07 00.394414	14 07 42.923420	0.24		
1404+286	28 41 29.23519 * 28 27 14.69022	28 22 34.80464	0.34		
J1407+28	../SCHED/sched11.3u1/catalogs/sources.vlba				
* OQ208	GSFC 2011B astro solution	66461 Observations			
* J1544+3240	15 42 07.416281 * 15 44 05.656641	15 44 42.335083	0.28		
1542+328	32 50 11.77600 * 32 40 48.32082	32 37 45.78759	0.38		
J1544+32	../SCHED/sched11.3u1/catalogs/sources.vlba				
	GSFC 2011B astro solution	77 Observations			
J1642+3948	16 41 17.606228 * 16 42 58.809965	16 43 29.664738	0.77		
* 3C345	39 54 10.81496 * 39 48 36.99402	39 46 49.98988	0.52		
1641+399	../SCHED/sched11.3u1/catalogs/sources.vlba				
J1642+39	GSFC 2011B astro solution	52621 Observations			
J2031+1219	20 29 32.681262 * 20 31 54.994269	20 32 39.317352	0.10		
* 2029+121	12 09 28.75297 * 12 19 41.34013	12 23 05.38533	0.10		
J2031+12	../SCHED/sched11.3u1/catalogs/sources.vlba				
	rfc_2012b Petrov, 2012, unpublished 2576 observations				
* J2226+0052	22 24 13.105515 * 22 26 46.537016	22 27 34.738930	0.16		
2224+006	00 36 53.17058 * 00 52 11.33145	00 57 07.45216	0.33		
	../SCHED/sched11.3u1/catalogs/sources.vlba				
	rfc_2012b Petrov, 2012, unpublished 182 observations				
J2232+1143	22 30 07.803947 * 22 32 36.408905	22 33 23.213594	0.10		
* CTA102	11 28 22.81066 * 11 43 50.90394	11 48 52.88892	0.10		
2230+114	../SCHED/sched11.3u1/catalogs/sources.vlba				
J2232+11	rfc_2012b Petrov, 2012, unpublished 5100 observations				
J2253+1608	22 51 29.519738 * 22 53 57.747937	22 54 44.590308	0.68		
* 3C454.3	15 52 54.34810 * 16 08 53.56093	16 14 06.01760	0.72		
2251+158	../SCHED/sched11.3u1/catalogs/sources.vlba				
J2253+16	GSFC 2011B astro solution	39747 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)
J2220+0025	46.0
0940+0526	145.7
1013+2811	143.6
1548+3335	77.2
0235+164	110.5
0528+134	149.4
OJ287	161.3
J0950+0615	143.9

J1023+2856	141.4
OQ208	93.5
J1544+3240	77.4
3C345	73.4
2029+121	36.7
J2226+0052	47.6
CTA102	54.9
3C454.3	61.7

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{deg } F^{-0.6}$ 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


```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 47.228274	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.47858	0.00
	fake circumpolar target for a TS to look at			
* 0149+218	01 49 31.744133	* 01 52 18.059044	01 53 11.860615	0.00
J0152+2207	21 52 20.74786	* 22 07 07.69974	22 11 50.92680	0.00
	./rk12ly_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 2624 observations, RA-A03-04, RA-A02-12			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
0149+218	100.8

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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


```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1= 2, 18, 3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 47.262762	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.49146	0.00
	fake circumpolar target for a TS to look at			
* 1253-055	12 53 35.831289	* 12 56 11.166557	12 57 01.211044	0.00
J1256-0547	-05 31 07.99603	*-05 47 21.52489	-05 52 31.71798	0.00
3C279	./rk12lz_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 7924 observations, RA-A03-04, RA-A03-05			

EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
1253-055    98.0

```

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 $60 \text{ deg } F^{-0.6}$ 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

```

rk12matr

RADIOASTRON AGN SURVEY

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Phone: +7-495-3332512 EMAIL: kirx@scan.sai.msu.ru
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Observing mode: C/L-band, dual-pol

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Thu 14 Jan 2016 Day 14 ---

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

Next scan frequencies:	4836.00	4836.00	4836.00	4836.00						
Next BBC frequencies:	736.00	736.00	736.00	736.00						
Next scan bandwidths:	16.00	16.00	16.00	16.00						
05 10 00	1403+411	13 56 43	77.7	172.0	-0.2		-6.4	0	0	05 10 00
05 22 00	---	14 08 45	77.8	182.7	0.0		2.1	720	23	05 10 01
05 22 30	1403+411	14 09 15	77.8	183.1	0.1		2.5	22	23	05 22 30
05 34 30	---	14 21 17	77.5	193.7	0.3		10.8	720	46	05 22 31
05 35 00	1403+411	14 21 47	77.5	194.1	0.3		11.1	22	46	05 35 00
05 47 00	---	14 33 49	76.9	204.0	0.5		18.9	720	69	05 35 01
05 47 30	1403+411	14 34 20	76.9	204.4	0.5		19.2	23	69	05 47 30
06 00 00	---	14 46 52	75.9	213.7	0.7		26.2	750	93	05 47 31

SETUP FILE INFORMATION:

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

==== Setup file: ra6cm2.set

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 47.295611	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.50408	0.00
	fake circumpolar target for a TS to look at			
* 1403+411	14 03 04.025300	* 14 05 07.795440	14 05 46.629201	0.00
J1405+4056	41 11 16.37060	* 40 56 57.83098	40 52 12.87209	0.00
	./rk12ma_sources.radioastron			
	AGN, BAL QSO, rfc_2013d Petrov, 2013, unpublished 90 observations, RA-A03-04, RA			

EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
1403+411    99.4

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

```



```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 47.755458	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.71163	0.00
	fake circumpolar target for a TS to look at			
* 0307+380	03 07 37.554068	* 03 10 49.879926	03 11 52.752228	0.00
J0310+3814	38 03 34.47086	* 38 14 53.83785	38 18 31.14895	0.00
	./rk12mc_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 9270 observations, RA-A03-04, RA-A02-12			

EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
0307+380    118.7

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

```


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

The following frequency sets based on these setups were used.

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

Track assignments are:

track1= 2, 18, 3, 19
 barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 47.784205	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.72592	0.00
	fake circumpolar target for a TS to look at			
* 1226+023	12 26 33.245835	* 12 29 06.699731	12 29 56.241036	0.00
J1229+0203	02 19 43.30547	* 02 03 08.59797	01 57 47.08230	0.00
3C273B	./rk12md_sources.radioastron			
3C273	AGN, rfc_2013d Petrov, 2013, unpublished 32011 observations, RA-A03-04, RA-A03-0			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
1226+023	109.3

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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


```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 47.812739	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.74016	0.00
	fake circumpolar target for a TS to look at			
* 1219+285	12 19 01.115600	* 12 21 31.690520	12 22 20.017270	0.00
J1221+2813	28 30 36.52556	* 28 13 58.50011	28 08 27.34488	0.00
	./rk12me_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 880 observations, RA-A03-04			

EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
1219+285    118.5

```

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 $60 \text{ deg } F^{-0.6}$ 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

```

rg18dtr

RADIOASTRON MEGAMASER OBSERVATIONS

PI: Alexei Alakoz, Willem Baan

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Observing mode: K-band, dual-pol

Schedule for TORUN (Code Tr) Page 2

RadioAstron Megamaser observations

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are LO sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Sun 17 Jan 2016 Day 17 ---

----- 10 min. K-band VLBI scan of FF/clock offset calibrator for NGC3079 (23 deg. separation) -----

Next scan frequencies:	22172.00	22172.00	22172.00	22172.00
Next BBC frequencies:	672.00	672.00	672.00	672.00
Next scan bandwidths:	16.00	16.00	16.00	16.00

06 00 00	0716+714	14 58 41	42.8	-23.6	7.6	48.6	0	0	06 00 00
06 15 00	---	15 13 44	42.0	-22.5	7.8	45.8	900	29	06 00 01

----- K-band VLBI scan of NGC3079 -----

06 30 00	NGC3079	15 28 46	45.3	-52.5	5.4	57.5	822	29	06 30 00
06 51 40	---	15 50 30	42.7	-50.2	5.8	54.7	1300	70	06 30 01
06 52 40	NGC3079	15 51 30	42.6	-50.0	5.8	54.6	54	70	06 52 40
07 14 20	---	16 13 13	40.1	-47.6	6.2	51.7	1300	112	06 52 41
07 15 20	NGC3079	16 14 14	40.0	-47.5	6.2	51.6	54	112	07 15 20
07 37 00	---	16 35 57	37.7	-45.0	6.5	48.7	1300	154	07 15 21
07 38 00	NGC3079	16 36 57	37.6	-44.8	6.6	48.5	54	154	07 38 00
08 00 00	---	16 59 01	35.3	-42.2	6.9	45.6	1320	196	07 38 01

SETUP FILE INFORMATION:

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

==== Setup file: ra1cm2.set

Matching groups in ./rg18d_freq.dat:

tr1cm

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  3  Setup file default.  Used with PCAL = off
LO sum=  22172.00 22172.00 22172.00 22172.00
BBC fr=   672.00  672.00  672.00  672.00
Bandwd=   16.00  16.00  16.00  16.00
Matching frequency sets:  3

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 48.014065	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.84044	0.00
	fake circumpolar target for a TS to look at			
* NGC3079	09 58 35.011191	* 10 01 57.802000	10 03 03.592067	0.00
NGC3079_H2O	55 55 15.50111	* 55 40 47.26000	55 35 50.54275	0.00
	./rg18d_sources.radioastron			
	H2O maser; positions from 2005ApJ...618K, RA-A03-10, RA-A02-13			
* 0716+714	07 16 13.029739	* 07 21 53.448474	07 23 45.602738	0.00
J0721+7120	71 26 15.17406	* 71 20 36.36340	71 18 33.88253	0.00
	./rg18d_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 42370 observations, RA-A03-04, RA-A02-1			

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

The following frequency sets based on these setups were used.

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

Track assignments are:

track1= 2, 18, 3, 19
 barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 48.070905	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.86808	0.00
	fake circumpolar target for a TS to look at			
* 0016+731	00 16 54.195077	* 00 19 45.786355	00 20 41.994492	0.00
J0019+7327	73 10 51.40716	* 73 27 30.01760	73 33 06.63991	0.00
	./rk12mf_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 63799 observations, RA-A03-04, RA-A02-1			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
0016+731	103.5

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 $60 \text{ deg } F^{-0.6}$ 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

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

The following frequency sets based on these setups were used.

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

Track assignments are:

track1= 2, 18, 3, 19
 barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 48.187674	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.92289	0.00
	fake circumpolar target for a TS to look at			
* 0016+731	00 16 54.195077	* 00 19 45.786355	00 20 41.962447	0.00
J0019+7327	73 10 51.40716	* 73 27 30.01760	73 33 06.57516	0.00
	./rk12mg_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 63799 observations, RA-A03-04, RA-A02-1			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
0016+731	103.3

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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


```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 48.214527	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.93504	0.00
	fake circumpolar target for a TS to look at			
* 1156+295	11 56 57.786212	* 11 59 31.833913	12 00 21.442465	0.00
J1159+2914	29 31 25.73868	* 29 14 43.82678	29 09 10.21048	0.00
	./rk12mh_sources.radioastron			
	AGN, MASIV, rfc_2013d Petrov, 2013, unpublished 70591 observations, RA-A03-04, R			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
1156+295	125.0

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 $60 \text{ deg } F^{-0.6}$ 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

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

The following frequency sets based on these setups were used.

Frequency Set: 3 Setup file default. Used with PCAL = 1MHz
 LO sum= 4836.00 4836.00 4836.00 4836.00
 BBC fr= 736.00 736.00 736.00 736.00
 Bandwd= 16.00 16.00 16.00 16.00
 Matching frequency sets: 3

Track assignments are:

track1= 2, 18, 3, 19
 barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 48.241002	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.94684	0.00
	fake circumpolar target for a TS to look at			
* 1302-102	13 02 55.848556	* 13 05 33.015041	13 06 23.778296	0.00
J1305-1033	-10 17 16.37573	*-10 33 19.42817	-10 38 24.77956	0.00
	./rk12mi_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 1014 observations, RA-A03-04			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
1302-102	98.2

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

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

The following frequency sets based on these setups were used.

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

Track assignments are:

track1= 2, 18, 3, 19
 barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 48.269351	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 19.95926	0.00
	fake circumpolar target for a TS to look at			
* 1324+224	13 24 37.118626	* 13 27 00.861311	13 27 46.768086	0.00
J1327+2210	22 26 22.70232	* 22 10 50.16276	22 05 44.29060	0.00
	./rk12mj_sources.radioastron AGN, rfc_2013d Petrov, 2013, unpublished 36026 observations, RA-A03-04, RA-A02-1			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
1324+224	104.6

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

rk12mctr

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Mon 18 Jan 2016 Day 18 ---

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

Next scan frequencies:	4836.00	4836.00	4836.00	4836.00							
Next BBC frequencies:	736.00	736.00	736.00	736.00							
Next scan bandwidths:	16.00	16.00	16.00	16.00							
22 00 00	0215+015	07 05 16	12.4	256.2	4.8		35.7	0	0	22 00 00	
22 14 30	---	07 19 48	10.2	259.2	5.0		36.2	870	28	22 00 01	
22 15 00	0215+015	07 20 18	10.2	259.3	5.0		36.2	24	28	22 15 00	
22 29 30	---	07 34 50	8.0	262.3	5.3		36.5	870	56	22 15 01	
22 30 00	0215+015	07 35 20	7.9	262.4	5.3		36.5	24	56	22 30 00	
22 44 30	---	07 49 53	5.8	265.3	5.5		36.8	870	84	22 30 01	
22 45 00	0215+015	07 50 23	5.7	265.4	5.5		36.8	24	84	22 45 00	
23 00 00	---	08 05 25	3.4	268.4	5.8		36.9	900	112	22 45 01	

SETUP FILE INFORMATION:

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

=====
Setup file: ra6cm2.set

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 48.376023	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 20.00398	0.00
	fake circumpolar target for a TS to look at			
* 0215+015	02 15 14.130235	* 02 17 48.954755	02 18 38.859208	0.00
J0217+0144	01 31 00.16093	* 01 44 49.69903	01 49 05.64105	0.00
	./rk12mk_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 14210 observations, RA-A03-04, RA-A02-1			

EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
0215+015    94.7

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

```

rk12mltr

RADIOASTRON AGN SURVEY

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Tue 19 Jan 2016 Day 19 ---

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

Next scan frequencies:	1668.00	1668.00	1668.00	1668.00							
Next BBC frequencies:	732.00	732.00	732.00	732.00							
Next scan bandwidths:	16.00	16.00	16.00	16.00							
02 00 00	1417+385	11 05 55	53.8	94.2	-3.2		-49.7	0	0	02 00 00	
02 14 30	---	11 20 27	56.0	97.4	-3.0		-49.4	870	28	02 00 01	
02 15 00	1417+385	11 20 57	56.0	97.5	-3.0		-49.3	24	28	02 15 00	
02 29 30	---	11 35 30	58.2	100.9	-2.7		-48.7	870	56	02 15 01	
02 30 00	1417+385	11 36 00	58.3	101.1	-2.7		-48.7	24	56	02 30 00	
02 44 30	---	11 50 32	60.4	104.8	-2.5		-47.7	870	84	02 30 01	
02 45 00	1417+385	11 51 02	60.5	104.9	-2.5		-47.7	24	84	02 45 00	
03 00 00	---	12 06 05	62.6	109.2	-2.2		-46.3	900	112	02 45 01	

SETUP FILE INFORMATION:

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

=====
Setup file: ra18cm2.set

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

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

Track assignments are:

track1= 2, 18, 3, 19
 barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 48.412179	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 20.01842	0.00
	fake circumpolar target for a TS to look at			
* 1417+385	14 17 43.055732	* 14 19 46.613761	14 20 25.515701	0.00
J1419+3821	38 35 32.28529	* 38 21 48.47497	38 17 15.26060	0.00
	./rk12ml_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 21334 observations, RA-A03-04			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
1417+385	99.1

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

rk12mmtr

RADIOASTRON AGN SURVEY

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Tue 19 Jan 2016 Day 19 ---

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

Next scan frequencies:	1668.00	1668.00	1668.00	1668.00						
Next BBC frequencies:	732.00	732.00	732.00	732.00						
Next scan bandwidths:	16.00	16.00	16.00	16.00						
05 00 00	1302-102	14 06 24	25.0	196.3	1.0	9.9	0	0	05 00 00	
05 14 30	---	14 20 57	24.3	200.2	1.2	12.2	870	28	05 00 01	
05 15 00	1302-102	14 21 27	24.3	200.3	1.3	12.2	24	28	05 15 00	
05 29 30	---	14 35 59	23.5	204.1	1.5	14.4	870	56	05 15 01	
05 30 00	1302-102	14 36 29	23.4	204.2	1.5	14.5	24	56	05 30 00	
05 44 30	---	14 51 02	22.5	208.0	1.7	16.6	870	84	05 30 01	
05 45 00	1302-102	14 51 32	22.4	208.1	1.8	16.7	24	84	05 45 00	
06 00 00	---	15 06 34	21.3	211.9	2.0	18.8	900	112	05 45 01	

SETUP FILE INFORMATION:

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

=====
Setup file: ra18cm2.set

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 48.439400	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 20.02905	0.00
	fake circumpolar target for a TS to look at			
* 1302-102	13 02 55.848556	* 13 05 33.015041	13 06 23.809244	0.00
J1305-1033	-10 17 16.37573	*-10 33 19.42817	-10 38 24.96482	0.00
	./rk12mm_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 1014 observations, RA-A03-04			

EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
1302-102    99.2

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

```



```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 48.776483	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 20.14750	0.00
	fake circumpolar target for a TS to look at			
* 0307+380	03 07 37.554068	* 03 10 49.879926	03 11 52.683760	0.00
J0310+3814	38 03 34.47086	* 38 14 53.83785	38 18 31.13398	0.00
	./rk12mo_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 9270 observations, RA-A03-04, RA-A02-12			

EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
0307+380    114.4

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

```



```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1= 2, 18, 3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 48.815400	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 20.16017	0.00
	fake circumpolar target for a TS to look at			
* 0403-132	04 03 13.979060	* 04 05 34.003395	04 06 19.648701	0.00
J0405-1308	-13 16 18.08449	*-13 08 13.69083	-13 05 56.53730	0.00
	./rk12mp_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 1366 observations, RA-A03-04, RA-A02-12			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
0403-132	111.6

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

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

The following frequency sets based on these setups were used.

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

Track assignments are:

track1= 2, 18, 3, 19
 barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 48.854640	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 20.17287	0.00
	fake circumpolar target for a TS to look at			
* 0307+380	03 07 37.554068	* 03 10 49.879926	03 11 52.680479	0.00
J0310+3814	38 03 34.47086	* 38 14 53.83785	38 18 31.14264	0.00
	./rk12mq_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 9270 observations, RA-A03-04, RA-A02-12			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
0307+380	114.1

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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


```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  3  Setup file default.  Used with PCAL = 1MHz
LO sum=  4836.00  4836.00  4836.00  4836.00
BBC fr=   736.00   736.00   736.00   736.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  3

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 48.924082	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 20.19529	0.00
	fake circumpolar target for a TS to look at			
* 1329-049	13 29 28.424700	* 13 32 04.464672	13 32 54.742879	0.00
J1332-0509	-04 54 18.75752	*-05 09 43.30568	-05 14 37.55617	0.00
	./rk12mr_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 64 observations, RA-A03-04			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
1329-049	97.3

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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


```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 49.045357	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 20.23484	0.00
	fake circumpolar target for a TS to look at			
* 0336-019	03 36 58.953148	* 03 39 30.937788	03 40 20.335775	0.00
J0339-0146	-01 56 16.89659	*-01 46 35.80419	-01 43 43.92745	0.00
CTA26	./rk12ms_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 81923 observations, RA-A03-04, RA-A02-1			

EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
0336-019    109.6

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

```


rk12mttr

RADIOASTRON AGN SURVEY
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Fax: +7-495-3332378 Phone during observation: +7-903-6614865

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Thu 21 Jan 2016 Day 21 ---

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

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

23 00 00	0307+380	08 17 15	37.4	-73.6	5.1		47.2	0	0	23 00 00
23 14 30	---	08 31 47	35.3	-71.2	5.3		46.4	870	28	23 00 01
23 15 00	0307+380	08 32 17	35.2	-71.1	5.3		46.4	24	28	23 15 00
23 29 30	---	08 46 50	33.2	-68.7	5.6		45.5	870	56	23 15 01
23 30 00	0307+380	08 47 20	33.1	-68.6	5.6		45.5	24	56	23 30 00
23 44 30	---	09 01 52	31.1	-66.3	5.8		44.5	870	84	23 30 01
23 45 00	0307+380	09 02 22	31.0	-66.2	5.8		44.4	24	84	23 45 00
23 59 59	---	09 17 25	29.0	-63.7	6.1		43.3	899	112	23 45 01

SETUP FILE INFORMATION:

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

=====
Setup file: ra1cm2.set
Matching groups in ./rk12mt_freq.dat:
tr1cm

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1= 2, 18, 3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 49.076095	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 20.24504	0.00
	fake circumpolar target for a TS to look at			
* 0307+380	03 07 37.554068	* 03 10 49.879926	03 11 52.671108	0.00
J0310+3814	38 03 34.47086	* 38 14 53.83785	38 18 31.17310	0.00
	./rk12mt_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 9270 observations, RA-A03-04, RA-A02-12			

EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
0307+380    113.2

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

```


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

The following frequency sets based on these setups were used.

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

Track assignments are:

track1= 2, 18, 3, 19
 barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 49.106989	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 20.25540	0.00
	fake circumpolar target for a TS to look at			
* 1351-018	13 51 32.032818	* 13 54 06.895322	13 54 56.655080	0.00
J1354-0206	-01 51 20.07716	*-02 06 03.19066	-02 10 44.37909	0.00
	./rk12mu_sources.radioastron AGN, HIGHz, rfc_2013d Petrov, 2013, unpublished 22569 observations, RA-A03-04, R			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
1351-018	94.0

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 $60 \text{ deg } F^{-0.6}$ 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

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

The following frequency sets based on these setups were used.

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

Track assignments are:

track1= 2, 18, 3, 19
 barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 49.327056	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 20.33354	0.00
	fake circumpolar target for a TS to look at			
* 0307+380	03 07 37.554068	* 03 10 49.879926	03 11 52.659219	0.00
J0310+3814	38 03 34.47086	* 38 14 53.83785	38 18 31.21291	0.00
	./rk12mw_sources.radioastron AGN, rfc_2013d Petrov, 2013, unpublished 9270 observations, RA-A03-04, RA-A02-12			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
0307+380	112.2

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

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

The following frequency sets based on these setups were used.

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

Track assignments are:

track1= 2, 18, 3, 19
 barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 49.616057	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 20.45318	0.00
	fake circumpolar target for a TS to look at			
* 1351-018	13 51 32.032818	* 13 54 06.895322	13 54 56.725895	0.00
J1354-0206	-01 51 20.07716	*-02 06 03.19066	-02 10 44.81087	0.00
	./rk12mx_sources.radioastron AGN, HIGHz, rfc_2013d Petrov, 2013, unpublished 22569 observations, RA-A03-04, R			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
1351-018	96.0

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 $60 \text{ deg } F^{-0.6}$ 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


```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 49.648293	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 20.46803	0.00
	fake circumpolar target for a TS to look at			
* 1417+385	14 17 43.055732	* 14 19 46.613761	14 20 25.723072	0.00
J1419+3821	38 35 32.28529	* 38 21 48.47497	38 17 14.31154	0.00
	./rk12my_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 21334 observations, RA-A03-04			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
1417+385	102.5

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 $60 \text{ deg } F^{-0.6}$ 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


```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  4  Setup file default.  Used with PCAL = 1MHz
LO sum=  4836.00  4836.00  4836.00  4836.00
BBC fr=   736.00   736.00   736.00   736.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  4

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 49.883532	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 20.58716	0.00
	fake circumpolar target for a TS to look at			
* 0300+470	03 00 10.111206	* 03 03 35.242224	03 04 42.327154	0.00
J0303+4716	47 04 33.67712	* 47 16 16.27546	47 20 04.19216	0.00
	./rk12nb_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 26473 observations, RA-A03-04, RA-A02-1			

EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
0300+470    110.1

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

```


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

The following frequency sets based on these setups were used.

Frequency Set: 4 Setup file default. Used with PCAL = 1MHz
 LO sum= 4836.00 4836.00 4836.00 4836.00
 BBC fr= 736.00 736.00 736.00 736.00
 Bandwd= 16.00 16.00 16.00 16.00
 Matching frequency sets: 4

Track assignments are:

track1= 2, 18, 3, 19
 barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 49.912762	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 20.60336	0.00
	fake circumpolar target for a TS to look at			
* 1302-102	13 02 55.848556	* 13 05 33.015041	13 06 24.018629	0.00
J1305-1033	-10 17 16.37573	*-10 33 19.42817	-10 38 26.32631	0.00
	./rk12nc_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 1014 observations, RA-A03-04			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
1302-102	105.3

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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


```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 49.957544	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 20.62880	0.00
	fake circumpolar target for a TS to look at			
* 1324+224	13 24 37.118626	* 13 27 00.861311	13 27 47.020369	0.00
J1327+2210	22 26 22.70232	* 22 10 50.16276	22 05 43.09809	0.00
	./rk12nd_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 36026 observations, RA-A03-04, RA-A02-1			

EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
1324+224    110.7

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

```


rk12netr

RADIOASTRON AGN SURVEY

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Tue 26 Jan 2016 Day 26 ---

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

Next scan frequencies:	4836.00	4836.00	4836.00	4836.00							
Next BBC frequencies:	736.00	736.00	736.00	736.00							
Next scan bandwidths:	16.00	16.00	16.00	16.00							
00 00 00	0716+714	09 33 11	66.9	-26.0	2.2	124.9	0	0	00 00 00		
00 14 30	---	09 47 43	65.9	-27.5	2.4	120.0	870	28	00 00 01		
00 15 00	0716+714	09 48 14	65.9	-27.6	2.4	119.9	24	28	00 15 00		
00 29 30	---	10 02 46	64.9	-28.9	2.7	115.2	870	56	00 15 01		
00 30 00	0716+714	10 03 16	64.8	-28.9	2.7	115.1	24	56	00 30 00		
00 44 30	---	10 17 48	63.8	-29.9	2.9	110.7	870	84	00 30 01		
00 45 00	0716+714	10 18 18	63.7	-30.0	2.9	110.6	24	84	00 45 00		
01 00 00	---	10 33 21	62.6	-30.8	3.2	106.2	900	112	00 45 01		

SETUP FILE INFORMATION:

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

=====
Setup file: ra6cm2.set

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 50.103648	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 20.71724	0.00
	fake circumpolar target for a TS to look at			
* 0716+714	07 16 13.029739	* 07 21 53.448474	07 23 45.700287	0.00
J0721+7120	71 26 15.17406	* 71 20 36.36340	71 18 36.20772	0.00
	./rk12ne_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 42370 observations, RA-A03-04, RA-A02-1			

EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
0716+714    126.7

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

```

rk12nfr

RADIOASTRON AGN SURVEY

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Tue 26 Jan 2016 Day 26 ---

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

Next scan frequencies:	4836.00	4836.00	4836.00	4836.00						
Next BBC frequencies:	736.00	736.00	736.00	736.00						
Next scan bandwidths:	16.00	16.00	16.00	16.00						
07 00 00	1156+295	16 34 20	35.6	272.6	4.6	43.4	0	0	07 00 00	
07 14 30	---	16 48 52	33.4	275.4	4.8	43.2	870	28	07 00 01	
07 15 00	1156+295	16 49 23	33.3	275.5	4.8	43.2	24	28	07 15 00	
07 29 30	---	17 03 55	31.2	278.2	5.1	42.9	870	56	07 15 01	
07 30 00	1156+295	17 04 25	31.1	278.3	5.1	42.9	24	56	07 30 00	
07 44 30	---	17 18 57	28.9	281.0	5.3	42.4	870	84	07 30 01	
07 45 00	1156+295	17 19 27	28.9	281.1	5.3	42.4	24	84	07 45 00	
08 00 00	---	17 34 30	26.7	283.8	5.6	41.9	900	112	07 45 01	

SETUP FILE INFORMATION:

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

=====
Setup file: ra6cm2.set

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

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

Track assignments are:

track1= 2, 18, 3, 19
 barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 50.175548	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 20.76389	0.00
	fake circumpolar target for a TS to look at			
* 1156+295	11 56 57.786212	* 11 59 31.833913	12 00 21.719271	0.00
J1159+2914	29 31 25.73868	* 29 14 43.82678	29 09 09.47712	0.00
	./rk12nf_sources.radioastron AGN, MASIV, rfc_2013d Petrov, 2013, unpublished 70591 observations, RA-A03-04, R			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
1156+295	131.8

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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


```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  3  Setup file default.  Used with PCAL = 1MHz
LO sum=  4836.00  4836.00  4836.00  4836.00
BBC fr=   736.00   736.00   736.00   736.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  3

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 50.316657	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 20.86161	0.00
	fake circumpolar target for a TS to look at			
* 0403-132	04 03 13.979060	* 04 05 34.003395	04 06 19.582620	0.00
J0405-1308	-13 16 18.08449	*-13 08 13.69083	-13 05 57.02831	0.00
	./rk12ng_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 1366 observations, RA-A03-04, RA-A02-12			

EFFECT OF SOLAR CORONA

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

```

Source          Sun distance (deg)
0403-132        106.6

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

```

rk12nhtr

RADIOASTRON AGN SURVEY

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Wed 27 Jan 2016 Day 27 ---

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

Next scan frequencies:	22236.00	22236.00	22236.00	22236.00							
Next BBC frequencies:	736.00	736.00	736.00	736.00							
Next scan bandwidths:	16.00	16.00	16.00	16.00							
01 00 00	0716+714	10 37 18	62.3 -31.0	3.2		105.1	0		0	01 00 00	
01 14 30	---	10 51 50	61.2 -31.6	3.5		101.2	870		28	01 00 01	
01 15 00	0716+714	10 52 20	61.1 -31.6	3.5		101.1	24		28	01 15 00	
01 29 30	---	11 06 52	60.0 -32.0	3.7		97.3	870		56	01 15 01	
01 30 00	0716+714	11 07 22	59.9 -32.0	3.7		97.2	24		56	01 30 00	
01 44 30	---	11 21 55	58.8 -32.2	4.0		93.6	870		84	01 30 01	
01 45 00	0716+714	11 22 25	58.7 -32.2	4.0		93.4	24		84	01 45 00	
02 00 00	---	11 37 27	57.5 -32.3	4.2		89.8	900		112	01 45 01	

SETUP FILE INFORMATION:

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

=====
Setup file: ra1cm2.set
Matching groups in ./rk12nh_freq.dat:
tr1cm

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 50.356262	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 20.89051	0.00
	fake circumpolar target for a TS to look at			
* 0716+714	07 16 13.029739	* 07 21 53.448474	07 23 45.693341	0.00
J0721+7120	71 26 15.17406	* 71 20 36.36340	71 18 36.52446	0.00
	./rk12nh_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 42370 observations, RA-A03-04, RA-A02-1			

EFFECT OF SOLAR CORONA

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

```

Source          Sun distance (deg)
0716+714        126.3

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

```


rk12nitr

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Wed 27 Jan 2016 Day 27 ---

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

Next scan frequencies:	22236.00	22236.00	22236.00	22236.00						
Next BBC frequencies:	736.00	736.00	736.00	736.00						
Next scan bandwidths:	16.00	16.00	16.00	16.00						
05 00 00	1253-055	14 37 57	27.3	208.5	1.7		16.7	0	0	05 00 00
05 12 00	---	14 49 59	26.4	211.7	1.9		18.5	720	23	05 00 01
05 12 30	1253-055	14 50 29	26.3	211.8	1.9		18.6	24	23	05 12 30
05 24 30	---	15 02 31	25.3	215.0	2.1		20.2	720	46	05 12 31
05 25 00	1253-055	15 03 01	25.3	215.1	2.1		20.3	24	46	05 25 00
05 37 00	---	15 15 03	24.2	218.2	2.3		21.9	720	69	05 25 01
05 37 30	1253-055	15 15 33	24.2	218.3	2.3		22.0	24	69	05 37 30
05 50 00	---	15 28 05	23.0	221.4	2.5		23.5	750	93	05 37 31

SETUP FILE INFORMATION:

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

=====
Setup file: ra1cm2.set

Matching groups in ./rk12ni_freq.dat:

tr1cm

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 50.395129	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 20.91950	0.00
	fake circumpolar target for a TS to look at			
* 1253-055	12 53 35.831289	* 12 56 11.166557	12 57 01.616506	0.00
J1256-0547	-05 31 07.99603	*-05 47 21.52489	-05 52 34.31164	0.00
3C279	./rk12ni_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 7924 observations, RA-A03-04, RA-A03-05			

EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
1253-055    111.3

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

```

rk12nktr

RADIOASTRON AGN SURVEY

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Wed 27 Jan 2016 Day 27 ---

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

Next scan frequencies:	4836.00	4836.00	4836.00	4836.00							
Next BBC frequencies:	736.00	736.00	736.00	736.00							
Next scan bandwidths:	16.00	16.00	16.00	16.00							
23 00 00	0356+322	08 40 54	37.0	276.5	4.7		44.9	0	0	23 00 00	
23 14 30	---	08 55 27	34.8	279.2	4.9		44.6	870	28	23 00 01	
23 15 00	0356+322	08 55 57	34.7	279.3	4.9		44.6	24	28	23 15 00	
23 29 30	---	09 10 29	32.6	282.0	5.2		44.1	870	56	23 15 01	
23 30 00	0356+322	09 10 59	32.5	282.1	5.2		44.1	24	56	23 30 00	
23 44 30	---	09 25 32	30.4	284.7	5.4		43.5	870	84	23 30 01	
23 45 00	0356+322	09 26 02	30.3	284.7	5.4		43.4	24	84	23 45 00	
23 59 59	---	09 41 04	28.2	287.4	5.7		42.7	899	112	23 45 01	

SETUP FILE INFORMATION:

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

=====
Setup file: ra6cm2.set

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  4  Setup file default.  Used with PCAL = 1MHz
LO sum=  4836.00  4836.00  4836.00  4836.00
BBC fr=   736.00   736.00   736.00   736.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  4

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 50.568031	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 21.05596	0.00
	fake circumpolar target for a TS to look at			
* 0356+322	03 56 34.795463	* 03 59 44.912919	04 00 46.983307	0.00
J0359+3220	32 12 19.24958	* 32 20 47.15555	32 23 25.27704	0.00
	./rk12nk_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 88 observations, RA-A03-04, RA-A02-12			

EFFECT OF SOLAR CORONA

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

```

Source          Sun distance (deg)
0356+322        116.6

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

```

rk12nltr

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Thu 28 Jan 2016 Day 28 ---

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

Next scan frequencies:	22236.00	22236.00	22236.00	22236.00							
Next BBC frequencies:	736.00	736.00	736.00	736.00							
Next scan bandwidths:	16.00	16.00	16.00	16.00							
02 00 00	1253-055	11 41 24	28.9	158.4	-1.3		-12.8	0	0	02 00 00	
02 14 30	---	11 55 56	29.6	162.5	-1.0		-10.5	870	28	02 00 01	
02 15 00	1253-055	11 56 26	29.7	162.6	-1.0		-10.4	24	28	02 15 00	
02 29 30	---	12 10 59	30.2	166.7	-0.8		-8.0	870	56	02 15 01	
02 30 00	1253-055	12 11 29	30.2	166.9	-0.8		-7.9	24	56	02 30 00	
02 44 30	---	12 26 01	30.7	171.0	-0.5		-5.4	870	84	02 30 01	
02 45 00	1253-055	12 26 31	30.7	171.2	-0.5		-5.3	24	84	02 45 00	
03 00 00	---	12 41 34	30.9	175.5	-0.3		-2.7	900	112	02 45 01	

SETUP FILE INFORMATION:

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

=====
Setup file: ra1cm2.set

Matching groups in ./rk12nl_freq.dat:

tr1cm

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  6 Setup file default. Used with PCAL = 1MHz
LO sum= 22236.00 22236.00 22236.00 22236.00
BBC fr=  736.00  736.00  736.00  736.00
Bandwd=  16.00  16.00  16.00  16.00
Matching frequency sets:  6

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 50.596094	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 21.07924	0.00
	fake circumpolar target for a TS to look at			
* 1253-055	12 53 35.831289	* 12 56 11.166557	12 57 01.637742	0.00
J1256-0547	-05 31 07.99603	*-05 47 21.52489	-05 52 34.45236	0.00
3C279	./rk12nl_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 7924 observations, RA-A03-04, RA-A03-05			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
1253-055	112.2

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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


```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  4  Setup file default.  Used with PCAL = 1MHz
LO sum=  4836.00  4836.00  4836.00  4836.00
BBC fr=   736.00   736.00   736.00   736.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  4

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 50.623961	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 21.10265	0.00
	fake circumpolar target for a TS to look at			
* 1329-049	13 29 28.424700	* 13 32 04.464672	13 32 54.957260	0.00
J1332-0509	-04 54 18.75752	*-05 09 43.30568	-05 14 38.90724	0.00
	./rk12nm_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 64 observations, RA-A03-04			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
1329-049	104.2

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

rk12notr

RADIOASTRON AGN SURVEY

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

```
-----
Start UT  Source                Start / Stop                Early  Disk  TPStart
Stop UT   LST      EL    AZ    HA  UP   ParA Dwell  GBytes  SYNC
-----
```

--- Fri 29 Jan 2016 Day 29 ---

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

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

18 00 00	0235+164	03 47 58	51.2	206.7	1.1	16.4	0	0	18 00 00
18 14 30	---	04 02 31	50.1	212.0	1.4	19.4	870	28	18 00 01
18 15 00	0235+164	04 03 01	50.1	212.1	1.4	19.5	24	28	18 15 00
18 29 30	---	04 17 33	48.8	217.1	1.6	22.2	870	56	18 15 01
18 30 00	0235+164	04 18 03	48.8	217.3	1.6	22.3	24	56	18 30 00
18 44 30	---	04 32 35	47.4	222.1	1.9	24.8	870	84	18 30 01
18 45 00	0235+164	04 33 06	47.4	222.2	1.9	24.9	24	84	18 45 00
19 00 00	---	04 48 08	45.8	226.9	2.1	27.3	900	112	18 45 01

SETUP FILE INFORMATION:

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

=====
 Setup file: ra1cm2.set
 Matching groups in ./rk12no_freq.dat:
 tr1cm

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  3  Setup file default.  Used with PCAL = 1MHz
LO sum= 22236.00 22236.00 22236.00 22236.00
BBC fr=  736.00  736.00  736.00  736.00
Bandwd=  16.00  16.00  16.00  16.00
Matching frequency sets:  3

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 50.952097	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 21.39903	0.00
	fake circumpolar target for a TS to look at			
* 0235+164	02 35 52.630215	* 02 38 38.930107	02 39 32.667870	0.00
J0238+1636	16 24 04.01610	* 16 36 59.27452	16 41 01.59373	0.00
	./rk12no_sources.radioastron			
	AGN, IDV, rfc_2013d Petrov, 2013, unpublished 65224 observations, RA-A03-04, RA-			

EFFECT OF SOLAR CORONA

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

```

Source          Sun distance (deg)
0235+164        93.4

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

```



```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set: 3 Setup file default. Used with PCAL = 1MHz
LO sum= 22236.00 22236.00 22236.00 22236.00
BBC fr= 736.00 736.00 736.00 736.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 3

```

Track assignments are:

```

track1= 2, 18, 3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 50.985971	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 21.43148	0.00
	fake circumpolar target for a TS to look at			
* 0300+470	03 00 10.111206	* 03 03 35.242224	03 04 42.186543	0.00
J0303+4716	47 04 33.67712	* 47 16 16.27546	47 20 04.17707	0.00
	./rk12np_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 26473 observations, RA-A03-04, RA-A02-1			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
0300+470	105.9

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 $60 \text{ deg } F^{-0.6}$ 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

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

The following frequency sets based on these setups were used.

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

Track assignments are:

track1= 2, 18, 3, 19
 barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 51.019568	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 21.46393	0.00
	fake circumpolar target for a TS to look at			
* 1406-076	14 06 17.898821	* 14 08 56.481199	14 09 47.656415	0.00
J1408-0752	-07 38 15.91695	*-07 52 26.66668	-07 56 56.12484	0.00
	./rk12nq_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 2135 observations, RA-A03-04, RA-A02-12			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
1406-076	96.6

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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


```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 51.191891	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 21.63352	0.00
	fake circumpolar target for a TS to look at			
* 0316+413	03 16 29.567283	* 03 19 48.160114	03 20 52.899255	0.00
J0319+4130	41 19 51.91847	* 41 30 42.10559	41 34 10.63001	0.00
3C84	./rk12ns_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 15448 observations, RA-A03-04, RA-A02-1			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
0316+413	106.9

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 $60 \text{ deg } F^{-0.6}$ 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

rk12nttr

RADIOASTRON AGN SURVEY

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Fax: +7-495-3332378 Phone during observation: +7-903-6614865

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are LO sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Sun 31 Jan 2016 Day 31 ---

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

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

03 00 00	1329-049	12 53 23	31.1	168.5	-0.7		-6.9	0	0	03 00 00
03 14 30	---	13 07 56	31.4	172.7	-0.4		-4.4	870	28	03 00 01
03 15 00	1329-049	13 08 26	31.4	172.9	-0.4		-4.3	24	28	03 15 00
03 29 30	---	13 22 58	31.6	177.1	-0.2		-1.8	870	56	03 15 01
03 30 00	1329-049	13 23 28	31.6	177.2	-0.2		-1.7	24	56	03 30 00
03 44 30	---	13 38 01	31.7	181.5	0.1		0.9	870	84	03 30 01
03 45 00	1329-049	13 38 31	31.6	181.6	0.1		1.0	24	84	03 45 00
04 00 00	---	13 53 33	31.5	186.0	0.3		3.6	900	112	03 45 01

SETUP FILE INFORMATION:

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

=====
Setup file: ra18cm2.set

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 51.224044	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 21.66554	0.00
	fake circumpolar target for a TS to look at			
* 1329-049	13 29 28.424700	* 13 32 04.464672	13 32 55.031503	0.00
J1332-0509	-04 54 18.75752	*-05 09 43.30568	-05 14 39.33441	0.00
	./rk12nt_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 64 observations, RA-A03-04			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
1329-049	107.2

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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


```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 51.382455	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 21.82354	0.00
	fake circumpolar target for a TS to look at			
* 0333+321	03 33 22.404692	* 03 36 30.107611	03 37 31.211194	0.00
J0336+3218	32 08 36.66043	* 32 18 29.34220	32 21 35.68975	0.00
NRA0140	./rk12nu_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 3693 observations, RA-A03-04, RA-A02-12			

EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
0333+321    107.8

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ 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

```

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