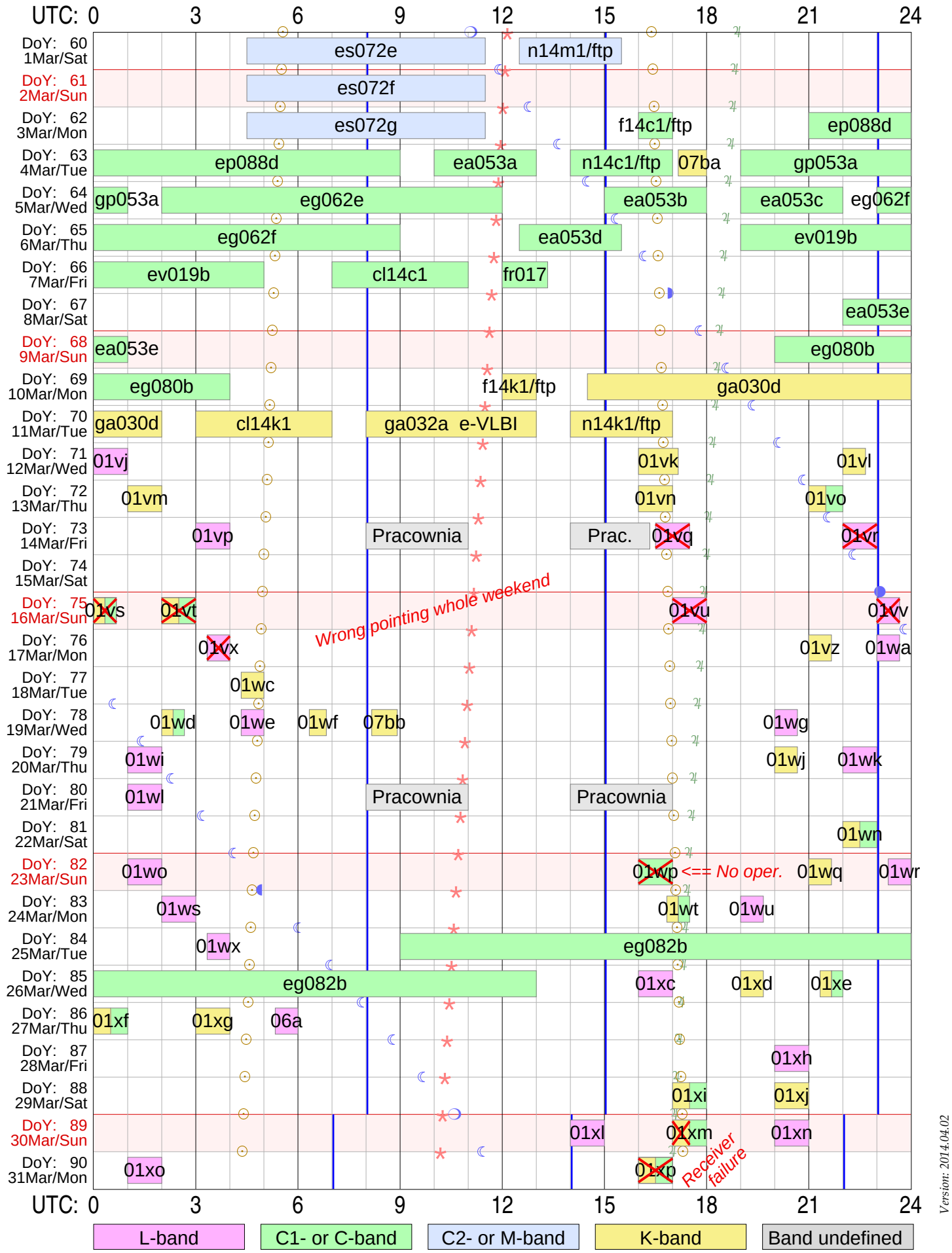
Tr VLBI plan for Mar 2014



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: 216.1 hours in 75 experiments scheduled

Two initial characters (rk) are omitted from RA experiment names!

Version: 2014.04.02

Strona zostawiona celowo pusta

RadioAstron and EVN Experiments
March 2014

Użytkownik i hasło ftp dla logów i schedulów RA: `grt K0&th%`
`ftp://webinet.asc.rssi.ru`
Przykład dla log files: `cd GRT_log_files/2013_08/2013_08_01_raks02aa`
Przykład dla sched files: `cd schedule/grtsched/RAKS/rk02aa`

DoY	DoM	WD	UT_Start h	UT_Start m	UT_Stop h	UT_Stop m	Experim. name	Band	Uwagi
60	1	Sob	4	30	11	30	es072e	M	
60	1	Sob	12	30	15	30	n14m1	M	ftp
61	2	Nie	4	30	11	30	es072f	M	
62	3	Pon	4	30	11	30	es072g	M	
62	3	Pon	16	00	17	00	f14c1	C	ftp
62	3	Pon	21	00	24+09	00	ep088d	C	
63	4	Wto	10	00	13	00	ea053a	C	
63	4	Wto	14	00	17	00	n14c1	C	ftp
63	4	Wto	17	10	18	00	rk07ba	K	
63	4	Wto	19	00	24+01	00	gp053a	C	
64	5	Sro	2	00	12	00	eg062e	C	
64	5	Sro	15	00	18	00	ea053b	C	
64	5	Sro	19	00	22	00	ea053c	C	
64	5	Sro	23	00	24+09	00	eg062f	C	
65	6	Czw	12	30	15	30	ea053d	C	
65	6	Czw	19	30	24+05	30	ev019b	C	
66	7	Pia	7	00	11	00	cl14c1	C	
67	8	Sob	22	00	24+01	00	ea053e	C	
68	9	Nie	20	00	24+04	00	eg080b	C	
69	10	Pon	12	00	13	00	f14k1	K	ftp
69	10	Pon	14	30	24+02	00	ga030d	K	
70	11	Wto	3	00	7	00	cl14k1	K	
70	11	Wto	8	00	13	00	ga032a	K	e-VLBI
70	11	Wto	14	00	17	00	n14k1	K	ftp
71	12	Sro	0	00	1	00	rk01vj	L	
71	12	Sro	16	00	17	10	rk01vk	K	
71	12	Sro	22	00	22	40	rk01vl	K	
72	13	Czw	1	00	2	00	rk01vm	K	
72	13	Czw	16	00	17	00	rk01vn	K	
72	13	Czw	21	00	22	00	rk01vo	K&C	
73	14	Pia	3	00	4	00	rk01vp	L	
73	14	Pia	16	30	17	30	rk01vq	L	
73	14	Pia	22	00	23	00	rk01vr	L	
75	16	Nie	0	00	0	40	rk01vs	K&C	
75	16	Nie	2	00	3	00	rk01vt	K&C	
75	16	Nie	17	00	18	00	rk01vu	L	
75	16	Nie	23	00	23	40	rk01vv	L	
76	17	Pon	3	20	4	00	rk01vx	L	
76	17	Pon	21	00	21	40	rk01vz	K	
76	17	Pon	23	00	23	40	rk01wa	L	

77	18	Wto	4	20	5	00	rk01wc	K	
78	19	Sro	2	00	2	40	rk01wd	K&C	(C 4III)
78	19	Sro	4	20	5	00	rk01we	L	
78	19	Sro	6	20	6	50	rk01wf	K	
78	19	Sro	8	10	8	55	rk07bb	K	
78	19	Sro	20	00	20	40	rk01wg	L	
79	20	Czw	1	00	2	00	rk01wi	L	
79	20	Czw	20	00	20	40	rk01wj	K	
79	20	Czw	22	00	23	00	rk01wk	L	
80	21	Pia	1	00	2	00	rk01wl	L	
81	22	Sob	22	00	23	00	rk01wn	K&C	
82	23	Nie	1	00	2	00	rk01wo	L	
82	23	Nie	16	00	17	00	rk01wp	C	
82	23	Nie	21	00	21	40	rk01wq	K	
82	23	Nie	23	20	24	00	rk01wr	L	
83	24	Pon	2	00	3	00	rk01ws	L	
83	24	Pon	16	50	17	30	rk01wt	K&C	
83	24	Pon	19	00	19	40	rk01wu	L	
84	25	Wto	3	20	4	00	rk01wx	L	
84	25	Wto	9	00	24+13	00	eg082b	C	e-VLBI
85	26	Sro	16	00	17	00	rk01xc	L	
85	26	Sro	19	00	19	40	rk01xd	K	
85	26	Sro	21	20	22	00	rk01xe	K&C	
86	27	Czw	0	00	1	00	rk01xf	K&C	
86	27	Czw	3	00	4	00	rk01xg	K	
86	27	Czw	5	20	6	00	rk06a	L	
87	28	Pia	20	00	21	00	rk01xh	L	
88	29	Sob	17	00	18	00	rk01xi	K&C	
88	29	Sob	20	00	21	00	rk01xj	K	
89	30	Nie	14	00	15	00	rk01xl	L	
89	30	Nie	17	00	18	00	rk01xm	K&C	
89	30	Nie	20	00	21	00	rk01xn	L	
90	31	Pon	1	00	2	00	rk01xo	L	
90	31	Pon	16	00	17	00	rk01xp	K&C	

Razem 74 eksperymenty (EVN i RA)

Do zapisu obserwacji RadioAstronu dedykowany jest dyskpak

TR-00002/1600

montowany w banku A. Gdyby ten się zapełnił, trzeba użyć innego paka zamontowanego w banku B obok **TR-00002/1600** (lub samego w A). Jeśli zaczęto w banku B, kolejne eksperymenty trzeba nagrywać także w B.

UWAGA: 1-godzinne eksperymenty RA zwykle wymagają ok. 110 GB wolnego miejsca na dyskpaku (dłuższe odpowiednio więcej).

A per-experiment summary for the February/March EVN observations

Experiments are listed alphabetically.

EA053A-E — C-band observations of 5 BL Lac objects with very hard TeV spectra. A general question for such hard spectra is the origin of the lower-energy photons that can get inverse-Compton boosted from collisions with the relativistic electrons in the jet: whether arising from the AGN itself is sufficient or whether a background source of (IR) photons is required. A "self-contained" reservoir of lower energy photons should result in un-limb-brightened structure and the existence of superluminal motion in jet components. These initial observations would seek these characteristics (for the latter, whether there are suitable components to use for tracing the jet kinematics).

EF025 — L-band observations of 4 hot dust-obscured galaxies that may represent the short phase during galaxy merging & evolution with a transition between starburst- to AGN-dominated domains. These targets have known mJy level radio emission, but have not been observed with VLBI. These observations would seek genuinely young AGN embedded at the cores of the galaxies (CSO-like objects, confined core-jets, possibly even binary AGN).

EG062E,F — Phase-referencing astrometry of two binary-star systems, each having a low-mass, pre-main-sequence member. By following the orbital motion in the binaries, the dynamical masses can be determined. Coupling with the distance from parallax measurements provides calibration points for stellar evolution models. The two parts observe different targets; multiple epochs (every other session) would follow if the stars are detected.

EG080A,B — Dual-frequency (L,C) observations of the brightest cluster galaxy in RBS 797 (redshift = 0.35), which shows a possible 90-degree misalignment between jets on different VLA scales. Previous short e-EVN observations showed two compact components separated by 77pc. These new EVN observations would aim to determine whether these components are both cores of a binary AGN or a single core-jet structure.

EH028B — Using 1612MHz OH masers to get the parallax distance of an OH/IR star, which could be compared also has a distance estimate using the phase-lag method (from the delay between the observed maxima of the light curves on the front and back edges of the shell [i.e., the blue- and red-ends of the velocity-distribution of the maser emission] and the angular diameter of the shell). First of four epochs.

EM110 — This follows up on the two epochs of EM080 (sess. 1/10, 1/11). The target is a pulsar, around which VLA observations have revealed a pulsar-wind nebula. Cherenkov telescopes have also shown there to be a co-located TeV source. The previous EVN observations greatly refined the proper motion of the pulsar, given the previous VLA data, in relation to the pulsar-wind nebula; these new EVN observations extending the time-baseline by 3 years would enable tracing the pulsar's trajectory on scales larger than the nebula and explore its relation with the TeV source on time-scales longer than 20 kyear.

EM111 — Previous L-band EVN observations of the gamma-ray binary HESS J0632+057 (RR005, RM006; Feb, Mar'11) caught the source during and just after the phase of main X-ray outburst (period 315 days). The derived EVN fluxes follow the decay of the X-ray light curve better than do GMRT at 1.3 GHz, suggesting the presence of a diffuse component

that VLBI can resolve out. These observations are timed to observe just after the secondary X-ray peak, which would help constrain the geometry of the shock arising from the interaction between the winds of the compact object and the primary star forming the binary.

EP088C,D — multi-frequency (L,C) imaging of a sample of luminous infra-red galaxies, made in conjunction with an e-MERLIN legacy project on the same targets. There are dozens of targets, being addressed a few at a time over several sessions (each with L- and C-band obs). Goals include separating contributions from AGN and starbursts to the overall energy budget, and detecting individual supernovae andór supernova remnants.

ES071A — Methanol maser spectral-line observations to a nearby massive star-forming region in Orion to obtain the velocity field structure traced by the masers in what appears to be circum-stellar disk. Inclusion of cross-pol correlation will also allow characterizing the magnetic field structure. The second of 3 annual epochs.

ES072E-G — Continuing a survey of polarization in methanol masers around massive proto-stars, which would provide the means to determine the direction of the stellar magnetic field and, with laboratory measurements being worked on separately, also the magnetic-field strength. It is still not well known exactly how the magnetic field influences massive-star formation.

EV019A,B — Dual-frequency (L,C) observations of the luminous infra-red galaxy NGC4418, in order to distinguish contributions of young, compact star-burst and dust-enshrouded AGN to the overall radio emission.

GA030D — EVN+RadioAstron observations of 3C279, targeting the innermost jet region with full-Stokes correlation to address the magnetic-field structure unprecedentedly close to the central engine and jet-launch region. GA030 has 5 targets in all; previous epochs have been observed in out-of-session EVN+RadioAstron segments.

GA032A — A preliminary short e-EVN phase-reference candidate search associated with a global proposal to study the rotations of the jet position angle of NRAO 150 at Q-band.

GP053A — C-band EVN-only observations continuing (e.g., EP075A-H, EP087A-E) to monitor the compact sources in Arp299, a merging galaxy system (i.e., merging drives lots of massive star formation leading to supernovae; there is also the signature of an AGN in one of the nuclei). This is part of a global multi-frequency proposal; global epochs will follow.

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es072etr

6.7GHz CH3OH MASER POLARIZATION TOWARDS MASSIVE PROTOSTARS. II.

PI: *G. Surcis*

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Observing mode: Polarization observations of 3 sources at 6.7 GHz (32 Mb/s

Schedule for TORUN (Code Tr) Page 2
6.7GHz CH3OH maser polarization towards massive protostars. II.
UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sat 1 Mar 2014 Day 60 ---										
Next scan frequencies:		6666.26	6666.26	6666.26	6666.26					
Next BBC frequencies:		766.26	766.26	766.26	766.26					
Next scan bandwidths:		2.00	2.00	2.00	2.00					
04 30 00	J2202+4216	16 19 53	34.8	63.9	-5.7		-46.8	0	0	04 30 00
04 40 00	=BLLAC	16 29 55	36.2	65.4	-5.6		-47.6	600	2	04 30 01
04 44 10	G23.44-0.18	16 34 05	23.2	147.1	-2.0		-19.3	72	2	04 44 10
04 54 10	---	16 44 07	24.0	149.6	-1.9		-17.9	600	5	04 44 11
04 54 40	G23.44-0.18	16 44 37	24.0	149.8	-1.8		-17.8	24	5	04 54 40
05 04 40	---	16 54 39	24.8	152.4	-1.7		-16.4	600	7	04 54 41
05 05 10	G23.44-0.18	16 55 09	24.8	152.5	-1.7		-16.3	24	7	05 05 10
05 15 10	---	17 05 10	25.5	155.1	-1.5		-14.8	600	10	05 05 11
05 15 40	G23.44-0.18	17 05 40	25.5	155.3	-1.5		-14.7	24	10	05 15 40
05 25 40	---	17 15 42	26.1	157.9	-1.3		-13.2	600	12	05 15 41
05 30 00	J2202+4216	17 20 03	43.2	73.2	-4.7		-51.1	75	12	05 30 00
05 40 00	=BLLAC	17 30 04	44.6	74.8	-4.6		-51.6	600	15	05 30 01
05 50 00	J1331+3030	17 40 06	40.4	268.6	4.1		44.1	199	15	05 50 00
06 00 00	=3C286	17 50 08	38.9	270.6	4.3		44.1	600	17	05 50 01
06 06 00	G23.44-0.18	17 56 09	27.8	169.0	-0.7		-6.7	140	17	06 06 00
06 16 00	---	18 06 10	28.1	171.8	-0.5		-5.0	600	19	06 06 01
06 16 30	G23.44-0.18	18 06 40	28.1	171.9	-0.5		-4.9	24	19	06 16 30
06 26 30	---	18 16 42	28.3	174.7	-0.3		-3.2	600	22	06 16 31
06 31 00	J2202+4216	18 21 13	52.2	83.5	-3.7		-53.8	72	22	06 31 00
06 41 00	=BLLAC	18 31 14	53.7	85.3	-3.5		-54.1	600	24	06 31 01
06 46 00	G23.44-0.18	18 36 15	28.4	180.2	0.0		0.1	96	24	06 46 00
06 56 00	---	18 46 17	28.4	183.1	0.2		1.9	600	27	06 46 01

Schedule for TORUN (Code Tr) Page 3

6.7GHz CH3OH maser polarization towards massive protostars. II.

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sat 1 Mar 2014 Day 60 ---										
06 56 30	G23.44-0.18	18 46 47	28.3	183.2	0.2		1.9	24	27	06 56 30
07 06 30	---	18 56 49	28.2	186.0	0.4		3.6	600	29	06 56 31
07 07 00	G23.44-0.18	18 57 19	28.2	186.1	0.4		3.7	24	29	07 07 00
07 17 00	---	19 07 20	28.0	188.9	0.5		5.4	600	31	07 07 01
07 17 30	G23.44-0.18	19 07 50	28.0	189.1	0.5		5.5	24	31	07 17 30
07 25 30	---	19 15 52	27.8	191.3	0.7		6.8	480	33	07 17 31
07 30 30	J2202+4216	19 20 53	61.1	95.3	-2.7		-54.0	92	33	07 30 30
07 40 30	=BLLAC	19 30 54	62.6	97.6	-2.5		-53.6	600	36	07 30 31
07 45 30	G23.44-0.18	19 35 55	27.1	196.8	1.0		10.1	87	36	07 45 30
07 55 30	---	19 45 57	26.6	199.6	1.2		11.7	600	38	07 45 31
07 56 00	G23.44-0.18	19 46 27	26.6	199.7	1.2		11.8	24	38	07 56 00
08 06 00	---	19 56 28	26.0	202.4	1.4		13.4	600	41	07 56 01
08 06 30	G23.44-0.18	19 56 58	26.0	202.5	1.4		13.5	24	41	08 06 30
08 16 30	---	20 07 00	25.4	205.2	1.5		15.0	600	43	08 06 31
08 17 00	G23.44-0.18	20 07 30	25.4	205.3	1.5		15.1	24	43	08 17 00
08 27 00	---	20 17 32	24.7	208.0	1.7		16.5	600	45	08 17 01
08 32 10	J2202+4216	20 22 43	70.1	112.6	-1.7		-48.6	103	45	08 32 10
08 42 10	=BLLAC	20 32 44	71.5	116.4	-1.5		-46.7	600	48	08 32 11
08 47 30	G23.44-0.18	20 38 05	23.1	213.3	2.0		19.4	112	48	08 47 30
08 57 30	---	20 48 07	22.3	215.8	2.2		20.8	600	50	08 47 31
08 58 00	G23.44-0.18	20 48 37	22.2	215.9	2.2		20.9	24	50	08 58 00
09 08 00	---	20 58 39	21.3	218.4	2.4		22.2	600	53	08 58 01
09 08 30	G23.44-0.18	20 59 09	21.3	218.5	2.4		22.2	24	53	09 08 30
09 18 30	---	21 09 10	20.3	221.0	2.6		23.5	600	55	09 08 31
09 19 00	G23.44-0.18	21 09 40	20.2	221.1	2.6		23.5	24	55	09 19 00
09 29 00	---	21 19 42	19.2	223.5	2.7		24.7	600	58	09 19 01
09 34 20	J2202+4216	21 25 03	77.5	145.5	-0.6		-27.4	88	58	09 34 20
09 44 20	=BLLAC	21 35 05	78.3	153.5	-0.5		-21.3	600	60	09 34 21
09 47 20	J2136+0041	21 38 05	37.7	180.2	0.0		0.1	14	60	09 47 20
09 57 20	=2134+00	21 48 07	37.6	183.4	0.2		2.0	600	62	09 47 21
10 00 30	G23.44-0.18	21 51 17	15.8	230.8	3.3		28.1	81	62	10 00 30
10 10 30	---	22 01 19	14.6	233.1	3.4		29.0	600	65	10 00 31

```
Schedule for TORUN     (Code Tr )                                  Page   4
               6.7GHz CH3OH maser polarization towards massive protostars. II.
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   1 Mar 2014   Day  60 ---

10 11 00  G23.44-0.18  22 01 49  14.5 233.2  3.4      29.1    24       65   10 11 00
10 20 00  ---          22 10 50  13.4 235.2  3.6      29.9   540       67   10 11 01

10 20 30  G23.44-0.18  22 11 20  13.4 235.3  3.6      29.9    24       67   10 20 30
10 29 30  ---          22 20 22  12.2 237.3  3.7      30.7   540       69   10 20 31

10 34 20  J2202+4216   22 25 13  78.6 201.0  0.4      16.9    27       69   10 34 20
10 44 20  =BLLAC       22 35 14  78.0 209.6  0.5      23.7   600       72   10 34 21

10 49 10  G23.44-0.18  22 40 05   9.7 241.5  4.1      32.3    20       72   10 49 10
10 58 00  ---          22 48 57   8.5 243.4  4.2      32.9   530       74   10 49 11

10 58 30  G23.44-0.18  22 49 27   8.4 243.5  4.2      32.9    24       74   10 58 30
11 06 30  ---          22 57 28   7.3 245.2  4.4      33.4   480       76   10 58 31

11 07 00  G23.44-0.18  22 57 58   7.3 245.3  4.4      33.5    24       76   11 07 00
11 15 00  ---          23 05 59   6.2 246.9  4.5      34.0   480       78   11 07 01

11 20 00  J2202+4216   23 11 00  74.4 233.2  1.1      40.6    30       78   11 20 00
11 30 00  =BLLAC       23 21 02  73.2 238.1  1.3      43.6   600       80   11 20 01


SETUP FILE INFORMATION:

 ======== Setup file: sess114.M32
   Matching groups in /aps3/sched10.2/catalogs/freq.dat:
     tr5cm           Values confirmed by E-mail Borkowski (JFD 26Oct98)

   Setup group:    4         Station: TORUN             Total bit rate:   32
   Format: MKIV1:1           Bits per sample: 2         Sample rate:  4.000
   Number of channels:  4    DBE type:                  Speedup factor:   2.00

   Disk used to record data.

   1st LO=   5900.00   5900.00   5900.00   5900.00
   Net SB=         U         U         U         U
   Pol.  =       RCP       LCP       RCP       LCP
   BBC   =         1         2         3         4
   BBC SB=         U         U         U         U
   IF    =         C         A         C         A

  The following frequency sets based on these setups were used.

  Frequency Set:   6  Based on FREQ, BW, and/or DOPPLER in schedule.  Used pcal sets:   1
   LO sum=   6666.26  6666.26  6666.26  6666.26
   BBC fr=    766.26   766.26   766.26   766.26
   Bandwd=      2.00     2.00     2.00     2.00
    Matching frequency sets:   6
```

```
 The following pulse cal sets were used with this setup:

  Pulse cal detection set:   1  PCAL = OFF
   PCALXB1=   S1    S2    S3    S4    OFF   OFF   OFF   OFF
   PCALXB2=   M1    M2    M3    M4    OFF   OFF   OFF   OFF
   PCALFR1=     0     0     0     0     0     0     0     0
   PCALFR2=     0     0     0     0     0     0     0     0

  Track assignments are:
   track1=   2,  6, 10, 14
   barrel=roll_off


SOURCES USED IN RECORDING SCANS --  6.7GHz CH3OH maser polarization towards massive protostars. II.
    Catalog positions marked with *.
    Precession of date coordinates is based on stop time of first scan.
    Names used in schedule marked with *.
    Short names used in VLA and SNAP files marked with +.
    Observation date used in B1950/J2000 coordinate conversion (PRECDATE):  1979.900
    No adjustments are made for rates (DRA, DDEC).
    Scan hours are for recording scans only.
    Baseline hours are only counted for scans above horizon at both ends.

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

* G23.44-0.18       18 31 55.467465   * 18 34 39.187000     18 35 25.529247       0.00
                   -08 33 50.47877    *-08 31 25.40500     -08 30 39.43203        0.00

* J1331+3030        13 28 49.657778   * 13 31 08.288070     13 31 48.859022       0.20
  3C286             30 45 58.64061    * 30 30 32.95925      30 25 57.04839        0.19

* J2136+0041        21 34 05.207371   * 21 36 38.586306     21 37 21.379245       0.74
  2134+00           00 28 25.08000    * 00 41 54.21282      00 45 44.42681        1.25

* J2202+4216        22 00 39.362504   * 22 02 43.291371     22 03 17.605065       0.14
  BLLAC             42 02 08.59073    * 42 16 39.97987      42 20 47.47119        0.10


 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)
  G23.44-0.18         62.6
  J1331+3030         135.5
  J2136+0041          19.6
  J2202+4216          51.0

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      327 MHz        117. deg
      610 MHz         81. deg
      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
     43.0 GHz          6. deg
```

n14m1tr

NETWORK MONITORING EXPERIMENT

PI: *Gabriele Surcis*

Address: JIVE, Postbus 2, 7990 AA Dwingeloo, The Netherlands
Phone: +31-521-596508 EMAIL: surcis@jive.nl
Phone during observation: +31-521-596508

Notes: 5cm NME and ftp fringe test for session 1/2014
(128 Mbps, L+R, 2-bit sampling, 2 MHz filters)
Please send the disk pack by express to JIVE

COVER LETTER:

This is the schedule for the 5cm NME and ftp fringe-test on 01 March 2014
involving 9 antennas: Eb Wb1 Jb2 On25 Mc Nt Tr Sh Ys Sr (Td, Yd, Md).
The NME uses a standard setup with 128 Mbps.

The schedule consists of:
- long integrations on strong calibrators like 3C48, DA193 for ftp-fringe tests;
- linear polarization check using the polarized calibrator J2202+4216
  (3C48 as calibrator of J2202+4216);
- D-terms check using the calibrator DA193;
- and phase-referencing parts with a continuum source (J0552+3754) as target.

Three ftp-fringe tests are scheduled throughout the experiment:

12:39:58 (scan 2, 2 sec, 3C48)
13:49:58 (scan 22, 2 sec, DA193)
14:46:58 (scan 60, 2 sec, DA193)

Please make sure that the autoftp is set up correctly. Thanks!

Good luck with the session!

Gabriele

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

 --- Sat   1 Mar 2014   Day  60 ---

 Next scan frequencies:  6662.52  6662.52  6662.52  6662.52  6666.52  6666.52  6666.52  6666.52
                         6670.52  6670.52  6670.52  6670.52  6674.52  6674.52  6674.52  6674.52
 Next BBC frequencies:    762.52   762.52   762.52   762.52   766.52   766.52   766.52   766.52
                          770.52   770.52   770.52   770.52   774.52   774.52   774.52   774.52
 Next scan bandwidths:      2.00     2.00     2.00     2.00     2.00     2.00     2.00     2.00
                            2.00     2.00     2.00     2.00     2.00     2.00     2.00     2.00

12 30 00  3C48         00 21 12  65.8 137.5 -1.3     -29.0     0        0   12 30 00
12 35 00  ---          00 26 13  66.3 139.8 -1.2     -27.6   300        5   12 30 01

12 36 00  3C48         00 27 13  66.4 140.2 -1.2     -27.3    53        5   12 36 00
12 41 00  ---          00 32 14  66.9 142.6 -1.1     -25.8   300       10   12 36 01

12 43 00  3C48         00 34 14  67.1 143.6 -1.1     -25.2   113       10   12 43 00
12 48 00  ---          00 39 15  67.5 146.0 -1.0     -23.6   300       15   12 43 01

12 54 00  J2202+4216   00 45 16  61.2 264.6  2.7      54.0   109       15   12 54 00
13 03 00  =BLLAC       00 54 17  59.8 266.6  2.8      54.2   540       23   12 54 01

13 04 00  J2202+4216   00 55 17  59.7 266.8  2.9      54.2    54       23   13 04 00
13 14 00  =BLLAC       01 05 19  58.2 268.9  3.0      54.3   600       33   13 04 01

13 23 35  DA193        01 14 56  41.8 436.1 -4.7     -49.4   227       33   13 23 35
13 28 35  ---          01 19 56  42.5 437.0 -4.6     -49.6   300       38   13 23 36

13 29 05  J0552+3754   01 20 26  41.8 439.6 -4.5     -48.5    11       38   13 29 05
13 30 05  =0548+378    01 21 27  42.0 439.8 -4.5     -48.5    60       39   13 29 06

13 30 05  DA193        01 21 27  42.8 437.2 -4.6     -49.7   -19       39   No stop
13 31 05  ---          01 22 27  42.9 437.4 -4.6     -49.7    41       40   13 30 06

13 31 05  J0552+3754   01 22 27  42.1  79.9 -4.5  W  -48.5  -726       40   No stop
13 32 05  =0548+378    01 23 27  42.3  80.1 -4.5  W  -48.6     0       41   13 31 06

13 32 05  DA193        01 23 27  43.1  77.6 -4.6     -49.8   -19       41   No stop
13 33 05  ---          01 24 27  43.2  77.8 -4.5     -49.8    41       42   13 32 06

13 33 05  J0552+3754   01 24 27  42.4  80.3 -4.5     -48.6   -19       42   No stop
13 34 05  =0548+378    01 25 27  42.6  80.5 -4.5     -48.6    41       43   13 33 06

13 34 05  DA193        01 25 27  43.4  77.9 -4.5     -49.9   -19       43   No stop
13 35 05  ---          01 26 27  43.5  78.1 -4.5     -49.9    41       44   13 34 06

13 35 05  J0552+3754   01 26 27  42.7  80.6 -4.4     -48.7   -19       44   No stop
13 36 05  =0548+378    01 27 28  42.9  80.8 -4.4     -48.7    41       45   13 35 06

13 36 05  DA193        01 27 28  43.7  78.3 -4.5     -49.9   -19       45   No stop
13 37 05  ---          01 28 28  43.8  78.4 -4.5     -50.0    41       45   13 36 06
```

Schedule for TORUN (Code Tr) Page 3

Network Monitoring Experiment

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sat 1 Mar 2014 Day 60 ---										
13 37 05	J0552+3754	01 28 28	43.0	81.0	-4.4		-48.7	-19	45	No stop
13 38 05	=0548+378	01 29 28	43.2	81.2	-4.4		-48.8	41	46	13 37 06
13 38 05	DA193	01 29 28	43.9	78.6	-4.5		-50.0	-19	46	No stop
13 39 05	---	01 30 28	44.1	78.8	-4.4		-50.1	41	47	13 38 06
13 39 05	J0552+3754	01 30 28	43.3	81.4	-4.4		-48.8	-19	47	No stop
13 40 05	=0548+378	01 31 28	43.5	81.5	-4.4		-48.8	41	48	13 39 06
13 41 05	DA193	01 32 28	44.4	79.1	-4.4		-50.1	41	48	13 41 05
13 42 05	---	01 33 29	44.5	79.3	-4.4		-50.2	60	49	13 41 06
13 42 05	J0552+3754	01 33 29	43.8	81.9	-4.3		-48.9	-20	49	No stop
13 43 05	=0548+378	01 34 29	43.9	82.1	-4.3		-48.9	40	50	13 42 06
13 43 05	DA193	01 34 29	44.7	79.5	-4.4		-50.2	-19	50	No stop
13 44 05	---	01 35 29	44.8	79.6	-4.4		-50.3	41	51	13 43 06
13 45 05	DA193	01 36 29	45.0	79.8	-4.3		-50.3	54	51	13 45 05
13 50 05	---	01 41 30	45.7	80.7	-4.3		-50.5	300	56	13 45 06
13 52 05	DA193	01 43 30	46.0	81.0	-4.2		-50.6	114	56	13 52 05
13 53 05	---	01 44 30	46.2	81.2	-4.2		-50.6	60	57	13 52 06
13 53 05	J0552+3754	01 44 30	45.4	83.9	-4.1		-49.2	-20	57	No stop
13 54 05	=0548+378	01 45 31	45.6	84.1	-4.1		-49.2	40	58	13 53 06
13 54 05	DA193	01 45 31	46.3	81.4	-4.2		-50.6	-20	58	No stop
13 55 05	---	01 46 31	46.5	81.6	-4.2		-50.7	40	59	13 54 06
13 55 05	J0552+3754	01 46 31	45.7	84.3	-4.1		-49.2	-20	59	No stop
13 56 05	=0548+378	01 47 31	45.9	84.4	-4.1		-49.2	40	60	13 55 06
13 56 05	DA193	01 47 31	46.6	81.8	-4.2		-50.7	-20	60	No stop
13 57 05	---	01 48 31	46.8	81.9	-4.1		-50.7	40	61	13 56 06
13 57 05	J0552+3754	01 48 31	46.0	84.6	-4.1		-49.3	-20	61	No stop
13 58 05	=0548+378	01 49 31	46.2	84.8	-4.1		-49.3	40	62	13 57 06
13 58 05	DA193	01 49 31	46.9	82.1	-4.1		-50.7	-20	62	No stop
13 59 05	---	01 50 31	47.1	82.3	-4.1		-50.8	40	63	13 58 06
13 59 05	J0552+3754	01 50 31	46.3	85.0	-4.0		-49.3	-20	63	No stop
14 00 05	=0548+378	01 51 32	46.5	85.2	-4.0		-49.3	40	64	13 59 06
14 00 05	DA193	01 51 32	47.2	82.5	-4.1		-50.8	-20	64	No stop
14 01 05	---	01 52 32	47.4	82.6	-4.1		-50.8	40	65	14 00 06

Schedule for TORUN (Code Tr) Page 4

Network Monitoring Experiment

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sat 1 Mar 2014 Day 60 ---										
14 01 05	J0552+3754	01 52 32	46.6	85.4	-4.0		-49.3	-20	65	No stop
14 02 05	=0548+378	01 53 32	46.8	85.6	-4.0		-49.4	40	66	14 01 06
14 02 05	DA193	01 53 32	47.5	82.8	-4.0		-50.9	-20	66	No stop
14 03 05	---	01 54 32	47.7	83.0	-4.0		-50.9	40	67	14 02 06
14 03 05	J0552+3754	01 54 32	46.9	85.8	-4.0		-49.4	-20	67	No stop
14 04 05	=0548+378	01 55 32	47.1	85.9	-4.0		-49.4	40	68	14 03 06
14 05 05	DA193	01 56 32	48.0	83.4	-4.0		-50.9	40	68	14 05 05
14 06 05	---	01 57 33	48.1	83.5	-4.0		-51.0	60	69	14 05 06
14 06 05	J0552+3754	01 57 33	47.4	86.3	-3.9		-49.4	-20	69	No stop
14 07 05	=0548+378	01 58 33	47.5	86.5	-3.9		-49.4	40	70	14 06 06
14 07 05	DA193	01 58 33	48.3	83.7	-4.0		-51.0	-20	70	No stop
14 08 05	---	01 59 33	48.4	83.9	-3.9		-51.0	40	71	14 07 06
14 08 05	J0552+3754	01 59 33	47.7	86.7	-3.9		-49.4	-20	71	No stop
14 09 05	=0548+378	02 00 33	47.8	86.9	-3.9		-49.5	40	72	14 08 06
14 09 05	DA193	02 00 33	48.6	84.1	-3.9		-51.0	-20	72	No stop
14 10 05	---	02 01 33	48.7	84.3	-3.9		-51.1	40	73	14 09 06
14 10 05	J0552+3754	02 01 33	48.0	87.1	-3.9		-49.5	-20	73	No stop
14 11 05	=0548+378	02 02 33	48.1	87.3	-3.8		-49.5	40	74	14 10 06
14 11 05	DA193	02 02 33	48.9	84.5	-3.9		-51.1	-20	74	No stop
14 12 05	---	02 03 34	49.0	84.6	-3.9		-51.1	40	75	14 11 06
14 12 05	J0552+3754	02 03 34	48.3	87.5	-3.8		-49.5	-20	75	No stop
14 13 05	=0548+378	02 04 34	48.4	87.7	-3.8		-49.5	40	75	14 12 06
14 13 05	DA193	02 04 34	49.2	84.8	-3.9		-51.1	-20	75	No stop
14 14 05	---	02 05 34	49.3	85.0	-3.8		-51.2	40	76	14 13 06
14 14 05	J0552+3754	02 05 34	48.6	87.9	-3.8		-49.5	-20	76	No stop
14 15 05	=0548+378	02 06 34	48.7	88.1	-3.8		-49.5	40	77	14 14 06
14 15 05	DA193	02 06 34	49.5	85.2	-3.8		-51.2	-20	77	No stop
14 16 05	---	02 07 34	49.6	85.4	-3.8		-51.2	40	78	14 15 06
14 16 05	J0552+3754	02 07 34	48.9	88.2	-3.8		-49.5	-20	78	No stop
14 17 05	=0548+378	02 08 34	49.0	88.4	-3.7		-49.5	40	79	14 16 06
14 18 05	DA193	02 09 35	49.9	85.8	-3.8		-51.2	40	79	14 18 05
14 19 05	---	02 10 35	50.1	85.9	-3.8		-51.2	60	80	14 18 06

Schedule for TORUN (Code Tr) Page 5

Network Monitoring Experiment

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sat 1 Mar 2014 Day 60 ---										
14 19 05	J0552+3754	02 10 35	49.3	88.8	-3.7		-49.5	-20	80	No stop
14 20 05	=0548+378	02 11 35	49.5	89.0	-3.7		-49.5	40	81	14 19 06
14 20 05	DA193	02 11 35	50.2	86.1	-3.7		-51.3	-20	81	No stop
14 21 05	---	02 12 35	50.4	86.3	-3.7		-51.3	40	82	14 20 06
14 21 05	J0552+3754	02 12 35	49.6	89.2	-3.7		-49.6	-20	82	No stop
14 22 05	=0548+378	02 13 35	49.8	89.4	-3.7		-49.6	40	83	14 21 06
14 22 05	DA193	02 13 35	50.5	86.5	-3.7		-51.3	-20	83	No stop
14 23 05	---	02 14 35	50.7	86.7	-3.7		-51.3	40	84	14 22 06
14 23 05	J0552+3754	02 14 35	49.9	89.6	-3.6		-49.6	-20	84	No stop
14 24 05	=0548+378	02 15 36	50.1	89.8	-3.6		-49.6	40	85	14 23 06
14 24 05	DA193	02 15 36	50.8	86.9	-3.7		-51.3	-20	85	No stop
14 25 05	---	02 16 36	51.0	87.1	-3.7		-51.3	40	86	14 24 06
14 25 05	J0552+3754	02 16 36	50.2	90.0	-3.6		-49.6	-20	86	No stop
14 26 05	=0548+378	02 17 36	50.4	90.2	-3.6		-49.6	40	87	14 25 06
14 26 05	DA193	02 17 36	51.1	87.3	-3.6		-51.3	-20	87	No stop
14 27 05	---	02 18 36	51.3	87.5	-3.6		-51.4	40	88	14 26 06
14 27 05	J0552+3754	02 18 36	50.5	90.4	-3.6		-49.6	-21	88	No stop
14 28 05	=0548+378	02 19 36	50.7	90.6	-3.6		-49.6	39	89	14 27 06
14 28 05	DA193	02 19 36	51.4	87.7	-3.6		-51.4	-20	89	No stop
14 29 05	---	02 20 36	51.6	87.9	-3.6		-51.4	40	90	14 28 06
14 29 05	J0552+3754	02 20 36	50.8	90.8	-3.5		-49.6	-21	90	No stop
14 30 05	=0548+378	02 21 36	51.0	91.0	-3.5		-49.5	39	91	14 29 06
14 31 05	DA193	02 22 37	51.9	88.2	-3.6		-51.4	40	91	14 31 05
14 41 05	---	02 32 38	53.4	90.2	-3.4		-51.4	600	101	14 31 06
14 42 05	DA193	02 33 38	53.5	90.4	-3.4		-51.4	54	101	14 42 05
14 49 05	---	02 40 40	54.6	91.9	-3.3		-51.4	420	107	14 42 06
14 51 05	DA193	02 42 40	54.9	92.3	-3.2		-51.4	114	107	14 51 05
14 54 05	---	02 45 40	55.3	92.9	-3.2		-51.3	180	110	14 51 06
15 05 05	3C48	02 56 42	65.7	222.9	1.3		29.3	391	110	15 05 05
15 10 05	---	03 01 43	65.2	225.1	1.4		30.6	300	115	15 05 06
15 10 35	3C48	03 02 13	65.1	225.3	1.4		30.7	23	115	15 10 35
15 19 35	---	03 11 15	64.1	229.1	1.5		32.8	540	124	15 10 36
15 20 05	3C48	03 11 45	64.1	229.3	1.6		32.9	24	124	15 20 05
15 29 05	---	03 20 46	63.0	232.8	1.7		34.9	540	133	15 20 06

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


 ======== Setup file: sess114.M128
   Matching groups in ./SH65.freq.dat:
     tr5cm           Values confirmed by E-mail Borkowski (JFD 26Oct98)

   Setup group:    4         Station: TORUN            Total bit rate:  128
   Format: MKIV1:1           Bits per sample: 2        Sample rate:  4.000
   Number of channels: 16    DBE type:                 Speedup factor:   2.00

   Disk used to record data.

   1st LO=   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00
             5900.00   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00   5900.00
   Net SB=         L         L         U         U         L         L         U         U
                   L         L         U         U         L         L         U         U
   Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
                 RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
   BBC   =         1         2         1         2         3         4         3         4
                   5         6         5         6         7         8         7         8
   BBC SB=         L         L         U         U         L         L         U         U
                   L         L         U         U         L         L         U         U
   IF    =         C         A         C         A         C         A         C         A
                   C         A         C         A         C         A         C         A

  The following frequency sets based on these setups were used.

   Frequency Set:   7  Setup file default.  Used pcal sets:   1
   LO sum=   6662.52  6662.52  6662.52  6662.52  6666.52  6666.52  6666.52  6666.52
             6670.52  6670.52  6670.52  6670.52  6674.52  6674.52  6674.52  6674.52
   BBC fr=    762.52   762.52   762.52   762.52   766.52   766.52   766.52   766.52
              770.52   770.52   770.52   770.52   774.52   774.52   774.52   774.52
   Bandwd=      2.00     2.00     2.00     2.00     2.00     2.00     2.00     2.00
                2.00     2.00     2.00     2.00     2.00     2.00     2.00     2.00
    Matching frequency sets:   7

  The following pulse cal sets were used with this setup:

   Pulse cal detection set:   1  PCAL = OFF
    PCALXB1=   S1    S2    S3    S4    S5    S6    S7    S8
    PCALXB2=   M1    M2    M3    M4    M5    M6    M7    M8
    PCALFR1=     0     0     0     0     0     0     0     0
    PCALFR2=     0     0     0     0     0     0     0     0

   Track assignments are:
    track1=   2,  6, 10, 14, 18, 22, 26, 30,  3,  7, 11, 15, 19, 23, 27, 31
    barrel=roll_off
```

```
SOURCES USED IN RECORDING SCANS --       Network Monitoring Experiment
    Catalog positions marked with *.
    Precession of date coordinates is based on stop time of first scan.
    Names used in schedule marked with *.
    Short names used in VLA and SNAP files marked with +.
    Observation date used in B1950/J2000 coordinate conversion (PRECDATE):  1979.900
    No adjustments are made for rates (DRA, DDEC).
    Scan hours are for recording scans only.
    Baseline hours are only counted for scans above horizon at both ends.

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

  J0137+3309        01 34 49.826374   * 01 37 41.299440     01 38 29.923171       0.52
* 3C48              32 54 20.25881    * 33 09 35.13299      33 13 55.11422        0.50

* J0552+3754        05 48 52.231755   * 05 52 17.936920     05 53 17.614550       0.13
  0548+378          37 53 44.15048    * 37 54 25.28236      37 54 31.93218        0.11

  J0555+3948        05 52 01.407174   * 05 55 30.805616     05 56 31.573650       0.13
* DA193             39 48 21.94578    * 39 48 49.16493      39 48 52.33276        0.10

* J2202+4216        22 00 39.362504   * 22 02 43.291371     22 03 17.606818       0.14
  BLLAC             42 02 08.59073    * 42 16 39.97987      42 20 47.37812        0.10


 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)
  3C48                57.1
  J0552+3754         107.1
  DA193              107.6
  J2202+4216          50.9

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      327 MHz        117. deg
      610 MHz         81. deg
      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
     43.0 GHz          6. deg
```

es072ftr

6.7GHz CH3OH maser polarization towards massive protostars. II.

PI: *G. Surcis*

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Observing mode: Polarization observations of 3 sources at 6.7 GHz (32 Mb/s

Schedule for TORUN (Code Tr) Page 2
6.7GHz CH3OH maser polarization towards massive protostars. II.
UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sun 2 Mar 2014 Day 61 ---										
Next scan frequencies:		6666.40	6666.40	6666.40	6666.40					
Next BBC frequencies:		766.40	766.40	766.40	766.40					
Next scan bandwidths:		2.00	2.00	2.00	2.00					
04 30 00	J2202+4216	16 23 49	35.3	64.5	-5.7		-47.1	0	0	04 30 00
04 40 00	=BLLAC	16 33 51	36.7	66.0	-5.5		-47.9	600	2	04 30 01
04 44 10	G25.83-0.18	16 38 02	25.2	146.2	-2.0		-19.6	75	2	04 44 10
04 54 10	---	16 48 03	26.0	148.8	-1.9		-18.2	600	5	04 44 11
04 54 40	G25.83-0.18	16 48 34	26.0	148.9	-1.9		-18.2	24	5	04 54 40
05 04 40	---	16 58 35	26.8	151.6	-1.7		-16.7	600	7	04 54 41
05 05 10	G25.83-0.18	16 59 05	26.8	151.7	-1.7		-16.6	24	7	05 05 10
05 15 10	---	17 09 07	27.5	154.4	-1.5		-15.1	600	10	05 05 11
05 15 40	G25.83-0.18	17 09 37	27.5	154.5	-1.5		-15.1	24	10	05 15 40
05 25 40	---	17 19 39	28.1	157.3	-1.3		-13.5	600	12	05 15 41
05 29 50	J2202+4216	17 23 49	43.7	73.8	-4.7		-51.3	68	12	05 29 50
05 39 50	=BLLAC	17 33 51	45.2	75.5	-4.5		-51.9	600	15	05 29 51
05 49 40	J1331+3030	17 43 43	39.8	269.3	4.2		44.1	189	15	05 49 40
05 59 40	=3C286	17 53 44	38.3	271.3	4.4		44.1	600	17	05 49 41
06 05 30	G25.83-0.18	17 59 35	29.9	168.4	-0.7		-6.9	128	17	06 05 30
06 15 30	---	18 09 37	30.2	171.3	-0.5		-5.2	600	19	06 05 31
06 16 00	G25.83-0.18	18 10 07	30.2	171.5	-0.5		-5.2	24	19	06 16 00
06 26 00	---	18 20 09	30.4	174.3	-0.3		-3.4	600	22	06 16 01
06 30 30	J2202+4216	18 24 39	52.7	84.1	-3.6		-53.9	74	22	06 30 30
06 40 30	=BLLAC	18 34 41	54.2	85.9	-3.5		-54.1	600	24	06 30 31
06 44 40	G25.83-0.18	18 38 52	30.5	179.7	-0.0		-0.2	48	24	06 44 40
06 54 40	---	18 48 53	30.5	182.6	0.2		1.6	600	27	06 44 41

Schedule for TORUN (Code Tr) Page 3

6.7GHz CH3OH maser polarization towards massive protostars. II.

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sun 2 Mar 2014 Day 61 ---										
06 55 10	G25.83-0.18	18 49 23	30.5	182.8	0.2		1.7	24	27	06 55 10
07 05 10	---	18 59 25	30.4	185.6	0.3		3.4	600	29	06 55 11
07 05 40	G25.83-0.18	18 59 55	30.4	185.8	0.3		3.5	24	29	07 05 40
07 15 40	---	19 09 57	30.2	188.7	0.5		5.2	600	31	07 05 41
07 16 10	G25.83-0.18	19 10 27	30.2	188.8	0.5		5.3	24	31	07 16 10
07 24 10	---	19 18 28	30.0	191.1	0.6		6.7	480	33	07 16 11
07 28 55	J2202+4216	19 23 14	61.5	95.8	-2.7		-53.9	79	33	07 28 55
07 38 55	=BLLAC	19 33 16	63.0	98.1	-2.5		-53.5	600	36	07 28 56
07 43 55	G25.83-0.18	19 38 16	29.2	196.7	1.0		10.0	89	36	07 43 55
07 53 55	---	19 48 18	28.8	199.5	1.1		11.6	600	38	07 43 56
07 54 25	G25.83-0.18	19 48 48	28.7	199.6	1.1		11.7	24	38	07 54 25
08 04 25	---	19 58 50	28.2	202.4	1.3		13.3	600	41	07 54 26
08 04 55	G25.83-0.18	19 59 20	28.2	202.5	1.3		13.4	24	41	08 04 55
08 14 55	---	20 09 21	27.6	205.3	1.5		14.9	600	43	08 04 56
08 15 25	G25.83-0.18	20 09 52	27.5	205.4	1.5		15.0	24	43	08 15 25
08 25 25	---	20 19 53	26.9	208.1	1.7		16.5	600	45	08 15 26
08 30 35	J2202+4216	20 25 04	70.4	113.4	-1.6		-48.2	104	45	08 30 35
08 40 35	=BLLAC	20 35 06	71.8	117.3	-1.5		-46.2	600	48	08 30 36
08 45 55	G25.83-0.18	20 40 27	25.3	213.5	2.0		19.5	114	48	08 45 55
08 55 55	---	20 50 28	24.4	216.1	2.2		20.8	600	50	08 45 56
08 56 25	G25.83-0.18	20 50 58	24.4	216.2	2.2		20.9	24	50	08 56 25
09 06 25	---	21 01 00	23.5	218.7	2.4		22.2	600	53	08 56 26
09 06 55	G25.83-0.18	21 01 30	23.4	218.9	2.4		22.3	24	53	09 06 55
09 16 55	---	21 11 32	22.4	221.4	2.5		23.5	600	55	09 06 56
09 17 25	G25.83-0.18	21 12 02	22.4	221.5	2.5		23.6	24	55	09 17 25
09 27 25	---	21 22 03	21.4	223.9	2.7		24.8	600	58	09 17 26
09 32 35	J2202+4216	21 27 14	77.7	147.1	-0.6		-26.2	85	58	09 32 35
09 42 35	=BLLAC	21 37 16	78.4	155.4	-0.4		-19.8	600	60	09 32 36
09 45 35	J2136+0041	21 40 16	37.7	180.9	0.0		0.6	13	60	09 45 35
09 55 35	=2134+00	21 50 18	37.6	184.1	0.2		2.5	600	62	09 45 36
09 58 35	G25.83-0.18	21 53 18	17.9	231.3	3.2		28.1	71	62	09 58 35
10 08 35	---	22 03 20	16.7	233.6	3.4		29.1	600	65	09 58 36

```
Schedule for TORUN     (Code Tr )                                  Page   4
               6.7GHz CH3OH maser polarization towards massive protostars. II.
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   2 Mar 2014   Day  61 ---

10 09 05  G25.83-0.18  22 03 50  16.7 233.7  3.4      29.2    24       65   10 09 05
10 18 05  ---          22 12 52  15.5 235.8  3.6      30.0   540       67   10 09 06

10 18 35  G25.83-0.18  22 13 22  15.5 235.9  3.6      30.0    24       67   10 18 35
10 27 35  ---          22 22 23  14.3 237.9  3.7      30.8   540       69   10 18 36

10 32 25  J2202+4216   22 27 14  78.5 202.8  0.4      18.4    35       69   10 32 25
10 42 25  =BLLAC       22 37 16  77.8 211.2  0.6      24.9   600       72   10 32 26

10 47 15  G25.83-0.18  22 42 06  11.8 242.2  4.0      32.3    29       72   10 47 15
10 56 05  ---          22 50 58  10.6 244.0  4.2      32.9   530       74   10 47 16

10 56 35  G25.83-0.18  22 51 28  10.5 244.1  4.2      32.9    24       74   10 56 35
11 05 35  ---          23 00 29   9.3 246.1  4.3      33.5   540       76   10 56 36

11 06 05  G25.83-0.18  23 01 00   9.2 246.2  4.4      33.6    24       76   11 06 05
11 15 05  ---          23 10 01   8.0 248.0  4.5      34.1   540       78   11 06 06

11 20 00  J2202+4216   23 14 57  73.9 235.2  1.2      41.9    34       78   11 20 00
11 30 00  =BLLAC       23 24 58  72.7 239.9  1.4      44.7   600       81   11 20 01



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


 ======== Setup file: sess114.M32
   Matching groups in /aps3/sched10.2/catalogs/freq.dat:
     tr5cm           Values confirmed by E-mail Borkowski (JFD 26Oct98)

   Setup group:    4         Station: TORUN             Total bit rate:   32
   Format: MKIV1:1           Bits per sample: 2         Sample rate:  4.000
   Number of channels:  4    DBE type:                  Speedup factor:   2.00

   Disk used to record data.

   1st LO=   5900.00   5900.00   5900.00   5900.00
   Net SB=         U         U         U         U
   Pol.  =       RCP       LCP       RCP       LCP
   BBC   =         1         2         3         4
   BBC SB=         U         U         U         U
   IF    =         C         A         C         A
```

```
The following frequency sets based on these setups were used.

Frequency Set:   6  Based on FREQ, BW, and/or DOPPLER in schedule.  Used pcal sets:   1
 LO sum=   6666.40  6666.40  6666.40  6666.40
 BBC fr=    766.40   766.40   766.40   766.40
 Bandwd=      2.00     2.00     2.00     2.00
  Matching frequency sets:   6

The following pulse cal sets were used with this setup:

 Pulse cal detection set:   1  PCAL = OFF
  PCALXB1=   S1    S2    S3    S4    OFF   OFF   OFF   OFF
  PCALXB2=   M1    M2    M3    M4    OFF   OFF   OFF   OFF
  PCALFR1=     0     0     0     0     0     0     0     0
  PCALFR2=     0     0     0     0     0     0     0     0

 Track assignments are:
  track1=   2,  6, 10, 14
  barrel=roll_off


SOURCES USED IN RECORDING SCANS -- 6.7GHz CH3OH maser polarization towards massive protostars. II.
     Catalog positions marked with *.  Precession of date coordinates is based on stop time
     of first scan.  Names used in schedule marked with *. Short names used in VLA and SNAP files
     marked with +.  Observation date used in B1950/J2000 coordinate conversion (PRECDATE): 1979.900
     No adjustments are made for rates (DRA, DDEC).     Scan hours are for recording scans only.
     Baseline hours are only counted for scans above horizon at both ends.

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

 * G25.83-0.18       18 36 22.419070   * 18 39 03.630000     18 39 49.256663       0.00
                    -06 26 55.40644    *-06 24 11.20000     -06 23 20.50834        0.00

 * J1331+3030        13 28 49.657778   * 13 31 08.288070     13 31 48.878095       0.20
   3C286             30 45 58.64061    * 30 30 32.95925      30 25 57.13531        0.19

 * J2136+0041        21 34 05.207371   * 21 36 38.586306     21 37 21.386989       0.74
   2134+00           00 28 25.08000    * 00 41 54.21282      00 45 44.36257        1.25

 * J2202+4216        22 00 39.362504   * 22 02 43.291371     22 03 17.610575       0.14
   BLLAC             42 02 08.59073    * 42 16 39.97987      42 20 47.19084        0.10


 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)
  G25.83-0.18         62.6
  J1331+3030         136.1
  J2136+0041          20.3
  J2202+4216          50.8

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

es072gtr

6.7GHz CH3OH MASER POLARIZATION TOWARDS MASSIVE PROTOSTARS. II.

PI: *G. Surcis*

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Phone: +31 (0)521-596508 EMAIL: surcis@jive.nl
Fax: +31 (0)521-596539 Phone during observation: +31 (0)521-596508

Observing mode: Polarization observations of 3 sources at 6.7 GHz (32 Mb/s

Schedule for TORUN (Code Tr) Page 2

6.7GHz CH3OH maser polarization towards massive protostars. II.

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 3 Mar 2014 Day 62 ---										
Next scan frequencies:		6666.32	6666.32	6666.32	6666.32					
Next BBC frequencies:		766.32	766.32	766.32	766.32					
Next scan bandwidths:		2.00	2.00	2.00	2.00					
04 30 00	J2202+4216	16 27 46	35.9	65.1	-5.6		-47.5	0	0	04 30 00
04 40 00	=BLLAC	16 37 48	37.2	66.6	-5.4		-48.2	600	2	04 30 01
04 44 10	G25.71+0.04	16 41 58	25.6	147.5	-1.9		-19.0	74	2	04 44 10
04 54 10	---	16 52 00	26.4	150.1	-1.8		-17.5	600	5	04 44 11
04 54 40	G25.71+0.04	16 52 30	26.4	150.2	-1.8		-17.5	24	5	04 54 40
05 04 40	---	17 02 32	27.1	152.9	-1.6		-16.0	600	7	04 54 41
05 05 10	G25.71+0.04	17 03 02	27.2	153.0	-1.6		-15.9	24	7	05 05 10
05 15 10	---	17 13 03	27.8	155.8	-1.4		-14.4	600	10	05 05 11
05 15 40	G25.71+0.04	17 13 34	27.8	155.9	-1.4		-14.3	24	10	05 15 40
05 25 40	---	17 23 35	28.4	158.6	-1.3		-12.7	600	12	05 15 41
05 29 50	J2202+4216	17 27 46	44.3	74.5	-4.6		-51.5	66	12	05 29 50
05 39 50	=BLLAC	17 37 48	45.8	76.1	-4.4		-52.1	600	15	05 29 51
05 49 40	J1331+3030	17 47 39	39.2	270.1	4.3		44.1	188	15	05 49 40
05 59 40	=3C286	17 57 41	37.7	272.1	4.4		44.1	600	17	05 49 41
06 05 30	G25.71+0.04	18 03 32	30.0	169.9	-0.6		-6.1	129	17	06 05 30
06 15 30	---	18 13 33	30.3	172.7	-0.4		-4.4	600	19	06 05 31
06 16 00	G25.71+0.04	18 14 03	30.3	172.9	-0.4		-4.3	24	19	06 16 00
06 26 00	---	18 24 05	30.4	175.8	-0.2		-2.6	600	22	06 16 01
06 30 30	J2202+4216	18 28 36	53.3	84.8	-3.6		-54.0	73	22	06 30 30
06 40 30	=BLLAC	18 38 37	54.8	86.6	-3.4		-54.2	600	24	06 30 31
06 44 40	G25.71+0.04	18 42 48	30.5	181.2	0.1		0.7	46	24	06 44 40
06 54 40	---	18 52 50	30.4	184.0	0.2		2.4	600	27	06 44 41

Schedule for TORUN (Code Tr) Page 3

6.7GHz CH3OH maser polarization towards massive protostars. II.

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 3 Mar 2014 Day 62 ---										
06 55 10	G25.71+0.04	18 53 20	30.4	184.2	0.2		2.5	24	27	06 55 10
07 05 10	---	19 03 22	30.3	187.1	0.4		4.3	600	29	06 55 11
07 05 40	G25.71+0.04	19 03 52	30.3	187.2	0.4		4.3	24	29	07 05 40
07 15 40	---	19 13 53	30.1	190.1	0.6		6.1	600	31	07 05 41
07 16 10	G25.71+0.04	19 14 23	30.0	190.2	0.6		6.2	24	31	07 16 10
07 24 10	---	19 22 25	29.8	192.5	0.7		7.5	480	33	07 16 11
07 28 55	J2202+4216	19 27 10	62.1	96.7	-2.6		-53.8	78	33	07 28 55
07 38 55	=BLLAC	19 37 12	63.5	99.1	-2.4		-53.3	600	36	07 28 56
07 43 55	G25.71+0.04	19 42 13	29.0	198.1	1.1		10.8	88	36	07 43 55
07 53 55	---	19 52 15	28.5	200.9	1.2		12.4	600	38	07 43 56
07 54 25	G25.71+0.04	19 52 45	28.5	201.0	1.2		12.5	24	38	07 54 25
08 04 25	---	20 02 46	27.9	203.8	1.4		14.1	600	41	07 54 26
08 04 55	G25.71+0.04	20 03 16	27.9	203.9	1.4		14.2	24	41	08 04 55
08 14 55	---	20 13 18	27.2	206.6	1.6		15.7	600	43	08 04 56
08 15 25	G25.71+0.04	20 13 48	27.2	206.7	1.6		15.8	24	43	08 15 25
08 25 25	---	20 23 50	26.5	209.4	1.8		17.3	600	45	08 15 26
08 30 35	J2202+4216	20 29 01	71.0	114.9	-1.6		-47.5	105	45	08 30 35
08 40 35	=BLLAC	20 39 02	72.3	119.0	-1.4		-45.3	600	48	08 30 36
08 45 55	G25.71+0.04	20 44 23	24.9	214.8	2.1		20.2	114	48	08 45 55
08 55 55	---	20 54 25	24.0	217.3	2.3		21.5	600	50	08 45 56
08 56 25	G25.71+0.04	20 54 55	23.9	217.5	2.3		21.6	24	50	08 56 25
09 06 25	---	21 04 56	23.0	220.0	2.4		22.8	600	53	08 56 26
09 06 55	G25.71+0.04	21 05 27	22.9	220.1	2.4		22.9	24	53	09 06 55
09 16 55	---	21 15 28	21.9	222.6	2.6		24.1	600	55	09 06 56
09 17 25	G25.71+0.04	21 15 58	21.9	222.7	2.6		24.2	24	55	09 17 25
09 27 25	---	21 26 00	20.8	225.1	2.8		25.4	600	58	09 17 26
09 32 35	J2202+4216	21 31 11	78.0	150.3	-0.5		-23.8	82	58	09 32 35
09 42 35	=BLLAC	21 41 12	78.6	158.8	-0.4		-17.1	600	60	09 32 36
09 45 35	J2136+0041	21 44 13	37.6	182.2	0.1		1.3	12	60	09 45 35
09 55 35	=2134+00	21 54 15	37.5	185.3	0.3		3.2	600	62	09 45 36
09 58 35	G25.71+0.04	21 57 15	17.3	232.5	3.3		28.6	71	62	09 58 35
10 08 35	---	22 07 17	16.1	234.7	3.5		29.6	600	65	09 58 36

```
Schedule for TORUN     (Code Tr )                                  Page   4
              6.7GHz CH3OH maser polarization towards massive protostars. II.
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   3 Mar 2014   Day  62 ---

10 09 05  G25.71+0.04  22 07 47  16.0 234.8  3.5      29.6    24       65   10 09 05
10 18 05  ---          22 16 48  14.9 236.9  3.6      30.4   540       67   10 09 06

10 18 35  G25.71+0.04  22 17 18  14.9 237.0  3.6      30.4    24       67   10 18 35
10 27 35  ---          22 26 20  13.7 239.0  3.8      31.2   540       69   10 18 36

10 32 25  J2202+4216   22 31 11  78.3 206.2  0.5      21.0    34       69   10 32 25
10 42 25  =BLLAC       22 41 12  77.5 214.3  0.6      27.2   600       72   10 32 26

10 47 15  G25.71+0.04  22 46 03  11.1 243.2  4.1      32.6    27       72   10 47 15
10 56 05  ---          22 54 54   9.9 245.1  4.3      33.2   530       74   10 47 16

10 56 35  G25.71+0.04  22 55 25   9.9 245.2  4.3      33.3    24       74   10 56 35
11 05 35  ---          23 04 26   8.6 247.1  4.4      33.8   540       76   10 56 36

11 10 30  J2202+4216   23 09 22  74.6 232.3  1.1      40.0    33       76   11 10 30
11 20 30  =BLLAC       23 19 23  73.4 237.4  1.3      43.2   600       78   11 10 31

11 21 00  J2202+4216   23 19 54  73.3 237.6  1.3      43.3    23       78   11 21 00
11 30 00  =BLLAC       23 28 55  72.1 241.6  1.4      45.6   540       81   11 21 01


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


 ======== Setup file: sess114.M32
   Matching groups in /aps3/sched10.2/catalogs/freq.dat:
     tr5cm           Values confirmed by E-mail Borkowski (JFD 26Oct98)

   Setup group:    4         Station: TORUN             Total bit rate:   32
   Format: MKIV1:1           Bits per sample: 2         Sample rate:  4.000
   Number of channels:  4    DBE type:                  Speedup factor:   2.00

   Disk used to record data.

   1st LO=   5900.00   5900.00   5900.00   5900.00
   Net SB=         U         U         U         U
   Pol.  =       RCP       LCP       RCP       LCP
   BBC   =         1         2         3         4
   BBC SB=         U         U         U         U
   IF    =         C         A         C         A

  The following frequency sets based on these setups were used.

  Frequency Set:   6  Based on FREQ, BW, and/or DOPPLER in schedule.  Used pcal sets:   1
   LO sum=   6666.32  6666.32  6666.32  6666.32
   BBC fr=    766.32   766.32   766.32   766.32
   Bandwd=      2.00     2.00     2.00     2.00
```

```
   Matching frequency sets:   6

 The following pulse cal sets were used with this setup:

  Pulse cal detection set:   1  PCAL = OFF
   PCALXB1=   S1    S2    S3    S4    OFF   OFF   OFF   OFF
   PCALXB2=   M1    M2    M3    M4    OFF   OFF   OFF   OFF
   PCALFR1=     0     0     0     0     0     0     0     0
   PCALFR2=     0     0     0     0     0     0     0     0

  Track assignments are:
   track1=   2,  6, 10, 14
   barrel=roll_off


SOURCES USED IN RECORDING SCANS -- 6.7GHz CH3OH maser polarization
                                   towards massive protostars. II.
    Catalog positions marked with *.
    Precession of date coordinates is based on stop time of first scan.
    Names used in schedule marked with *.
    Short names used in VLA and SNAP files marked with +.
    Observation date used in B1950/J2000 coordinate conversion (PRECDATE):  1979.900
    No adjustments are made for rates (DRA, DDEC).
    Scan hours are for recording scans only.
    Baseline hours are only counted for scans above horizon at both ends.

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

* G25.71+0.04       18 35 21.923035   * 18 38 03.140000     18 38 48.795223       0.00
                   -06 26 55.35570    *-06 24 15.50000     -06 23 26.07329        0.00

* J1331+3030        13 28 49.657778   * 13 31 08.288070     13 31 48.895586       0.20
  3C286             30 45 58.64061    * 30 30 32.95925      30 25 57.23789        0.19

* J2136+0041        21 34 05.207371   * 21 36 38.586306     21 37 21.394701       0.74
  2134+00           00 28 25.08000    * 00 41 54.21282      00 45 44.31163        1.25

* J2202+4216        22 00 39.362504   * 22 02 43.291371     22 03 17.617457       0.14
  BLLAC             42 02 08.59073    * 42 16 39.97987      42 20 46.92157        0.10


 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)
  G25.71+0.04         63.8
  J1331+3030         136.6
  J2136+0041          21.0
  J2202+4216          50.6

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

f14c1tr

6cm FTP Fringe Test F14C1

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Notes: 6cm FTP Fringe Test for Session 1/2014
512 Mbps, L+R, 2-bit sampling, 8 MHz filters
Please send the disk pack by express to JIVE

COVER LETTER:

This is the schedule for the 6cm ftp fringe-test F14C1 on 03 March 2014
involving 16 antennas: Ef Wb Jb1 On25 Mc Nt Tr Sv Zc Bd Ur Sh Sh65 Hh Ys Ir.
Stations testing their new DBBC backends are also included:
MC_DBBC (Md), TR_DBBC (Td), and YS_DBBC (Yd).
The ftp test uses a standard 512 Mbps setup and consists of
long integrations on standard fringe finder calibrators:
0528+134 (2 Jy at 5 GHz) and DA193 (5 Jy at 5 GHz).

There are two ftp fringe-test scans

(1) 16:09:00 UT (scan 2, 2 sec, 0528+134)
(2) 16:45:00 UT (scan 6, 2 sec, DA193)

Please make sure that the autoftp is set up correctly.

See you on Skype group chat
and
Good luck with the session!

Ciriaco Goddi
Support Scientist, JIVE
Skype account: ciriaco.goddi

```
Schedule for TORUN     (Code Tr )                                Page   2
               6cm FTP Fringe Test F14C1
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   3 Mar 2014   Day  62 ---

 Next scan frequencies:  4966.49  4966.49  4966.49  4966.49  4982.49  4982.49  4982.49  4982.49
                         4998.49  4998.49  4998.49  4998.49  5014.49  5014.49  5014.49  5014.49
 Next BBC frequencies:    766.49   766.49   766.49   766.49   782.49   782.49   782.49   782.49
                          798.49   798.49   798.49   798.49   814.49   814.49   814.49   814.49
 Next scan bandwidths:      8.00     8.00     8.00     8.00     8.00     8.00     8.00     8.00
                            8.00     8.00     8.00     8.00     8.00     8.00     8.00     8.00

16 00 00  0528+134     03 59 39  46.4 146.5 -1.5     -19.9     0        0   16 00 00
16 04 00  ---          04 03 40  46.8 147.9 -1.5     -19.2   240       15   16 00 01

16 06 00  0528+134     04 05 40  46.9 148.5 -1.4     -18.8   113       15   16 06 00
16 10 00  ---          04 09 41  47.2 149.9 -1.4     -18.1   240       31   16 06 01

16 12 00  0528+134     04 11 41  47.4 150.6 -1.3     -17.7   113       31   16 12 00
16 22 00  ---          04 21 43  48.1 154.0 -1.2     -15.7   600       70   16 12 01

16 24 00  0528+134     04 23 43  48.2 154.7 -1.1     -15.3   113       70   16 24 00
16 34 00  ---          04 33 45  48.8 158.3 -1.0     -13.2   600      108   16 24 01

16 38 00  DA193        04 37 46  71.1 126.8 -1.3     -38.7   143      108   16 38 00
16 41 00  ---          04 40 46  71.5 128.2 -1.3     -37.9   180      120   16 38 01

16 43 00  DA193        04 42 46  71.7 129.2 -1.2     -37.3   113      120   16 43 00
16 47 00  ---          04 46 47  72.2 131.2 -1.2     -36.0   240      135   16 43 01

16 50 00  DA193        04 49 48  72.5 132.8 -1.1     -35.0   172      135   16 50 00
17 00 00  ---          04 59 49  73.6 138.3 -0.9     -31.3   600      174   16 50 01



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


 ======== Setup file: sess114.C512
   Matching groups in ./SH65.freq.dat:
     tr6cm           E-mail Borkowski 23Apr03 (CR 1May03)

   Setup group:    4         Station: TORUN             Total bit rate:  512
   Format: MKIV1:2           Bits per sample: 2         Sample rate: 16.000
   Number of channels: 16    DBE type:                  Speedup factor:   1.00

   Disk used to record data.
```

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

 The following frequency sets based on these setups were used.

  Frequency Set:   7  Setup file default.  Used pcal sets:   1
  LO sum=   4966.49  4966.49  4966.49  4966.49  4982.49  4982.49  4982.49  4982.49
            4998.49  4998.49  4998.49  4998.49  5014.49  5014.49  5014.49  5014.49
  BBC fr=    766.49   766.49   766.49   766.49   782.49   782.49   782.49   782.49
             798.49   798.49   798.49   798.49   814.49   814.49   814.49   814.49
  Bandwd=      8.00     8.00     8.00     8.00     8.00     8.00     8.00     8.00
               8.00     8.00     8.00     8.00     8.00     8.00     8.00     8.00
   Matching frequency sets:   7

 The following pulse cal sets were used with this setup:

  Pulse cal detection set:   1  PCAL = 1MHZ
   PCALXB1=   S1    S3    S5    S7    S9    S11   S13   S15
   PCALXB2=   S2    S4    S6    S8    S10   S12   S14   S16
   PCALFR1=   490   510   490   510   490   510   490   510
   PCALFR2=   490   510   490   510   490   510   490   510

  Track assignments are:
   track1=   2, 10, 18, 26,  3, 11, 19, 27, 66, 74, 82, 90, 67, 75, 83, 91
   barrel=roll_off


SOURCES USED IN RECORDING SCANS --     6cm FTP Fringe Test F14C1
    Catalog positions marked with *.
    Precession of date coordinates is based on stop time of first scan.
    Names used in schedule marked with *.
    Short names used in VLA and SNAP files marked with +.
    Observation date used in B1950/J2000 coordinate conversion (PRECDATE):  1979.900
    No adjustments are made for rates (DRA, DDEC).
    Scan hours are for recording scans only.
    Baseline hours are only counted for scans above horizon at both ends.

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

  J0530+1331        05 28 06.759218   * 05 30 56.416749     05 31 45.469738       0.10
* 0528+134          13 29 42.28877    * 13 31 55.14944      13 32 20.49436        0.10

  J0555+3948        05 52 01.407174   * 05 55 30.805616     05 56 31.509620       0.13
* DA193             39 48 21.94578    * 39 48 49.16493      39 48 52.40132        0.10
```

ep088dtr

LIRGI - Source group 1 - Run b

PI: *Miguel A. Perez-Torres*


```
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```


```
Observing mode: 1024 Mbps
Notes:    Phase-ref of EVN LIRGI sources
          First 6cm observing epoch of IRAS10565, VV340A, IRASF15250, NGC63090, NGC6670A and  CGCG448
```

```
Schedule for TORUN     (Code Tr )                                    Page   2
               LIRGI - Source group 1 - Run b
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   3 Mar 2014   Day  62 ---

 Next scan frequencies:  4942.49  4942.49  4942.49  4942.49  4974.49  4974.49  4974.49  4974.49
                         5006.49  5006.49  5006.49  5006.49  5038.49  5038.49  5038.49  5038.49
 Next BBC frequencies:    742.49   742.49   742.49   742.49   774.49   774.49   774.49   774.49
                          806.49   806.49   806.49   806.49   838.49   838.49   838.49   838.49
 Next scan bandwidths:     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
                           16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00

21 00 00  J1102+2757   09 00 29  56.2 126.0 -2.0     -33.3     0         0   21 00 00
21 04 50  ---          09 05 19  56.7 127.6 -2.0     -32.5   290        37   21 00 01

21 05 50  IRAS10565    09 06 20  54.3 132.1 -1.9     -29.3    37        37   21 05 50
21 09 30  ---          09 10 00  54.7 133.3 -1.8     -28.7   220        65   21 05 51

21 09 30  J1102+2757   09 10 00  57.3 129.2 -1.9     -31.7   -24        65   No stop
21 10 50  ---          09 11 20  57.4 129.7 -1.9     -31.5    56        76   21 09 31

21 11 50  IRAS10565    09 12 21  54.9 134.1 -1.8     -28.3    36        76   21 11 50
21 15 30  ---          09 16 01  55.3 135.4 -1.7     -27.6   220       104   21 11 51

21 15 30  J1102+2757   09 16 01  58.0 131.4 -1.8     -30.6   -24       104   No stop
21 16 50  ---          09 17 21  58.1 131.9 -1.8     -30.4    56       114   21 15 31

21 16 50  IRAS10565    09 17 21  55.5 135.9 -1.7     -27.3   -24       114   No stop
21 20 30  ---          09 21 02  55.8 137.2 -1.7     -26.6   196       142   21 16 51

21 20 30  J1102+2757   09 21 02  58.5 133.2 -1.7     -29.7   -24       142   No stop
21 21 50  ---          09 22 22  58.7 133.7 -1.7     -29.4    56       152   21 20 31

21 22 50  IRAS10565    09 23 22  56.1 138.1 -1.6     -26.1    36       152   21 22 50
21 26 30  ---          09 27 03  56.4 139.4 -1.6     -25.4   220       180   21 22 51

21 26 30  J1102+2757   09 27 03  59.2 135.4 -1.6     -28.5   -24       180   No stop
21 27 50  ---          09 28 23  59.3 135.9 -1.6     -28.2    56       191   21 26 31
```

```
Schedule for TORUN     (Code Tr )                                Page   3
               LIRGI - Source group 1 - Run b
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   3 Mar 2014   Day  62 ---

21 27 50  IRAS10565    09 28 23  56.6 139.9 -1.5     -25.1   -24      191   No stop
21 31 30  ---          09 32 04  56.9 141.3 -1.5     -24.3   196      219   21 27 51

21 31 30  J1102+2757   09 32 04  59.7 137.4 -1.5     -27.4   -24      219   No stop
21 32 50  ---          09 33 24  59.8 137.9 -1.5     -27.1    56      229   21 31 31

21 33 50  IRAS10565    09 34 24  57.1 142.2 -1.4     -23.8    36      229   21 33 50
21 37 30  ---          09 38 05  57.5 143.6 -1.4     -23.0   220      257   21 33 51

21 37 30  J1102+2757   09 38 05  60.3 139.7 -1.4     -26.0   -25      257   No stop
21 38 50  ---          09 39 25  60.4 140.3 -1.4     -25.7    55      268   21 37 31

21 38 50  IRAS10565    09 39 25  57.6 144.2 -1.3     -22.7   -24      268   No stop
21 42 30  ---          09 43 06  57.9 145.6 -1.3     -21.9   196      296   21 38 51

21 42 30  J1102+2757   09 43 06  60.8 141.8 -1.3     -24.9   -25      296   No stop
21 43 50  ---          09 44 26  60.9 142.3 -1.3     -24.5    55      306   21 42 31

21 44 50  IRAS10565    09 45 26  58.1 146.5 -1.2     -21.3    35      306   21 44 50
21 48 30  ---          09 49 07  58.4 148.0 -1.2     -20.4   220      334   21 44 51

21 48 30  J1102+2757   09 49 07  61.3 144.3 -1.2     -23.4   -25      334   No stop
21 49 50  ---          09 50 27  61.4 144.8 -1.2     -23.0    55      344   21 48 31

21 49 50  IRAS10565    09 50 27  58.5 148.6 -1.2     -20.1   -25      344   No stop
21 53 30  ---          09 54 07  58.8 150.1 -1.1     -19.2   195      372   21 49 51

21 53 30  J1102+2757   09 54 07  61.7 146.4 -1.1     -22.1   -25      372   No stop
21 54 50  ---          09 55 28  61.9 147.0 -1.1     -21.7    55      383   21 53 31

21 55 50  IRAS10565    09 56 28  59.0 151.1 -1.1     -18.6    35      383   21 55 50
21 59 30  ---          10 00 08  59.2 152.6 -1.0     -17.7   220      411   21 55 51

21 59 30  J1102+2757   10 00 08  62.2 149.1 -1.0     -20.4   -25      411   No stop
22 00 50  ---          10 01 29  62.3 149.7 -1.0     -20.1    55      421   21 59 31

22 00 50  IRAS10565    10 01 29  59.3 153.2 -1.0     -17.3   -25      421   No stop
22 04 30  ---          10 05 09  59.6 154.8 -0.9     -16.3   195      449   22 00 51

22 04 30  J1102+2757   10 05 09  62.6 151.3 -1.0     -19.0   -25      449   No stop
22 05 50  ---          10 06 29  62.7 151.9 -0.9     -18.6    55      460   22 04 31

22 06 50  IRAS10565    10 07 30  59.7 155.8 -0.9     -15.7    35      460   22 06 50
22 10 30  ---          10 11 10  59.9 157.4 -0.8     -14.7   220      488   22 06 51

22 10 30  J1102+2757   10 11 10  63.0 154.1 -0.9     -17.3   -26      488   No stop
22 11 50  ---          10 12 30  63.1 154.7 -0.8     -16.9    54      498   22 10 31
```

Schedule for TORUN (Code Tr) Page 4

LIRGI - Source group 1 - Run b

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 3 Mar 2014 Day 62 ---										
22 11 50	IRAS10565	10 12 30	60.0	158.0	-0.8		-14.3	-25	498	No stop
22 15 30	---	10 16 11	60.2	159.6	-0.7		-13.3	195	526	22 11 51
22 15 30	J1102+2757	10 16 11	63.3	156.4	-0.8		-15.8	-26	526	No stop
22 16 50	---	10 17 31	63.4	157.1	-0.8		-15.3	54	536	22 15 31
22 17 50	IRAS10565	10 18 31	60.3	160.6	-0.7		-12.6	34	536	22 17 50
22 21 30	---	10 22 12	60.5	162.3	-0.6		-11.6	220	564	22 17 51
22 21 30	J1102+2757	10 22 12	63.7	159.3	-0.7		-13.9	-26	564	No stop
22 22 50	---	10 23 32	63.7	160.0	-0.7		-13.5	54	575	22 21 31
22 22 50	IRAS10565	10 23 32	60.5	162.9	-0.6		-11.2	-26	575	No stop
22 26 30	---	10 27 13	60.7	164.6	-0.5		-10.1	194	603	22 22 51
22 26 30	J1102+2757	10 27 13	63.9	161.8	-0.6		-12.3	-26	603	No stop
22 27 50	---	10 28 33	64.0	162.4	-0.6		-11.8	54	613	22 26 31
22 28 50	IRAS10565	10 29 33	60.8	165.6	-0.5		-9.4	34	613	22 28 50
22 32 30	---	10 33 14	60.9	167.3	-0.4		-8.3	220	641	22 28 51
22 32 30	J1102+2757	10 33 14	64.2	164.7	-0.5		-10.3	-26	641	No stop
22 33 50	---	10 34 34	64.2	165.4	-0.5		-9.9	54	652	22 32 31
22 33 50	IRAS10565	10 34 34	61.0	168.0	-0.4		-7.9	-26	652	No stop
22 37 30	---	10 38 15	61.1	169.7	-0.4		-6.8	194	680	22 33 51
22 37 30	J1102+2757	10 38 15	64.4	167.3	-0.4		-8.6	-26	680	No stop
22 38 50	---	10 39 35	64.4	167.9	-0.4		-8.2	54	690	22 37 31
22 39 50	IRAS10565	10 40 35	61.1	170.8	-0.3		-6.1	34	690	22 39 50
22 43 30	---	10 44 16	61.2	172.5	-0.3		-4.9	220	718	22 39 51
22 43 30	J1102+2757	10 44 16	64.5	170.3	-0.3		-6.6	-26	718	No stop
22 44 50	---	10 45 36	64.6	171.0	-0.3		-6.1	54	728	22 43 31
22 44 50	IRAS10565	10 45 36	61.2	173.1	-0.2		-4.5	-26	728	No stop
22 48 30	---	10 49 16	61.3	174.9	-0.2		-3.4	194	756	22 44 51
22 48 30	J1102+2757	10 49 16	64.6	172.9	-0.2		-4.8	-26	756	No stop
22 49 50	---	10 50 37	64.7	173.6	-0.2		-4.4	54	767	22 48 31
22 50 50	IRAS10565	10 51 37	61.3	176.0	-0.1		-2.7	34	767	22 50 50
22 54 30	---	10 55 17	61.4	177.7	-0.1		-1.5	220	795	22 50 51
22 54 30	J1102+2757	10 55 17	64.7	176.0	-0.1		-2.7	-27	795	No stop
22 55 50	---	10 56 38	64.7	176.7	-0.1		-2.3	53	805	22 54 31

Schedule for TORUN (Code Tr) Page 5

LIRGI - Source group 1 - Run b

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 3 Mar 2014 Day 62 ---										
22 55 50	IRAS10565	10 56 38	61.4	178.4	-0.1		-1.1	-27	805	No stop
22 59 30	---	11 00 18	61.4	180.1	0.0		0.1	193	833	22 55 51
22 59 30	J1102+2757	11 00 18	64.8	178.6	-0.0		-1.0	-27	833	No stop
23 00 50	---	11 01 39	64.8	179.3	-0.0		-0.5	53	844	22 59 31
23 00 50	J1453+2648	11 01 39	40.0	97.9	-3.9		-41.8	-176	844	No stop
23 04 50	---	11 05 39	40.6	98.8	-3.8		-41.6	64	874	23 00 51
23 05 30	VV340A	11 06 19	38.5	100.1	-3.9		-40.5	18	874	23 05 30
23 09 10	---	11 10 00	39.1	101.0	-3.8		-40.4	220	902	23 05 31
23 09 10	J1453+2648	11 10 00	41.2	99.8	-3.7		-41.5	-22	902	No stop
23 10 30	---	11 11 20	41.4	100.1	-3.7		-41.5	58	913	23 09 11
23 11 10	VV340A	11 12 00	39.4	101.4	-3.8		-40.3	18	913	23 11 10
23 14 50	---	11 15 41	39.9	102.2	-3.7		-40.2	220	941	23 11 11
23 14 50	J1453+2648	11 15 41	42.0	101.0	-3.6		-41.3	-22	941	No stop
23 16 00	---	11 16 51	42.2	101.3	-3.6		-41.3	48	950	23 14 51
23 16 00	VV340A	11 16 51	40.1	102.5	-3.7		-40.1	-22	950	No stop
23 19 40	---	11 20 32	40.6	103.3	-3.6		-40.0	198	978	23 16 01
23 19 40	J1453+2648	11 20 32	42.8	102.1	-3.6		-41.1	-22	978	No stop
23 21 00	---	11 21 52	43.0	102.5	-3.5		-41.0	58	988	23 19 41
23 21 40	VV340A	11 22 32	40.9	103.8	-3.6		-39.9	18	988	23 21 40
23 25 20	---	11 26 13	41.5	104.7	-3.5		-39.7	220	1016	23 21 41
23 25 20	J1453+2648	11 26 13	43.6	103.5	-3.5		-40.8	-22	1016	No stop
23 26 30	---	11 27 23	43.8	103.7	-3.5		-40.8	48	1025	23 25 21
23 26 30	VV340A	11 27 23	41.6	104.9	-3.5		-39.6	-22	1025	No stop
23 30 10	---	11 31 03	42.2	105.8	-3.4		-39.4	198	1053	23 26 31
23 30 10	J1453+2648	11 31 03	44.3	104.6	-3.4		-40.6	-22	1053	No stop
23 31 30	---	11 32 24	44.5	104.9	-3.4		-40.5	58	1064	23 30 11
23 32 10	VV340A	11 33 04	42.5	106.3	-3.4		-39.3	18	1064	23 32 10
23 35 50	---	11 36 44	43.0	107.1	-3.3		-39.1	220	1092	23 32 11
23 35 50	J1453+2648	11 36 44	45.1	106.0	-3.3		-40.3	-22	1092	No stop
23 37 00	---	11 37 54	45.3	106.2	-3.3		-40.2	48	1101	23 35 51
23 37 00	VV340A	11 37 54	43.1	107.4	-3.3		-39.0	-22	1101	No stop
23 40 40	---	11 41 35	43.7	108.3	-3.3		-38.8	198	1129	23 37 01

```
Schedule for TORUN     (Code Tr )                                Page   6
               LIRGI - Source group 1 - Run b
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   3 Mar 2014   Day  62 ---

23 40 40  J1453+2648   11 41 35  45.8 107.1 -3.2     -40.0   -22     1129   No stop
23 42 00  ---          11 42 55  46.0 107.5 -3.2     -39.9    58     1139   23 40 41

23 42 40  VV340A       11 43 35  44.0 108.8 -3.2     -38.7    18     1139   23 42 40
23 46 20  ---          11 47 16  44.5 109.7 -3.2     -38.4   220     1167   23 42 41

23 46 20  J1453+2648   11 47 16  46.6 108.5 -3.1     -39.6   -22     1167   No stop
23 47 30  ---          11 48 26  46.8 108.8 -3.1     -39.5    48     1176   23 46 21

23 47 30  VV340A       11 48 26  44.6 110.0 -3.2     -38.3   -22     1176   No stop
23 51 10  ---          11 52 07  45.2 111.0 -3.1     -38.1   198     1204   23 47 31

23 51 10  J1453+2648   11 52 07  47.3 109.8 -3.0     -39.3   -22     1204   No stop
23 52 30  ---          11 53 27  47.5 110.1 -3.0     -39.2    58     1215   23 51 11

23 53 10  VV340A       11 54 07  45.4 111.5 -3.1     -37.9    18     1215   23 53 10
23 56 50  ---          11 57 48  46.0 112.4 -3.0     -37.6   220     1243   23 53 11

23 56 50  J1453+2648   11 57 48  48.1 111.2 -2.9     -38.8   -22     1243   No stop
23 58 00  ---          11 58 58  48.3 111.5 -2.9     -38.7    48     1252   23 56 51

 --- Start: Mon   3 Mar 2014   Day  62 -- Stop: Tue   4 Mar 2014   Day  63 ---

23 58 00  VV340A       11 58 58  46.1 112.7 -3.0     -37.5   -22     1252   No stop
00 01 40  ---          12 02 39  46.6 113.7 -2.9     -37.2   198     1280   23 58 01

00 01 40  J1453+2648   12 02 39  48.8 112.5 -2.9     -38.4   -22     1280   No stop
00 03 00  ---          12 03 59  49.0 112.9 -2.8     -38.3    58     1290   00 01 41

00 03 40  VV340A       12 04 39  46.9 114.2 -2.9     -37.0    18     1290   00 03 40
00 07 20  ---          12 08 19  47.4 115.2 -2.8     -36.7   220     1318   00 03 41

00 07 20  J1453+2648   12 08 19  49.6 114.0 -2.8     -37.9   -22     1318   No stop
00 08 30  ---          12 09 30  49.7 114.4 -2.8     -37.8    48     1327   00 07 21

00 08 30  VV340A       12 09 30  47.6 115.5 -2.8     -36.6   -22     1327   No stop
00 12 10  ---          12 13 10  48.1 116.5 -2.7     -36.2   198     1356   00 08 31

00 12 10  J1453+2648   12 13 10  50.2 115.4 -2.7     -37.4   -22     1356   No stop
00 13 30  ---          12 14 30  50.4 115.7 -2.7     -37.3    58     1366   00 12 11

00 14 10  VV340A       12 15 11  48.3 117.1 -2.7     -36.0    18     1366   00 14 10
00 17 50  ---          12 18 51  48.8 118.1 -2.6     -35.6   220     1394   00 14 11

00 17 50  J1453+2648   12 18 51  51.0 117.0 -2.6     -36.8   -22     1394   No stop
00 19 00  ---          12 20 01  51.2 117.3 -2.6     -36.7    48     1403   00 17 51
```

```
Schedule for TORUN     (Code Tr )                                Page   7
               LIRGI - Source group 1 - Run b
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   4 Mar 2014   Day  63 ---

00 19 00  VV340A       12 20 01  49.0 118.4 -2.6     -35.5   -22     1403   No stop
00 22 40  ---          12 23 42  49.5 119.5 -2.6     -35.1   198     1431   00 19 01

00 22 40  J1453+2648   12 23 42  51.6 118.3 -2.5     -36.3   -22     1431   No stop
00 24 00  ---          12 25 02  51.8 118.7 -2.5     -36.1    58     1441   00 22 41

00 24 40  VV340A       12 25 42  49.7 120.0 -2.5     -34.9    18     1441   00 24 40
00 28 20  ---          12 29 23  50.2 121.1 -2.5     -34.4   220     1469   00 24 41

00 28 20  J1453+2648   12 29 23  52.4 120.0 -2.4     -35.6   -22     1469   No stop
00 29 30  ---          12 30 33  52.5 120.4 -2.4     -35.5    48     1478   00 28 21

00 29 30  VV340A       12 30 33  50.3 121.4 -2.5     -34.3   -22     1478   No stop
00 33 10  ---          12 34 14  50.8 122.5 -2.4     -33.8   198     1507   00 29 31

00 33 10  J1453+2648   12 34 14  53.0 121.5 -2.3     -35.0   -22     1507   No stop
00 34 30  ---          12 35 34  53.2 121.9 -2.3     -34.8    58     1517   00 33 11

00 35 10  VV340A       12 36 14  51.1 123.1 -2.4     -33.6    18     1517   00 35 10
00 38 50  ---          12 39 55  51.5 124.3 -2.3     -33.1   220     1545   00 35 11

00 38 50  J1453+2648   12 39 55  53.7 123.2 -2.2     -34.2   -22     1545   No stop
00 40 00  ---          12 41 05  53.9 123.6 -2.2     -34.1    48     1554   00 38 51

00 40 00  VV340A       12 41 05  51.7 124.6 -2.3     -32.9   -22     1554   No stop
00 43 40  ---          12 44 45  52.1 125.8 -2.2     -32.4   198     1582   00 40 01

00 43 40  J1453+2648   12 44 45  54.3 124.8 -2.2     -33.5   -22     1582   No stop
00 45 00  ---          12 46 06  54.5 125.2 -2.1     -33.3    58     1592   00 43 41

00 45 40  VV340A       12 46 46  52.4 126.4 -2.2     -32.1    18     1592   00 45 40
00 49 20  ---          12 50 26  52.8 127.6 -2.1     -31.6   220     1620   00 45 41

00 49 20  J1453+2648   12 50 26  55.0 126.6 -2.1     -32.7   -22     1620   No stop
00 50 30  ---          12 51 37  55.2 127.0 -2.0     -32.5    48     1629   00 49 21

00 50 30  VV340A       12 51 37  52.9 127.9 -2.1     -31.4   -22     1629   No stop
00 54 10  ---          12 55 17  53.4 129.1 -2.0     -30.8   198     1658   00 50 31

00 54 10  J1453+2648   12 55 17  55.6 128.2 -2.0     -31.9   -22     1658   No stop
00 55 30  ---          12 56 37  55.8 128.6 -2.0     -31.7    58     1668   00 54 11

00 55 30  J1522+3144   12 56 37  56.2 114.5 -2.4     -39.9   -43     1668   No stop
00 57 00  ---          12 58 08  56.4 115.0 -2.4     -39.8    47     1679   00 55 31
```

Schedule for TORUN (Code Tr) Page 8

LIRGI - Source group 1 - Run b

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 4 Mar 2014 Day 63 ---										
00 58 00	IRASF15250	12 59 08	59.0	108.6	-2.5		-44.7	32	1679	00 58 00
01 01 40	---	13 02 48	59.5	109.6	-2.4		-44.3	220	1708	00 58 01
01 01 40	J1522+3144	13 02 48	57.0	116.4	-2.3		-39.2	-29	1708	No stop
01 03 05	---	13 04 14	57.2	116.8	-2.3		-39.0	56	1718	01 01 41
01 04 05	IRASF15250	13 05 14	59.8	110.3	-2.4		-44.1	32	1718	01 04 05
01 07 45	---	13 08 54	60.4	111.4	-2.3		-43.7	220	1747	01 04 06
01 07 45	J1522+3144	13 08 54	57.8	118.3	-2.2		-38.4	-29	1747	No stop
01 09 15	---	13 10 25	58.0	118.7	-2.2		-38.2	61	1758	01 07 46
01 09 15	IRASF15250	13 10 25	60.6	111.8	-2.3		-43.5	-29	1758	No stop
01 12 55	---	13 14 05	61.1	112.9	-2.2		-43.1	191	1786	01 09 16
01 12 55	J1522+3144	13 14 05	58.5	119.9	-2.1		-37.7	-29	1786	No stop
01 14 20	---	13 15 30	58.7	120.4	-2.1		-37.5	56	1797	01 12 56
01 15 20	IRASF15250	13 16 31	61.4	113.7	-2.2		-42.8	31	1797	01 15 20
01 19 00	---	13 20 11	61.9	114.8	-2.1		-42.3	220	1825	01 15 21
01 19 00	J1522+3144	13 20 11	59.3	121.9	-2.0		-36.8	-29	1825	No stop
01 20 30	---	13 21 41	59.5	122.4	-2.0		-36.6	61	1837	01 19 01
01 20 30	IRASF15250	13 21 41	62.1	115.3	-2.1		-42.1	-29	1837	No stop
01 24 10	---	13 25 22	62.6	116.5	-2.0		-41.6	191	1865	01 20 31
01 24 10	J1522+3144	13 25 22	59.9	123.7	-2.0		-36.0	-30	1865	No stop
01 25 35	---	13 26 47	60.1	124.2	-1.9		-35.7	55	1876	01 24 11
01 26 35	IRASF15250	13 27 47	62.9	117.3	-2.0		-41.2	31	1876	01 26 35
01 30 15	---	13 31 28	63.4	118.6	-1.9		-40.6	220	1904	01 26 36
01 30 15	J1522+3144	13 31 28	60.7	125.8	-1.9		-34.9	-30	1904	No stop
01 31 45	---	13 32 58	60.9	126.3	-1.8		-34.6	60	1916	01 30 16
01 31 45	IRASF15250	13 32 58	63.6	119.1	-1.9		-40.4	-29	1916	No stop
01 35 25	---	13 36 39	64.1	120.4	-1.8		-39.8	191	1944	01 31 46
01 35 25	J1522+3144	13 36 39	61.3	127.7	-1.8		-34.0	-30	1944	No stop
01 36 50	---	13 38 04	61.5	128.2	-1.7		-33.7	55	1955	01 35 26
01 37 50	IRASF15250	13 39 04	64.4	121.3	-1.8		-39.3	31	1955	01 37 50
01 41 30	---	13 42 45	64.9	122.6	-1.7		-38.7	220	1983	01 37 51

```
Schedule for TORUN     (Code Tr )                                Page   9
               LIRGI - Source group 1 - Run b
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   4 Mar 2014   Day  63 ---

01 41 30  J1522+3144   13 42 45  62.0 130.0 -1.7     -32.7   -30     1983   No stop
01 43 00  ---          13 44 15  62.2 130.5 -1.6     -32.4    60     1994   01 41 31

01 43 00  IRASF15250   13 44 15  65.1 123.2 -1.7     -38.4   -29     1994   No stop
01 46 40  ---          13 47 56  65.5 124.6 -1.7     -37.6   191     2022   01 43 01

01 46 40  J1522+3144   13 47 56  62.6 132.0 -1.6     -31.6   -30     2022   No stop
01 48 05  ---          13 49 21  62.8 132.5 -1.6     -31.3    55     2033   01 46 41

01 49 05  IRASF15250   13 50 21  65.8 125.5 -1.6     -37.1    31     2033   01 49 05
01 52 45  ---          13 54 02  66.3 127.0 -1.6     -36.3   220     2061   01 49 06

01 52 45  J1522+3144   13 54 02  63.3 134.4 -1.5     -30.3   -30     2061   No stop
01 54 15  ---          13 55 32  63.4 135.0 -1.5     -29.9    60     2073   01 52 46

01 54 15  IRASF15250   13 55 32  66.5 127.6 -1.5     -36.0   -30     2073   No stop
01 57 55  ---          13 59 13  66.9 129.1 -1.5     -35.1   190     2101   01 54 16

01 57 55  J1522+3144   13 59 13  63.8 136.6 -1.4     -29.0   -30     2101   No stop
01 59 20  ---          14 00 38  64.0 137.2 -1.4     -28.7    55     2112   01 57 56

02 00 20  IRASF15250   14 01 38  67.2 130.2 -1.4     -34.5    30     2112   02 00 20
02 04 00  ---          14 05 19  67.6 131.8 -1.4     -33.6   220     2140   02 00 21

02 04 00  J1522+3144   14 05 19  64.4 139.2 -1.3     -27.5   -30     2140   No stop
02 05 30  ---          14 06 49  64.6 139.8 -1.3     -27.1    60     2152   02 04 01

02 05 30  IRASF15250   14 06 49  67.8 132.4 -1.3     -33.2   -29     2152   No stop
02 09 10  ---          14 10 29  68.2 134.1 -1.3     -32.2   191     2180   02 05 31

02 09 10  J1522+3144   14 10 29  64.9 141.5 -1.2     -26.1   -30     2180   No stop
02 10 35  ---          14 11 55  65.1 142.1 -1.2     -25.7    55     2191   02 09 11

02 11 35  IRASF15250   14 12 55  68.4 135.2 -1.2     -31.5    31     2191   02 11 35
02 15 15  ---          14 16 35  68.8 137.0 -1.2     -30.4   220     2219   02 11 36

02 15 15  J1522+3144   14 16 35  65.5 144.3 -1.1     -24.3   -30     2219   No stop
02 16 45  ---          14 18 06  65.6 145.0 -1.1     -23.9    60     2230   02 15 16

02 16 45  IRASF15250   14 18 06  69.0 137.7 -1.2     -29.9   -29     2230   No stop
02 20 25  ---          14 21 46  69.3 139.5 -1.1     -28.8   191     2259   02 16 46

02 20 25  J1522+3144   14 21 46  65.9 146.7 -1.0     -22.8   -30     2259   No stop
02 21 50  ---          14 23 12  66.0 147.4 -1.0     -22.3    55     2269   02 20 26
```

Schedule for TORUN (Code Tr) Page 10

LIRGI - Source group 1 - Run b

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 4 Mar 2014 Day 63 ---										
02 22 50	IRASF15250	14 24 12	69.5	140.8	-1.1		-28.0	31	2269	02 22 50
02 26 30	---	14 27 52	69.9	142.7	-1.0		-26.7	220	2298	02 22 51
02 26 30	J1522+3144	14 27 52	66.4	149.7	-0.9		-20.8	-29	2298	No stop
02 28 00	---	14 29 23	66.5	150.5	-0.9		-20.4	61	2309	02 26 31
02 28 00	IRASF15250	14 29 23	70.0	143.5	-1.0		-26.2	-29	2309	No stop
02 31 40	---	14 33 03	70.3	145.4	-0.9		-24.9	191	2337	02 28 01
02 31 40	J1522+3144	14 33 03	66.8	152.3	-0.8		-19.1	-29	2337	No stop
02 33 05	---	14 34 28	66.9	153.1	-0.8		-18.7	56	2348	02 31 41
02 34 05	IRASF15250	14 35 29	70.5	146.8	-0.9		-24.0	32	2348	02 34 05
02 37 45	---	14 39 09	70.8	148.9	-0.8		-22.6	220	2376	02 34 06
02 37 45	J1522+3144	14 39 09	67.2	155.5	-0.7		-17.0	-29	2376	No stop
02 39 15	---	14 40 39	67.3	156.3	-0.7		-16.5	61	2388	02 37 46
02 39 15	IRASF15250	14 40 39	71.0	149.7	-0.8		-22.0	-28	2388	No stop
02 42 55	---	14 44 20	71.2	151.9	-0.7		-20.5	192	2416	02 39 16
02 42 55	J1522+3144	14 44 20	67.5	158.2	-0.6		-15.2	-28	2416	No stop
02 44 20	---	14 45 45	67.6	159.0	-0.6		-14.7	57	2427	02 42 56
02 45 20	IRASF15250	14 46 45	71.4	153.3	-0.7		-19.5	32	2427	02 45 20
02 49 00	---	14 50 26	71.6	155.5	-0.6		-17.9	220	2455	02 45 21
02 49 00	J1522+3144	14 50 26	67.8	161.5	-0.5		-12.9	-28	2455	No stop
02 50 30	---	14 51 56	67.9	162.4	-0.5		-12.3	62	2467	02 49 01
02 50 30	IRASF15250	14 51 56	71.7	156.4	-0.6		-17.2	-28	2467	No stop
02 54 10	---	14 55 37	71.9	158.7	-0.5		-15.6	192	2495	02 50 31
02 54 10	J1522+3144	14 55 37	68.0	164.4	-0.5		-10.9	-28	2495	No stop
02 55 40	---	14 57 07	68.1	165.3	-0.4		-10.3	62	2506	02 54 11
02 55 40	J1824+5651	14 57 07	60.8	61.6	-3.5		-75.0	-222	2506	No stop
03 00 00	---	15 01 28	61.3	61.9	-3.4		-75.7	38	2540	02 55 41
03 01 00	NGC6670A	15 02 28	60.9	55.3	-3.5		-79.7	32	2540	03 01 00
03 04 40	---	15 06 09	61.3	55.4	-3.5		-80.3	220	2568	03 01 01
03 04 40	J1824+5651	15 06 09	61.9	62.2	-3.3		-76.3	-29	2568	No stop
03 06 00	---	15 07 29	62.1	62.3	-3.3		-76.5	51	2578	03 04 41

```
Schedule for TORUN     (Code Tr )                                Page  11
               LIRGI - Source group 1 - Run b
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   4 Mar 2014   Day  63 ---

03 07 00  NGC6670A     15 08 29  61.6  55.5 -3.4     -80.7    31     2578   03 07 00
03 10 40  ---          15 12 10  62.1  55.7 -3.4     -81.4   220     2606   03 07 01

03 10 40  J1824+5651   15 12 10  62.7  62.6 -3.2     -77.2   -29     2606   No stop
03 12 00  ---          15 13 30  62.9  62.7 -3.2     -77.4    51     2616   03 10 41

03 12 00  NGC6670A     15 13 30  62.3  55.7 -3.3     -81.6   -29     2616   No stop
03 15 40  ---          15 17 10  62.7  55.9 -3.3     -82.3   191     2644   03 12 01

03 15 40  J1824+5651   15 17 10  63.4  63.0 -3.1     -78.0   -29     2644   No stop
03 17 00  ---          15 18 31  63.6  63.0 -3.1     -78.2    51     2655   03 15 41

03 18 00  NGC6670A     15 19 31  63.0  55.9 -3.2     -82.7    31     2655   03 18 00
03 21 40  ---          15 23 11  63.5  56.1 -3.2     -83.4   220     2683   03 18 01

03 21 40  J1824+5651   15 23 11  64.2  63.3 -3.0     -78.9   -30     2683   No stop
03 23 00  ---          15 24 32  64.4  63.4 -3.0     -79.1    50     2693   03 21 41

03 23 00  NGC6670A     15 24 32  63.6  56.1 -3.2     -83.7   -30     2693   No stop
03 26 40  ---          15 28 12  64.1  56.2 -3.1     -84.4   190     2721   03 23 01

03 26 40  J1824+5651   15 28 12  64.9  63.6 -2.9     -79.7   -30     2721   No stop
03 28 00  ---          15 29 32  65.1  63.7 -2.9     -79.9    50     2732   03 26 41

03 29 00  NGC6670A     15 30 33  64.4  56.3 -3.1     -84.8    30     2732   03 29 00
03 32 40  ---          15 34 13  64.8  56.4 -3.0     -85.5   220     2760   03 29 01

03 32 40  J1824+5651   15 34 13  65.7  64.0 -2.8     -80.7   -30     2760   No stop
03 34 00  ---          15 35 33  65.9  64.0 -2.8     -80.9    50     2770   03 32 41

03 34 00  NGC6670A     15 35 33  65.0  56.4 -3.0     -85.8   -30     2770   No stop
03 37 40  ---          15 39 14  65.5  56.5 -2.9     -86.5   190     2798   03 34 01

03 37 40  J1824+5651   15 39 14  66.4  64.2 -2.8     -81.5   -31     2798   No stop
03 39 00  ---          15 40 34  66.6  64.3 -2.7     -81.7    49     2808   03 37 41

03 40 00  NGC6670A     15 41 34  65.8  56.5 -2.9     -87.0    29     2808   03 40 00
03 43 40  ---          15 45 15  66.2  56.6 -2.8     -87.8   220     2836   03 40 01

03 43 40  J1824+5651   15 45 15  67.2  64.5 -2.7     -82.5   -31     2836   No stop
03 45 00  ---          15 46 35  67.4  64.6 -2.6     -82.7    49     2847   03 43 41

03 45 00  NGC6670A     15 46 35  66.4  56.6 -2.8     -88.0   -31     2847   No stop
03 48 40  ---          15 50 16  66.9  56.6 -2.7     -88.8   189     2875   03 45 01

03 48 40  J1824+5651   15 50 16  67.9  64.7 -2.6     -83.3   -31     2875   No stop
03 50 00  ---          15 51 36  68.1  64.8 -2.5     -83.5    49     2885   03 48 41
```

Schedule for TORUN (Code Tr) Page 12

LIRGI - Source group 1 - Run b

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 4 Mar 2014 Day 63 ---										
03 51 00	NGC6670A	15 52 36	67.1	56.6	-2.7		-89.3	29	2885	03 51 00
03 54 40	---	15 56 17	67.6	56.6	-2.6		-90.1	220	2913	03 51 01
03 54 40	J1824+5651	15 56 17	68.7	65.0	-2.5		-84.4	-32	2913	No stop
03 56 00	---	15 57 37	68.9	65.0	-2.4		-84.6	48	2924	03 54 41
03 56 00	NGC6670A	15 57 37	67.8	56.6	-2.6		-90.4	-32	2924	No stop
03 59 40	---	16 01 18	68.2	56.6	-2.5		-91.2	188	2952	03 56 01
03 59 40	J1824+5651	16 01 18	69.4	65.1	-2.4		-85.2	-32	2952	No stop
04 01 00	---	16 02 38	69.6	65.2	-2.4		-85.5	48	2962	03 59 41
04 02 00	NGC6670A	16 03 38	68.5	56.6	-2.5		-91.7	28	2962	04 02 00
04 05 40	---	16 07 19	69.0	56.6	-2.4		-92.5	220	2990	04 02 01
04 05 40	J1824+5651	16 07 19	70.2	65.3	-2.3		-86.3	-33	2990	No stop
04 07 00	---	16 08 39	70.4	65.4	-2.3		-86.6	47	3000	04 05 41
04 07 00	NGC6670A	16 08 39	69.2	56.5	-2.4		-92.8	-33	3000	No stop
04 10 40	---	16 12 19	69.6	56.5	-2.4		-93.7	187	3028	04 07 01
04 10 40	J1824+5651	16 12 19	70.9	65.4	-2.2		-87.3	-33	3028	No stop
04 12 00	---	16 13 40	71.1	65.5	-2.2		-87.5	47	3039	04 10 41
04 13 00	NGC6670A	16 14 40	69.9	56.4	-2.3		-94.3	27	3039	04 13 00
04 16 40	---	16 18 20	70.4	56.3	-2.3		-95.2	220	3067	04 13 01
04 16 40	J1824+5651	16 18 20	71.7	65.5	-2.1		-88.4	-34	3067	No stop
04 18 00	---	16 19 41	71.9	65.5	-2.1		-88.7	46	3077	04 16 41
04 18 00	NGC6670A	16 19 41	70.5	56.2	-2.2		-95.5	-34	3077	No stop
04 21 40	---	16 23 21	71.0	56.1	-2.2		-96.4	186	3105	04 18 01
04 21 40	J1824+5651	16 23 21	72.4	65.6	-2.0		-89.5	-34	3105	No stop
04 23 00	---	16 24 41	72.6	65.6	-2.0		-89.7	46	3116	04 21 41
04 24 00	NGC6670A	16 25 42	71.3	56.0	-2.1		-97.1	26	3116	04 24 00
04 27 40	---	16 29 22	71.7	55.8	-2.1		-98.0	220	3144	04 24 01
04 27 40	J1824+5651	16 29 22	73.2	65.6	-1.9		-90.7	-35	3144	No stop
04 29 00	---	16 30 42	73.4	65.6	-1.9		-91.0	45	3154	04 27 41
04 29 00	NGC6670A	16 30 42	71.9	55.7	-2.1		-98.4	-35	3154	No stop
04 32 40	---	16 34 23	72.4	55.5	-2.0		-99.4	185	3182	04 29 01
04 32 40	J1824+5651	16 34 23	73.9	65.5	-1.8		-91.8	-35	3182	No stop
04 34 00	---	16 35 43	74.1	65.5	-1.8		-92.1	45	3192	04 32 41

```
Schedule for TORUN     (Code Tr )                                Page  13
               LIRGI - Source group 1 - Run b
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   4 Mar 2014   Day  63 ---

04 35 00  NGC6670A     16 36 43  72.7  55.3 -2.0    -100.1    25     3192   04 35 00
04 38 40  ---          16 40 24  73.1  55.0 -1.9    -101.1   220     3220   04 35 01

04 38 40  J1824+5651   16 40 24  74.7  65.4 -1.7     -93.2   -36     3220   No stop
04 40 00  ---          16 41 44  74.9  65.3 -1.7     -93.5    44     3231   04 38 41

04 40 00  NGC6670A     16 41 44  73.3  54.9 -1.9    -101.5   -36     3231   No stop
04 43 40  ---          16 45 25  73.7  54.6 -1.8    -102.7   184     3259   04 40 01

04 43 40  J1824+5651   16 45 25  75.4  65.2 -1.6     -94.4   -36     3259   No stop
04 45 00  ---          16 46 45  75.6  65.1 -1.6     -94.8    44     3269   04 43 41

04 46 00  NGC6670A     16 47 45  74.0  54.3 -1.8    -103.4    23     3269   04 46 00
04 49 40  ---          16 51 26  74.5  53.9 -1.7    -104.6   220     3297   04 46 01

04 49 40  J1824+5651   16 51 26  76.2  64.9 -1.5     -96.0   -37     3297   No stop
04 51 00  ---          16 52 46  76.4  64.8 -1.5     -96.3    43     3308   04 49 41

04 51 00  NGC6670A     16 52 46  74.6  53.8 -1.7    -105.0   -37     3308   No stop
04 54 40  ---          16 56 27  75.1  53.3 -1.6    -106.3   183     3336   04 51 01

04 54 40  J1824+5651   16 56 27  76.9  64.6 -1.5     -97.4   -37     3336   No stop
04 56 05  ---          16 57 52  77.1  64.4 -1.4     -97.8    48     3347   04 54 41

04 56 45  J2108+1430   16 58 32  27.9 103.3 -4.2     -37.1  -157     3347   04 56 45
05 01 30  ---          17 03 18  28.6 104.4 -4.1     -36.9   128     3383   04 56 46

05 02 10  CGCG448      17 03 58  32.4 105.2 -3.9     -37.3    12     3383   05 02 10
05 05 50  ---          17 07 38  32.9 106.0 -3.8     -37.2   220     3411   05 02 11

05 05 50  J2108+1430   17 07 38  29.2 105.3 -4.0     -36.7   -28     3411   No stop
05 07 05  ---          17 08 54  29.4 105.6 -4.0     -36.7    47     3421   05 05 51

05 07 45  CGCG448      17 09 34  33.2 106.5 -3.8     -37.1    12     3421   05 07 45
05 11 23  ---          17 13 12  33.7 107.3 -3.7     -36.9   218     3449   05 07 46

05 11 23  J2108+1430   17 13 12  30.0 106.6 -3.9     -36.5   -28     3449   No stop
05 12 38  ---          17 14 28  30.2 106.9 -3.9     -36.4    47     3458   05 11 24

05 12 38  CGCG448      17 14 28  33.9 107.6 -3.7     -36.8   -28     3458   No stop
05 16 17  ---          17 18 07  34.4 108.4 -3.7     -36.6   191     3486   05 12 39

05 16 17  J2108+1430   17 18 07  30.7 107.7 -3.9     -36.2   -28     3486   No stop
05 17 32  ---          17 19 22  30.9 108.0 -3.8     -36.2    47     3496   05 16 18

05 18 12  CGCG448      17 20 03  34.7 108.9 -3.6     -36.5    12     3496   05 18 12
05 21 50  ---          17 23 41  35.2 109.7 -3.6     -36.3   218     3524   05 18 13
```

Schedule for TORUN (Code Tr) Page 14

LIRGI - Source group 1 - Run b

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 4 Mar 2014 Day 63 ---										
05 21 50	J2108+1430	17 23 41	31.5	109.0	-3.8		-35.9	-28	3524	No stop
05 23 05	---	17 24 56	31.7	109.3	-3.7		-35.9	47	3533	05 21 51
05 23 05	CGCG448	17 24 56	35.4	110.0	-3.6		-36.2	-28	3533	No stop
05 26 44	---	17 28 36	35.9	110.9	-3.5		-36.0	191	3561	05 23 06
05 26 44	J2108+1430	17 28 36	32.2	110.1	-3.7		-35.6	-28	3561	No stop
05 27 59	---	17 29 51	32.4	110.4	-3.7		-35.6	47	3571	05 26 45
05 28 39	CGCG448	17 30 31	36.2	111.4	-3.5		-35.8	12	3571	05 28 39
05 32 17	---	17 34 10	36.7	112.3	-3.4		-35.6	218	3599	05 28 40
05 32 17	J2108+1430	17 34 10	33.0	111.4	-3.6		-35.3	-28	3599	No stop
05 33 32	---	17 35 25	33.2	111.7	-3.6		-35.2	47	3609	05 32 18
05 33 32	CGCG448	17 35 25	36.9	112.6	-3.4		-35.5	-28	3609	No stop
05 37 11	---	17 39 05	37.4	113.5	-3.3		-35.2	191	3637	05 33 33
05 37 11	J2108+1430	17 39 05	33.7	112.6	-3.5		-35.0	-28	3637	No stop
05 38 26	---	17 40 20	33.8	112.9	-3.5		-34.9	47	3646	05 37 12
05 39 06	CGCG448	17 41 00	37.6	113.9	-3.3		-35.1	12	3646	05 39 06
05 42 44	---	17 44 39	38.1	114.8	-3.2		-34.8	218	3674	05 39 07
05 42 44	J2108+1430	17 44 39	34.4	113.9	-3.4		-34.6	-28	3674	No stop
05 43 59	---	17 45 54	34.6	114.2	-3.4		-34.5	47	3684	05 42 45
05 43 59	CGCG448	17 45 54	38.3	115.1	-3.2		-34.7	-28	3684	No stop
05 47 38	---	17 49 33	38.8	116.1	-3.1		-34.4	191	3712	05 44 00
05 47 38	J2108+1430	17 49 33	35.1	115.1	-3.3		-34.2	-28	3712	No stop
05 48 53	---	17 50 49	35.3	115.4	-3.3		-34.1	47	3721	05 47 39
05 49 33	CGCG448	17 51 29	39.1	116.5	-3.1		-34.2	12	3721	05 49 33
05 53 11	---	17 55 07	39.5	117.5	-3.0		-33.9	218	3749	05 49 34
05 53 11	J2108+1430	17 55 07	35.9	116.5	-3.2		-33.7	-28	3749	No stop
05 54 26	---	17 56 22	36.0	116.8	-3.2		-33.6	47	3759	05 53 12
05 54 26	CGCG448	17 56 22	39.7	117.8	-3.0		-33.8	-28	3759	No stop
05 58 05	---	18 00 02	40.2	118.8	-3.0		-33.4	191	3787	05 54 27
05 58 05	J2108+1430	18 00 02	36.5	117.7	-3.2		-33.3	-27	3787	No stop
05 59 20	---	18 01 17	36.7	118.0	-3.1		-33.2	48	3796	05 58 06
06 00 00	CGCG448	18 01 57	40.4	119.3	-2.9		-33.3	12	3796	06 00 00
06 03 38	---	18 05 36	40.9	120.2	-2.9		-32.9	218	3824	06 00 01

```
Schedule for TORUN     (Code Tr )                                Page  15
               LIRGI - Source group 1 - Run b
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   4 Mar 2014   Day  63 ---

06 03 38  J2108+1430   18 05 36  37.2 119.1 -3.1     -32.8   -27     3824   No stop
06 04 53  ---          18 06 51  37.4 119.4 -3.0     -32.7    48     3834   06 03 39

06 04 53  CGCG448      18 06 51  41.1 120.6 -2.9     -32.8   -28     3834   No stop
06 08 32  ---          18 10 31  41.6 121.5 -2.8     -32.4   191     3862   06 04 54

06 08 32  J2108+1430   18 10 31  37.9 120.4 -3.0     -32.4   -27     3862   No stop
06 09 47  ---          18 11 46  38.1 120.7 -3.0     -32.2    48     3872   06 08 33

06 10 27  CGCG448      18 12 26  41.8 122.1 -2.8     -32.2    12     3872   06 10 27
06 14 05  ---          18 16 05  42.3 123.0 -2.7     -31.8   218     3900   06 10 28

06 14 05  J2108+1430   18 16 05  38.6 121.8 -2.9     -31.8   -27     3900   No stop
06 15 20  ---          18 17 20  38.8 122.2 -2.9     -31.7    48     3909   06 14 06

06 15 20  CGCG448      18 17 20  42.4 123.4 -2.7     -31.7   -28     3909   No stop
06 18 59  ---          18 20 59  42.9 124.4 -2.6     -31.2   191     3937   06 15 21

06 18 59  J2108+1430   18 20 59  39.2 123.1 -2.8     -31.3   -27     3937   No stop
06 20 14  ---          18 22 15  39.4 123.5 -2.8     -31.2    48     3947   06 19 00

06 20 54  CGCG448      18 22 55  43.1 124.9 -2.6     -31.0    12     3947   06 20 54
06 24 32  ---          18 26 33  43.6 126.0 -2.5     -30.6   218     3975   06 20 55

06 24 32  J2108+1430   18 26 33  39.9 124.6 -2.7     -30.7   -27     3975   No stop
06 25 47  ---          18 27 49  40.1 125.0 -2.7     -30.6    48     3984   06 24 33

06 25 47  CGCG448      18 27 49  43.7 126.3 -2.5     -30.4   -28     3984   No stop
06 29 26  ---          18 31 28  44.1 127.4 -2.4     -30.0   191     4012   06 25 48

06 29 26  J2108+1430   18 31 28  40.5 126.0 -2.6     -30.1   -27     4012   No stop
06 30 41  ---          18 32 43  40.7 126.3 -2.6     -30.0    48     4022   06 29 27

06 31 21  CGCG448      18 33 24  44.4 127.9 -2.4     -29.7    12     4022   06 31 21
06 34 59  ---          18 37 02  44.8 129.0 -2.4     -29.2   218     4050   06 31 22

06 34 59  J2108+1430   18 37 02  41.2 127.5 -2.5     -29.5   -27     4050   No stop
06 36 14  ---          18 38 17  41.3 127.9 -2.5     -29.3    48     4059   06 35 00

06 36 14  CGCG448      18 38 17  45.0 129.4 -2.3     -29.1   -28     4059   No stop
06 39 53  ---          18 41 57  45.4 130.4 -2.3     -28.6   191     4087   06 36 15

06 39 53  J2108+1430   18 41 57  41.8 128.9 -2.5     -28.9   -27     4087   No stop
06 41 08  ---          18 43 12  41.9 129.3 -2.4     -28.7    48     4097   06 39 54

06 41 48  CGCG448      18 43 52  45.6 131.0 -2.2     -28.3    12     4097   06 41 48
06 45 26  ---          18 47 31  46.0 132.1 -2.2     -27.8   218     4125   06 41 49
```

Schedule for TORUN (Code Tr) Page 16

LIRGI - Source group 1 - Run b

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 4 Mar 2014 Day 63 ---										
06 45 26	J2108+1430	18 47 31	42.4	130.5	-2.4		-28.2	-27	4125	No stop
06 46 41	---	18 48 46	42.6	130.9	-2.3		-28.0	48	4135	06 45 27
06 46 41	CGCG448	18 48 46	46.1	132.5	-2.2		-27.6	-27	4135	No stop
06 50 20	---	18 52 26	46.5	133.6	-2.1		-27.1	192	4163	06 46 42
06 50 20	J2108+1430	18 52 26	43.0	131.9	-2.3		-27.5	-27	4163	No stop
06 51 40	---	18 53 46	43.1	132.3	-2.3		-27.3	53	4173	06 50 21
06 52 20	3C454.3	18 54 26	30.7	104.5	-4.0		-37.3	-30	4173	06 52 20
06 55 10	---	18 57 16	31.2	105.2	-4.0		-37.1	140	4195	06 52 21
06 55 10	3C454.3	18 57 16	31.2	105.2	-4.0		-37.1	-5	4195	No stop
06 57 15	---	18 59 22	31.5	105.6	-3.9		-37.0	120	4211	06 55 11
06 57 55	J1549+5038	19 00 02	61.0	284.5	3.2		66.3	-334	4211	06 57 55
07 06 00	---	19 08 08	59.9	285.6	3.3		65.6	151	4273	06 57 56
07 06 40	NGC6090A	19 08 48	63.7	286.5	2.9		70.7	12	4273	07 06 40
07 10 20	---	19 12 29	63.1	286.9	3.0		70.4	220	4301	07 06 41
07 10 20	J1549+5038	19 12 29	59.2	286.2	3.4		65.3	-29	4301	No stop
07 11 40	---	19 13 49	59.0	286.3	3.4		65.2	51	4311	07 10 21
07 12 20	NGC6090A	19 14 29	62.9	287.2	3.0		70.2	12	4311	07 12 20
07 16 00	---	19 18 10	62.3	287.6	3.1		69.8	220	4339	07 12 21
07 16 00	J1549+5038	19 18 10	58.4	286.9	3.5		64.8	-29	4339	No stop
07 17 20	---	19 19 30	58.2	287.1	3.5		64.7	51	4349	07 16 01
07 17 20	NGC6090A	19 19 30	62.1	287.7	3.1		69.7	-28	4349	No stop
07 21 00	---	19 23 11	61.6	288.2	3.2		69.3	192	4378	07 17 21
07 21 00	J1549+5038	19 23 11	57.7	287.5	3.6		64.4	-29	4378	No stop
07 22 20	---	19 24 31	57.5	287.7	3.6		64.3	51	4388	07 21 01
07 23 00	NGC6090A	19 25 11	61.3	288.4	3.2		69.1	12	4388	07 23 00
07 26 40	---	19 28 52	60.8	288.8	3.3		68.7	220	4416	07 23 01
07 26 40	J1549+5038	19 28 52	56.9	288.3	3.7		63.9	-29	4416	No stop
07 28 00	---	19 30 12	56.7	288.4	3.7		63.8	51	4426	07 26 41
07 28 00	NGC6090A	19 30 12	60.6	289.0	3.3		68.6	-28	4426	No stop
07 31 40	---	19 33 52	60.1	289.4	3.4		68.3	192	4454	07 28 01
07 31 40	J1549+5038	19 33 52	56.2	288.9	3.7		63.5	-29	4454	No stop
07 33 00	---	19 35 13	56.0	289.1	3.8		63.4	51	4465	07 31 41

```
Schedule for TORUN     (Code Tr )                                Page  17
               LIRGI - Source group 1 - Run b
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   4 Mar 2014   Day  63 ---

07 33 40  NGC6090A     19 35 53  59.8 289.6  3.4      68.1    12     4465   07 33 40
07 37 20  ---          19 39 33  59.3 290.0  3.5      67.7   220     4493   07 33 41

07 37 20  J1549+5038   19 39 33  55.4 289.6  3.8      63.0   -29     4493   No stop
07 38 40  ---          19 40 54  55.2 289.8  3.9      62.9    51     4503   07 37 21

07 38 40  NGC6090A     19 40 54  59.1 290.2  3.5      67.5   -28     4503   No stop
07 42 20  ---          19 44 34  58.6 290.6  3.5      67.2   192     4531   07 38 41

07 42 20  J1549+5038   19 44 34  54.7 290.3  3.9      62.5   -29     4531   No stop
07 43 40  ---          19 45 54  54.5 290.4  3.9      62.4    51     4541   07 42 21

07 44 20  NGC6090A     19 46 35  58.3 290.8  3.6      67.0    12     4541   07 44 20
07 48 00  ---          19 50 15  57.8 291.2  3.6      66.6   220     4570   07 44 21

07 48 00  J1549+5038   19 50 15  53.9 291.0  4.0      62.0   -29     4570   No stop
07 49 20  ---          19 51 35  53.7 291.2  4.0      61.9    51     4580   07 48 01

07 49 20  NGC6090A     19 51 35  57.6 291.4  3.7      66.5   -28     4580   No stop
07 53 00  ---          19 55 16  57.1 291.8  3.7      66.1   192     4608   07 49 21

07 53 00  J1549+5038   19 55 16  53.2 291.6  4.1      61.6   -29     4608   No stop
07 54 20  ---          19 56 36  53.0 291.8  4.1      61.4    51     4618   07 53 01

07 55 00  NGC6090A     19 57 16  56.8 292.0  3.8      65.9    12     4618   07 55 00
07 58 40  ---          20 00 57  56.3 292.4  3.8      65.5   220     4646   07 55 01

07 58 40  J1549+5038   20 00 57  52.4 292.3  4.2      61.0   -29     4646   No stop
08 00 00  ---          20 02 17  52.2 292.5  4.2      60.9    51     4657   07 58 41

08 00 00  NGC6090A     20 02 17  56.1 292.6  3.8      65.4   -28     4657   No stop
08 03 40  ---          20 05 58  55.6 293.0  3.9      65.0   192     4685   08 00 01

08 03 40  J1549+5038   20 05 58  51.7 293.0  4.3      60.6   -29     4685   No stop
08 05 00  ---          20 07 18  51.5 293.1  4.3      60.4    51     4695   08 03 41

08 06 00  NGC6090A     20 08 18  55.3 293.3  3.9      64.7    32     4695   08 06 00
08 09 40  ---          20 11 59  54.8 293.7  4.0      64.4   220     4723   08 06 01

08 09 40  J1549+5038   20 11 59  50.8 293.7  4.4      60.0   -29     4723   No stop
08 11 00  ---          20 13 19  50.7 293.9  4.4      59.9    51     4733   08 09 41

08 11 00  NGC6090A     20 13 19  54.6 293.9  4.0      64.2   -28     4733   No stop
08 14 40  ---          20 16 59  54.1 294.3  4.1      63.8   192     4762   08 11 01

08 14 40  J1549+5038   20 16 59  50.2 294.3  4.5      59.5   -29     4762   No stop
08 16 00  ---          20 18 20  50.0 294.5  4.5      59.4    51     4772   08 14 41
```

```
Schedule for TORUN     (Code Tr )                                Page  18
               LIRGI - Source group 1 - Run b
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   4 Mar 2014   Day  63 ---

08 17 00  NGC6090A     20 19 20  53.8 294.5  4.1      63.6    32     4772   08 17 00
08 20 40  ---          20 23 00  53.3 295.0  4.2      63.2   220     4800   08 17 01

08 20 40  J1549+5038   20 23 00  49.3 295.1  4.6      58.9   -29     4800   No stop
08 22 00  ---          20 24 21  49.2 295.3  4.6      58.8    51     4810   08 20 41

08 22 00  NGC6090A     20 24 21  53.1 295.1  4.2      63.0   -28     4810   No stop
08 25 40  ---          20 28 01  52.6 295.5  4.3      62.7   192     4838   08 22 01

08 25 40  J1549+5038   20 28 01  48.7 295.7  4.6      58.4   -29     4838   No stop
08 27 00  ---          20 29 22  48.5 295.9  4.7      58.3    51     4849   08 25 41

08 28 00  NGC6090A     20 30 22  52.3 295.8  4.3      62.4    32     4849   08 28 00
08 31 40  ---          20 34 02  51.8 296.2  4.4      62.0   220     4877   08 28 01

08 31 40  J1549+5038   20 34 02  47.9 296.5  4.7      57.8   -29     4877   No stop
08 33 00  ---          20 35 23  47.7 296.7  4.8      57.7    51     4887   08 31 41

08 33 00  NGC6090A     20 35 23  51.6 296.4  4.4      61.9   -28     4887   No stop
08 36 40  ---          20 39 03  51.1 296.8  4.5      61.5   192     4915   08 33 01

08 36 40  J1549+5038   20 39 03  47.2 297.1  4.8      57.3   -29     4915   No stop
08 38 00  ---          20 40 23  47.0 297.3  4.8      57.2    51     4925   08 36 41

08 39 00  NGC6090A     20 41 23  50.8 297.1  4.5      61.2    32     4925   08 39 00
08 42 40  ---          20 45 04  50.3 297.5  4.6      60.8   220     4954   08 39 01

08 42 40  J1549+5038   20 45 04  46.4 297.9  4.9      56.7   -29     4954   No stop
08 44 00  ---          20 46 24  46.2 298.1  4.9      56.6    51     4964   08 42 41

08 44 00  NGC6090A     20 46 24  50.1 297.7  4.6      60.7   -28     4964   No stop
08 47 40  ---          20 50 05  49.6 298.1  4.6      60.3   192     4992   08 44 01

08 47 40  J1549+5038   20 50 05  45.7 298.5  5.0      56.2   -29     4992   No stop
08 49 00  ---          20 51 25  45.5 298.7  5.0      56.1    51     5002   08 47 41

08 50 00  NGC6090A     20 52 25  49.3 298.4  4.7      60.0    32     5002   08 50 00
08 53 40  ---          20 56 06  48.8 298.8  4.7      59.6   220     5030   08 50 01

08 53 40  J1549+5038   20 56 06  44.9 299.3  5.1      55.6   -29     5030   No stop
08 55 00  ---          20 57 26  44.7 299.4  5.1      55.4    51     5041   08 53 41

08 55 00  NGC6090A     20 57 26  48.7 299.0  4.8      59.5   -28     5041   No stop
08 58 40  ---          21 01 07  48.2 299.4  4.8      59.1   192     5069   08 55 01

08 58 40  J1549+5038   21 01 07  44.3 299.9  5.2      55.1   -29     5069   No stop
09 00 00  ---          21 02 27  44.1 300.1  5.2      54.9    51     5079   08 58 41
```

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


 ======== Setup file: sess114.C1024
   Matching groups in /Users/torres/sched11/catalogs/freq.dat:
     tr6cm           E-mail Borkowski 23Apr03 (CR 1May03)

   Setup group:    3         Station: TORUN            Total bit rate:  1024
   Format: MKIV1:2           Bits per sample: 2        Sample rate: 32.000
   Number of channels: 16    DBE type:                 Speedup factor:   0.50

   Disk used to record data.

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

  The following frequency sets based on these setups were used.

   Frequency Set:   7  Setup file default.  Used pcal sets:   1
   LO sum=   4942.49  4942.49  4942.49  4942.49  4974.49  4974.49  4974.49  4974.49
             5006.49  5006.49  5006.49  5006.49  5038.49  5038.49  5038.49  5038.49
   BBC fr=    742.49   742.49   742.49   742.49   774.49   774.49   774.49   774.49
              806.49   806.49   806.49   806.49   838.49   838.49   838.49   838.49
   Bandwd=     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
               16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
    Matching frequency sets:   7

  The following pulse cal sets were used with this setup:

   Pulse cal detection set:   1  PCAL = 1MHZ
    PCALXB1=   S1    S3    S5    S7    S9    S11   S13   S15
    PCALXB2=   S2    S4    S6    S8    S10   S12   S14   S16
    PCALFR1=   490   510   490   510   490   510   490   510
    PCALFR2=   490   510   490   510   490   510   490   510

   Track assignments are:
    track1=   2, 10, 18, 26,  3, 11, 19, 27, 66, 74, 82, 90, 67, 75, 83, 91
    barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* IRAS10565	10 56 36.176767	* 10 59 18.140000	11 00 05.772503	0.00
	24 48 39.87457	* 24 32 34.40000	24 27 46.79195	0.00
* J1102+2757	10 59 31.439332	* 11 02 14.288462	11 03 02.168224	0.00
	28 13 17.49366	* 27 57 08.68984	27 52 20.25481	0.00
* VV340A	14 54 48.205811	* 14 57 00.630000	14 57 39.133038	0.00
	24 49 05.20936	* 24 37 04.20000	24 33 29.18130	0.00
* J1453+2648	14 51 43.035340	* 14 53 53.600640	14 54 31.577042	0.00
	27 00 43.75981	* 26 48 33.41002	26 44 55.19069	0.00
* IRASF15250	15 25 03.716279	* 15 26 59.420000	15 27 32.946917	0.00
	36 09 00.97586	* 35 58 37.40000	35 55 28.27441	0.00
* J1522+3144	15 20 08.107572	* 15 22 09.991715	15 22 45.326783	0.00
	31 54 54.51259	* 31 44 14.38185	31 41 01.31020	0.00
* NGC6090A	16 10 24.556817	* 16 11 40.880000	16 12 02.820991	0.00
	52 35 05.48919	* 52 27 27.00000	52 25 02.92551	0.00
* J1549+5038	15 47 52.271601	* 15 49 17.468542	15 49 42.101211	0.00
	50 47 09.25451	* 50 38 05.78822	50 35 17.43641	0.00
* NGC6670A	18 32 57.837319	* 18 33 37.750000	18 33 48.127396	0.00
	59 50 57.78647	* 59 53 22.90000	59 53 53.81317	0.00
* J1824+5651	18 23 14.951498	* 18 24 07.068376	18 24 21.103667	0.00
	56 49 18.07203	* 56 51 01.49084	56 51 20.45150	0.00
* CGCG448	20 55 05.290426	* 20 57 24.370000	20 58 03.225506	0.00
	16 56 02.30972	* 17 07 39.20000	17 10 56.03880	0.00
* J2108+1430	21 06 18.978800	* 21 08 41.032151	21 09 20.715741	0.00
	14 18 15.61321	* 14 30 27.01241	14 33 53.95597	0.00
J2253+1608	22 51 29.519738	* 22 53 57.747937	22 54 39.159420	0.68
* 3C454.3	15 52 54.34810	* 16 08 53.56093	16 13 24.55806	0.72

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)	Source	Sun distance (deg)
IRAS10565	162.0	J1549+5038	106.0
J1102+2757	158.6	NGC6670A	84.1
VV340A	120.2	J1824+5651	84.1
J1453+2648	120.6	CGCG448	38.1
IRASF15250	112.3	J2108+1430	34.4
J1522+3144	113.8	3C454.3	22.8
NGC6090A	102.3		

ea053atr

5 GHz observation of RGB J0152+017

PI: *Kazunori Akiyama*


```
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Phone:    +81 422 34 3939                      EMAIL:    kazunori.akiyama@nao.ac.jp
Fax:      +81 422 34 3814                      Phone during observation: +81 422 34 3939
```


Observing mode: VLBA/MKIV

```
Schedule for TORUN     (Code Tr )                                  Page   2
               5 GHz observation of RGB J0152+017
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   4 Mar 2014   Day  63 ---

 Next scan frequencies:  4942.49  4942.49  4942.49  4942.49  4974.49  4974.49  4974.49  4974.49
                         5006.49  5006.49  5006.49  5006.49  5038.49  5038.49  5038.49  5038.49
 Next BBC frequencies:    742.49   742.49   742.49   742.49   774.49   774.49   774.49   774.49
                          806.49   806.49   806.49   806.49   838.49   838.49   838.49   838.49
 Next scan bandwidths:     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
                           16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00

10 00 00  0150+015     22 02 37  20.3 115.8 -3.8     -32.8     0        0   10 00 00
10 05 30  ---          22 08 08  21.0 117.0 -3.8     -32.4   330       42   10 00 01

10 06 00  0150+015     22 08 38  21.1 117.1 -3.7     -32.3    24       42   10 06 00
10 11 30  ---          22 14 09  21.8 118.4 -3.7     -31.9   330       84   10 06 01

10 12 00  0150+015     22 14 39  21.9 118.5 -3.6     -31.9    24       84   10 12 00
10 17 30  ---          22 20 10  22.6 119.8 -3.6     -31.4   330      127   10 12 01

10 18 00  0150+015     22 20 40  22.7 119.9 -3.5     -31.4    24      127   10 18 00
10 23 30  ---          22 26 11  23.4 121.2 -3.5     -30.9   330      169   10 18 01

10 24 00  0150+015     22 26 41  23.5 121.3 -3.4     -30.9    24      169   10 24 00
10 29 30  ---          22 32 12  24.2 122.6 -3.4     -30.4   330      211   10 24 01

10 30 00  0150+015     22 32 42  24.2 122.7 -3.3     -30.4    24      211   10 30 00
10 35 30  ---          22 38 13  24.9 124.0 -3.3     -29.9   330      253   10 30 01

10 36 00  0150+015     22 38 43  25.0 124.1 -3.2     -29.8    24      253   10 36 00
10 41 30  ---          22 44 14  25.7 125.4 -3.2     -29.3   330      296   10 36 01

10 42 00  0150+015     22 44 44  25.7 125.6 -3.1     -29.3    24      296   10 42 00
10 47 30  ---          22 50 15  26.4 126.9 -3.1     -28.7   330      338   10 42 01

10 48 00  0150+015     22 50 45  26.4 127.0 -3.0     -28.7    24      338   10 48 00
10 53 30  ---          22 56 16  27.1 128.4 -3.0     -28.1   330      380   10 48 01

10 54 30  0158+031     22 57 16  27.7 125.8 -3.1     -29.2    40      380   10 54 30
10 59 30  ---          23 02 17  28.3 127.0 -3.0     -28.7   300      419   10 54 31
```

Schedule for TORUN (Code Tr) Page 3

5 GHz observation of RGB J0152+017

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 4 Mar 2014 Day 63 ---										
11 00 00	0150+015	23 02 47	27.9	130.0	-2.8		-27.4	10	419	11 00 00
11 05 30	---	23 08 18	28.5	131.4	-2.8		-26.8	330	461	11 00 01
11 06 00	0150+015	23 08 48	28.5	131.5	-2.7		-26.7	24	461	11 06 00
11 11 30	---	23 14 19	29.2	132.9	-2.7		-26.1	330	503	11 06 01
11 12 00	0150+015	23 14 49	29.2	133.1	-2.6		-26.0	24	503	11 12 00
11 17 30	---	23 20 20	29.8	134.5	-2.6		-25.4	330	545	11 12 01
11 18 00	0150+015	23 20 50	29.9	134.6	-2.5		-25.3	24	545	11 18 00
11 23 30	---	23 26 21	30.4	136.1	-2.5		-24.6	330	588	11 18 01
11 24 00	0150+015	23 26 51	30.5	136.2	-2.4		-24.6	24	588	11 24 00
11 29 30	---	23 32 21	31.1	137.7	-2.4		-23.9	330	630	11 24 01
11 30 00	0150+015	23 32 52	31.1	137.8	-2.3		-23.8	24	630	11 30 00
11 35 30	---	23 38 22	31.7	139.3	-2.3		-23.1	330	672	11 30 01
11 36 00	0150+015	23 38 53	31.7	139.4	-2.2		-23.0	24	672	11 36 00
11 41 30	---	23 44 23	32.2	140.9	-2.1		-22.3	330	714	11 36 01
11 42 00	0150+015	23 44 54	32.3	141.0	-2.1		-22.2	24	714	11 42 00
11 47 30	---	23 50 24	32.8	142.6	-2.0		-21.4	330	756	11 42 01
11 48 00	0150+015	23 50 55	32.8	142.7	-2.0		-21.3	24	756	11 48 00
11 53 30	---	23 56 25	33.3	144.2	-1.9		-20.6	330	799	11 48 01
11 54 30	0158+031	23 57 26	34.2	141.6	-2.1		-22.0	40	799	11 54 30
11 59 30	---	00 02 26	34.6	143.0	-2.0		-21.2	300	837	11 54 31
12 02 00	0234+285	00 04 57	52.9	115.4	-2.6		-38.3	68	837	12 02 00
12 12 00	---	00 14 58	54.3	118.3	-2.4		-37.1	600	914	12 02 01
12 14 30	0150+015	00 17 29	35.0	150.3	-1.6		-17.3	64	914	12 14 30
12 24 00	---	00 27 00	35.7	153.1	-1.4		-15.8	570	987	12 14 31
12 24 30	0150+015	00 27 31	35.8	153.2	-1.4		-15.7	24	987	12 24 30
12 30 00	---	00 33 01	36.1	154.8	-1.3		-14.8	330	1029	12 24 31
12 30 30	0150+015	00 33 32	36.2	155.0	-1.3		-14.7	24	1029	12 30 30
12 36 00	---	00 39 02	36.5	156.7	-1.2		-13.8	330	1071	12 30 31
12 36 30	0150+015	00 39 33	36.5	156.8	-1.2		-13.7	24	1071	12 36 30
12 42 00	---	00 45 03	36.8	158.5	-1.1		-12.7	330	1114	12 36 31
12 42 30	0150+015	00 45 33	36.9	158.6	-1.1		-12.6	24	1114	12 42 30
12 48 00	---	00 51 04	37.2	160.3	-1.0		-11.7	330	1156	12 42 31

```
Schedule for TORUN     (Code Tr )                                  Page   4
               5 GHz observation of RGB J0152+017
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   4 Mar 2014   Day  63 ---

12 48 30  0150+015     00 51 34  37.2 160.5 -1.0     -11.6    24     1156   12 48 30
12 54 00  ---          00 57 05  37.4 162.2 -0.9     -10.6   330     1198   12 48 31

12 55 00  0158+031     00 58 06  38.7 159.6 -1.1     -12.1    40     1198   12 55 00
13 00 00  ---          01 03 06  38.9 161.2 -1.0     -11.2   300     1236   12 55 01



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


 ======== Setup file: sess114.C1024
   Matching groups in /usr2/local/sched/catalogs/freq.dat:
     tr6cm           E-mail Borkowski 23Apr03 (CR 1May03)

   Setup group:    5         Station: TORUN             Total bit rate:  1024
   Format: MKIV1:2           Bits per sample: 2         Sample rate: 32.000
   Number of channels: 16    DBE type:                  Speedup factor:   0.50

   Disk used to record data.

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

  The following frequency sets based on these setups were used.

   Frequency Set:   9  Setup file default.  Used pcal sets:   1
   LO sum=   4942.49  4942.49  4942.49  4942.49  4974.49  4974.49  4974.49  4974.49
             5006.49  5006.49  5006.49  5006.49  5038.49  5038.49  5038.49  5038.49
   BBC fr=    742.49   742.49   742.49   742.49   774.49   774.49   774.49   774.49
              806.49   806.49   806.49   806.49   838.49   838.49   838.49   838.49
   Bandwd=     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
               16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
    Matching frequency sets:   9
```

The following pulse cal sets were used with this setup:

```
 Pulse cal detection set:   1  PCAL = 1MHZ
  PCALXB1=   S1    S3    S5    S7    S9    S11   S13   S15
  PCALXB2=   S2    S4    S6    S8    S10   S12   S14   S16
  PCALFR1=   490   510   490   510   490   510   490   510
  PCALFR2=   490   510   490   510   490   510   490   510

 Track assignments are:
  track1=   2, 10, 18, 26,  3, 11, 19, 27, 66, 74, 82, 90, 67, 75, 83, 91
  barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* 0150+015	01 50 04.944956	* 01 52 39.610900	01 53 23.219076	0.00
	01 32 31.24587	* 01 47 17.38300	01 51 20.07749	0.00
* 0158+031	01 58 05.164743	* 02 00 40.816500	02 01 24.756169	0.38
	03 08 20.27885	* 03 22 49.50700	03 26 47.47354	0.38
J0237+2848	02 34 55.589591	* 02 37 52.405678	02 38 42.756132	0.11
* 0234+285	28 35 11.40773	* 28 48 08.98998	28 51 47.15343	0.10

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)
0150+015	44.0
0158+031	46.2
0234+285	63.2

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
that the Sun will cause amplitude reductions on the longest VLBA baselines
at a solar distance of 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
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
43.0 GHz	6. deg

n14c1tr

NME + FTP FT

PI: *Ivan Agudo*

Address: JIVE Postbus 2 7990 AA Dwingeloo The Netherlands
Phone: +31-521-596-549 EMAIL: agudo@jive.nl
Phone during observation: +31-521-596-549

Notes: 6cm NME + FTP FT for session 1/2014
512 Mbps, 2-bit sampling, 8 MHz filters
Participation from Sr (with DBBC), and Sh65 (TIANMA65 or T6) expected
Additional DBBC testing data from Mc, Tr, and Ys is also expected.

COVER LETTER:

Dear EVN friends,

This is the schedule for the 1.3cm FTP-FT on March 04 2014, involving 19 stations: Eb Wb Jb1 On25 Mc Nt Tr Sv Zc Bd Ir Ur Sh Hh Ys, as well as Md Td Yd (Mc Tr and Ys with DBBC) and Sh65. The session uses a standard setup with 512 Mbps and consists of three ftp fringe tests, interspersed with a longer set of phase referencing scans on 3C 84 (~25 Jy source at 5 GHz), and a weaker calibrator.

The three ftp fringe-test scans, start at:

(1) 14:07:30 UT (scan 2, 2 sec)
(2) 14:57:20 UT (scan 20, 2 sec)
(3) 16:52:50 UT (scan 62, 2 sec)

See you on Skype group chat
and
Good luck with the session!

Ivan
Support Scientist, JIVE
Skype account: JIVE.Support.Scientist

```
Schedule for TORUN     (Code Tr )                                Page   2
               NME + FTP FT
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   4 Mar 2014   Day  63 ---

 Next scan frequencies:  4966.49  4966.49  4966.49  4966.49  4982.49  4982.49  4982.49  4982.49
                         4998.49  4998.49  4998.49  4998.49  5014.49  5014.49  5014.49  5014.49
 Next BBC frequencies:    766.49   766.49   766.49   766.49   782.49   782.49   782.49   782.49
                          798.49   798.49   798.49   798.49   814.49   814.49   814.49   814.49
 Next scan bandwidths:      8.00     8.00     8.00     8.00     8.00     8.00     8.00     8.00
                            8.00     8.00     8.00     8.00     8.00     8.00     8.00     8.00

14 00 00  3C84         02 03 16  72.6 123.8 -1.3     -41.8     0        0   14 00 00
14 04 00  ---          02 07 17  73.1 125.7 -1.2     -40.7   240       15   14 00 01

14 04 30  3C84         02 07 47  73.2 125.9 -1.2     -40.5    23       15   14 04 30
14 08 30  ---          02 11 48  73.7 128.0 -1.1     -39.2   240       31   14 04 31

14 10 30  3C84         02 13 48  73.9 129.0 -1.1     -38.6   112       31   14 10 30
14 12 30  ---          02 15 48  74.1 130.1 -1.1     -37.9   120       38   14 10 31

14 13 00  3C84         02 16 18  74.2 130.4 -1.1     -37.7    23       38   14 13 00
14 15 00  ---          02 18 19  74.4 131.5 -1.0     -37.0   120       46   14 13 01

14 15 30  J0313+4120   02 18 49  75.1 136.1 -0.9     -33.7     6       46   14 15 30
14 17 30  =0309+411    02 20 49  75.3 137.3 -0.9     -32.9   120       54   14 15 31

14 18 20  3C84         02 21 39  74.8 133.4 -1.0     -35.7    27       54   14 18 20
14 20 20  ---          02 23 40  75.0 134.5 -1.0     -34.9   120       61   14 18 21

14 20 50  J0313+4120   02 24 10  75.6 139.4 -0.8     -31.4     5       61   14 20 50
14 22 50  =0309+411    02 26 10  75.8 140.7 -0.8     -30.4   120       69   14 20 51

14 23 20  3C84         02 26 40  75.3 136.3 -0.9     -33.6     6       69   14 23 20
14 25 20  ---          02 28 40  75.5 137.6 -0.9     -32.8   120       77   14 23 21

14 25 50  J0313+4120   02 29 10  76.1 142.7 -0.7     -29.0     5       77   14 25 50
14 27 50  =0309+411    02 31 11  76.3 144.1 -0.7     -28.0   120       84   14 25 51

14 28 40  3C84         02 32 01  75.9 139.7 -0.8     -31.2    26       84   14 28 40
14 30 40  ---          02 34 01  76.0 141.1 -0.8     -30.3   120       92   14 28 41

14 31 10  J0313+4120   02 34 31  76.5 146.5 -0.7     -26.2     4       92   14 31 10
14 33 10  =0309+411    02 36 32  76.7 148.0 -0.6     -25.1   120      100   14 31 11

14 33 40  3C84         02 37 02  76.3 143.1 -0.7     -28.8     5      100   14 33 40
14 35 40  ---          02 39 02  76.5 144.5 -0.7     -27.8   120      108   14 33 41

14 36 10  J0313+4120   02 39 32  76.9 150.2 -0.6     -23.4     4      108   14 36 10
14 38 10  =0309+411    02 41 32  77.1 151.8 -0.5     -22.3   120      115   14 36 11

14 39 00  3C84         02 42 23  76.8 146.9 -0.6     -26.0    25      115   14 39 00
14 41 00  ---          02 44 23  76.9 148.4 -0.6     -24.8   120      123   14 39 01
```

```
Schedule for TORUN     (Code Tr )                                  Page   3
               NME + FTP FT
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   4 Mar 2014   Day  63 ---
14 41 30  J0313+4120   02 44 53  77.3 154.4 -0.5     -20.2     3      123   14 41 30
14 43 30  =0309+411    02 46 53  77.4 156.0 -0.5     -19.0   120      131   14 41 31

14 44 00  3C84         02 47 23  77.2 150.7 -0.6     -23.1     4      131   14 44 00
14 46 00  ---          02 49 24  77.3 152.3 -0.5     -21.9   120      138   14 44 01

14 46 30  J0313+4120   02 49 54  77.6 158.5 -0.4     -17.1     3      138   14 46 30
14 48 30  =0309+411    02 51 54  77.7 160.2 -0.4     -15.7   120      146   14 46 31

14 49 20  3C84         02 52 44  77.5 155.0 -0.5     -19.8    24      146   14 49 20
14 51 20  ---          02 54 45  77.7 156.6 -0.4     -18.6   120      154   14 49 21

14 51 50  J0313+4120   02 55 15  77.9 163.1 -0.3     -13.5     2      154   14 51 50
14 53 50  =0309+411    02 57 15  78.0 164.8 -0.3     -12.1   120      161   14 51 51

14 54 20  3C84         02 57 45  77.8 159.2 -0.4     -16.6     3      161   14 54 20
14 58 20  ---          03 01 46  78.0 162.6 -0.3     -13.9   240      177   14 54 21

15 00 20  3C84         03 03 46  78.1 164.4 -0.3     -12.5   111      177   15 00 20
15 02 20  ---          03 05 46  78.2 166.2 -0.2     -11.1   120      184   15 00 21

15 03 10  3C84         03 06 37  78.2 166.9 -0.2     -10.5    42      184   15 03 10
15 05 10  ---          03 08 37  78.3 168.8 -0.2      -9.0   120      192   15 03 11

15 05 40  J0313+4120   03 09 07  78.3 175.5 -0.1      -3.6     2      192   15 05 40
15 07 40  =0309+411    03 11 07  78.3 177.4 -0.0      -2.1   120      200   15 05 41

15 08 30  3C84         03 11 57  78.4 171.8 -0.1      -6.6    23      200   15 08 30
15 10 30  ---          03 13 58  78.4 173.7 -0.1      -5.1   120      207   15 08 31

15 11 00  J0313+4120   03 14 28  78.3 180.5  0.0       0.4     2      207   15 11 00
15 13 00  =0309+411    03 16 28  78.3 182.3  0.0       1.8   120      215   15 11 01

15 13 50  3C84         03 17 18  78.5 176.8 -0.1      -2.6    23      215   15 13 50
15 15 50  ---          03 19 19  78.5 178.7 -0.0      -1.1   120      223   15 13 51

15 16 20  J0313+4120   03 19 49  78.3 185.4  0.1       4.3     2      223   15 16 20
15 18 20  =0309+411    03 21 49  78.2 187.2  0.1       5.8   120      230   15 16 21

15 19 10  3C84         03 22 39  78.5 181.8  0.0       1.4    23      230   15 19 10
15 21 10  ---          03 24 40  78.4 183.7  0.1       2.9   120      238   15 19 11

15 21 40  J0313+4120   03 25 10  78.1 190.3  0.2       8.2     2      238   15 21 40
15 23 40  =0309+411    03 27 10  78.1 192.1  0.2       9.6   120      246   15 21 41

15 24 30  3C84         03 28 00  78.4 186.8  0.1       5.4    23      246   15 24 30
15 26 30  ---          03 30 00  78.4 188.6  0.2       6.9   120      253   15 24 31

15 27 00  J0313+4120   03 30 31  78.0 195.0  0.3      12.0     2      253   15 27 00
15 29 00  =0309+411    03 32 31  77.9 196.8  0.3      13.4   120      261   15 27 01
```

Schedule for TORUN (Code Tr) Page 4
NME + FTP FT

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 4 Mar 2014 Day 63 ---										
15 29 50	3C84	03 33 21	78.3	191.7	0.2		9.3	24	261	15 29 50
15 31 50	---	03 35 21	78.2	193.5	0.2		10.8	120	269	15 29 51
15 32 20	J0313+4120	03 35 51	77.7	199.7	0.4		15.6	3	269	15 32 20
15 34 20	=0309+411	03 37 52	77.6	201.4	0.4		16.9	120	276	15 32 21
15 35 10	3C84	03 38 42	78.1	196.5	0.3		13.1	24	276	15 35 10
15 37 10	---	03 40 42	78.0	198.2	0.3		14.5	120	284	15 35 11
15 37 40	J0313+4120	03 41 12	77.4	204.1	0.5		19.1	3	284	15 37 40
15 39 40	=0309+411	03 43 13	77.3	205.7	0.5		20.3	120	292	15 37 41
15 40 30	3C84	03 44 03	77.8	201.1	0.4		16.8	25	292	15 40 30
15 42 30	---	03 46 03	77.7	202.8	0.4		18.1	120	300	15 40 31
15 43 00	J0313+4120	03 46 33	77.1	208.4	0.5		22.3	4	300	15 43 00
15 45 00	=0309+411	03 48 33	76.9	209.9	0.6		23.5	120	307	15 43 01
15 45 50	3C84	03 49 24	77.5	205.5	0.5		20.2	25	307	15 45 50
15 47 50	---	03 51 24	77.4	207.1	0.5		21.5	120	315	15 45 51
15 48 20	J0313+4120	03 51 54	76.7	212.4	0.6		25.4	5	315	15 48 20
15 50 20	=0309+411	03 53 54	76.5	213.9	0.7		26.5	120	323	15 48 21
15 51 10	3C84	03 54 44	77.1	209.8	0.6		23.5	26	323	15 51 10
15 53 10	---	03 56 45	77.0	211.3	0.6		24.6	120	330	15 51 11
15 53 40	J0313+4120	03 57 15	76.2	216.2	0.7		28.2	5	330	15 53 40
15 55 40	=0309+411	03 59 15	76.0	217.6	0.8		29.2	120	338	15 53 41
15 56 30	3C84	04 00 05	76.7	213.8	0.7		26.5	27	338	15 56 30
15 58 30	---	04 02 06	76.5	215.2	0.7		27.6	120	346	15 56 31
15 59 00	J0313+4120	04 02 36	75.7	219.8	0.8		30.8	6	346	15 59 00
16 01 00	=0309+411	04 04 36	75.5	221.1	0.8		31.8	120	353	15 59 01
16 01 50	3C84	04 05 26	76.2	217.6	0.7		29.3	27	353	16 01 50
16 03 50	---	04 07 27	76.1	218.9	0.8		30.3	120	361	16 01 51
16 04 20	J0313+4120	04 07 57	75.2	223.2	0.9		33.2	7	361	16 04 20
16 06 20	=0309+411	04 09 57	75.0	224.4	0.9		34.1	120	369	16 04 21
16 07 10	3C84	04 10 47	75.7	221.1	0.8		31.8	28	369	16 07 10
16 09 10	---	04 12 47	75.5	222.4	0.9		32.8	120	376	16 07 11
16 09 40	J0313+4120	04 13 18	74.6	226.4	1.0		35.4	7	376	16 09 40
16 11 40	=0309+411	04 15 18	74.4	227.5	1.0		36.2	120	384	16 09 41

Schedule for TORUN (Code Tr) Page 5
NME + FTP FT

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 4 Mar 2014 Day 63 ---										
16 12 30	3C84	04 16 08	75.2	224.4	0.9		34.2	28	384	16 12 30
16 14 30	---	04 18 08	75.0	225.6	1.0		35.0	120	392	16 12 31
16 15 00	J0313+4120	04 18 38	74.0	229.4	1.1		37.4	8	392	16 15 00
16 17 00	=0309+411	04 20 39	73.8	230.4	1.1		38.1	120	399	16 15 01
16 17 50	3C84	04 21 29	74.6	227.6	1.0		36.3	29	399	16 17 50
16 19 50	---	04 23 29	74.4	228.7	1.0		37.1	120	407	16 17 51
16 20 20	J0313+4120	04 23 59	73.4	232.2	1.2		39.2	9	407	16 20 20
16 22 20	=0309+411	04 26 00	73.2	233.2	1.2		39.9	120	415	16 20 21
16 23 10	3C84	04 26 50	74.0	230.5	1.1		38.3	30	415	16 23 10
16 25 10	---	04 28 50	73.8	231.6	1.1		39.0	120	422	16 23 11
16 25 40	J0313+4120	04 29 20	72.8	234.8	1.3		40.9	9	422	16 25 40
16 27 40	=0309+411	04 31 20	72.5	235.8	1.3		41.4	120	430	16 25 41
16 28 30	3C84	04 32 11	73.4	233.3	1.2		40.0	30	430	16 28 30
16 30 30	---	04 34 11	73.1	234.3	1.2		40.7	120	438	16 28 31
16 31 00	J0313+4120	04 34 41	72.1	237.3	1.3		42.3	10	438	16 31 00
16 33 00	=0309+411	04 36 41	71.8	238.2	1.4		42.9	120	445	16 31 01
16 33 50	3C84	04 37 31	72.7	235.9	1.3		41.6	31	445	16 33 50
16 35 50	---	04 39 32	72.5	236.8	1.3		42.2	120	453	16 33 51
16 36 20	J0313+4120	04 40 02	71.4	239.6	1.4		43.7	10	453	16 36 20
16 38 20	=0309+411	04 42 02	71.1	240.5	1.5		44.1	120	461	16 36 21
16 39 10	3C84	04 42 52	72.0	238.3	1.4		43.1	31	461	16 39 10
16 41 10	---	04 44 53	71.8	239.2	1.4		43.6	120	468	16 39 11
16 41 40	J0313+4120	04 45 23	70.7	241.9	1.5		44.9	11	468	16 41 40
16 43 40	=0309+411	04 47 23	70.4	242.7	1.6		45.3	120	476	16 41 41
16 44 30	3C84	04 48 13	71.3	240.6	1.5		44.4	31	476	16 44 30
16 46 30	---	04 50 14	71.1	241.5	1.5		44.8	120	484	16 44 31
16 47 00	J0313+4120	04 50 44	70.0	244.0	1.6		46.0	11	484	16 47 00
16 49 00	=0309+411	04 52 44	69.7	244.7	1.6		46.4	120	492	16 47 01
16 49 50	3C84	04 53 34	70.6	242.8	1.5		45.5	32	492	16 49 50
16 53 50	---	04 57 35	70.1	244.4	1.6		46.3	240	507	16 49 51
16 55 50	3C84	04 59 35	69.8	245.1	1.6		46.7	113	507	16 55 50
17 00 00	---	05 03 46	69.3	246.6	1.7		47.5	250	523	16 55 51

```
SETUP FILE INFORMATION:

 ======== Setup file: sess114.C512
   Matching groups in ./SH65.freq.dat:     tr6cm           E-mail Borkowski 23Apr03 (CR 1May03)

   Setup group:    4         Station: TORUN             Total bit rate:   512
   Format: MKIV1:2           Bits per sample: 2         Sample rate: 16.000
   Number of channels: 16    DBE type:                  Speedup factor:   1.00

   Disk used to record data.

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

  The following frequency sets based on these setups were used.

   Frequency Set:   7  Setup file default.  Used pcal sets:   1
   LO sum=   4966.49  4966.49  4966.49  4966.49  4982.49  4982.49  4982.49  4982.49
             4998.49  4998.49  4998.49  4998.49  5014.49  5014.49  5014.49  5014.49
   BBC fr=    766.49   766.49   766.49   766.49   782.49   782.49   782.49   782.49
              798.49   798.49   798.49   798.49   814.49   814.49   814.49   814.49
   Bandwd=      8.00     8.00     8.00     8.00     8.00     8.00     8.00     8.00
                8.00     8.00     8.00     8.00     8.00     8.00     8.00     8.00
    Matching frequency sets:   7

  The following pulse cal sets were used with this setup:

   Pulse cal detection set:   1  PCAL = 1MHZ
    PCALXB1=   S1    S3    S5    S7    S9    S11   S13   S15
    PCALXB2=   S2    S4    S6    S8    S10   S12   S14   S16
    PCALFR1=   490   510   490   510   490   510   490   510
    PCALFR2=   490   510   490   510   490   510   490   510

   Track assignments are:
    track1=   2, 10, 18, 26,  3, 11, 19, 27, 66, 74, 82, 90, 67, 75, 83, 91
    barrel=roll_off


 POSITIONS OF SOURCES USED IN RECORDING SCANS

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

 * J0313+4120         03 09 44.793518   * 03 13 01.962133     03 13 58.390888       0.14
   0309+411           41 08 48.80254    * 41 20 01.18313      41 23 12.60092        0.10

   J0319+4130         03 16 29.567260   * 03 19 48.160090     03 20 45.032733       1.30
 * 3C84               41 19 51.91699    * 41 30 42.10412      41 33 47.13470        2.72
```

rk07batr

RadioAstron Maser observations

PI: *Alexei Alakoz*

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

Observing mode: K-band, dual-pol



Schedule for TORUN     (Code Tr )                                  Page   2
               RadioAstron Maser 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
-------------------------------------------------------------------------------------------

 --- Tue   4 Mar 2014   Day  63 ---

 ---------- This is a fringe finder/clock offset calibrator 8.7 deg. from ORION_H2O ----------

 Next scan frequencies:  22228.00  22228.00  22228.00  22228.00
 Next BBC frequencies:     728.00    728.00    728.00    728.00
 Next scan bandwidths:      16.00     16.00     16.00     16.00

17 05 00  0605-085     05 08 47  27.0 163.3 -1.0     -10.0     0        0   17 05 00
17 07 00  ---          05 10 47  27.1 163.9 -1.0      -9.7   120        4   17 05 01

 ---------- Please, make sure PCAL is OFF for ORION_H2O maser observations. ----------

17 10 00  ORION_H2O    05 13 47  31.3 173.5 -0.4      -3.9   147        4   17 10 00
17 29 30  ---          05 33 21  31.5 179.2 -0.0      -0.5  1170       41   17 10 01

17 30 00  ORION_H2O    05 33 51  31.5 179.4 -0.0      -0.4    24       41   17 30 00
18 00 00  ---          06 03 56  31.2 188.2  0.5       4.9  1800       99   17 30 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 ./rk07ba_freq.dat:
     tr1cm           Values from Bob Campbell by email (23-04-2013)

   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=  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:   7  Setup file default.  Used with PCAL = off
 LO sum=   22228.00  22228.00  22228.00  22228.00
 BBC fr=     728.00    728.00    728.00    728.00
 Bandwd=      16.00     16.00     16.00     16.00
  Matching frequency sets:   7

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* ORION_H2O	05 32 46.647965	* 05 35 14.125500	05 35 56.767894	0.00
	-05 24 29.93190	*-05 22 36.47500	-05 22 22.82780	0.00
* 0605-085	06 05 36.027963	* 06 07 59.699233	06 08 41.427899	0.00
J0607-0834	-08 34 20.29746	*-08 34 49.97823	-08 35 18.31901	0.00

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)
 FAKERA             101.2
 ORION_H2O           98.0
 0605-085           105.6

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
that the Sun will cause amplitude reductions on the  longest VLBA baselines
at a solar distance of 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:
     327 MHz        117. deg
     610 MHz         81. deg
     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
    43.0 GHz          6. deg
```

gp053atr

Arp 299-A at 1 Gb/s

PI: *Miguel Perez-Torres*


```
Address:  IAA - CSIC          Glorieta de la Astronomia s/n          18008 Granada, Spain
Phone:    +34-665252538                       EMAIL:    torres@iaa.es
Phone during observation: +34-665252538
```


```
Observing mode: 1024 Mbps
Notes:    Phase-ref of Arp 299 with the full EVN
          12th epoch of obs-ns at 6cm; eight with the full EVN
```

```
Schedule for TORUN     (Code Tr )                                  Page   2
                Arp 299-A at 1 Gb/s
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   4 Mar 2014   Day  63 ---

 Next scan frequencies:  4942.49  4942.49  4942.49  4942.49  4974.49  4974.49  4974.49  4974.49
                         5006.49  5006.49  5006.49  5006.49  5038.49  5038.49  5038.49  5038.49
 Next BBC frequencies:    742.49   742.49   742.49   742.49   774.49   774.49   774.49   774.49
                          806.49   806.49   806.49   806.49   838.49   838.49   838.49   838.49
 Next scan bandwidths:     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
                           16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00

19 00 00  4C39.25      07 04 06  61.7 105.4 -2.4     -48.1     0         0   19 00 00
19 03 00  ---          07 07 06  62.2 106.2 -2.3     -47.9   180        23   19 00 01

19 03 00  4C39.25      07 07 06  62.2 106.2 -2.3     -47.9    -5        23   No stop
19 05 00  ---          07 09 06  62.5 106.8 -2.3     -47.7   115        38   19 03 01

19 13 00  J1128+5925   07 17 08  55.8  53.9 -4.2     -72.1   358        38   19 13 00
19 13 30  ---          07 17 38  55.8  53.9 -4.2     -72.1    30        42   19 13 01

19 13 30  ARP299       07 17 38  55.5  55.4 -4.2     -70.9   -16        42   No stop
19 17 20  ---          07 21 28  56.0  55.6 -4.1     -71.5   214        72   19 13 31

19 17 20  J1128+5925   07 21 28  56.3  54.2 -4.1     -72.8   -16        72   No stop
19 18 20  ---          07 22 29  56.4  54.3 -4.1     -72.9    44        79   19 17 21

19 18 20  ARP299       07 22 29  56.1  55.7 -4.1     -71.6   -16        79   No stop
19 22 20  ---          07 26 29  56.6  56.0 -4.0     -72.2   224       110   19 18 21

19 23 00  J1128+5925   07 27 09  57.0  54.6 -4.0     -73.7    24       110   19 23 00
19 23 30  ---          07 27 39  57.1  54.6 -4.0     -73.7    30       114   19 23 01

19 23 30  ARP299       07 27 39  56.8  56.1 -4.0     -72.4   -16       114   No stop
19 27 30  ---          07 31 40  57.3  56.4 -4.0     -73.0   224       145   19 23 31

19 27 30  J1128+5925   07 31 40  57.6  54.9 -4.0     -74.4   -16       145   No stop
19 28 30  ---          07 32 40  57.7  54.9 -3.9     -74.5    44       152   19 27 31
```

Schedule for TORUN (Code Tr) Page 3

Arp 299-A at 1 Gb/s

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

Start UT / Stop UT	Source	Start LST	Start EL	Start AZ	Stop HA	Stop UP	Stop ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 4 Mar 2014 Day 63 ---										
19 28 30	ARP299	07 32 40	57.4	56.4	-3.9		-73.2	-16	152	No stop
19 32 30	---	07 36 41	57.9	56.7	-3.9		-73.8	224	183	19 28 31
19 32 30	J1128+5925	07 36 41	58.2	55.2	-3.9		-75.2	-16	183	No stop
19 33 30	---	07 37 41	58.3	55.2	-3.9		-75.4	44	191	19 32 31
19 33 30	ARP299	07 37 41	58.0	56.8	-3.9		-74.0	-16	191	No stop
19 37 30	---	07 41 42	58.5	57.1	-3.8		-74.6	224	221	19 33 31
19 38 10	J1128+5925	07 42 22	58.9	55.5	-3.8		-76.1	24	221	19 38 10
19 38 40	---	07 42 52	58.9	55.6	-3.8		-76.2	30	225	19 38 11
19 38 40	ARP299	07 42 52	58.7	57.1	-3.8		-74.8	-16	225	No stop
19 42 40	---	07 46 53	59.2	57.4	-3.7		-75.4	224	256	19 38 41
19 42 40	J1128+5925	07 46 53	59.4	55.8	-3.7		-76.9	-16	256	No stop
19 43 40	---	07 47 53	59.6	55.9	-3.7		-77.0	44	264	19 42 41
19 43 40	ARP299	07 47 53	59.3	57.5	-3.7		-75.6	-16	264	No stop
19 47 40	---	07 51 53	59.8	57.7	-3.6		-76.2	224	294	19 43 41
19 47 40	J1128+5925	07 51 53	60.1	56.1	-3.6		-77.7	-16	294	No stop
19 48 40	---	07 52 53	60.2	56.1	-3.6		-77.9	44	302	19 47 41
19 48 40	ARP299	07 52 53	60.0	57.8	-3.6		-76.4	-17	302	No stop
19 52 40	---	07 56 54	60.5	58.0	-3.5		-77.0	223	333	19 48 41
19 53 20	J1128+5925	07 57 34	60.8	56.4	-3.5		-78.7	23	333	19 53 20
19 53 50	---	07 58 04	60.8	56.4	-3.5		-78.7	30	337	19 53 21
19 53 50	ARP299	07 58 04	60.6	58.1	-3.5		-77.2	-17	337	No stop
19 57 50	---	08 02 05	61.1	58.3	-3.5		-77.8	223	367	19 53 51
19 57 50	J1128+5925	08 02 05	61.3	56.6	-3.4		-79.4	-17	367	No stop
19 58 50	---	08 03 05	61.5	56.6	-3.4		-79.6	43	375	19 57 51
19 58 50	ARP299	08 03 05	61.3	58.4	-3.4		-78.0	-17	375	No stop
20 02 50	---	08 07 06	61.8	58.6	-3.4		-78.7	223	406	19 58 51
20 02 50	J1128+5925	08 07 06	62.0	56.8	-3.4		-80.3	-17	406	No stop
20 03 50	---	08 08 06	62.1	56.9	-3.3		-80.5	43	413	20 02 51
20 03 50	ARP299	08 08 06	61.9	58.7	-3.4		-78.8	-17	413	No stop
20 07 50	---	08 12 07	62.4	58.9	-3.3		-79.5	223	444	20 03 51
20 08 30	J1128+5925	08 12 47	62.7	57.1	-3.3		-81.3	23	444	20 08 30
20 09 00	---	08 13 17	62.7	57.1	-3.3		-81.4	30	448	20 08 31

Schedule for TORUN (Code Tr) Page 4

Arp 299-A at 1 Gb/s

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 4 Mar 2014 Day 63 ---										
20 09 00	ARP299	08 13 17	62.6	58.9	-3.3		-79.7	-17	448	No stop
20 13 00	---	08 17 17	63.1	59.1	-3.2		-80.4	223	479	20 09 01
20 13 00	J1128+5925	08 17 17	63.3	57.3	-3.2		-82.1	-17	479	No stop
20 14 00	---	08 18 18	63.4	57.3	-3.2		-82.3	43	486	20 13 01
20 14 00	ARP299	08 18 18	63.2	59.2	-3.2		-80.5	-17	486	No stop
20 18 00	---	08 22 18	63.7	59.4	-3.1		-81.2	223	517	20 14 01
20 18 00	J1128+5925	08 22 18	63.9	57.5	-3.1		-83.0	-17	517	No stop
20 19 00	---	08 23 18	64.0	57.5	-3.1		-83.2	43	525	20 18 01
20 19 00	ARP299	08 23 18	63.9	59.4	-3.1		-81.4	-17	525	No stop
20 23 00	---	08 27 19	64.4	59.6	-3.0		-82.1	223	556	20 19 01
20 23 40	J1128+5925	08 27 59	64.6	57.6	-3.0		-84.1	22	556	20 23 40
20 24 10	---	08 28 29	64.7	57.7	-3.0		-84.2	30	559	20 23 41
20 24 10	ARP299	08 28 29	64.5	59.6	-3.0		-82.3	-18	559	No stop
20 28 10	---	08 32 30	65.0	59.8	-2.9		-83.0	222	590	20 24 11
20 28 10	J1128+5925	08 32 30	65.2	57.8	-2.9		-84.9	-18	590	No stop
20 29 10	---	08 33 30	65.3	57.8	-2.9		-85.1	42	598	20 28 11
20 29 10	ARP299	08 33 30	65.2	59.8	-2.9		-83.2	-18	598	No stop
20 33 10	---	08 37 31	65.7	60.0	-2.9		-83.9	222	628	20 29 11
20 33 10	J1128+5925	08 37 31	65.8	57.9	-2.9		-85.9	-18	628	No stop
20 34 10	---	08 38 31	65.9	57.9	-2.8		-86.1	42	636	20 33 11
20 34 10	ARP299	08 38 31	65.8	60.0	-2.8		-84.1	-18	636	No stop
20 38 10	---	08 42 32	66.3	60.1	-2.8		-84.9	222	667	20 34 11
20 38 50	J1128+5925	08 43 12	66.5	58.0	-2.8		-87.0	22	667	20 38 50
20 39 20	---	08 43 42	66.6	58.0	-2.8		-87.1	30	671	20 38 51
20 39 20	ARP299	08 43 42	66.5	60.2	-2.8		-85.1	-18	671	No stop
20 43 20	---	08 47 42	67.0	60.3	-2.7		-85.8	222	701	20 39 21
20 43 20	J1128+5925	08 47 42	67.1	58.1	-2.7		-87.9	-18	701	No stop
20 44 20	---	08 48 43	67.2	58.1	-2.7		-88.1	42	709	20 43 21
20 44 20	ARP299	08 48 43	67.2	60.3	-2.7		-86.0	-18	709	No stop
20 48 20	---	08 52 43	67.7	60.4	-2.6		-86.8	222	740	20 44 21
20 48 20	J1128+5925	08 52 43	67.8	58.1	-2.6		-89.0	-18	740	No stop
20 49 20	---	08 53 43	67.9	58.1	-2.6		-89.2	42	748	20 48 21

Schedule for TORUN (Code Tr) Page 5

Arp 299-A at 1 Gb/s

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 4 Mar 2014 Day 63 ---										
20 49 20	ARP299	08 53 43	67.8	60.4	-2.6		-87.0	-18	748	No stop
20 53 20	---	08 57 44	68.3	60.5	-2.5		-87.8	222	778	20 49 21
20 54 00	J1128+5925	08 58 24	68.5	58.1	-2.5		-90.2	21	778	20 54 00
20 54 30	---	08 58 54	68.5	58.1	-2.5		-90.3	30	782	20 54 01
20 54 30	ARP299	08 58 54	68.5	60.5	-2.5		-88.0	-19	782	No stop
20 58 30	---	09 02 55	69.0	60.5	-2.4		-88.9	221	813	20 54 31
20 58 30	J1128+5925	09 02 55	69.0	58.1	-2.4		-91.2	-19	813	No stop
20 59 30	---	09 03 55	69.2	58.1	-2.4		-91.4	41	820	20 58 31
20 59 30	ARP299	09 03 55	69.1	60.5	-2.4		-89.1	-19	820	No stop
21 03 30	---	09 07 56	69.7	60.5	-2.4		-89.9	221	851	20 59 31
21 03 30	J1128+5925	09 07 56	69.7	58.1	-2.4		-92.3	-19	851	No stop
21 04 30	---	09 08 56	69.8	58.0	-2.3		-92.5	41	859	21 03 31
21 04 30	ARP299	09 08 56	69.8	60.5	-2.3		-90.1	-19	859	No stop
21 08 30	---	09 12 57	70.3	60.5	-2.3		-91.0	221	890	21 04 31
21 09 10	J1128+5925	09 13 37	70.4	57.9	-2.3		-93.6	21	890	21 09 10
21 09 40	---	09 14 07	70.5	57.9	-2.2		-93.7	30	893	21 09 11
21 09 40	ARP299	09 14 07	70.5	60.5	-2.3		-91.2	-19	893	No stop
21 13 40	---	09 18 07	71.0	60.5	-2.2		-92.1	221	924	21 09 41
21 13 40	J1128+5925	09 18 07	71.0	57.8	-2.2		-94.7	-20	924	No stop
21 14 40	---	09 19 08	71.1	57.8	-2.2		-95.0	40	932	21 13 41
21 14 40	ARP299	09 19 08	71.1	60.4	-2.2		-92.4	-20	932	No stop
21 18 40	---	09 23 08	71.6	60.4	-2.1		-93.3	220	963	21 14 41
21 18 40	J1128+5925	09 23 08	71.6	57.6	-2.1		-96.0	-20	963	No stop
21 19 40	---	09 24 08	71.7	57.6	-2.1		-96.2	40	970	21 18 41
21 19 40	ARP299	09 24 08	71.8	60.3	-2.1		-93.5	-20	970	No stop
21 23 40	---	09 28 09	72.3	60.2	-2.0		-94.5	220	1001	21 19 41
21 24 20	J1128+5925	09 28 49	72.3	57.4	-2.0		-97.4	20	1001	21 24 20
21 24 50	---	09 29 19	72.4	57.3	-2.0		-97.6	30	1005	21 24 21
21 24 50	ARP299	09 29 19	72.5	60.2	-2.0		-94.8	-20	1005	No stop
21 28 50	---	09 33 20	73.0	60.0	-1.9		-95.8	220	1036	21 24 51
21 28 50	J1128+5925	09 33 20	72.9	57.1	-1.9		-98.7	-20	1036	No stop
21 29 50	---	09 34 20	73.0	57.0	-1.9		-98.9	40	1043	21 28 51

Schedule for TORUN (Code Tr) Page 6

Arp 299-A at 1 Gb/s

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

Start UT / Stop UT	Source	Start LST	Start EL	Start AZ	Stop HA	Stop UP	Stop ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 4 Mar 2014 Day 63 ---										
21 29 50	ARP299	09 34 20	73.1	60.0	-1.9		-96.1	-20	1043	No stop
21 33 50	---	09 38 21	73.6	59.8	-1.9		-97.1	220	1074	21 29 51
21 33 50	J1128+5925	09 38 21	73.5	56.7	-1.8		-100.1	-21	1074	No stop
21 34 50	---	09 39 21	73.7	56.6	-1.8		-100.4	39	1082	21 33 51
21 34 50	ARP299	09 39 21	73.8	59.7	-1.8		-97.4	-21	1082	No stop
21 38 50	---	09 43 22	74.3	59.4	-1.8		-98.5	219	1112	21 34 51
21 39 30	J1128+5925	09 44 02	74.3	56.2	-1.8		-101.8	19	1112	21 39 30
21 40 00	---	09 44 32	74.3	56.2	-1.7		-101.9	30	1116	21 39 31
21 40 00	ARP299	09 44 32	74.4	59.3	-1.7		-98.8	-21	1116	No stop
21 44 00	---	09 48 32	74.9	59.0	-1.7		-100.0	219	1147	21 40 01
21 44 00	J1128+5925	09 48 32	74.8	55.8	-1.7		-103.2	-21	1147	No stop
21 45 00	---	09 49 33	74.9	55.7	-1.7		-103.5	39	1155	21 44 01
21 45 00	ARP299	09 49 33	75.1	58.9	-1.7		-100.3	-21	1155	No stop
21 49 00	---	09 53 33	75.6	58.5	-1.6		-101.5	219	1185	21 45 01
21 49 00	J1128+5925	09 53 33	75.4	55.2	-1.6		-104.9	-22	1185	No stop
21 50 00	---	09 54 33	75.6	55.0	-1.6		-105.2	38	1193	21 49 01
21 50 00	ARP299	09 54 33	75.7	58.4	-1.6		-101.8	-21	1193	No stop
21 54 00	---	09 58 34	76.2	58.0	-1.5		-103.2	219	1224	21 50 01
21 54 40	J1128+5925	09 59 14	76.1	54.4	-1.5		-106.9	18	1224	21 54 40
21 55 10	---	09 59 44	76.2	54.3	-1.5		-107.1	30	1228	21 54 41
21 55 10	ARP299	09 59 44	76.4	57.8	-1.5		-103.6	-22	1228	No stop
21 59 10	---	10 03 45	76.9	57.3	-1.4		-105.0	218	1258	21 55 11
21 59 10	J1128+5925	10 03 45	76.7	53.6	-1.4		-108.6	-22	1258	No stop
22 00 10	---	10 04 45	76.8	53.4	-1.4		-109.0	38	1266	21 59 11
22 00 10	ARP299	10 04 45	77.0	57.1	-1.4		-105.3	-22	1266	No stop
22 04 10	---	10 08 46	77.5	56.4	-1.3		-106.8	218	1297	22 00 11
22 04 10	J1128+5925	10 08 46	77.3	52.7	-1.3		-110.6	-23	1297	No stop
22 05 10	---	10 09 46	77.4	52.5	-1.3		-111.0	37	1304	22 04 11
22 05 10	ARP299	10 09 46	77.6	56.3	-1.3		-107.2	-22	1304	No stop
22 09 10	---	10 13 47	78.1	55.5	-1.3		-108.8	218	1335	22 05 11
22 09 50	J1128+5925	10 14 27	78.0	51.4	-1.2		-113.0	17	1335	22 09 50
22 10 20	---	10 14 57	78.0	51.3	-1.2		-113.3	30	1339	22 09 51

Schedule for TORUN (Code Tr) Page 7

Arp 299-A at 1 Gb/s

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

Start UT / Stop UT	Source	Start LST	Start EL	Start AZ	Stop HA	Stop UP	Stop ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 4 Mar 2014 Day 63 ---										
22 10 20	ARP299	10 14 57	78.3	55.3	-1.2		-109.3	-23	1339	No stop
22 14 20	---	10 18 57	78.8	54.3	-1.2		-111.0	217	1370	22 10 21
22 14 20	J1128+5925	10 18 57	78.5	50.3	-1.2		-115.1	-23	1370	No stop
22 15 20	---	10 19 58	78.6	50.0	-1.2		-115.6	37	1377	22 14 21
22 15 20	ARP299	10 19 58	78.9	54.1	-1.2		-111.5	-23	1377	No stop
22 19 20	---	10 23 58	79.4	53.0	-1.1		-113.4	217	1408	22 15 21
22 19 20	J1128+5925	10 23 58	79.1	48.8	-1.1		-117.6	-24	1408	No stop
22 20 20	---	10 24 58	79.2	48.5	-1.1		-118.2	36	1416	22 19 21
22 20 20	ARP299	10 24 58	79.5	52.8	-1.1		-113.9	-23	1416	No stop
22 24 20	---	10 28 59	80.0	51.5	-1.0		-116.0	217	1446	22 20 21
22 25 00	J1128+5925	10 29 39	79.7	46.9	-1.0		-120.7	16	1446	22 25 00
22 25 30	---	10 30 09	79.7	46.7	-1.0		-121.0	30	1450	22 25 01
22 25 30	ARP299	10 30 09	80.1	51.1	-1.0		-116.6	-24	1450	No stop
22 29 30	---	10 34 10	80.6	49.7	-0.9		-118.9	216	1481	22 25 31
22 29 30	J1128+5925	10 34 10	80.2	45.1	-0.9		-123.4	-24	1481	No stop
22 30 30	---	10 35 10	80.3	44.7	-0.9		-124.1	36	1489	22 29 31
22 30 30	ARP299	10 35 10	80.7	49.3	-0.9		-119.5	-24	1489	No stop
22 34 30	---	10 39 11	81.1	47.6	-0.8		-122.0	216	1519	22 30 31
22 34 30	J1128+5925	10 39 11	80.7	42.9	-0.8		-126.7	-25	1519	No stop
22 35 30	---	10 40 11	80.8	42.4	-0.8		-127.4	35	1527	22 34 31
22 35 30	ARP299	10 40 11	81.3	47.1	-0.8		-122.7	-24	1527	No stop
22 39 30	---	10 44 12	81.7	45.1	-0.8		-125.5	216	1558	22 35 31
22 40 10	J1128+5925	10 44 52	81.3	40.0	-0.7		-130.8	15	1558	22 40 10
22 40 40	---	10 45 22	81.3	39.8	-0.7		-131.1	30	1562	22 40 11
22 40 40	ARP299	10 45 22	81.8	44.5	-0.7		-126.4	-24	1562	No stop
22 44 40	---	10 49 22	82.2	42.2	-0.7		-129.5	216	1592	22 40 41
22 44 40	J1128+5925	10 49 22	81.7	37.4	-0.7		-134.3	-25	1592	No stop
22 45 40	---	10 50 23	81.8	36.8	-0.6		-135.2	35	1600	22 44 41
22 45 40	ARP299	10 50 23	82.3	41.6	-0.7		-130.4	-24	1600	No stop
22 49 40	---	10 54 23	82.7	38.9	-0.6		-133.9	216	1631	22 45 41

```
Schedule for TORUN     (Code Tr )                                Page   8
               Arp 299-A at 1 Gb/s
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   4 Mar 2014   Day  63 ---

22 49 40  J1128+5925   10 54 23  82.1  34.1 -0.6    -138.7   -25     1631   No stop
22 50 40  ---          10 55 23  82.2  33.4 -0.6    -139.6    35     1638   22 49 41

22 50 40  ARP299       10 55 23  82.8  38.1 -0.6    -134.8   -24     1638   No stop
22 54 40  ---          10 59 24  83.2  35.0 -0.5    -138.8   216     1669   22 50 41

22 55 20  J1128+5925   11 00 04  82.6  29.9 -0.5    -144.1    15     1669   22 55 20
22 55 50  ---          11 00 34  82.6  29.5 -0.5    -144.6    30     1673   22 55 21

22 55 50  ARP299       11 00 34  83.3  34.0 -0.5    -140.0   -23     1673   No stop
22 59 50  ---          11 04 35  83.6  30.4 -0.4    -144.5   217     1704   22 55 51

22 59 50  J1128+5925   11 04 35  82.9  26.1 -0.4    -148.8   -24     1704   No stop
23 00 50  ---          11 05 35  83.0  25.2 -0.4    -149.9    36     1711   22 59 51

23 00 50  ARP299       11 05 35  83.7  29.4 -0.4    -145.6   -23     1711   No stop
23 04 50  ---          11 09 36  83.9  25.3 -0.3    -150.6   217     1742   23 00 51

23 04 50  J1128+5925   11 09 36  83.2  21.4 -0.3    -154.5   -23     1742   No stop
23 05 50  ---          11 10 36  83.3  20.4 -0.3    -155.7    37     1750   23 04 51

23 05 50  ARP299       11 10 36  84.0  24.2 -0.3    -151.9   -22     1750   No stop
23 09 50  ---          11 14 37  84.2  19.6 -0.2    -157.4   218     1780   23 05 51

23 10 30  J1128+5925   11 15 17  83.5  15.6 -0.2    -161.5    18     1780   23 10 30
23 11 00  ---          11 15 47  83.5  15.1 -0.2    -162.1    30     1784   23 10 31

23 11 00  ARP299       11 15 47  84.3  18.2 -0.2    -159.0   -20     1784   No stop
23 15 00  ---          11 19 47  84.4  13.1 -0.2    -164.9   220     1815   23 11 01

23 15 00  J1128+5925   11 19 47  83.6  10.7 -0.2    -167.4   -20     1815   No stop
23 16 00  ---          11 20 48  83.7   9.6 -0.1    -168.7    40     1823   23 15 01

23 16 00  ARP299       11 20 48  84.5  11.8 -0.1    -166.5   -17     1823   No stop
23 20 00  ---          11 24 48  84.6   6.4 -0.1    -172.7   223     1853   23 16 01

23 20 00  J1128+5925   11 24 48  83.7   5.0 -0.1    -174.1   -16     1853   No stop
23 21 00  ---          11 25 48  83.7   3.8 -0.1    -175.5    44     1861   23 20 01

23 21 00  ARP299       11 25 48  84.6   5.0 -0.1    -174.3   -16     1861   No stop
23 25 00  ---          11 29 49  84.6  -0.6  0.0     179.3   224     1892   23 21 01

23 25 40  J1128+5925   11 30 29  83.8  -1.7  0.0     178.0    24     1892   23 25 40
23 26 10  ---          11 30 59  83.8  -2.3  0.0     177.3    30     1896   23 25 41

23 26 10  ARP299       11 30 59  84.6  -2.2  0.0     177.5   -16     1896   No stop
23 30 10  ---          11 35 00  84.6  -7.7  0.1     171.1   224     1926   23 26 11
```

```
Schedule for TORUN     (Code Tr )                                Page   9
               Arp 299-A at 1 Gb/s
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   4 Mar 2014   Day  63 ---

23 30 10  J1128+5925   11 35 00  83.7  -6.9  0.1     171.8   -16     1926   No stop
23 31 10  ---          11 36 00  83.7  -8.1  0.1     170.5    44     1934   23 30 11

23 31 10  ARP299       11 36 00  84.5  -9.1  0.1     169.5   -16     1934   No stop
23 35 10  ---          11 40 01  84.4 -14.4  0.2     163.4   224     1965   23 31 11

23 35 10  J1128+5925   11 40 01  83.6 -12.6  0.2     165.1   -16     1965   No stop
23 36 10  ---          11 41 01  83.5 -13.7  0.2     163.8    44     1972   23 35 11

23 36 10  ARP299       11 41 01  84.4 -15.7  0.2     161.9   -18     1972   No stop
23 40 10  ---          11 45 02  84.2 -20.6  0.3     156.2   222     2003   23 36 11

23 40 50  J1128+5925   11 45 42  83.3 -18.6  0.3     157.9    21     2003   23 40 50
23 41 20  ---          11 46 12  83.3 -19.1  0.3     157.3    30     2007   23 40 51

23 41 20  ARP299       11 46 12  84.1 -22.0  0.3     154.6   -21     2007   No stop
23 45 20  ---          11 50 12  83.9 -26.4  0.3     149.3   219     2038   23 41 21

23 45 20  J1128+5925   11 50 12  83.1 -23.0  0.4     152.6   -21     2038   No stop
23 46 20  ---          11 51 13  83.0 -24.0  0.4     151.4    39     2045   23 45 21

23 46 20  ARP299       11 51 13  83.8 -27.4  0.4     148.1   -22     2045   No stop
23 50 20  ---          11 55 13  83.5 -31.3  0.4     143.3   218     2076   23 46 21

23 50 20  J1128+5925   11 55 13  82.8 -27.5  0.4     147.0   -22     2076   No stop
23 51 20  ---          11 56 13  82.7 -28.4  0.5     146.0    38     2084   23 50 21

23 51 20  ARP299       11 56 13  83.4 -32.3  0.4     142.2   -23     2084   No stop
23 55 20  ---          12 00 14  83.1 -35.7  0.5     137.9   217     2115   23 51 21

23 56 00  J1128+5925   12 00 54  82.4 -32.1  0.5     141.3    17     2115   23 56 00
23 56 30  ---          12 01 24  82.3 -32.4  0.5     140.8    30     2118   23 56 01

 --- Start: Tue   4 Mar 2014   Day  63 -- Stop: Wed   5 Mar 2014   Day  64 ---

23 56 30  ARP299       12 01 24  83.0 -36.6  0.5     136.8   -24     2118   No stop
00 00 30  ---          12 05 25  82.6 -39.6  0.6     133.0   216     2149   23 56 31

00 00 30  J1128+5925   12 05 25  82.0 -35.3  0.6     137.2   -23     2149   No stop
00 01 30  ---          12 06 25  81.9 -35.9  0.6     136.3    37     2157   00 00 31

00 01 30  ARP299       12 06 25  82.5 -40.3  0.6     132.1   -24     2157   No stop
00 05 30  ---          12 10 26  82.1 -42.8  0.7     128.7   216     2188   00 01 31

00 05 30  J1128+5925   12 10 26  81.5 -38.4  0.7     133.0   -23     2188   No stop
00 06 30  ---          12 11 26  81.4 -39.0  0.7     132.2    37     2195   00 05 31
```

Schedule for TORUN (Code Tr) Page 10

Arp 299-A at 1 Gb/s

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

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 5 Mar 2014 Day 64 ---										
00 06 30	ARP299	12 11 26	82.0	-43.4	0.7		127.9	-24	2195	No stop
00 10 30	---	12 15 27	81.6	-45.6	0.8		124.9	216	2226	00 06 31
00 11 10	J1128+5925	12 16 07	81.0	-41.5	0.8		128.7	17	2226	00 11 10
00 11 40	---	12 16 37	80.9	-41.8	0.8		128.3	30	2230	00 11 11
00 11 40	ARP299	12 16 37	81.5	-46.2	0.8		124.1	-24	2230	No stop
00 15 40	---	12 20 37	81.0	-48.0	0.9		121.4	216	2260	00 11 41
00 15 40	J1128+5925	12 20 37	80.5	-43.7	0.9		125.6	-23	2260	No stop
00 16 40	---	12 21 38	80.4	-44.1	0.9		124.9	37	2268	00 15 41
00 16 40	ARP299	12 21 38	80.9	-48.5	0.9		120.7	-24	2268	No stop
00 20 40	---	12 25 38	80.5	-50.0	0.9		118.3	216	2299	00 16 41
00 20 40	J1128+5925	12 25 38	80.0	-45.8	0.9		122.4	-23	2299	No stop
00 21 40	---	12 26 38	79.9	-46.2	1.0		121.8	37	2307	00 20 41
00 21 40	ARP299	12 26 38	80.3	-50.4	1.0		117.7	-24	2307	No stop
00 25 40	---	12 30 39	79.9	-51.8	1.0		115.5	216	2337	00 21 41
00 26 20	J1128+5925	12 31 19	79.4	-47.9	1.0		119.1	17	2337	00 26 20
00 26 50	---	12 31 49	79.3	-48.1	1.0		118.9	30	2341	00 26 21
00 26 50	ARP299	12 31 49	79.7	-52.2	1.0		114.9	-23	2341	No stop
00 30 50	---	12 35 50	79.3	-53.3	1.1		112.9	217	2372	00 26 51
00 30 50	J1128+5925	12 35 50	78.9	-49.3	1.1		116.8	-23	2372	No stop
00 31 50	---	12 36 50	78.7	-49.6	1.1		116.3	37	2380	00 30 51
00 31 50	ARP299	12 36 50	79.1	-53.6	1.1		112.4	-23	2380	No stop
00 35 50	---	12 40 51	78.7	-54.6	1.2		110.6	217	2410	00 31 51
00 35 50	J1128+5925	12 40 51	78.3	-50.7	1.2		114.3	-22	2410	No stop
00 36 50	---	12 41 51	78.2	-51.0	1.2		113.9	38	2418	00 35 51
00 36 50	ARP299	12 41 51	78.5	-54.8	1.2		110.1	-23	2418	No stop
00 40 50	---	12 45 51	78.0	-55.7	1.3		108.5	217	2449	00 36 51
00 41 30	J1128+5925	12 46 32	77.6	-52.1	1.3		111.8	18	2449	00 41 30
00 42 00	---	12 47 02	77.6	-52.2	1.3		111.6	30	2452	00 41 31
00 42 00	ARP299	12 47 02	77.9	-55.9	1.3		108.0	-22	2452	No stop
00 46 00	---	12 51 02	77.4	-56.6	1.4		106.4	218	2483	00 42 01
00 46 00	J1128+5925	12 51 02	77.1	-53.0	1.4		109.9	-22	2483	No stop
00 47 00	---	12 52 03	77.0	-53.2	1.4		109.5	38	2491	00 46 01

```
Schedule for TORUN     (Code Tr )                                Page  11
               Arp 299-A at 1 Gb/s
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   5 Mar 2014   Day  64 ---

00 47 00  ARP299       12 52 03  77.3 -56.8  1.4     106.0   -22     2491   No stop
00 51 00  ---          12 56 03  76.8 -57.4  1.4     104.6   218     2522   00 47 01

00 51 40  J1128+5925   12 56 43  76.4 -54.0  1.5     107.7    18     2522   00 51 40
00 52 10  ---          12 57 13  76.3 -54.1  1.5     107.5    30     2525   00 51 41

00 52 10  ARP299       12 57 13  76.6 -57.6  1.5     104.2   -22     2525   No stop
00 55 00  ---          13 00 04  76.2 -57.9  1.5     103.2   148     2547   00 52 11

00 55 00  J1128+5925   13 00 04  76.0 -54.5  1.5     106.5   -21     2547   No stop
00 56 00  ---          13 01 04  75.9 -54.7  1.5     106.1    39     2555   00 55 01

00 56 00  ARP299       13 01 04  76.1 -58.1  1.5     102.9   -22     2555   No stop
00 59 00  ---          13 04 04  75.7 -58.4  1.6     101.9   158     2578   00 56 01

00 59 00  J1128+5925   13 04 04  75.5 -55.1  1.6     105.0   -21     2578   No stop
01 00 00  ---          13 05 05  75.4 -55.2  1.6     104.7    39     2586   00 59 01



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


 ======== Setup file: sess114.C1024
   Matching groups in /Users/torres/sched11/catalogs/freq.dat:
     tr6cm           E-mail Borkowski 23Apr03 (CR 1May03)

   Setup group:    3         Station: TORUN             Total bit rate:  1024
   Format: MKIV1:2           Bits per sample: 2         Sample rate: 32.000
   Number of channels: 16    DBE type:                  Speedup factor:   0.50

   Disk used to record data.

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

```
 The following frequency sets based on these setups were used.

  Frequency Set:   7  Setup file default.  Used pcal sets:   1
  LO sum=   4942.49  4942.49  4942.49  4942.49  4974.49  4974.49  4974.49  4974.49
            5006.49  5006.49  5006.49  5006.49  5038.49  5038.49  5038.49  5038.49
  BBC fr=    742.49   742.49   742.49   742.49   774.49   774.49   774.49   774.49
             806.49   806.49   806.49   806.49   838.49   838.49   838.49   838.49
  Bandwd=     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
              16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
   Matching frequency sets:   7

 The following pulse cal sets were used with this setup:

  Pulse cal detection set:   1  PCAL = OFF
   PCALXB1=   S1    S2    S3    S4    S5    S6    S7    S8
   PCALXB2=   M1    M2    M3    M4    M5    M6    M7    M8
   PCALFR1=     0     0     0     0     0     0     0     0
   PCALFR2=     0     0     0     0     0     0     0     0

  Track assignments are:
   track1=   2, 10, 18, 26,  3, 11, 19, 27, 66, 74, 82, 90, 67, 75, 83, 91
   barrel=roll_off


POSITIONS OF SOURCES USED IN RECORDING SCANS

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

* ARP299            11 25 44.174219   * 11 28 33.622010     11 29 23.630467       0.00
                    58 50 18.17319    * 58 33 46.61000      58 28 53.26874        0.00

* J1128+5925        11 25 23.181652   * 11 28 13.340676     11 29 03.575770       0.00
                    59 41 46.14397    * 59 25 14.79866      59 20 21.60184        0.00

  J0927+3902        09 23 55.319217   * 09 27 03.013938     09 27 58.016187       0.13
* 4C39.25           39 15 23.56637    * 39 02 20.85177      38 58 27.76412        0.10


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)
  ARP299             127.4
  J1128+5925         126.6
  4C39.25            141.0

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      327 MHz        117. deg                      8.4 GHz         17. deg
      610 MHz         81. deg                     15.0 GHz         12. deg
      1.6 GHz         45. deg                     22.0 GHz          9. deg
      2.3 GHz         36. deg                     43.0 GHz          6. deg
      5.0 GHz         23. deg
```

eg062etr

HD160934 Orbit -Epoch 3

PI: *Jose C. Guirado*

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Phone: +34 963543078 EMAIL: Jose.C.Guirado@uv.es
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Observing mode: Phase-referencing at 6cm (1024 Mb/s). Dual Pol

Schedule for TORUN (Code Tr) Page 2
HD160934 Orbit -Epoch 3
UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

--- Wed 5 Mar 2014 Day 64 ---

Start UT	Source	Start / Stop														Early	Disk	TPStart
Stop UT		LST			EL		AZ		HA	UP	ParA					Dwell	GBytes	SYNC
Next scan frequencies:		4942.49	4942.49	4942.49	4942.49	4974.49	4974.49	4974.49	4974.49									
		5006.49	5006.49	5006.49	5006.49	5038.49	5038.49	5038.49	5038.49									
Next BBC frequencies:		742.49	742.49	742.49	742.49	774.49	774.49	774.49	774.49									
		806.49	806.49	806.49	806.49	838.49	838.49	838.49	838.49									
Next scan bandwidths:		16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00									
		16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00									
02 00 00	1803+784	14 05 14			57.8		18.7	-3.9			-105.9					0	0	02 00 00
02 05 00	---	14 10 15			58.0		18.5	-3.8			-107.2					300	38	02 00 01
02 08 00	1803+784	14 13 16			58.2		18.5	-3.8			-108.0					174	38	02 08 00
02 13 00	---	14 18 17			58.4		18.3	-3.7			-109.4					300	77	02 08 01
02 16 00	J1746+6226	14 21 17			62.0		50.2	-3.4			-85.5					101	77	02 16 00
02 17 40	=1745+624	14 22 57			62.2		50.2	-3.4			-85.8					100	90	02 16 01
02 17 40	HD-MID	14 22 57			63.0		53.0	-3.3			-85.0					-20	90	No stop
02 20 10	---	14 25 28			63.3		53.1	-3.2			-85.5					130	109	02 17 41
02 20 10	HD-MID	14 25 28			63.3		53.1	-3.2			-85.5					-5	109	No stop
02 22 10	---	14 27 28			63.5		53.1	-3.2			-85.9					115	124	02 20 11
02 22 10	J1746+6226	14 27 28			62.7		50.3	-3.3			-86.8					-20	124	No stop
02 23 50	=1745+624	14 29 08			62.9		50.3	-3.3			-87.1					80	137	02 22 11
02 23 50	HD-MID	14 29 08			63.7		53.1	-3.2			-86.3					-20	137	No stop
02 26 20	---	14 31 39			64.0		53.2	-3.1			-86.8					130	156	02 23 51
02 26 20	HD-MID	14 31 39			64.0		53.2	-3.1			-86.8					-5	156	No stop
02 28 20	---	14 33 39			64.2		53.2	-3.1			-87.2					115	172	02 26 21
02 29 00	J1746+6226	14 34 19			63.5		50.4	-3.2			-88.2					20	172	02 29 00
02 30 40	=1745+624	14 36 00			63.7		50.4	-3.2			-88.6					100	184	02 29 01
02 30 40	HD-MID	14 36 00			64.5		53.2	-3.0			-87.7					-20	184	No stop
02 33 10	---	14 38 30			64.8		53.3	-3.0			-88.2					130	204	02 30 41

```
Schedule for TORUN     (Code Tr )                                Page   3
               HD160934 Orbit -Epoch 3
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   5 Mar 2014   Day  64 ---

02 33 10  HD-MID       14 38 30  64.8  53.3 -3.0     -88.2    -5      204   No stop
02 35 10  ---          14 40 30  65.1  53.3 -3.0     -88.6   115      219   02 33 11

02 35 10  J1746+6226   14 40 30  64.2  50.4 -3.1     -89.6   -20      219   No stop
02 36 50  =1745+624    14 42 11  64.4  50.4 -3.1     -89.9    80      232   02 35 11

02 36 50  HD-MID       14 42 11  65.3  53.3 -2.9     -89.0   -20      232   No stop
02 39 20  ---          14 44 41  65.6  53.3 -2.9     -89.5   130      251   02 36 51

02 39 20  HD-MID       14 44 41  65.6  53.3 -2.9     -89.5    -5      251   No stop
02 41 20  ---          14 46 41  65.8  53.3 -2.9     -90.0   115      266   02 39 21

02 41 20  J1746+6226   14 46 41  64.9  50.4 -3.0     -90.9   -20      266   No stop
02 43 00  =1745+624    14 48 22  65.1  50.4 -3.0     -91.3    80      279   02 41 21

02 43 00  HD-MID       14 48 22  66.0  53.3 -2.8     -90.3   -20      279   No stop
02 45 30  ---          14 50 52  66.3  53.3 -2.8     -90.9   130      298   02 43 01

02 45 30  HD-MID       14 50 52  66.3  53.3 -2.8     -90.9    -5      298   No stop
02 47 30  ---          14 52 52  66.6  53.3 -2.8     -91.4   115      314   02 45 31

02 48 10  J1746+6226   14 53 32  65.7  50.3 -2.9     -92.5    20      314   02 48 10
02 49 50  =1745+624    14 55 13  65.9  50.3 -2.9     -92.9   100      326   02 48 11

02 49 50  HD-MID       14 55 13  66.8  53.3 -2.7     -91.9   -20      326   No stop
02 52 20  ---          14 57 43  67.1  53.2 -2.7     -92.5   130      346   02 49 51

02 52 20  HD-MID       14 57 43  67.1  53.2 -2.7     -92.5    -5      346   No stop
02 54 20  ---          14 59 43  67.4  53.2 -2.7     -92.9   115      361   02 52 21

02 54 20  J1746+6226   14 59 43  66.4  50.2 -2.8     -94.0   -20      361   No stop
02 56 00  =1745+624    15 01 24  66.6  50.2 -2.7     -94.4    80      374   02 54 21

02 56 00  HD-MID       15 01 24  67.6  53.2 -2.6     -93.3   -20      374   No stop
02 58 30  ---          15 03 54  67.9  53.1 -2.6     -93.9   130      393   02 56 01

02 58 30  HD-MID       15 03 54  67.9  53.1 -2.6     -93.9    -5      393   No stop
03 00 30  ---          15 05 54  68.1  53.1 -2.5     -94.4   115      408   02 58 31

03 00 30  J1746+6226   15 05 54  67.1  50.1 -2.7     -95.5   -20      408   No stop
03 02 10  =1745+624    15 07 35  67.3  50.0 -2.6     -95.9    80      421   03 00 31

03 02 10  HD-MID       15 07 35  68.3  53.0 -2.5     -94.8   -20      421   No stop
03 04 40  ---          15 10 05  68.6  53.0 -2.5     -95.4   130      440   03 02 11

03 04 40  HD-MID       15 10 05  68.6  53.0 -2.5     -95.4    -5      440   No stop
03 06 40  ---          15 12 05  68.9  52.9 -2.4     -95.9   115      456   03 04 41
```

```
Schedule for TORUN     (Code Tr )                                Page   4
               HD160934 Orbit -Epoch 3
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   5 Mar 2014   Day  64 ---

03 07 20  J1746+6226   15 12 46  67.9  49.9 -2.6     -97.2    19      456   03 07 20
03 09 00  =1745+624    15 14 26  68.1  49.8 -2.5     -97.7   100      468   03 07 21

03 09 00  HD-MID       15 14 26  69.2  52.8 -2.4     -96.5   -21      468   No stop
03 11 30  ---          15 16 56  69.5  52.7 -2.4     -97.2   129      488   03 09 01

03 11 30  HD-MID       15 16 56  69.5  52.7 -2.4     -97.2    -5      488   No stop
03 13 30  ---          15 18 57  69.7  52.6 -2.3     -97.7   115      503   03 11 31

03 13 30  J1746+6226   15 18 57  68.6  49.6 -2.5     -98.8   -21      503   No stop
03 15 10  =1745+624    15 20 37  68.8  49.5 -2.4     -99.3    79      516   03 13 31

03 15 10  HD-MID       15 20 37  69.9  52.5 -2.3     -98.1   -21      516   No stop
03 17 40  ---          15 23 07  70.2  52.4 -2.3     -98.8   129      535   03 15 11

03 17 40  HD-MID       15 23 07  70.2  52.4 -2.3     -98.8    -5      535   No stop
03 19 40  ---          15 25 08  70.4  52.3 -2.2     -99.3   115      550   03 17 41

03 19 40  J1746+6226   15 25 08  69.3  49.2 -2.4    -100.5   -21      550   No stop
03 21 20  =1745+624    15 26 48  69.5  49.1 -2.3    -101.0    79      563   03 19 41

03 21 20  HD-MID       15 26 48  70.6  52.2 -2.2     -99.8   -21      563   No stop
03 23 50  ---          15 29 18  70.9  52.0 -2.2    -100.5   129      582   03 21 21

03 23 50  HD-MID       15 29 18  70.9  52.0 -2.2    -100.5    -5      582   No stop
03 25 50  ---          15 31 19  71.2  51.9 -2.1    -101.1   115      598   03 23 51

03 26 30  J1746+6226   15 31 59  70.1  48.8 -2.2    -102.5    19      598   03 26 30
03 28 10  =1745+624    15 33 39  70.3  48.7 -2.2    -103.0   100      611   03 26 31

03 28 10  HD-MID       15 33 39  71.4  51.7 -2.1    -101.8   -21      611   No stop
03 30 40  ---          15 36 09  71.7  51.5 -2.0    -102.5   129      630   03 28 11

03 30 40  HD-MID       15 36 09  71.7  51.5 -2.0    -102.5    -5      630   No stop
03 32 40  ---          15 38 10  72.0  51.3 -2.0    -103.1   115      645   03 30 41

03 32 40  J1746+6226   15 38 10  70.8  48.3 -2.1    -104.3   -21      645   No stop
03 34 20  =1745+624    15 39 50  71.0  48.1 -2.1    -104.8    79      658   03 32 41

03 34 20  HD-MID       15 39 50  72.2  51.2 -2.0    -103.6   -21      658   No stop
03 36 50  ---          15 42 20  72.5  51.0 -1.9    -104.4   129      677   03 34 21

03 36 50  HD-MID       15 42 20  72.5  51.0 -1.9    -104.4    -5      677   No stop
03 38 50  ---          15 44 21  72.7  50.8 -1.9    -105.0   115      692   03 36 51

03 38 50  J1746+6226   15 44 21  71.5  47.7 -2.0    -106.2   -21      692   No stop
03 40 30  =1745+624    15 46 01  71.7  47.5 -2.0    -106.8    79      705   03 38 51
```

```
Schedule for TORUN     (Code Tr )                                Page   5
               HD160934 Orbit -Epoch 3
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   5 Mar 2014   Day  64 ---

03 40 30  HD-MID       15 46 01  72.9  50.6 -1.9    -105.6   -21      705   No stop
03 43 00  ---          15 48 31  73.2  50.3 -1.8    -106.4   129      724   03 40 31

03 43 00  HD-MID       15 48 31  73.2  50.3 -1.8    -106.4    -5      724   No stop
03 45 00  ---          15 50 32  73.4  50.0 -1.8    -107.0   115      740   03 43 01

03 45 40  J1746+6226   15 51 12  72.2  47.0 -1.9    -108.5    19      740   03 45 40
03 47 20  =1745+624    15 52 52  72.4  46.7 -1.9    -109.0   100      753   03 45 41

03 47 20  HD-MID       15 52 52  73.7  49.7 -1.8    -107.8   -20      753   No stop
03 49 50  ---          15 55 23  74.0  49.4 -1.7    -108.7   130      772   03 47 21

03 49 50  HD-MID       15 55 23  74.0  49.4 -1.7    -108.7    -5      772   No stop
03 51 50  ---          15 57 23  74.2  49.1 -1.7    -109.4   115      787   03 49 51

03 51 50  J1746+6226   15 57 23  72.9  46.2 -1.8    -110.6   -20      787   No stop
03 53 30  =1745+624    15 59 03  73.1  45.9 -1.8    -111.2    80      800   03 51 51

03 53 30  HD-MID       15 59 03  74.4  48.9 -1.7    -110.0   -20      800   No stop
03 56 00  ---          16 01 34  74.7  48.5 -1.6    -111.0   130      819   03 53 31

03 56 00  HD-MID       16 01 34  74.7  48.5 -1.6    -111.0    -5      819   No stop
03 58 00  ---          16 03 34  74.9  48.1 -1.6    -111.7   115      835   03 56 01

03 58 00  J1746+6226   16 03 34  73.6  45.2 -1.7    -112.9   -20      835   No stop
03 59 40  =1745+624    16 05 14  73.8  45.0 -1.7    -113.5    80      847   03 58 01

03 59 40  HD-MID       16 05 14  75.1  47.8 -1.6    -112.4   -20      847   No stop
04 02 10  ---          16 07 45  75.3  47.4 -1.5    -113.4   130      867   03 59 41

04 02 10  HD-MID       16 07 45  75.3  47.4 -1.5    -113.4    -5      867   No stop
04 04 10  ---          16 09 45  75.6  47.0 -1.5    -114.2   115      882   04 02 11

04 04 50  J1746+6226   16 10 25  74.3  44.1 -1.6    -115.5    20      882   04 04 50
04 06 30  =1745+624    16 12 05  74.5  43.7 -1.6    -116.2   100      895   04 04 51

04 06 30  HD-MID       16 12 05  75.8  46.5 -1.4    -115.2   -20      895   No stop
04 09 00  ---          16 14 36  76.1  46.0 -1.4    -116.2   130      914   04 06 31

04 09 00  HD-MID       16 14 36  76.1  46.0 -1.4    -116.2    -5      914   No stop
04 11 00  ---          16 16 36  76.3  45.5 -1.4    -117.1   115      929   04 09 01

04 11 00  J1746+6226   16 16 36  74.9  42.8 -1.5    -118.0   -20      929   No stop
04 12 40  =1745+624    16 18 16  75.1  42.5 -1.5    -118.8    80      942   04 11 01

04 12 40  HD-MID       16 18 16  76.5  45.1 -1.3    -117.9   -19      942   No stop
04 15 10  ---          16 20 47  76.8  44.5 -1.3    -119.0   131      961   04 12 41
```

```
Schedule for TORUN     (Code Tr )                                Page   6
               HD160934 Orbit -Epoch 3
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   5 Mar 2014   Day  64 ---

04 15 10  HD-MID       16 20 47  76.8  44.5 -1.3    -119.0    -5      961   No stop
04 17 10  ---          16 22 47  77.0  44.0 -1.3    -120.0   115      977   04 15 11

04 17 10  J1746+6226   16 22 47  75.6  41.5 -1.4    -120.7   -19      977   No stop
04 18 50  =1745+624    16 24 27  75.7  41.1 -1.4    -121.5    81      989   04 17 11

04 18 50  HD-MID       16 24 27  77.1  43.5 -1.2    -120.8   -19      989   No stop
04 21 20  ---          16 26 58  77.4  42.8 -1.2    -122.0   131     1009   04 18 51

04 21 20  HD-MID       16 26 58  77.4  42.8 -1.2    -122.0    -5     1009   No stop
04 23 20  ---          16 28 58  77.6  42.2 -1.2    -123.0   115     1024   04 21 21

04 24 00  J1746+6226   16 29 38  76.2  39.7 -1.3    -124.0    21     1024   04 24 00
04 25 40  =1745+624    16 31 18  76.4  39.3 -1.3    -124.8   100     1037   04 24 01

04 25 40  HD-MID       16 31 18  77.8  41.5 -1.1    -124.3   -19     1037   No stop
04 28 10  ---          16 33 49  78.1  40.7 -1.1    -125.6   131     1056   04 25 41

04 28 10  HD-MID       16 33 49  78.1  40.7 -1.1    -125.6    -5     1056   No stop
04 30 10  ---          16 35 49  78.3  40.0 -1.0    -126.8   115     1071   04 28 11

04 30 10  J1746+6226   16 35 49  76.8  37.9 -1.2    -127.1   -19     1071   No stop
04 31 50  =1745+624    16 37 29  77.0  37.4 -1.1    -127.9    81     1084   04 30 11

04 31 50  HD-MID       16 37 29  78.4  39.4 -1.0    -127.7   -19     1084   No stop
04 34 20  ---          16 40 00  78.7  38.4 -1.0    -129.2   131     1103   04 31 51

04 34 20  HD-MID       16 40 00  78.7  38.4 -1.0    -129.2    -5     1103   No stop
04 36 20  ---          16 42 00  78.9  37.6 -0.9    -130.4   115     1119   04 34 21

04 36 20  J1746+6226   16 42 00  77.4  35.9 -1.1    -130.4   -19     1119   No stop
04 38 00  =1745+624    16 43 40  77.5  35.4 -1.0    -131.3    81     1132   04 36 21

04 38 00  HD-MID       16 43 40  79.0  36.9 -0.9    -131.4   -19     1132   No stop
04 40 30  ---          16 46 11  79.2  35.9 -0.9    -133.1   131     1151   04 38 01

04 40 30  HD-MID       16 46 11  79.2  35.9 -0.9    -133.1    -5     1151   No stop
04 42 30  ---          16 48 11  79.4  35.0 -0.8    -134.4   115     1166   04 40 31

04 43 10  J1746+6226   16 48 51  78.0  33.4 -1.0    -134.4    21     1166   04 43 10
04 44 50  =1745+624    16 50 32  78.1  32.8 -0.9    -135.4   100     1179   04 43 11

04 44 50  HD-MID       16 50 32  79.6  33.9 -0.8    -136.0   -19     1179   No stop
04 47 20  ---          16 53 02  79.8  32.6 -0.8    -137.7   131     1198   04 44 51
```

Schedule for TORUN (Code Tr) Page 7

HD160934 Orbit -Epoch 3

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 5 Mar 2014 Day 64 ---										
04 47 20	HD-MID	16 53 02	79.8	32.6	-0.8		-137.7	-5	1198	No stop
04 49 20	---	16 55 02	80.0	31.6	-0.7		-139.2	115	1213	04 47 21
04 49 20	J1746+6226	16 55 02	78.5	30.9	-0.9		-138.2	-19	1213	No stop
04 51 00	=1745+624	16 56 43	78.6	30.2	-0.8		-139.3	81	1226	04 49 21
04 51 00	HD-MID	16 56 43	80.1	30.7	-0.7		-140.4	-19	1226	No stop
04 53 30	---	16 59 13	80.3	29.3	-0.7		-142.3	131	1245	04 51 01
04 53 30	HD-MID	16 59 13	80.3	29.3	-0.7		-142.3	-5	1245	No stop
04 55 30	---	17 01 13	80.4	28.2	-0.6		-143.9	115	1261	04 53 31
04 55 30	J1746+6226	17 01 13	78.9	28.1	-0.8		-142.3	-19	1261	No stop
04 57 10	=1745+624	17 02 54	79.0	27.3	-0.7		-143.5	81	1274	04 55 31
04 57 10	HD-MID	17 02 54	80.6	27.2	-0.6		-145.3	-19	1274	No stop
04 59 40	---	17 05 24	80.7	25.6	-0.6		-147.3	131	1293	04 57 11
04 59 40	HD-MID	17 05 24	80.7	25.6	-0.6		-147.3	-5	1293	No stop
05 01 40	---	17 07 24	80.8	24.4	-0.5		-149.0	115	1308	04 59 41
05 02 20	J1746+6226	17 08 04	79.4	24.7	-0.6		-147.2	21	1308	05 02 20
05 04 00	=1745+624	17 09 45	79.5	23.8	-0.6		-148.5	100	1321	05 02 21
05 04 00	HD-MID	17 09 45	81.0	22.8	-0.5		-151.1	-19	1321	No stop
05 06 30	---	17 12 15	81.1	21.1	-0.4		-153.3	131	1340	05 04 01
05 06 30	HD-MID	17 12 15	81.1	21.1	-0.4		-153.3	-5	1340	No stop
05 08 30	---	17 14 15	81.2	19.7	-0.4		-155.2	115	1356	05 06 31
05 08 30	J1746+6226	17 14 15	79.7	21.3	-0.5		-151.9	-19	1356	No stop
05 10 10	=1745+624	17 15 56	79.8	20.3	-0.5		-153.3	81	1368	05 08 31
05 10 10	HD-MID	17 15 56	81.3	18.5	-0.4		-156.7	-19	1368	No stop
05 12 40	---	17 18 26	81.4	16.6	-0.3		-159.1	131	1388	05 10 11
05 12 40	HD-MID	17 18 26	81.4	16.6	-0.3		-159.1	-5	1388	No stop
05 14 40	---	17 20 26	81.5	15.1	-0.3		-161.1	115	1403	05 12 41
05 14 40	J1746+6226	17 20 26	80.0	17.6	-0.4		-156.9	-19	1403	No stop
05 16 20	=1745+624	17 22 07	80.1	16.5	-0.4		-158.3	81	1416	05 14 41
05 16 20	HD-MID	17 22 07	81.6	13.8	-0.3		-162.7	-20	1416	No stop
05 18 50	---	17 24 37	81.7	11.8	-0.2		-165.2	130	1435	05 16 21

Schedule for TORUN (Code Tr) Page 8

HD160934 Orbit -Epoch 3

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 5 Mar 2014 Day 64 ---										
05 18 50	HD-MID	17 24 37	81.7	11.8	-0.2		-165.2	-5	1435	No stop
05 20 50	---	17 26 37	81.7	10.2	-0.2		-167.3	115	1450	05 18 51
05 21 30	J1746+6226	17 27 18	80.3	13.2	-0.3		-162.7	19	1450	05 21 30
05 23 10	=1745+624	17 28 58	80.4	12.1	-0.3		-164.2	100	1463	05 21 31
05 23 10	HD-MID	17 28 58	81.8	8.2	-0.2		-169.7	-23	1463	No stop
05 25 40	---	17 31 28	81.8	6.2	-0.1		-172.3	127	1482	05 23 11
05 25 40	HD-MID	17 31 28	81.8	6.2	-0.1		-172.3	-5	1482	No stop
05 27 40	---	17 33 29	81.8	4.5	-0.1		-174.4	115	1498	05 25 41
05 27 40	J1746+6226	17 33 29	80.5	9.1	-0.2		-168.2	-24	1498	No stop
05 29 20	=1745+624	17 35 09	80.5	7.9	-0.2		-169.7	76	1510	05 27 41
05 29 20	HD-MID	17 35 09	81.9	3.1	-0.1		-176.2	-25	1510	No stop
05 31 50	---	17 37 39	81.9	0.9	-0.0		-178.8	125	1530	05 29 21
05 31 50	HD-MID	17 37 39	81.9	0.9	-0.0		-178.8	-5	1530	No stop
05 33 50	---	17 39 40	81.9	-0.8	0.0		179.0	115	1545	05 31 51
05 33 50	J1746+6226	17 39 40	80.6	4.7	-0.1		-173.8	-26	1545	No stop
05 35 30	=1745+624	17 41 20	80.6	3.6	-0.1		-175.4	74	1558	05 33 51
05 35 30	HD-MID	17 41 20	81.9	-2.2	0.0		177.3	-27	1558	No stop
05 38 00	---	17 43 50	81.8	-4.3	0.1		174.6	123	1577	05 35 31
05 38 00	HD-MID	17 43 50	81.8	-4.3	0.1		174.6	-5	1577	No stop
05 40 00	---	17 45 51	81.8	-6.0	0.1		172.5	115	1592	05 38 01
05 40 40	J1746+6226	17 46 31	80.7	-0.1	0.0		179.8	13	1592	05 40 40
05 42 20	=1745+624	17 48 11	80.7	-1.3	0.0		178.3	100	1605	05 40 41
05 42 20	HD-MID	17 48 11	81.8	-8.0	0.2		170.0	-29	1605	No stop
05 44 50	---	17 50 41	81.7	-10.0	0.2		167.5	121	1624	05 42 21
05 44 50	HD-MID	17 50 41	81.7	-10.0	0.2		167.5	-5	1624	No stop
05 46 50	---	17 52 42	81.7	-11.7	0.2		165.4	115	1640	05 44 51
05 46 50	J1746+6226	17 52 42	80.6	-4.5	0.1		174.1	-29	1640	No stop
05 48 30	=1745+624	17 54 22	80.6	-5.7	0.1		172.6	71	1652	05 46 51
05 48 30	HD-MID	17 54 22	81.6	-13.0	0.3		163.7	-30	1652	No stop
05 51 00	---	17 56 52	81.5	-14.9	0.3		161.2	120	1672	05 48 31

```
Schedule for TORUN     (Code Tr )                                Page   9
               HD160934 Orbit -Epoch 3
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   5 Mar 2014   Day  64 ---

05 51 00  HD-MID       17 56 52  81.5 -14.9  0.3     161.2    -5     1672   No stop
05 53 00  ---          17 58 53  81.4 -16.5  0.3     159.3   115     1687   05 51 01

05 53 00  J1746+6226   17 58 53  80.5  -8.8  0.2     168.5   -30     1687   No stop
05 54 40  =1745+624    18 00 33  80.5 -10.0  0.2     167.0    70     1700   05 53 01

05 54 40  HD-MID       18 00 33  81.4 -17.7  0.4     157.7   -31     1700   No stop
05 57 10  ---          18 03 03  81.2 -19.6  0.4     155.3   119     1719   05 54 41

05 57 10  HD-MID       18 03 03  81.2 -19.6  0.4     155.3    -5     1719   No stop
05 59 10  ---          18 05 04  81.1 -21.0  0.4     153.5   115     1734   05 57 11

05 59 50  J1746+6226   18 05 44  80.3 -13.4  0.3     162.5    10     1734   05 59 50
06 01 30  =1745+624    18 07 24  80.3 -14.5  0.4     161.0   100     1747   05 59 51

06 01 30  HD-MID       18 07 24  81.0 -22.6  0.5     151.4   -32     1747   No stop
06 04 00  ---          18 09 55  80.9 -24.3  0.5     149.2   118     1766   06 01 31

06 04 00  HD-MID       18 09 55  80.9 -24.3  0.5     149.2    -5     1766   No stop
06 06 00  ---          18 11 55  80.7 -25.5  0.6     147.5   115     1782   06 04 01

06 06 00  J1746+6226   18 11 55  80.1 -17.4  0.4     157.2   -31     1782   No stop
06 07 40  =1745+624    18 13 35  80.0 -18.4  0.5     155.8    69     1795   06 06 01

06 07 40  HD-MID       18 13 35  80.6 -26.6  0.6     146.1   -32     1795   No stop
06 10 10  ---          18 16 06  80.4 -28.1  0.6     144.0   118     1814   06 07 41

06 10 10  HD-MID       18 16 06  80.4 -28.1  0.6     144.0    -5     1814   No stop
06 12 10  ---          18 18 06  80.3 -29.2  0.7     142.5   115     1829   06 10 11

06 12 10  J1746+6226   18 18 06  79.8 -21.1  0.5     152.2   -31     1829   No stop
06 13 50  =1745+624    18 19 46  79.7 -22.0  0.6     150.9    69     1842   06 12 11

06 13 50  HD-MID       18 19 46  80.2 -30.2  0.7     141.2   -32     1842   No stop
06 16 20  ---          18 22 17  80.0 -31.5  0.7     139.3   118     1861   06 13 51

06 16 20  HD-MID       18 22 17  80.0 -31.5  0.7     139.3    -5     1861   No stop
06 18 20  ---          18 24 17  79.8 -32.6  0.8     137.8   115     1876   06 16 21

06 19 00  J1746+6226   18 24 57  79.4 -24.8  0.6     147.0     9     1876   06 19 00
06 20 40  =1745+624    18 26 37  79.2 -25.7  0.7     145.7   100     1889   06 19 01

06 20 40  HD-MID       18 26 37  79.6 -33.7  0.8     136.2   -31     1889   No stop
06 23 10  ---          18 29 08  79.4 -34.9  0.8     134.5   119     1908   06 20 41
```

Schedule for TORUN (Code Tr) Page 10

HD160934 Orbit -Epoch 3

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 5 Mar 2014 Day 64 ---										
06 23 10	HD-MID	18 29 08	79.4	-34.9	0.8		134.5	-5	1908	No stop
06 25 10	---	18 31 08	79.2	-35.8	0.9		133.2	115	1924	06 23 11
06 25 10	J1746+6226	18 31 08	78.9	-27.9	0.7		142.6	-30	1924	No stop
06 26 50	=1745+624	18 32 48	78.8	-28.7	0.8		141.4	70	1937	06 25 11
06 26 50	HD-MID	18 32 48	79.1	-36.5	0.9		132.1	-31	1937	No stop
06 29 20	---	18 35 19	78.9	-37.6	0.9		130.5	119	1956	06 26 51
06 29 20	HD-MID	18 35 19	78.9	-37.6	0.9		130.5	-5	1956	No stop
06 31 20	---	18 37 19	78.7	-38.4	1.0		129.3	115	1971	06 29 21
06 31 20	J1746+6226	18 37 19	78.5	-30.8	0.8		138.4	-30	1971	No stop
06 33 00	=1745+624	18 38 59	78.4	-31.5	0.9		137.3	70	1984	06 31 21
06 33 00	HD-MID	18 38 59	78.5	-39.0	1.0		128.3	-30	1984	No stop
06 35 30	---	18 41 30	78.3	-39.9	1.0		126.9	120	2003	06 33 01
06 35 30	HD-MID	18 41 30	78.3	-39.9	1.0		126.9	-5	2003	No stop
06 37 30	---	18 43 30	78.1	-40.6	1.1		125.7	115	2019	06 35 31
06 38 10	J1746+6226	18 44 10	77.9	-33.6	1.0		134.2	11	2019	06 38 10
06 39 50	=1745+624	18 45 50	77.8	-34.2	1.0		133.2	100	2031	06 38 11
06 39 50	HD-MID	18 45 50	77.9	-41.4	1.1		124.5	-30	2031	No stop
06 42 20	---	18 48 21	77.6	-42.2	1.2		123.1	120	2051	06 39 51
06 42 20	HD-MID	18 48 21	77.6	-42.2	1.2		123.1	-5	2051	No stop
06 44 20	---	18 50 21	77.4	-42.8	1.2		122.1	115	2066	06 42 21
06 44 20	J1746+6226	18 50 21	77.4	-35.8	1.1		130.6	-29	2066	No stop
06 46 00	=1745+624	18 52 01	77.3	-36.4	1.1		129.6	71	2079	06 44 21
06 46 00	HD-MID	18 52 01	77.2	-43.3	1.2		121.3	-29	2079	No stop
06 48 30	---	18 54 32	77.0	-43.9	1.3		120.0	121	2098	06 46 01
06 48 30	HD-MID	18 54 32	77.0	-43.9	1.3		120.0	-5	2098	No stop
06 50 30	---	18 56 32	76.8	-44.5	1.3		119.1	115	2113	06 48 31
06 50 30	J1746+6226	18 56 32	76.9	-37.8	1.2		127.2	-28	2113	No stop
06 52 10	=1745+624	18 58 12	76.7	-38.3	1.2		126.4	72	2126	06 50 31
06 52 10	HD-MID	18 58 12	76.6	-44.9	1.3		118.3	-28	2126	No stop
06 54 40	---	19 00 43	76.3	-45.5	1.4		117.2	122	2145	06 52 11

Schedule for TORUN (Code Tr) Page 11

HD160934 Orbit -Epoch 3

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 5 Mar 2014 Day 64 ---										
06 54 40	HD-MID	19 00 43	76.3	-45.5	1.4		117.2	-5	2145	No stop
06 56 40	---	19 02 43	76.1	-45.9	1.4		116.3	115	2161	06 54 41
07 04 40	3C454.3	19 10 45	33.1	108.2	-3.7		-36.4	158	2161	07 04 40
07 09 40	---	19 15 45	33.8	109.4	-3.6		-36.2	300	2199	07 04 41
07 17 40	J1746+6226	19 23 47	74.2	-44.3	1.6		114.9	159	2199	07 17 40
07 19 20	=1745+624	19 25 27	74.0	-44.6	1.7		114.3	100	2212	07 17 41
07 19 20	HD-MID	19 25 27	73.6	-49.9	1.8		107.6	-26	2212	No stop
07 21 50	---	19 27 57	73.3	-50.2	1.8		106.7	124	2231	07 19 21
07 21 50	HD-MID	19 27 57	73.3	-50.2	1.8		106.7	-5	2231	No stop
07 23 50	---	19 29 58	73.1	-50.4	1.9		106.0	115	2246	07 21 51
07 23 50	J1746+6226	19 29 58	73.5	-45.4	1.7		112.5	-25	2246	No stop
07 25 30	=1745+624	19 31 38	73.3	-45.6	1.8		111.9	75	2259	07 23 51
07 25 30	HD-MID	19 31 38	72.9	-50.6	1.9		105.5	-25	2259	No stop
07 28 00	---	19 34 08	72.6	-50.9	1.9		104.7	125	2278	07 25 31
07 28 00	HD-MID	19 34 08	72.6	-50.9	1.9		104.7	-5	2278	No stop
07 30 00	---	19 36 09	72.3	-51.1	2.0		104.1	115	2294	07 28 01
07 30 00	J1746+6226	19 36 09	72.8	-46.3	1.8		110.3	-24	2294	No stop
07 31 40	=1745+624	19 37 49	72.7	-46.5	1.9		109.7	76	2307	07 30 01
07 31 40	HD-MID	19 37 49	72.1	-51.2	2.0		103.6	-24	2307	No stop
07 34 10	---	19 40 19	71.8	-51.4	2.0		102.8	126	2326	07 31 41
07 34 10	HD-MID	19 40 19	71.8	-51.4	2.0		102.8	-5	2326	No stop
07 36 10	---	19 42 20	71.6	-51.6	2.1		102.2	115	2341	07 34 11
07 36 50	J1746+6226	19 43 00	72.1	-47.1	1.9		108.0	16	2341	07 36 50
07 38 30	=1745+624	19 44 40	71.9	-47.3	2.0		107.4	100	2354	07 36 51
07 38 30	HD-MID	19 44 40	71.3	-51.8	2.1		101.5	-24	2354	No stop
07 41 00	---	19 47 11	71.0	-52.0	2.1		100.8	126	2373	07 38 31
07 41 00	HD-MID	19 47 11	71.0	-52.0	2.1		100.8	-5	2373	No stop
07 43 00	---	19 49 11	70.8	-52.1	2.2		100.2	115	2388	07 41 01
07 43 00	J1746+6226	19 49 11	71.4	-47.8	2.0		106.0	-23	2388	No stop
07 44 40	=1745+624	19 50 51	71.2	-48.0	2.1		105.4	77	2401	07 43 01

```
Schedule for TORUN     (Code Tr )                                Page  12
               HD160934 Orbit -Epoch 3
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   5 Mar 2014   Day  64 ---

07 44 40  HD-MID       19 50 51  70.6 -52.2  2.2      99.8   -23     2401   No stop
07 47 10  ---          19 53 22  70.3 -52.4  2.2      99.1   127     2420   07 44 41

07 47 10  HD-MID       19 53 22  70.3 -52.4  2.2      99.1    -5     2420   No stop
07 49 10  ---          19 55 22  70.1 -52.5  2.3      98.5   115     2436   07 47 11

07 49 10  J1746+6226   19 55 22  70.7 -48.4  2.2     104.1   -23     2436   No stop
07 50 50  =1745+624    19 57 02  70.5 -48.5  2.2     103.6    77     2449   07 49 11

07 50 50  HD-MID       19 57 02  69.9 -52.5  2.3      98.1   -23     2449   No stop
07 53 20  ---          19 59 33  69.6 -52.7  2.3      97.4   127     2468   07 50 51

07 53 20  HD-MID       19 59 33  69.6 -52.7  2.3      97.4    -5     2468   No stop
07 55 20  ---          20 01 33  69.3 -52.7  2.4      96.9   115     2483   07 53 21

07 56 00  J1746+6226   20 02 13  69.9 -48.9  2.3     102.0    17     2483   07 56 00
07 57 40  =1745+624    20 03 53  69.7 -49.0  2.3     101.6   100     2496   07 56 01

07 57 40  HD-MID       20 03 53  69.1 -52.8  2.4      96.3   -23     2496   No stop
08 00 10  ---          20 06 24  68.8 -52.9  2.5      95.7   127     2515   07 57 41

08 00 10  HD-MID       20 06 24  68.8 -52.9  2.5      95.7    -5     2515   No stop
08 02 10  ---          20 08 24  68.5 -53.0  2.5      95.2   115     2531   08 00 11

08 02 10  J1746+6226   20 08 24  69.2 -49.3  2.4     100.3   -22     2531   No stop
08 03 50  =1745+624    20 10 04  69.0 -49.4  2.4      99.8    78     2543   08 02 11

08 03 50  HD-MID       20 10 04  68.3 -53.0  2.5      94.8   -22     2543   No stop
08 06 20  ---          20 12 35  68.0 -53.1  2.6      94.2   128     2563   08 03 51

08 06 20  HD-MID       20 12 35  68.0 -53.1  2.6      94.2    -5     2563   No stop
08 08 20  ---          20 14 35  67.8 -53.1  2.6      93.7   115     2578   08 06 21

08 08 20  J1746+6226   20 14 35  68.5 -49.6  2.5      98.6   -22     2578   No stop
08 10 00  =1745+624    20 16 15  68.3 -49.7  2.5      98.2    78     2591   08 08 21

08 10 00  HD-MID       20 16 15  67.6 -53.2  2.6      93.3   -22     2591   No stop
08 12 30  ---          20 18 46  67.3 -53.2  2.7      92.7   128     2610   08 10 01

08 12 30  HD-MID       20 18 46  67.3 -53.2  2.7      92.7    -5     2610   No stop
08 14 30  ---          20 20 46  67.0 -53.2  2.7      92.2   115     2625   08 12 31

08 15 10  J1746+6226   20 21 26  67.7 -49.9  2.6      96.8    19     2625   08 15 10
08 16 50  =1745+624    20 23 06  67.6 -50.0  2.6      96.4   100     2638   08 15 11
```

```
Schedule for TORUN     (Code Tr )                                Page  13
               HD160934 Orbit -Epoch 3
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   5 Mar 2014   Day  64 ---

08 16 50  HD-MID       20 23 06  66.7 -53.3  2.7      91.7   -21     2638   No stop
08 19 20  ---          20 25 37  66.4 -53.3  2.8      91.1   129     2657   08 16 51

08 19 20  HD-MID       20 25 37  66.4 -53.3  2.8      91.1    -5     2657   No stop
08 21 20  ---          20 27 37  66.2 -53.3  2.8      90.7   115     2673   08 19 21

08 21 20  J1746+6226   20 27 37  67.0 -50.1  2.7      95.3   -21     2673   No stop
08 23 00  =1745+624    20 29 17  66.8 -50.1  2.7      94.9    79     2685   08 21 21

08 23 00  HD-MID       20 29 17  66.0 -53.3  2.8      90.3   -21     2685   No stop
08 25 30  ---          20 31 48  65.7 -53.3  2.9      89.8   129     2705   08 23 01

08 25 30  HD-MID       20 31 48  65.7 -53.3  2.9      89.8    -5     2705   No stop
08 27 30  ---          20 33 48  65.5 -53.3  2.9      89.3   115     2720   08 25 31

08 27 30  J1746+6226   20 33 48  66.3 -50.2  2.8      93.8   -21     2720   No stop
08 29 10  =1745+624    20 35 28  66.1 -50.3  2.8      93.4    79     2733   08 27 31

08 29 10  HD-MID       20 35 28  65.3 -53.3  2.9      89.0   -21     2733   No stop
08 31 40  ---          20 37 59  65.0 -53.3  3.0      88.4   129     2752   08 29 11

08 31 40  HD-MID       20 37 59  65.0 -53.3  3.0      88.4    -5     2752   No stop
08 33 40  ---          20 39 59  64.7 -53.3  3.0      88.0   115     2767   08 31 41

08 34 20  J1746+6226   20 40 39  65.5 -50.3  2.9      92.2    20     2767   08 34 20
08 36 00  =1745+624    20 42 20  65.3 -50.4  2.9      91.8   100     2780   08 34 21

08 36 00  HD-MID       20 42 20  64.4 -53.2  3.1      87.5   -20     2780   No stop
08 38 30  ---          20 44 50  64.1 -53.2  3.1      87.0   130     2799   08 36 01

08 38 30  HD-MID       20 44 50  64.1 -53.2  3.1      87.0    -5     2799   No stop
08 40 30  ---          20 46 50  63.9 -53.2  3.1      86.6   115     2815   08 38 31

08 40 30  J1746+6226   20 46 50  64.8 -50.4  3.0      90.8   -20     2815   No stop
08 42 10  =1745+624    20 48 31  64.6 -50.4  3.0      90.4    80     2828   08 40 31

08 42 10  HD-MID       20 48 31  63.7 -53.1  3.2      86.2   -20     2828   No stop
08 44 40  ---          20 51 01  63.4 -53.1  3.2      85.7   130     2847   08 42 11

08 44 40  HD-MID       20 51 01  63.4 -53.1  3.2      85.7    -5     2847   No stop
08 46 40  ---          20 53 01  63.1 -53.0  3.2      85.3   115     2862   08 44 41

08 46 40  J1746+6226   20 53 01  64.1 -50.4  3.1      89.4   -20     2862   No stop
08 48 20  =1745+624    20 54 42  63.9 -50.4  3.1      89.0    80     2875   08 46 41
```

Schedule for TORUN (Code Tr) Page 14

HD160934 Orbit -Epoch 3

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 5 Mar 2014 Day 64 ---										
08 48 20	HD-MID	20 54 42	62.9	-53.0	3.3		85.0	-19	2875	No stop
08 50 50	---	20 57 12	62.6	-52.9	3.3		84.5	131	2894	08 48 21
08 50 50	HD-MID	20 57 12	62.6	-52.9	3.3		84.5	-5	2894	No stop
08 52 50	---	20 59 12	62.4	-52.9	3.3		84.1	115	2909	08 50 51
08 53 30	J1746+6226	20 59 52	63.3	-50.4	3.2		87.9	21	2909	08 53 30
08 55 10	=1745+624	21 01 33	63.1	-50.3	3.3		87.6	100	2922	08 53 31
08 55 10	HD-MID	21 01 33	62.1	-52.8	3.4		83.7	-19	2922	No stop
08 57 40	---	21 04 03	61.8	-52.8	3.4		83.2	131	2941	08 55 11
08 57 40	HD-MID	21 04 03	61.8	-52.8	3.4		83.2	-5	2941	No stop
08 59 40	---	21 06 03	61.6	-52.7	3.5		82.8	115	2957	08 57 41
08 59 40	J1746+6226	21 06 03	62.6	-50.3	3.3		86.6	-19	2957	No stop
09 01 20	=1745+624	21 07 44	62.4	-50.3	3.4		86.3	81	2970	08 59 41
09 01 20	HD-MID	21 07 44	61.4	-52.6	3.5		82.5	-19	2970	No stop
09 03 50	---	21 10 14	61.1	-52.6	3.5		82.0	131	2989	09 01 21
09 03 50	HD-MID	21 10 14	61.1	-52.6	3.5		82.0	-5	2989	No stop
09 05 50	---	21 12 14	60.8	-52.5	3.6		81.6	115	3004	09 03 51
09 05 50	J1746+6226	21 12 14	61.9	-50.2	3.4		85.3	-19	3004	No stop
09 07 30	=1745+624	21 13 55	61.7	-50.1	3.5		85.0	81	3017	09 05 51
09 07 30	HD-MID	21 13 55	60.6	-52.4	3.6		81.3	-19	3017	No stop
09 10 00	---	21 16 25	60.4	-52.3	3.6		80.8	131	3036	09 07 31
09 10 00	HD-MID	21 16 25	60.4	-52.3	3.6		80.8	-5	3036	No stop
09 12 00	---	21 18 25	60.1	-52.3	3.7		80.5	115	3052	09 10 01
09 12 40	J1746+6226	21 19 06	61.1	-50.0	3.5		83.9	22	3052	09 12 40
09 14 20	=1745+624	21 20 46	60.9	-50.0	3.6		83.6	100	3064	09 12 41
09 14 20	HD-MID	21 20 46	59.8	-52.2	3.7		80.0	-18	3064	No stop
09 16 50	---	21 23 16	59.5	-52.1	3.7		79.6	132	3084	09 14 21
09 16 50	HD-MID	21 23 16	59.5	-52.1	3.7		79.6	-5	3084	No stop
09 18 50	---	21 25 17	59.3	-52.0	3.8		79.2	115	3099	09 16 51
09 18 50	J1746+6226	21 25 17	60.4	-49.8	3.6		82.7	-18	3099	No stop
09 20 30	=1745+624	21 26 57	60.2	-49.8	3.7		82.4	82	3112	09 18 51

```
Schedule for TORUN     (Code Tr )                                Page  15
               HD160934 Orbit -Epoch 3
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   5 Mar 2014   Day  64 ---

09 20 30  HD-MID       21 26 57  59.1 -51.9  3.8      78.9   -18     3112   No stop
09 23 00  ---          21 29 27  58.8 -51.8  3.8      78.5   132     3131   09 20 31

09 23 00  HD-MID       21 29 27  58.8 -51.8  3.8      78.5    -5     3131   No stop
09 25 00  ---          21 31 28  58.6 -51.7  3.9      78.1   115     3146   09 23 01

09 25 00  J1746+6226   21 31 28  59.7 -49.6  3.8      81.5   -18     3146   No stop
09 26 40  =1745+624    21 33 08  59.5 -49.6  3.8      81.2    82     3159   09 25 01

09 26 40  HD-MID       21 33 08  58.4 -51.6  3.9      77.8   -18     3159   No stop
09 29 10  ---          21 35 38  58.1 -51.5  3.9      77.4   132     3178   09 26 41

09 29 10  HD-MID       21 35 38  58.1 -51.5  3.9      77.4    -5     3178   No stop
09 31 10  ---          21 37 39  57.8 -51.4  4.0      77.0   115     3194   09 29 11

09 31 50  J1746+6226   21 38 19  58.9 -49.4  3.9      80.2    22     3194   09 31 50
09 33 30  =1745+624    21 39 59  58.7 -49.3  3.9      79.9   100     3206   09 31 51

09 33 30  HD-MID       21 39 59  57.6 -51.3  4.0      76.6   -17     3206   No stop
09 36 00  ---          21 42 29  57.3 -51.1  4.1      76.2   133     3226   09 33 31

09 36 00  HD-MID       21 42 29  57.3 -51.1  4.1      76.2    -5     3226   No stop
09 38 00  ---          21 44 30  57.0 -51.0  4.1      75.8   115     3241   09 36 01

09 38 00  J1746+6226   21 44 30  58.2 -49.2  4.0      79.1   -17     3241   No stop
09 39 40  =1745+624    21 46 10  58.0 -49.1  4.0      78.7    83     3254   09 38 01

09 39 40  HD-MID       21 46 10  56.8 -50.9  4.1      75.5   -17     3254   No stop
09 42 10  ---          21 48 40  56.6 -50.8  4.2      75.1   133     3273   09 39 41

09 42 10  HD-MID       21 48 40  56.6 -50.8  4.2      75.1    -5     3273   No stop
09 44 10  ---          21 50 41  56.3 -50.7  4.2      74.7   115     3288   09 42 11

09 44 10  J1746+6226   21 50 41  57.5 -48.9  4.1      77.9   -17     3288   No stop
09 45 50  =1745+624    21 52 21  57.3 -48.8  4.1      77.6    83     3301   09 44 11

09 45 50  HD-MID       21 52 21  56.1 -50.6  4.2      74.5   -18     3301   No stop
09 48 20  ---          21 54 51  55.8 -50.4  4.3      74.0   132     3320   09 45 51

09 48 20  HD-MID       21 54 51  55.8 -50.4  4.3      74.0    -5     3320   No stop
09 50 20  ---          21 56 52  55.6 -50.3  4.3      73.7   115     3336   09 48 21

09 51 00  J1746+6226   21 57 32  56.7 -48.6  4.2      76.7    23     3336   09 51 00
09 52 40  =1745+624    21 59 12  56.5 -48.5  4.2      76.4   100     3348   09 51 01
```

```
Schedule for TORUN     (Code Tr )                                Page  16
               HD160934 Orbit -Epoch 3
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   5 Mar 2014   Day  64 ---

09 52 40  HD-MID       21 59 12  55.3 -50.2  4.3      73.3   -18     3348   No stop
09 55 10  ---          22 01 43  55.0 -50.0  4.4      72.9   132     3368   09 52 41

09 55 10  HD-MID       22 01 43  55.0 -50.0  4.4      72.9    -5     3368   No stop
09 57 10  ---          22 03 43  54.8 -49.9  4.4      72.5   115     3383   09 55 11

09 57 10  J1746+6226   22 03 43  56.0 -48.3  4.3      75.6   -18     3383   No stop
09 58 50  =1745+624    22 05 23  55.8 -48.2  4.3      75.3    82     3396   09 57 11

09 58 50  HD-MID       22 05 23  54.6 -49.8  4.4      72.3   -18     3396   No stop
10 01 20  ---          22 07 54  54.3 -49.6  4.5      71.8   132     3415   09 58 51

10 01 20  HD-MID       22 07 54  54.3 -49.6  4.5      71.8    -5     3415   No stop
10 03 20  ---          22 09 54  54.1 -49.5  4.5      71.5   115     3430   10 01 21

10 03 20  J1746+6226   22 09 54  55.3 -47.9  4.4      74.5   -18     3430   No stop
10 05 00  =1745+624    22 11 34  55.1 -47.8  4.4      74.2    82     3443   10 03 21

10 05 00  HD-MID       22 11 34  53.9 -49.4  4.5      71.2   -18     3443   No stop
10 07 30  ---          22 14 05  53.6 -49.2  4.6      70.8   132     3462   10 05 01

10 07 30  HD-MID       22 14 05  53.6 -49.2  4.6      70.8    -5     3462   No stop
10 09 30  ---          22 16 05  53.4 -49.1  4.6      70.5   115     3478   10 07 31

10 10 10  J1746+6226   22 16 45  54.6 -47.5  4.5      73.2    22     3478   10 10 10
10 11 50  =1745+624    22 18 25  54.4 -47.4  4.5      73.0   100     3491   10 10 11

10 11 50  HD-MID       22 18 25  53.1 -48.9  4.7      70.1   -18     3491   No stop
10 14 20  ---          22 20 56  52.9 -48.8  4.7      69.7   132     3510   10 11 51

10 14 20  HD-MID       22 20 56  52.9 -48.8  4.7      69.7    -5     3510   No stop
10 16 20  ---          22 22 56  52.6 -48.6  4.7      69.3   115     3525   10 14 21

10 16 20  J1746+6226   22 22 56  53.9 -47.2  4.6      72.2   -18     3525   No stop
10 18 00  =1745+624    22 24 36  53.7 -47.1  4.6      71.9    82     3538   10 16 21

10 18 00  HD-MID       22 24 36  52.4 -48.5  4.8      69.1   -18     3538   No stop
10 20 30  ---          22 27 07  52.2 -48.3  4.8      68.7   132     3557   10 18 01

10 20 30  HD-MID       22 27 07  52.2 -48.3  4.8      68.7    -5     3557   No stop
10 22 30  ---          22 29 07  51.9 -48.2  4.8      68.3   115     3572   10 20 31

10 22 30  J1746+6226   22 29 07  53.2 -46.8  4.7      71.1   -18     3572   No stop
10 24 10  =1745+624    22 30 47  53.0 -46.7  4.7      70.8    82     3585   10 22 31
```

```
Schedule for TORUN     (Code Tr )                                Page  17
               HD160934 Orbit -Epoch 3
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   5 Mar 2014   Day  64 ---

10 24 10  HD-MID       22 30 47  51.8 -48.1  4.9      68.1   -18     3585   No stop
10 26 40  ---          22 33 18  51.5 -47.9  4.9      67.7   132     3604   10 24 11

10 26 40  HD-MID       22 33 18  51.5 -47.9  4.9      67.7    -5     3604   No stop
10 28 40  ---          22 35 18  51.2 -47.7  4.9      67.3   115     3620   10 26 41

10 29 20  J1746+6226   22 35 58  52.5 -46.4  4.8      69.9    22     3620   10 29 20
10 31 00  =1745+624    22 37 38  52.3 -46.3  4.9      69.7   100     3633   10 29 21

10 31 00  HD-MID       22 37 38  51.0 -47.5  5.0      67.0   -18     3633   No stop
10 33 30  ---          22 40 09  50.7 -47.4  5.0      66.6   132     3652   10 31 01

10 33 30  HD-MID       22 40 09  50.7 -47.4  5.0      66.6    -5     3652   No stop
10 35 30  ---          22 42 09  50.5 -47.2  5.1      66.2   115     3667   10 33 31

10 35 30  J1746+6226   22 42 09  51.8 -46.0  4.9      68.9   -18     3667   No stop
10 37 10  =1745+624    22 43 49  51.6 -45.8  5.0      68.6    82     3680   10 35 31

10 37 10  HD-MID       22 43 49  50.3 -47.1  5.1      66.0   -18     3680   No stop
10 39 40  ---          22 46 20  50.0 -46.9  5.1      65.6   132     3699   10 37 11

10 39 40  HD-MID       22 46 20  50.0 -46.9  5.1      65.6    -5     3699   No stop
10 41 40  ---          22 48 20  49.8 -46.7  5.2      65.2   115     3715   10 39 41

10 41 40  J1746+6226   22 48 20  51.1 -45.5  5.0      67.8   -18     3715   No stop
10 43 20  =1745+624    22 50 00  50.9 -45.4  5.1      67.6    82     3727   10 41 41

10 43 20  HD-MID       22 50 00  49.6 -46.6  5.2      65.0   -18     3727   No stop
10 45 50  ---          22 52 31  49.4 -46.4  5.2      64.6   132     3747   10 43 21

10 45 50  HD-MID       22 52 31  49.4 -46.4  5.2      64.6    -5     3747   No stop
10 47 50  ---          22 54 31  49.1 -46.2  5.3      64.3   115     3762   10 45 51

10 48 30  J1746+6226   22 55 11  50.4 -45.0  5.1      66.7    22     3762   10 48 30
10 50 10  =1745+624    22 56 52  50.2 -44.9  5.2      66.4   100     3775   10 48 31

10 50 10  HD-MID       22 56 52  48.9 -46.1  5.3      63.9   -18     3775   No stop
10 52 40  ---          22 59 22  48.6 -45.9  5.3      63.5   132     3794   10 50 11

10 52 40  HD-MID       22 59 22  48.6 -45.9  5.3      63.5    -5     3794   No stop
10 54 40  ---          23 01 22  48.4 -45.7  5.4      63.2   115     3809   10 52 41

10 54 40  J1746+6226   23 01 22  49.7 -44.6  5.3      65.7   -18     3809   No stop
10 56 20  =1745+624    23 03 03  49.6 -44.5  5.3      65.4    82     3822   10 54 41
```

```
Schedule for TORUN     (Code Tr )                                Page  18
               HD160934 Orbit -Epoch 3
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   5 Mar 2014   Day  64 ---

10 56 20  HD-MID       23 03 03  48.2 -45.6  5.4      62.9   -18     3822   No stop
10 58 50  ---          23 05 33  48.0 -45.3  5.4      62.5   132     3841   10 56 21

10 58 50  HD-MID       23 05 33  48.0 -45.3  5.4      62.5    -5     3841   No stop
11 00 50  ---          23 07 33  47.7 -45.2  5.5      62.2   115     3857   10 58 51

11 00 50  J1746+6226   23 07 33  49.1 -44.1  5.4      64.7   -18     3857   No stop
11 02 30  =1745+624    23 09 14  48.9 -44.0  5.4      64.4    82     3869   11 00 51

11 02 30  HD-MID       23 09 14  47.6 -45.0  5.5      61.9   -19     3869   No stop
11 05 00  ---          23 11 44  47.3 -44.8  5.5      61.5   131     3889   11 02 31

11 05 00  HD-MID       23 11 44  47.3 -44.8  5.5      61.5    -5     3889   No stop
11 07 00  ---          23 13 44  47.1 -44.7  5.6      61.2   115     3904   11 05 01

11 07 40  J1746+6226   23 14 24  48.4 -43.6  5.5      63.5    22     3904   11 07 40
11 09 20  =1745+624    23 16 05  48.2 -43.5  5.5      63.3   100     3917   11 07 41

11 09 20  HD-MID       23 16 05  46.8 -44.5  5.6      60.9   -19     3917   No stop
11 11 50  ---          23 18 35  46.6 -44.2  5.7      60.5   131     3936   11 09 21

11 11 50  HD-MID       23 18 35  46.6 -44.2  5.7      60.5    -5     3936   No stop
11 13 50  ---          23 20 35  46.4 -44.1  5.7      60.2   115     3951   11 11 51

11 13 50  J1746+6226   23 20 35  47.7 -43.1  5.6      62.5   -18     3951   No stop
11 15 30  =1745+624    23 22 16  47.6 -43.0  5.6      62.3    82     3964   11 13 51

11 15 30  HD-MID       23 22 16  46.2 -43.9  5.7      59.9   -19     3964   No stop
11 18 00  ---          23 24 46  45.9 -43.7  5.8      59.5   131     3983   11 15 31

11 18 00  HD-MID       23 24 46  45.9 -43.7  5.8      59.5    -5     3983   No stop
11 20 00  ---          23 26 46  45.7 -43.5  5.8      59.2   115     3999   11 18 01

11 20 00  J1746+6226   23 26 46  47.1 -42.6  5.7      61.5   -18     3999   No stop
11 21 40  =1745+624    23 28 27  46.9 -42.5  5.7      61.2    82     4012   11 20 01

11 21 40  HD-MID       23 28 27  45.5 -43.4  5.8      58.9   -19     4012   No stop
11 24 10  ---          23 30 57  45.3 -43.2  5.9      58.5   131     4031   11 21 41

11 24 10  HD-MID       23 30 57  45.3 -43.2  5.9      58.5    -5     4031   No stop
11 26 10  ---          23 32 58  45.1 -43.0  5.9      58.2   115     4046   11 24 11

11 26 50  J1746+6226   23 33 38  46.4 -42.1  5.8      60.4    21     4046   11 26 50
11 28 30  =1745+624    23 35 18  46.2 -41.9  5.8      60.1   100     4059   11 26 51
```

```
Schedule for TORUN     (Code Tr )                                Page  19
               HD160934 Orbit -Epoch 3
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   5 Mar 2014   Day  64 ---

11 28 30  HD-MID       23 35 18  44.8 -42.8  5.9      57.9   -19     4059   No stop
11 31 00  ---          23 37 48  44.6 -42.5  6.0      57.5   131     4078   11 28 31

11 31 00  HD-MID       23 37 48  44.6 -42.5  6.0      57.5    -5     4078   No stop
11 33 00  ---          23 39 49  44.4 -42.4  6.0      57.2   115     4093   11 31 01

11 33 00  J1746+6226   23 39 49  45.8 -41.6  5.9      59.4   -19     4093   No stop
11 34 40  =1745+624    23 41 29  45.6 -41.4  5.9      59.1    81     4106   11 33 01

11 34 40  HD-MID       23 41 29  44.2 -42.2  6.0      56.9   -19     4106   No stop
11 37 10  ---          23 43 59  44.0 -42.0  6.1      56.5   131     4125   11 34 41

11 37 10  HD-MID       23 43 59  44.0 -42.0  6.1      56.5    -5     4125   No stop
11 39 10  ---          23 46 00  43.8 -41.8  6.1      56.2   115     4141   11 37 11

11 39 10  J1746+6226   23 46 00  45.2 -41.0  6.0      58.4   -19     4141   No stop
11 40 50  =1745+624    23 47 40  45.0 -40.9  6.0      58.1    81     4154   11 39 11

11 40 50  HD-MID       23 47 40  43.6 -41.6  6.1      56.0   -19     4154   No stop
11 43 20  ---          23 50 10  43.3 -41.4  6.2      55.6   131     4173   11 40 51

11 43 20  HD-MID       23 50 10  43.3 -41.4  6.2      55.6    -5     4173   No stop
11 45 20  ---          23 52 11  43.2 -41.2  6.2      55.3   115     4188   11 43 21

11 46 00  J1746+6226   23 52 51  44.5 -40.4  6.1      57.3    21     4188   11 46 00
11 47 40  =1745+624    23 54 31  44.3 -40.3  6.1      57.1   100     4201   11 46 01

11 47 40  HD-MID       23 54 31  42.9 -41.0  6.3      54.9   -19     4201   No stop
11 50 10  ---          23 57 01  42.7 -40.7  6.3      54.5   131     4220   11 47 41

11 50 10  HD-MID       23 57 01  42.7 -40.7  6.3      54.5    -5     4220   No stop
11 52 10  ---          23 59 02  42.5 -40.6  6.3      54.2   115     4236   11 50 11

11 53 10  1803+784     00 00 02  51.6 -18.8  6.0      75.1     1     4236   11 53 10
11 56 10  ---          00 03 02  51.4 -18.7  6.1      74.4   180     4259   11 53 11

11 56 40  1803+784     00 03 33  51.4 -18.7  6.1      74.3    25     4259   11 56 40
11 59 40  ---          00 06 33  51.3 -18.6  6.1      73.6   180     4282   11 56 41
```

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


 ======== Setup file: sess114.C1024
   Matching groups in /Users/jcg/sched11/catalogs/freq.dat:
     tr6cm           E-mail Borkowski 23Apr03 (CR 1May03)

   Setup group:    2         Station: TORUN            Total bit rate:  1024
   Format: MKIV1:2           Bits per sample: 2        Sample rate: 32.000
   Number of channels: 16    DBE type:                 Speedup factor:   0.50

   Disk used to record data.

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

  The following frequency sets based on these setups were used.

   Frequency Set:   6  Setup file default.  Used pcal sets:   1
   LO sum=   4942.49  4942.49  4942.49  4942.49  4974.49  4974.49  4974.49  4974.49
             5006.49  5006.49  5006.49  5006.49  5038.49  5038.49  5038.49  5038.49
   BBC fr=    742.49   742.49   742.49   742.49   774.49   774.49   774.49   774.49
              806.49   806.49   806.49   806.49   838.49   838.49   838.49   838.49
   Bandwd=     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
               16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
    Matching frequency sets:   6

  The following pulse cal sets were used with this setup:

   Pulse cal detection set:   1  PCAL = 1MHZ
    PCALXB1=   S1    S3    S5    S7    S9    S11   S13   S15
    PCALXB2=   S2    S4    S6    S8    S10   S12   S14   S16
    PCALFR1=   490   510   490   510   490   510   490   510
    PCALFR2=   490   510   490   510   490   510   490   510

   Track assignments are:
    track1=   2, 10, 18, 26,  3, 11, 19, 27, 66, 74, 82, 90, 67, 75, 83, 91
    barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* HD-MID	17 38 03.174297	* 17 38 35.785200	17 38 44.504774	0.00
	61 15 23.60008	* 61 13 49.06270	61 13 09.56759	0.00
* J1746+6226	17 45 48.087282	* 17 46 14.034133	17 46 20.748593	0.22
1745+624	62 27 55.74936	* 62 26 54.73830	62 26 24.89852	0.10
J1800+7828	18 03 39.193525	* 18 00 45.683903	17 59 53.846586	0.50
* 1803+784	78 27 54.29744	* 78 28 04.01838	78 27 52.48232	0.10
J2253+1608	22 51 29.519738	* 22 53 57.747937	22 54 39.159062	0.68
* 3C454.3	15 52 54.34810	* 16 08 53.56093	16 13 24.39183	0.72

SOURCE SCAN SUMMARY FOR SOURCES LISTED ABOVE

Scan hours are for recording scans only.
Baseline hours are only counted for scans above horizon at both ends.

Source	Setup file	Frequency sets (duplicates not shown)	Observing hours Scan	Baseline
HD-MID	sess114.C1024	1 2 3 4 5 6 7 8 11 12	6.525	330.610
J1746+6226	sess114.C1024	1 2 3 4 5 6 7 8 11 12	2.417	111.718
1803+784	sess114.C1024	1 2 3 4 5 6 7 8 11 12	0.267	16.370
3C454.3	sess114.C1024	1 2 3 4 5 6 7 8 11 12	0.083	5.500

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)
HD-MID	91.1
J1746+6226	90.4
1803+784	93.1
3C454.3	22.4

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
that the Sun will cause amplitude reductions on the longest VLBA baselines
at a solar distance of 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
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
43.0 GHz	6. deg

ea053btr

5 GHz observation of RGB J0710+591

PI: *Kazunori Akiyama*

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Phone: +81 422 34 3939 EMAIL: kazunori.akiyama@nao.ac.jp
Fax: +81 422 34 3814 Phone during observation: +81 422 34 3939

Observing mode: VLBA/MKIV

Schedule for TORUN (Code Tr) Page 2

5 GHz observation of RGB J0710+591

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

--- Wed 5 Mar 2014 Day 64 ---

Next scan frequencies:	4942.49	4942.49	4942.49	4942.49	4974.49	4974.49	4974.49	4974.49							
	5006.49	5006.49	5006.49	5006.49	5038.49	5038.49	5038.49	5038.49							
Next BBC frequencies:	742.49	742.49	742.49	742.49	774.49	774.49	774.49	774.49							
	806.49	806.49	806.49	806.49	838.49	838.49	838.49	838.49							
Next scan bandwidths:	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00							
	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00							

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
15 00 00	0706+592	03 07 23	56.6	54.8	-4.1		-72.9	0	0	15 00 00
15 05 30	---	03 12 54	57.3	55.2	-4.0		-73.8	330	42	15 00 01
15 06 00	0706+592	03 13 24	57.4	55.2	-4.0		-73.9	24	42	15 06 00
15 11 30	---	03 18 55	58.1	55.6	-3.9		-74.8	330	84	15 06 01
15 12 00	0706+592	03 19 25	58.1	55.6	-3.9		-74.8	24	84	15 12 00
15 17 30	---	03 24 56	58.8	55.9	-3.8		-75.7	330	127	15 12 01
15 18 00	0706+592	03 25 26	58.9	56.0	-3.8		-75.8	24	127	15 18 00
15 23 30	---	03 30 56	59.6	56.3	-3.7		-76.7	330	169	15 18 01
15 24 00	0706+592	03 31 27	59.6	56.3	-3.7		-76.8	24	169	15 24 00
15 29 30	---	03 36 57	60.3	56.6	-3.6		-77.7	330	211	15 24 01
15 30 00	0706+592	03 37 28	60.4	56.7	-3.6		-77.8	24	211	15 30 00
15 35 30	---	03 42 58	61.1	57.0	-3.5		-78.7	330	253	15 30 01
15 36 00	0706+592	03 43 29	61.1	57.0	-3.5		-78.8	24	253	15 36 00
15 41 30	---	03 48 59	61.8	57.3	-3.4		-79.8	330	296	15 36 01
15 42 00	0706+592	03 49 30	61.9	57.3	-3.4		-79.8	24	296	15 42 00
15 47 30	---	03 55 00	62.6	57.5	-3.3		-80.8	330	338	15 42 01
15 48 00	0706+592	03 55 31	62.6	57.6	-3.3		-80.9	24	338	15 48 00
15 53 30	---	04 01 01	63.3	57.8	-3.2		-81.9	330	380	15 48 01
15 54 30	0738+548	04 02 02	58.1	64.4	-3.7		-69.6	26	380	15 54 30
15 59 30	---	04 07 02	58.8	64.9	-3.6		-70.2	300	419	15 54 31

Schedule for TORUN (Code Tr) Page 3

5 GHz observation of RGB J0710+591

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 5 Mar 2014 Day 64 ---										
16 00 00	0706+592	04 07 32	64.2	58.1	-3.1		-83.0	-4	419	16 00 00
16 05 30	---	04 13 03	64.9	58.2	-3.0		-84.0	326	461	16 00 01
16 06 00	0706+592	04 13 33	64.9	58.3	-3.0		-84.1	24	461	16 06 00
16 11 30	---	04 19 04	65.6	58.4	-2.9		-85.2	330	503	16 06 01
16 12 00	0706+592	04 19 34	65.7	58.4	-2.9		-85.3	24	503	16 12 00
16 17 30	---	04 25 05	66.4	58.5	-2.8		-86.3	330	545	16 12 01
16 18 00	0706+592	04 25 35	66.5	58.6	-2.8		-86.4	24	545	16 18 00
16 23 30	---	04 31 06	67.2	58.7	-2.7		-87.5	330	588	16 18 01
16 24 00	0706+592	04 31 36	67.3	58.7	-2.7		-87.6	24	588	16 24 00
16 29 30	---	04 37 07	68.0	58.7	-2.6		-88.8	330	630	16 24 01
16 30 00	0706+592	04 37 37	68.0	58.7	-2.6		-88.9	24	630	16 30 00
16 35 30	---	04 43 08	68.7	58.7	-2.5		-90.0	330	672	16 30 01
16 36 00	0706+592	04 43 38	68.8	58.7	-2.5		-90.1	24	672	16 36 00
16 41 30	---	04 49 09	69.5	58.7	-2.4		-91.4	330	714	16 36 01
16 42 00	0706+592	04 49 39	69.6	58.7	-2.4		-91.5	24	714	16 42 00
16 47 30	---	04 55 10	70.3	58.6	-2.3		-92.7	330	756	16 42 01
16 48 00	0706+592	04 55 40	70.3	58.6	-2.3		-92.8	24	756	16 48 00
16 53 30	---	05 01 11	71.0	58.5	-2.2		-94.1	330	799	16 48 01
16 54 30	0738+548	05 02 11	66.5	69.7	-2.7		-77.1	23	799	16 54 30
16 59 30	---	05 07 12	67.2	70.1	-2.6		-77.8	300	837	16 54 31
17 02 30	0738+548	05 10 13	67.6	70.4	-2.6		-78.2	173	837	17 02 30
17 12 30	---	05 20 14	69.0	71.1	-2.4		-79.5	600	914	17 02 31
17 15 30	0706+592	05 23 15	73.9	57.3	-1.8		-100.0	138	914	17 15 30
17 24 00	---	05 31 46	74.9	56.5	-1.7		-102.6	510	979	17 15 31
17 24 30	0706+592	05 32 16	75.0	56.5	-1.7		-102.7	24	979	17 24 30
17 30 00	---	05 37 47	75.7	55.8	-1.6		-104.6	330	1021	17 24 31
17 30 30	0706+592	05 38 17	75.7	55.8	-1.6		-104.7	24	1021	17 30 30
17 36 00	---	05 43 48	76.4	55.0	-1.5		-106.7	330	1064	17 30 31
17 36 30	0706+592	05 44 18	76.5	54.9	-1.5		-106.9	24	1064	17 36 30
17 42 00	---	05 49 49	77.2	53.9	-1.4		-109.0	330	1106	17 36 31
17 42 30	0706+592	05 50 19	77.2	53.8	-1.4		-109.2	24	1106	17 42 30
17 48 00	---	05 55 50	77.9	52.7	-1.3		-111.5	330	1148	17 42 31

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

 --- Wed   5 Mar 2014   Day  64 ---

17 48 30  0706+592     05 56 20  77.9  52.6 -1.3    -111.7    24     1148   17 48 30
17 54 00  ---          06 01 51  78.6  51.2 -1.2    -114.2   330     1190   17 48 31

17 55 00  0738+548     06 02 51  75.1  73.7 -1.7     -85.8     0     1190   17 55 00
18 00 00  ---          06 07 52  75.8  73.9 -1.6     -86.7   300     1229   17 55 01




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


 ======== Setup file: sess114.C1024
   Matching groups in /usr2/local/sched/catalogs/freq.dat:
     tr6cm           E-mail Borkowski 23Apr03 (CR 1May03)

   Setup group:    5         Station: TORUN             Total bit rate:  1024
   Format: MKIV1:2           Bits per sample: 2         Sample rate: 32.000
   Number of channels: 16    DBE type:                  Speedup factor:   0.50

   Disk used to record data.

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

  The following frequency sets based on these setups were used.

   Frequency Set:   9  Setup file default.  Used pcal sets:   1
   LO sum=   4942.49  4942.49  4942.49  4942.49  4974.49  4974.49  4974.49  4974.49
             5006.49  5006.49  5006.49  5006.49  5038.49  5038.49  5038.49  5038.49
   BBC fr=    742.49   742.49   742.49   742.49   774.49   774.49   774.49   774.49
              806.49   806.49   806.49   806.49   838.49   838.49   838.49   838.49
   Bandwd=     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
               16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
    Matching frequency sets:   9
```

```
  The following pulse cal sets were used with this setup:

   Pulse cal detection set:   1  PCAL = 1MHZ
    PCALXB1=   S1    S3    S5    S7    S9    S11   S13   S15
    PCALXB2=   S2    S4    S6    S8    S10   S12   S14   S16
    PCALFR1=   490   510   490   510   490   510   490   510
    PCALFR2=   490   510   490   510   490   510   490   510

   Track assignments are:
    track1=   2, 10, 18, 26,  3, 11, 19, 27, 66, 74, 82, 90, 67, 75, 83, 91
    barrel=roll_off


 POSITIONS OF SOURCES USED IN RECORDING SCANS

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

 * 0706+592          07 06 09.303620   * 07 10 30.068300     07 11 45.995928       0.00
                     59 13 14.69171    * 59 08 20.36700      59 06 54.69940        0.00
                     From catalog imbedded in main SCHED input file.

 * 0738+548          07 38 40.348389   * 07 42 39.790700     07 43 49.599863       0.11
                     54 51 30.74964    * 54 44 24.66700      54 42 19.41818        0.11
                     From catalog imbedded in main SCHED input file.


SOURCE SCAN SUMMARY FOR SOURCES LISTED ABOVE

     Scan hours are for recording scans only.
     Baseline hours are only counted for scans above horizon at both ends.
  Source       Setup file             Frequency sets                  Observing hours
                                    (duplicates not shown)              Scan  Baseline
  0706+592   sess114.C1024         1 2 3 4 5 6 7 8 9 10 11           2.250   168.079
  0738+548   sess114.C1024         1 2 3 4 5 6 7 8 9 10 11           0.417    31.493


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)
   0706+592           110.9
   0738+548           116.8

  Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
  that the Sun will cause amplitude reductions on the  longest VLBA baselines
  at a solar distance of 60deg F^(-0.6) where F is in GHz.
  For common VLBI bands, this is:
       327 MHz        117. deg
       610 MHz         81. deg
       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
      43.0 GHz          6. deg
```

ea053ctr

5 GHz observation of 1ES 1218+304

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Observing mode: VLBA/MKIV

Schedule for TORUN (Code Tr) Page 2

5 GHz observation of 1ES 1218+304

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

--- Wed 5 Mar 2014 Day 64 ---

Start UT	Source	Start / Stop						Early	Disk	TPStart						
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC						
Next scan frequencies:		4942.49	4942.49	4942.49	4942.49	4974.49	4974.49	4974.49	4974.49							
		5006.49	5006.49	5006.49	5006.49	5038.49	5038.49	5038.49	5038.49							
Next BBC frequencies:		742.49	742.49	742.49	742.49	774.49	774.49	774.49	774.49							
		806.49	806.49	806.49	806.49	838.49	838.49	838.49	838.49							
Next scan bandwidths:		16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00							
		16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00							
19 00 00	1218+304	07 08 02	30.3	79.1	-5.2		-43.0	0	0	19 00 00						
19 05 30	---	07 13 33	31.1	80.1	-5.1		-43.1	330	42	19 00 01						
19 06 00	1218+304	07 14 03	31.2	80.2	-5.1		-43.2	24	42	19 06 00						
19 11 30	---	07 19 34	32.0	81.2	-5.0		-43.3	330	84	19 06 01						
19 12 00	1218+304	07 20 04	32.1	81.3	-5.0		-43.3	24	84	19 12 00						
19 17 30	---	07 25 35	32.9	82.3	-4.9		-43.5	330	127	19 12 01						
19 18 00	1218+304	07 26 05	33.0	82.4	-4.9		-43.5	24	127	19 18 00						
19 23 30	---	07 31 36	33.8	83.5	-4.8		-43.6	330	169	19 18 01						
19 24 00	1218+304	07 32 06	33.9	83.6	-4.8		-43.6	24	169	19 24 00						
19 29 30	---	07 37 37	34.7	84.6	-4.7		-43.7	330	211	19 24 01						
19 30 00	1218+304	07 38 07	34.8	84.7	-4.7		-43.7	24	211	19 30 00						
19 35 30	---	07 43 38	35.6	85.8	-4.6		-43.8	330	253	19 30 01						
19 36 00	1218+304	07 44 08	35.7	85.9	-4.6		-43.8	24	253	19 36 00						
19 41 30	---	07 49 39	36.5	86.9	-4.5		-43.9	330	296	19 36 01						
19 42 00	1218+304	07 50 09	36.6	87.0	-4.5		-43.9	24	296	19 42 00						
19 47 30	---	07 55 40	37.4	88.1	-4.4		-43.9	330	338	19 42 01						
19 48 00	1218+304	07 56 10	37.5	88.2	-4.4		-43.9	24	338	19 48 00						
19 53 30	---	08 01 41	38.3	89.3	-4.3		-43.9	330	380	19 48 01						
19 54 30	1226+373	08 02 41	42.1	81.5	-4.4		-48.1	29	380	19 54 30						
19 59 30	---	08 07 42	42.9	82.4	-4.4		-48.2	300	419	19 54 31						
20 00 00	1218+304	08 08 12	39.3	90.6	-4.2		-43.9	-1	419	20 00 00						
20 05 30	---	08 13 43	40.1	91.7	-4.1		-43.9	329	461	20 00 01						

Schedule for TORUN (Code Tr) Page 3

5 GHz observation of 1ES 1218+304

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 5 Mar 2014 Day 64 ---										
20 06 00	1218+304	08 14 13	40.2	91.8	-4.1		-43.9	24	461	20 06 00
20 11 30	---	08 19 44	41.0	92.9	-4.0		-43.9	330	503	20 06 01
20 12 00	1218+304	08 20 14	41.1	93.0	-4.0		-43.9	24	503	20 12 00
20 17 30	---	08 25 45	41.9	94.2	-3.9		-43.8	330	545	20 12 01
20 18 00	1218+304	08 26 15	42.0	94.3	-3.9		-43.8	24	545	20 18 00
20 23 30	---	08 31 46	42.8	95.5	-3.8		-43.7	330	588	20 18 01
20 24 00	1218+304	08 32 16	42.9	95.6	-3.8		-43.7	24	588	20 24 00
20 29 30	---	08 37 47	43.7	96.7	-3.7		-43.6	330	630	20 24 01
20 30 00	1218+304	08 38 17	43.8	96.9	-3.7		-43.6	24	630	20 30 00
20 35 30	---	08 43 48	44.6	98.1	-3.6		-43.4	330	672	20 30 01
20 36 00	1218+304	08 44 18	44.7	98.2	-3.6		-43.4	24	672	20 36 00
20 41 30	---	08 49 49	45.5	99.4	-3.5		-43.2	330	714	20 36 01
20 42 00	1218+304	08 50 19	45.6	99.5	-3.5		-43.2	24	714	20 42 00
20 47 30	---	08 55 50	46.4	100.8	-3.4		-43.0	330	756	20 42 01
20 48 00	1218+304	08 56 20	46.5	100.9	-3.4		-43.0	24	756	20 48 00
20 53 30	---	09 01 51	47.3	102.2	-3.3		-42.7	330	799	20 48 01
20 54 30	1226+373	09 02 51	51.2	93.1	-3.4		-48.7	27	799	20 54 30
20 59 30	---	09 07 52	51.9	94.2	-3.4		-48.6	300	837	20 54 31
21 03 30	3C345	09 11 52	19.4	48.6	-7.5		-35.9	103	837	21 03 30
21 13 30	---	09 21 54	20.5	50.3	-7.4		-36.9	600	914	21 03 31
21 17 30	1218+304	09 25 55	50.7	108.1	-2.9		-41.3	110	914	21 17 30
21 24 00	---	09 32 26	51.7	109.8	-2.8		-40.8	390	964	21 17 31
21 24 30	1218+304	09 32 56	51.7	109.9	-2.8		-40.7	24	964	21 24 30
21 30 00	---	09 38 27	52.5	111.4	-2.7		-40.3	330	1006	21 24 31
21 30 30	1218+304	09 38 57	52.6	111.5	-2.7		-40.2	24	1006	21 30 30
21 36 00	---	09 44 28	53.4	113.0	-2.6		-39.7	330	1048	21 30 31
21 36 30	1218+304	09 44 58	53.4	113.2	-2.6		-39.6	24	1048	21 36 30
21 42 00	---	09 50 29	54.2	114.7	-2.5		-39.1	330	1091	21 36 31
21 42 30	1218+304	09 50 59	54.3	114.9	-2.5		-39.0	24	1091	21 42 30
21 48 00	---	09 56 30	55.0	116.5	-2.4		-38.4	330	1133	21 42 31
21 48 30	1218+304	09 57 00	55.1	116.6	-2.4		-38.3	24	1133	21 48 30
21 54 00	---	10 02 31	55.8	118.3	-2.3		-37.7	330	1175	21 48 31
21 55 00	1226+373	10 03 31	60.1	107.7	-2.4		-45.8	24	1175	21 55 00
22 00 00	---	10 08 32	60.8	109.1	-2.3		-45.3	300	1213	21 55 01

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


 ======== Setup file: sess114.C1024
   Matching groups in /usr2/local/sched/catalogs/freq.dat:
     tr6cm           E-mail Borkowski 23Apr03 (CR 1May03)

   Setup group:    5         Station: TORUN            Total bit rate:  1024
   Format: MKIV1:2           Bits per sample: 2        Sample rate: 32.000
   Number of channels: 16    DBE type:                 Speedup factor:   0.50

   Disk used to record data.

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

  The following frequency sets based on these setups were used.

   Frequency Set:   9  Setup file default.  Used pcal sets:   1
   LO sum=   4942.49  4942.49  4942.49  4942.49  4974.49  4974.49  4974.49  4974.49
             5006.49  5006.49  5006.49  5006.49  5038.49  5038.49  5038.49  5038.49
   BBC fr=    742.49   742.49   742.49   742.49   774.49   774.49   774.49   774.49
              806.49   806.49   806.49   806.49   838.49   838.49   838.49   838.49
   Bandwd=     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
               16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
    Matching frequency sets:   9

  The following pulse cal sets were used with this setup:

   Pulse cal detection set:   1  PCAL = 1MHZ
    PCALXB1=   S1    S3    S5    S7    S9    S11   S13   S15
    PCALXB2=   S2    S4    S6    S8    S10   S12   S14   S16
    PCALFR1=   490   510   490   510   490   510   490   510
    PCALFR2=   490   510   490   510   490   510   490   510

   Track assignments are:
    track1=   2, 10, 18, 26,  3, 11, 19, 27, 66, 74, 82, 90, 67, 75, 83, 91
    barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* 1218+304	12 18 51.604105	* 12 21 21.942600	12 22 06.141704	0.00
	30 27 15.23868	* 30 10 37.16100	30 05 40.70408	0.00
* 1226+373	12 26 19.753218	* 12 28 47.423700	12 29 30.847135	0.10
	37 22 46.76057	* 37 06 12.09600	37 01 16.36150	0.10
J1642+3948	16 41 17.606228	* 16 42 58.809965	16 43 27.814097	0.77
* 3C345	39 54 10.81496	* 39 48 36.99402	39 46 51.06954	0.52

SOURCE SCAN SUMMARY FOR SOURCES LISTED ABOVE

Scan hours are for recording scans only.
Baseline hours are only counted for scans above horizon at both ends.

Source	Setup file	Frequency sets (duplicates not shown)	Observing hours Scan	Baseline
1218+304	sess114.C1024	1 2 3 4 5 6 7 8 9 10 11 14	2.217	194.491
1226+373	sess114.C1024	1 2 3 4 5 6 7 8 9 10 11 14	0.250	21.667
3C345	sess114.C1024	1 4 6 7 8 9 11	0.167	6.000

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)
1218+304	149.8
1226+373	143.4
3C345	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 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
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
43.0 GHz	6. deg

eg062ftr

EKDra Orbit -Epoch 3

PI: *Jose C. Guirado*


```
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```


```
Observing mode: Phase-referencing at 6cm (1024 Mb/s). Dual Pol


Schedule for TORUN     (Code Tr )                                  Page   2
               EKDra Orbit -Epoch 3
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   5 Mar 2014   Day  64 ---
 Next scan frequencies:  4942.49  4942.49  4942.49  4942.49  4974.49  4974.49  4974.49  4974.49
                         5006.49  5006.49  5006.49  5006.49  5038.49  5038.49  5038.49  5038.49
 Next BBC frequencies:    742.49   742.49   742.49   742.49   774.49   774.49   774.49   774.49
                          806.49   806.49   806.49   806.49   838.49   838.49   838.49   838.49
 Next scan bandwidths:     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
                           16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00

23 00 00  3C286        11 08 41  55.6 116.8 -2.4     -38.4     0        0   23 00 00
23 05 00  ---          11 13 42  56.3 118.4 -2.3     -37.8   300       38   23 00 01

23 08 00  3C286        11 16 43  56.7 119.3 -2.3     -37.4   173       38   23 08 00
23 13 00  ---          11 21 44  57.3 120.9 -2.2     -36.7   300       77   23 08 01

23 16 48  J1441+6318   11 25 32  63.0  48.5 -3.3     -88.8    68       77   23 16 48
23 18 28  =1440+635    11 27 13  63.1  48.6 -3.3     -89.2   100       90   23 16 49

23 18 28  EKDRA        11 27 13  63.5  46.4 -3.2     -91.8   -18       90   No stop
23 22 58  ---          11 31 43  64.0  46.3 -3.1     -92.8   252      124   23 18 29

23 22 58  J1441+6318   11 31 43  63.7  48.6 -3.2     -90.2   -18      124   No stop
23 24 38  =1440+635    11 33 24  63.8  48.6 -3.1     -90.5    82      137   23 22 59

23 24 38  EKDRA        11 33 24  64.1  46.3 -3.1     -93.2   -18      137   No stop
23 29 08  ---          11 37 54  64.6  46.2 -3.0     -94.3   252      172   23 24 39

23 29 48  J1441+6318   11 38 35  64.4  48.5 -3.1     -91.7    21      172   23 29 48
23 31 28  =1440+635    11 40 15  64.6  48.5 -3.0     -92.1   100      184   23 29 49

23 31 28  EKDRA        11 40 15  64.9  46.2 -3.0     -94.9   -19      184   No stop
23 35 58  ---          11 44 46  65.4  46.1 -2.9     -96.0   251      219   23 31 29

23 35 58  J1441+6318   11 44 46  65.1  48.5 -3.0     -93.2   -19      219   No stop
23 37 38  =1440+635    11 46 26  65.3  48.4 -2.9     -93.6    81      232   23 35 59

23 37 38  EKDRA        11 46 26  65.6  46.0 -2.9     -96.4   -19      232   No stop
23 42 08  ---          11 50 57  66.0  45.9 -2.8     -97.6   251      266   23 37 39

23 42 08  J1441+6318   11 50 57  65.8  48.4 -2.9     -94.6   -19      266   No stop
23 43 48  =1440+635    11 52 37  66.0  48.3 -2.8     -95.1    81      279   23 42 09
```

```
Schedule for TORUN     (Code Tr )                                Page   3
               EKDra Orbit -Epoch 3
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   5 Mar 2014   Day  64 ---

23 43 48  EKDRA        11 52 37  66.2  45.8 -2.8     -98.0   -19      279   No stop
23 48 18  ---          11 57 08  66.7  45.6 -2.7     -99.2   251      314   23 43 49

23 48 58  J1441+6318   11 57 48  66.6  48.2 -2.7     -96.3    21      314   23 48 58
23 50 38  =1440+635    11 59 28  66.8  48.1 -2.7     -96.8   100      326   23 48 59

23 50 38  EKDRA        11 59 28  67.0  45.5 -2.7     -99.8   -19      326   No stop
23 55 08  ---          12 03 59  67.4  45.3 -2.6    -101.0   251      361   23 50 39

23 55 08  J1441+6318   12 03 59  67.3  47.9 -2.6     -97.9   -20      361   No stop
23 56 48  =1440+635    12 05 39  67.5  47.9 -2.6     -98.4    80      374   23 55 09

 --- Start: Wed   5 Mar 2014   Day  64 -- Stop: Thu   6 Mar 2014   Day  65 ---

23 56 48  EKDRA        12 05 39  67.6  45.2 -2.6    -101.5   -20      374   No stop
00 01 18  ---          12 10 10  68.1  44.9 -2.5    -102.8   250      408   23 56 49

00 01 18  J1441+6318   12 10 10  68.0  47.7 -2.5     -99.6   -20      408   No stop
00 02 58  =1440+635    12 11 50  68.1  47.6 -2.5    -100.0    80      421   00 01 19

00 02 58  EKDRA        12 11 50  68.3  44.8 -2.5    -103.3   -20      421   No stop
00 07 28  ---          12 16 21  68.7  44.5 -2.4    -104.6   250      456   00 02 59

00 08 08  J1441+6318   12 17 01  68.7  47.3 -2.4    -101.4    20      456   00 08 08
00 09 48  =1440+635    12 18 41  68.9  47.2 -2.4    -101.9   100      468   00 08 09

00 09 48  EKDRA        12 18 41  69.0  44.3 -2.3    -105.3   -20      468   No stop
00 14 18  ---          12 23 12  69.5  43.9 -2.3    -106.6   250      503   00 09 49

00 14 18  J1441+6318   12 23 12  69.4  46.9 -2.3    -103.2   -20      503   No stop
00 15 58  =1440+635    12 24 52  69.6  46.7 -2.3    -103.7    80      516   00 14 19

00 15 58  EKDRA        12 24 52  69.6  43.8 -2.2    -107.2   -20      516   No stop
00 20 28  ---          12 29 23  70.1  43.3 -2.2    -108.6   250      550   00 15 59

00 20 28  J1441+6318   12 29 23  70.1  46.4 -2.2    -105.1   -21      550   No stop
00 22 08  =1440+635    12 31 03  70.3  46.2 -2.2    -105.6    79      563   00 20 29

00 22 08  EKDRA        12 31 03  70.3  43.2 -2.1    -109.1   -21      563   No stop
00 26 38  ---          12 35 34  70.7  42.7 -2.1    -110.6   249      598   00 22 09

00 27 18  J1441+6318   12 36 14  70.8  45.7 -2.1    -107.2    19      598   00 27 18
00 28 58  =1440+635    12 37 54  71.0  45.6 -2.1    -107.7   100      611   00 27 19

00 28 58  EKDRA        12 37 54  71.0  42.4 -2.0    -111.4   -21      611   No stop
00 33 28  ---          12 42 25  71.4  41.8 -1.9    -113.0   249      645   00 28 59
```

Schedule for TORUN (Code Tr) Page 4

EKDra Orbit -Epoch 3

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Thu 6 Mar 2014 Day 65 ---										
00 33 28	J1441+6318	12 42 25	71.5	45.1	-2.0		-109.2	-21	645	No stop
00 35 08	=1440+635	12 44 05	71.7	44.9	-2.0		-109.8	79	658	00 33 29
00 35 08	EKDRA	12 44 05	71.6	41.6	-1.9		-113.6	-21	658	No stop
00 39 38	---	12 48 36	72.0	40.9	-1.8		-115.2	249	692	00 35 09
00 39 38	J1441+6318	12 48 36	72.1	44.3	-1.9		-111.3	-21	692	No stop
00 41 18	=1440+635	12 50 16	72.3	44.1	-1.9		-111.9	79	705	00 39 39
00 41 18	EKDRA	12 50 16	72.2	40.7	-1.8		-115.8	-22	705	No stop
00 45 48	---	12 54 47	72.6	40.0	-1.7		-117.5	248	740	00 41 19
00 46 28	J1441+6318	12 55 27	72.8	43.3	-1.8		-113.8	18	740	00 46 28
00 48 08	=1440+635	12 57 07	73.0	43.1	-1.8		-114.4	100	753	00 46 29
00 48 08	EKDRA	12 57 07	72.9	39.6	-1.7		-118.4	-22	753	No stop
00 52 38	---	13 01 38	73.3	38.7	-1.6		-120.2	248	787	00 48 09
00 52 38	J1441+6318	13 01 38	73.5	42.3	-1.7		-116.1	-22	787	No stop
00 54 18	=1440+635	13 03 18	73.6	42.0	-1.7		-116.8	78	800	00 52 39
00 54 18	EKDRA	13 03 18	73.5	38.4	-1.6		-120.9	-22	800	No stop
00 58 48	---	13 07 49	73.9	37.5	-1.5		-122.8	248	835	00 54 19
00 58 48	J1441+6318	13 07 49	74.1	41.2	-1.6		-118.6	-22	835	No stop
01 00 28	=1440+635	13 09 29	74.3	40.8	-1.5		-119.3	78	847	00 58 49
01 00 28	EKDRA	13 09 29	74.0	37.1	-1.5		-123.5	-22	847	No stop
01 04 58	---	13 14 00	74.4	36.1	-1.4		-125.5	248	882	01 00 29
01 05 38	J1441+6318	13 14 40	74.8	39.7	-1.5		-121.5	18	882	01 05 38
01 07 18	=1440+635	13 16 21	74.9	39.3	-1.4		-122.3	100	895	01 05 39
01 07 18	EKDRA	13 16 21	74.6	35.5	-1.4		-126.6	-23	895	No stop
01 11 48	---	13 20 51	75.0	34.4	-1.3		-128.7	247	929	01 07 19
01 11 48	J1441+6318	13 20 51	75.3	38.3	-1.4		-124.3	-22	929	No stop
01 13 28	=1440+635	13 22 32	75.5	37.8	-1.3		-125.1	78	942	01 11 49
01 13 28	EKDRA	13 22 32	75.2	34.0	-1.3		-129.5	-23	942	No stop
01 17 58	---	13 27 02	75.5	32.7	-1.2		-131.8	247	977	01 13 29
01 17 58	J1441+6318	13 27 02	75.9	36.6	-1.3		-127.3	-23	977	No stop
01 19 38	=1440+635	13 28 43	76.1	36.1	-1.2		-128.1	77	989	01 17 59
01 19 38	EKDRA	13 28 43	75.7	32.2	-1.2		-132.6	-23	989	No stop
01 24 08	---	13 33 13	76.0	30.8	-1.1		-135.0	247	1024	01 19 39

Schedule for TORUN (Code Tr) Page 5

EKDra Orbit -Epoch 3

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Thu 6 Mar 2014 Day 65 ---										
01 24 48	J1441+6318	13 33 53	76.5	34.6	-1.1		-130.8	17	1024	01 24 48
01 26 28	=1440+635	13 35 34	76.6	34.0	-1.1		-131.7	100	1037	01 24 49
01 26 28	EKDRA	13 35 34	76.2	30.0	-1.1		-136.2	-23	1037	No stop
01 30 58	---	13 40 04	76.5	28.5	-1.0		-138.8	247	1071	01 26 29
01 30 58	J1441+6318	13 40 04	77.0	32.5	-1.0		-134.2	-23	1071	No stop
01 32 38	=1440+635	13 41 45	77.2	31.9	-1.0		-135.1	77	1084	01 30 59
01 32 38	EKDRA	13 41 45	76.7	27.9	-1.0		-139.7	-23	1084	No stop
01 37 08	---	13 46 15	77.0	26.3	-0.9		-142.4	247	1119	01 32 39
01 37 08	J1441+6318	13 46 15	77.5	30.3	-0.9		-137.8	-23	1119	No stop
01 38 48	=1440+635	13 47 56	77.6	29.6	-0.9		-138.8	77	1132	01 37 09
01 38 48	EKDRA	13 47 56	77.1	25.6	-0.9		-143.4	-23	1132	No stop
01 43 18	---	13 52 26	77.4	23.8	-0.8		-146.1	247	1166	01 38 49
01 43 58	J1441+6318	13 53 07	78.0	27.5	-0.8		-142.0	17	1166	01 43 58
01 45 38	=1440+635	13 54 47	78.1	26.7	-0.8		-143.1	100	1179	01 43 59
01 45 38	EKDRA	13 54 47	77.5	22.8	-0.7		-147.6	-23	1179	No stop
01 50 08	---	13 59 18	77.7	20.9	-0.7		-150.6	247	1213	01 45 39
01 50 08	J1441+6318	13 59 18	78.4	24.7	-0.7		-146.1	-22	1213	No stop
01 51 48	=1440+635	14 00 58	78.5	23.9	-0.7		-147.2	78	1226	01 50 09
01 51 48	EKDRA	14 00 58	77.8	20.1	-0.6		-151.7	-23	1226	No stop
01 56 18	---	14 05 29	78.1	18.0	-0.6		-154.7	247	1261	01 51 49
01 56 18	J1441+6318	14 05 29	78.8	21.7	-0.6		-150.4	-22	1261	No stop
01 57 58	=1440+635	14 07 09	78.9	20.9	-0.6		-151.6	78	1274	01 56 19
01 57 58	EKDRA	14 07 09	78.1	17.2	-0.5		-155.9	-22	1274	No stop
02 02 28	---	14 11 40	78.3	15.0	-0.5		-159.1	248	1308	01 57 59
02 03 08	J1441+6318	14 12 20	79.1	18.1	-0.5		-155.5	19	1308	02 03 08
02 04 48	=1440+635	14 14 00	79.2	17.2	-0.5		-156.7	100	1321	02 03 09
02 04 48	EKDRA	14 14 00	78.4	13.8	-0.4		-160.8	-22	1321	No stop
02 09 18	---	14 18 31	78.6	11.5	-0.3		-164.1	248	1356	02 04 49
02 09 18	J1441+6318	14 18 31	79.4	14.7	-0.4		-160.2	-21	1356	No stop
02 10 58	=1440+635	14 20 11	79.4	13.7	-0.4		-161.6	79	1368	02 09 19

Schedule for TORUN (Code Tr) Page 6

EKDra Orbit -Epoch 3

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Thu 6 Mar 2014 Day 65 ---										
02 10 58	EKDRA	14 20 11	78.6	10.6	-0.3		-165.3	-21	1368	No stop
02 15 28	---	14 24 42	78.7	8.1	-0.2		-168.7	249	1403	02 10 59
02 15 28	J1441+6318	14 24 42	79.6	11.0	-0.3		-165.2	-20	1403	No stop
02 17 08	=1440+635	14 26 22	79.6	10.0	-0.3		-166.6	80	1416	02 15 29
02 17 08	EKDRA	14 26 22	78.7	7.2	-0.2		-170.0	-20	1416	No stop
02 21 38	---	14 30 53	78.8	4.7	-0.1		-173.5	250	1450	02 17 09
02 22 18	J1441+6318	14 31 33	79.8	6.8	-0.2		-170.9	21	1450	02 22 18
02 23 58	=1440+635	14 33 13	79.8	5.8	-0.2		-172.3	100	1463	02 22 19
02 23 58	EKDRA	14 33 13	78.8	3.4	-0.1		-175.3	-19	1463	No stop
02 28 28	---	14 37 44	78.9	0.9	-0.0		-178.8	251	1498	02 23 59
02 28 28	J1441+6318	14 37 44	79.8	2.9	-0.1		-176.1	-17	1498	No stop
02 30 08	=1440+635	14 39 24	79.8	1.9	-0.0		-177.5	83	1510	02 28 29
02 30 08	EKDRA	14 39 24	78.9	-0.0	0.0		179.9	-18	1510	No stop
02 34 38	---	14 43 55	78.9	-2.6	0.1		176.4	252	1545	02 30 09
02 34 38	J1441+6318	14 43 55	79.8	-1.0	0.0		178.6	-17	1545	No stop
02 36 18	=1440+635	14 45 35	79.8	-2.1	0.1		177.2	83	1558	02 34 39
02 36 18	EKDRA	14 45 35	78.8	-3.5	0.1		175.1	-17	1558	No stop
02 40 48	---	14 50 06	78.8	-6.0	0.2		171.7	253	1592	02 36 19
02 41 28	J1441+6318	14 50 46	79.8	-5.4	0.1		172.8	23	1592	02 41 28
02 43 08	=1440+635	14 52 26	79.8	-6.4	0.2		171.4	100	1605	02 41 29
02 43 08	EKDRA	14 52 26	78.7	-7.3	0.2		169.9	-17	1605	No stop
02 47 38	---	14 56 57	78.6	-9.8	0.3		166.5	253	1640	02 43 09
02 47 38	J1441+6318	14 56 57	79.7	-9.2	0.2		167.7	-17	1640	No stop
02 49 18	=1440+635	14 58 37	79.6	-10.2	0.3		166.3	83	1652	02 47 39
02 49 18	EKDRA	14 58 37	78.6	-10.7	0.3		165.2	-17	1652	No stop
02 53 48	---	15 03 08	78.5	-13.0	0.4		161.9	253	1687	02 49 19
02 53 48	J1441+6318	15 03 08	79.5	-12.9	0.3		162.6	-17	1687	No stop
02 55 28	=1440+635	15 04 48	79.4	-13.9	0.4		161.3	83	1700	02 53 49
02 55 28	EKDRA	15 04 48	78.4	-13.9	0.4		160.6	-17	1700	No stop
02 59 58	---	15 09 19	78.2	-16.1	0.5		157.4	253	1734	02 55 29

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Schedule for TORUN     (Code Tr )                                Page   7
               EKDra Orbit -Epoch 3
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   6 Mar 2014   Day  65 ---

03 00 38  J1441+6318   15 09 59  79.2 -16.9  0.5     157.2    23     1734   03 00 38
03 02 18  =1440+635    15 11 39  79.2 -17.8  0.5     156.0   100     1747   03 00 39

03 02 18  EKDRA        15 11 39  78.1 -17.3  0.5     155.8   -17     1747   No stop
03 06 48  ---          15 16 10  77.9 -19.4  0.6     152.7   253     1782   03 02 19

03 06 48  J1441+6318   15 16 10  78.9 -20.2  0.6     152.6   -17     1782   No stop
03 08 28  =1440+635    15 17 50  78.8 -21.1  0.6     151.4    83     1795   03 06 49

03 08 28  EKDRA        15 17 50  77.8 -20.2  0.6     151.6   -17     1795   No stop
03 12 58  ---          15 22 21  77.6 -22.2  0.7     148.6   253     1829   03 08 29

03 12 58  J1441+6318   15 22 21  78.6 -23.3  0.7     148.2   -17     1829   No stop
03 14 38  =1440+635    15 24 01  78.5 -24.1  0.7     147.0    83     1842   03 12 59

03 14 38  EKDRA        15 24 01  77.5 -22.9  0.7     147.5   -17     1842   No stop
03 19 08  ---          15 28 32  77.2 -24.7  0.8     144.7   253     1876   03 14 39

03 19 48  J1441+6318   15 29 12  78.2 -26.5  0.8     143.5    24     1876   03 19 48
03 21 28  =1440+635    15 30 53  78.0 -27.2  0.8     142.4   100     1889   03 19 49

03 21 28  EKDRA        15 30 53  77.1 -25.7  0.9     143.3   -17     1889   No stop
03 25 58  ---          15 35 23  76.8 -27.4  0.9     140.6   253     1924   03 21 29

03 25 58  J1441+6318   15 35 23  77.7 -29.1  0.9     139.6   -17     1924   No stop
03 27 38  =1440+635    15 37 04  77.6 -29.7  0.9     138.6    83     1937   03 25 59

03 27 38  EKDRA        15 37 04  76.6 -28.0  1.0     139.6   -17     1937   No stop
03 32 08  ---          15 41 34  76.3 -29.5  1.0     137.1   253     1971   03 27 39

03 32 08  J1441+6318   15 41 34  77.3 -31.5  1.0     135.9   -18     1971   No stop
03 33 48  =1440+635    15 43 15  77.1 -32.1  1.0     134.9    82     1984   03 32 09

03 33 48  EKDRA        15 43 15  76.2 -30.1  1.1     136.2   -17     1984   No stop
03 38 18  ---          15 47 45  75.8 -31.5  1.1     133.8   253     2019   03 33 49

03 38 58  J1441+6318   15 48 25  76.7 -33.8  1.1     132.0    22     2019   03 38 58
03 40 38  =1440+635    15 50 06  76.6 -34.4  1.1     131.1   100     2031   03 38 59

03 40 38  EKDRA        15 50 06  75.7 -32.2  1.2     132.5   -18     2031   No stop
03 45 08  ---          15 54 36  75.3 -33.5  1.3     130.3   252     2066   03 40 39

03 45 08  J1441+6318   15 54 36  76.2 -35.8  1.2     128.8   -19     2066   No stop
03 46 48  =1440+635    15 56 17  76.0 -36.2  1.2     128.0    81     2079   03 45 09
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Schedule for TORUN     (Code Tr )                                Page   8
               EKDra Orbit -Epoch 3
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   6 Mar 2014   Day  65 ---

03 46 48  EKDRA        15 56 17  75.2 -34.0  1.3     129.5   -18     2079   No stop
03 51 18  ---          16 00 47  74.8 -35.2  1.4     127.3   252     2113   03 46 49

03 51 18  J1441+6318   16 00 47  75.6 -37.5  1.3     125.7   -19     2113   No stop
03 52 58  =1440+635    16 02 28  75.5 -37.9  1.3     124.9    81     2126   03 51 19

03 52 58  EKDRA        16 02 28  74.6 -35.6  1.4     126.5   -19     2126   No stop
03 57 28  ---          16 06 58  74.2 -36.6  1.5     124.5   251     2161   03 52 59

04 05 28  NRAO512      16 15 00  75.9 159.0 -0.4     -16.2    76     2161   04 05 28
04 10 28  ---          16 20 01  76.2 162.9 -0.3     -13.3   300     2199   04 05 29

04 19 28  J1441+6318   16 29 02  72.9 316.7  1.8     113.8   217     2199   04 19 28
04 21 08  =1440+635    16 30 43  72.7 316.5  1.8     113.2   100     2212   04 19 29

04 21 08  EKDRA        16 30 43  72.0 319.0  1.9     114.9   -19     2212   No stop
04 25 38  ---          16 35 13  71.5 318.3  1.9     113.3   251     2246   04 21 09

04 25 38  J1441+6318   16 35 13  72.2 315.8  1.9     111.6   -19     2246   No stop
04 27 18  =1440+635    16 36 54  72.0 315.6  1.9     111.0    81     2259   04 25 39

04 27 18  EKDRA        16 36 54  71.4 318.1  2.0     112.7   -19     2259   No stop
04 31 48  ---          16 41 24  70.9 317.5  2.0     111.2   251     2294   04 27 19

04 31 48  J1441+6318   16 41 24  71.6 315.0  2.0     109.5   -19     2294   No stop
04 33 28  =1440+635    16 43 05  71.4 314.8  2.0     108.9    81     2307   04 31 49

04 33 28  EKDRA        16 43 05  70.7 317.3  2.1     110.6   -19     2307   No stop
04 37 58  ---          16 47 35  70.3 316.8  2.1     109.1   251     2341   04 33 29

04 38 38  J1441+6318   16 48 16  70.8 314.3  2.1     107.2    21     2341   04 38 38
04 40 18  =1440+635    16 49 56  70.7 314.1  2.1     106.7   100     2354   04 38 39

04 40 18  EKDRA        16 49 56  70.0 316.6  2.2     108.4   -19     2354   No stop
04 44 48  ---          16 54 27  69.6 316.2  2.3     107.0   251     2388   04 40 19

04 44 48  J1441+6318   16 54 27  70.2 313.7  2.2     105.3   -19     2388   No stop
04 46 28  =1440+635    16 56 07  70.0 313.5  2.2     104.8    81     2401   04 44 49

04 46 28  EKDRA        16 56 07  69.4 316.0  2.3     106.4   -19     2401   No stop
04 50 58  ---          17 00 38  68.9 315.6  2.4     105.1   251     2436   04 46 29

04 50 58  J1441+6318   17 00 38  69.5 313.2  2.3     103.4   -19     2436   No stop
04 52 38  =1440+635    17 02 18  69.3 313.1  2.3     103.0    81     2449   04 50 59
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Schedule for TORUN (Code Tr) Page 9

EKDra Orbit -Epoch 3

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Thu 6 Mar 2014 Day 65 ---										
04 52 38	EKDRA	17 02 18	68.7	315.5	2.4		104.6	-19	2449	No stop
04 57 08	---	17 06 49	68.3	315.2	2.5		103.3	251	2483	04 52 39
04 57 48	J1441+6318	17 07 29	68.7	312.7	2.4		101.5	21	2483	04 57 48
04 59 28	=1440+635	17 09 09	68.6	312.6	2.4		101.0	100	2496	04 57 49
04 59 28	EKDRA	17 09 09	68.0	315.0	2.5		102.6	-19	2496	No stop
05 03 58	---	17 13 40	67.5	314.8	2.6		101.3	251	2531	04 59 29
05 03 58	J1441+6318	17 13 40	68.1	312.4	2.5		99.8	-19	2531	No stop
05 05 38	=1440+635	17 15 20	67.9	312.3	2.6		99.3	81	2543	05 03 59
05 05 38	EKDRA	17 15 20	67.4	314.7	2.6		100.9	-19	2543	No stop
05 10 08	---	17 19 51	66.9	314.4	2.7		99.6	251	2578	05 05 39
05 10 08	J1441+6318	17 19 51	67.4	312.1	2.6		98.1	-19	2578	No stop
05 11 48	=1440+635	17 21 31	67.2	312.0	2.7		97.7	81	2591	05 10 09
05 11 48	EKDRA	17 21 31	66.7	314.4	2.7		99.2	-19	2591	No stop
05 16 18	---	17 26 02	66.2	314.2	2.8		98.0	251	2625	05 11 49
05 16 58	J1441+6318	17 26 42	66.6	311.8	2.7		96.4	21	2625	05 16 58
05 18 38	=1440+635	17 28 22	66.4	311.8	2.8		96.0	100	2638	05 16 59
05 18 38	EKDRA	17 28 22	66.0	314.1	2.8		97.4	-19	2638	No stop
05 23 08	---	17 32 53	65.5	314.0	2.9		96.3	251	2673	05 18 39
05 23 08	J1441+6318	17 32 53	65.9	311.7	2.8		94.8	-19	2673	No stop
05 24 48	=1440+635	17 34 33	65.7	311.6	2.9		94.4	81	2685	05 23 09
05 24 48	EKDRA	17 34 33	65.3	313.9	2.9		95.8	-19	2685	No stop
05 29 18	---	17 39 04	64.8	313.8	3.0		94.7	251	2720	05 24 49
05 29 18	J1441+6318	17 39 04	65.2	311.5	2.9		93.4	-18	2720	No stop
05 30 58	=1440+635	17 40 44	65.0	311.5	3.0		93.0	82	2733	05 29 19
05 30 58	EKDRA	17 40 44	64.6	313.8	3.0		94.3	-18	2733	No stop
05 35 28	---	17 45 15	64.1	313.7	3.1		93.2	252	2767	05 30 59
05 36 08	J1441+6318	17 45 55	64.4	311.5	3.1		91.7	22	2767	05 36 08
05 37 48	=1440+635	17 47 35	64.3	311.5	3.1		91.4	100	2780	05 36 09
05 37 48	EKDRA	17 47 35	63.9	313.7	3.1		92.7	-18	2780	No stop
05 42 18	---	17 52 06	63.4	313.6	3.2		91.6	252	2815	05 37 49

```
Schedule for TORUN     (Code Tr )                                Page  10
               EKDra Orbit -Epoch 3
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   6 Mar 2014   Day  65 ---

05 42 18  J1441+6318   17 52 06  63.7 311.4  3.2      90.3   -18     2815   No stop
05 43 58  =1440+635    17 53 46  63.6 311.4  3.2      90.0    82     2828   05 42 19

05 43 58  EKDRA        17 53 46  63.2 313.6  3.2      91.2   -18     2828   No stop
05 48 28  ---          17 58 17  62.7 313.6  3.3      90.2   252     2862   05 43 59

05 48 28  J1441+6318   17 58 17  63.0 311.4  3.3      89.0   -18     2862   No stop
05 50 08  =1440+635    17 59 57  62.9 311.5  3.3      88.6    82     2875   05 48 29

05 50 08  EKDRA        17 59 57  62.5 313.6  3.3      89.8   -18     2875   No stop
05 54 38  ---          18 04 28  62.1 313.6  3.4      88.8   252     2909   05 50 09

05 55 18  J1441+6318   18 05 08  62.3 311.5  3.4      87.5    22     2909   05 55 18
05 56 58  =1440+635    18 06 48  62.1 311.5  3.4      87.1   100     2922   05 55 19

05 56 58  EKDRA        18 06 48  61.8 313.6  3.5      88.3   -18     2922   No stop
06 01 28  ---          18 11 19  61.3 313.7  3.5      87.3   252     2957   05 56 59

06 01 28  J1441+6318   18 11 19  61.6 311.6  3.5      86.2   -18     2957   No stop
06 03 08  =1440+635    18 12 59  61.4 311.6  3.5      85.8    82     2970   06 01 29

06 03 08  EKDRA        18 12 59  61.1 313.7  3.6      87.0   -18     2970   No stop
06 07 38  ---          18 17 30  60.6 313.8  3.6      86.0   252     3004   06 03 09

06 07 38  J1441+6318   18 17 30  60.9 311.7  3.6      84.9   -18     3004   No stop
06 09 18  =1440+635    18 19 10  60.7 311.7  3.6      84.6    82     3017   06 07 39

06 09 18  EKDRA        18 19 10  60.5 313.8  3.7      85.7   -18     3017   No stop
06 13 48  ---          18 23 41  60.0 313.9  3.7      84.7   252     3052   06 09 19

06 14 28  J1441+6318   18 24 21  60.1 311.9  3.7      83.5    22     3052   06 14 28
06 16 08  =1440+635    18 26 02  59.9 311.9  3.7      83.2   100     3064   06 14 29

06 16 08  EKDRA        18 26 02  59.7 313.9  3.8      84.2   -18     3064   No stop
06 20 38  ---          18 30 32  59.2 314.0  3.9      83.3   252     3099   06 16 09

06 20 38  J1441+6318   18 30 32  59.4 312.0  3.8      82.3   -18     3099   No stop
06 22 18  =1440+635    18 32 13  59.2 312.1  3.8      81.9    82     3112   06 20 39

06 22 18  EKDRA        18 32 13  59.0 314.1  3.9      83.0   -18     3112   No stop
06 26 48  ---          18 36 43  58.6 314.2  4.0      82.1   252     3146   06 22 19

06 26 48  J1441+6318   18 36 43  58.7 312.2  3.9      81.1   -17     3146   No stop
06 28 28  =1440+635    18 38 24  58.6 312.3  3.9      80.7    83     3159   06 26 49
```

```
Schedule for TORUN     (Code Tr )                                Page  11
               EKDra Orbit -Epoch 3
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   6 Mar 2014   Day  65 ---

06 28 28  EKDRA        18 38 24  58.4 314.2  4.0      81.7   -18     3159   No stop
06 32 58  ---          18 42 54  57.9 314.4  4.1      80.8   252     3194   06 28 29

06 33 38  J1441+6318   18 43 34  58.0 312.5  4.0      79.7    23     3194   06 33 38
06 35 18  =1440+635    18 45 15  57.8 312.5  4.0      79.4   100     3206   06 33 39

06 35 18  EKDRA        18 45 15  57.6 314.4  4.1      80.4   -17     3206   No stop
06 39 48  ---          18 49 45  57.2 314.6  4.2      79.5   253     3241   06 35 19

06 39 48  J1441+6318   18 49 45  57.3 312.7  4.1      78.6   -17     3241   No stop
06 41 28  =1440+635    18 51 26  57.1 312.8  4.2      78.3    83     3254   06 39 49

06 41 28  EKDRA        18 51 26  57.0 314.7  4.2      79.2   -17     3254   No stop
06 45 58  ---          18 55 57  56.5 314.8  4.3      78.3   253     3288   06 41 29

06 45 58  J1441+6318   18 55 57  56.6 313.0  4.2      77.4   -17     3288   No stop
06 47 38  =1440+635    18 57 37  56.4 313.0  4.3      77.1    83     3301   06 45 59

06 47 38  EKDRA        18 57 37  56.3 314.9  4.3      78.0   -17     3301   No stop
06 52 08  ---          19 02 08  55.8 315.1  4.4      77.1   253     3336   06 47 39

06 52 48  J1441+6318   19 02 48  55.9 313.3  4.3      76.1    23     3336   06 52 48
06 54 28  =1440+635    19 04 28  55.7 313.4  4.4      75.8   100     3348   06 52 49

06 54 28  EKDRA        19 04 28  55.6 315.2  4.4      76.7   -17     3348   No stop
06 58 58  ---          19 08 59  55.1 315.4  4.5      75.8   253     3383   06 54 29

06 58 58  J1441+6318   19 08 59  55.2 313.6  4.4      75.0   -17     3383   No stop
07 00 38  =1440+635    19 10 39  55.0 313.7  4.5      74.7    83     3396   06 58 59

07 00 38  EKDRA        19 10 39  54.9 315.5  4.5      75.5   -17     3396   No stop
07 05 08  ---          19 15 10  54.5 315.7  4.6      74.7   253     3430   07 00 39

07 05 08  J1441+6318   19 15 10  54.5 313.9  4.5      73.9   -17     3430   No stop
07 06 48  =1440+635    19 16 50  54.3 314.0  4.6      73.6    83     3443   07 05 09

07 06 48  EKDRA        19 16 50  54.3 315.8  4.6      74.4   -17     3443   No stop
07 11 18  ---          19 21 21  53.8 316.0  4.7      73.5   253     3478   07 06 49

07 11 58  J1441+6318   19 22 01  53.8 314.3  4.7      72.7    23     3478   07 11 58
07 13 38  =1440+635    19 23 41  53.6 314.4  4.7      72.4   100     3491   07 11 59

07 13 38  EKDRA        19 23 41  53.6 316.1  4.7      73.1   -17     3491   No stop
07 18 08  ---          19 28 12  53.1 316.4  4.8      72.3   253     3525   07 13 39
```

```
Schedule for TORUN     (Code Tr )                                Page  12
               EKDra Orbit -Epoch 3
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   6 Mar 2014   Day  65 ---

07 18 08  J1441+6318   19 28 12  53.1 314.7  4.8      71.6   -17     3525   No stop
07 19 48  =1440+635    19 29 52  52.9 314.8  4.8      71.3    83     3538   07 18 09

07 19 48  EKDRA        19 29 52  52.9 316.5  4.8      72.0   -17     3538   No stop
07 24 18  ---          19 34 23  52.5 316.7  4.9      71.2   253     3572   07 19 49

07 24 18  J1441+6318   19 34 23  52.5 315.0  4.9      70.5   -17     3572   No stop
07 25 58  =1440+635    19 36 03  52.3 315.1  4.9      70.2    83     3585   07 24 19

07 25 58  EKDRA        19 36 03  52.3 316.8  4.9      70.9   -17     3585   No stop
07 30 28  ---          19 40 34  51.8 317.1  5.0      70.1   253     3620   07 25 59

07 31 08  J1441+6318   19 41 14  51.7 315.5  5.0      69.3    23     3620   07 31 08
07 32 48  =1440+635    19 42 54  51.6 315.6  5.0      69.0   100     3633   07 31 09

07 32 48  EKDRA        19 42 54  51.6 317.2  5.1      69.7   -17     3633   No stop
07 37 18  ---          19 47 25  51.1 317.5  5.1      68.9   253     3667   07 32 49

07 37 18  J1441+6318   19 47 25  51.1 315.9  5.1      68.2   -16     3667   No stop
07 38 58  =1440+635    19 49 05  50.9 316.0  5.1      68.0    84     3680   07 37 19

07 38 58  EKDRA        19 49 05  51.0 317.6  5.2      68.6   -17     3680   No stop
07 43 28  ---          19 53 36  50.5 317.9  5.2      67.8   253     3715   07 38 59

07 43 28  J1441+6318   19 53 36  50.4 316.3  5.2      67.2   -16     3715   No stop
07 45 08  =1440+635    19 55 16  50.3 316.4  5.2      66.9    84     3727   07 43 29

07 45 08  EKDRA        19 55 16  50.4 318.0  5.3      67.5   -16     3727   No stop
07 49 38  ---          19 59 47  49.9 318.3  5.3      66.7   254     3762   07 45 09

07 50 18  J1441+6318   20 00 27  49.7 316.8  5.3      66.0    24     3762   07 50 18
07 51 58  =1440+635    20 02 07  49.6 316.9  5.3      65.7   100     3775   07 50 19

07 51 58  EKDRA        20 02 07  49.7 318.5  5.4      66.3   -16     3775   No stop
07 56 28  ---          20 06 38  49.2 318.8  5.5      65.5   254     3809   07 51 59

07 56 28  J1441+6318   20 06 38  49.1 317.2  5.4      65.0   -16     3809   No stop
07 58 08  =1440+635    20 08 18  48.9 317.3  5.4      64.7    84     3822   07 56 29

07 58 08  EKDRA        20 08 18  49.1 318.9  5.5      65.2   -16     3822   No stop
08 02 38  ---          20 12 49  48.6 319.2  5.6      64.4   254     3857   07 58 09

08 02 38  J1441+6318   20 12 49  48.5 317.7  5.5      63.9   -16     3857   No stop
08 04 18  =1440+635    20 14 29  48.3 317.8  5.5      63.7    84     3869   08 02 39
```

Schedule for TORUN (Code Tr) Page 13

EKDra Orbit -Epoch 3

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Thu 6 Mar 2014 Day 65 ---										
08 04 18	EKDRA	20 14 29	48.4	319.3	5.6		64.2	-16	3869	No stop
08 08 48	---	20 19 00	48.0	319.7	5.7		63.4	254	3904	08 04 19
08 09 28	J1441+6318	20 19 40	47.8	318.2	5.6		62.8	24	3904	08 09 28
08 11 08	=1440+635	20 21 20	47.6	318.3	5.7		62.5	100	3917	08 09 29
08 11 08	EKDRA	20 21 20	47.8	319.8	5.7		63.0	-16	3917	No stop
08 15 38	---	20 25 51	47.3	320.2	5.8		62.2	254	3951	08 11 09
08 15 38	J1441+6318	20 25 51	47.2	318.7	5.7		61.8	-16	3951	No stop
08 17 18	=1440+635	20 27 32	47.0	318.8	5.8		61.5	84	3964	08 15 39
08 17 18	EKDRA	20 27 32	47.2	320.3	5.8		61.9	-16	3964	No stop
08 21 48	---	20 32 02	46.8	320.6	5.9		61.2	254	3999	08 17 19
08 21 48	J1441+6318	20 32 02	46.6	319.1	5.8		60.8	-16	3999	No stop
08 23 28	=1440+635	20 33 43	46.4	319.3	5.9		60.5	84	4012	08 21 49
08 23 28	EKDRA	20 33 43	46.6	320.8	5.9		60.9	-16	4012	No stop
08 27 58	---	20 38 13	46.2	321.1	6.0		60.1	254	4046	08 23 29
08 28 38	J1441+6318	20 38 53	45.9	319.7	5.9		59.6	24	4046	08 28 38
08 30 18	=1440+635	20 40 34	45.7	319.8	6.0		59.3	100	4059	08 28 39
08 30 18	EKDRA	20 40 34	45.9	321.3	6.0		59.7	-16	4059	No stop
08 34 48	---	20 45 04	45.5	321.7	6.1		59.0	254	4093	08 30 19
08 34 48	J1441+6318	20 45 04	45.3	320.2	6.0		58.6	-16	4093	No stop
08 36 28	=1440+635	20 46 45	45.1	320.4	6.1		58.3	84	4106	08 34 49
08 36 28	EKDRA	20 46 45	45.4	321.8	6.1		58.7	-16	4106	No stop
08 40 58	---	20 51 15	45.0	322.2	6.2		57.9	254	4141	08 36 29
08 44 58	3C454.3	20 55 16	46.3	136.2	-2.0		-25.7	-145	4141	08 44 58
08 49 58	---	21 00 17	46.9	137.8	-1.9		-24.9	155	4179	08 44 59
08 50 58	3C454.3	21 01 17	47.0	138.1	-1.9		-24.7	54	4179	08 50 58
08 53 58	---	21 04 18	47.3	139.1	-1.8		-24.2	180	4202	08 50 59
08 54 58	3C454.3	21 05 18	47.4	139.4	-1.8		-24.0	54	4202	08 54 58
08 57 58	---	21 08 18	47.6	140.4	-1.8		-23.5	180	4225	08 54 59

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


 ======== Setup file: sess114.C1024
   Matching groups in /Users/jcg/sched11/catalogs/freq.dat:
     tr6cm           E-mail Borkowski 23Apr03 (CR 1May03)

   Setup group:    3         Station: TORUN            Total bit rate:  1024
   Format: MKIV1:2           Bits per sample: 2        Sample rate: 32.000
   Number of channels: 16    DBE type:                 Speedup factor:   0.50

   Disk used to record data.

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

  The following frequency sets based on these setups were used.

   Frequency Set:   7  Setup file default.  Used pcal sets:   1
   LO sum=   4942.49  4942.49  4942.49  4942.49  4974.49  4974.49  4974.49  4974.49
             5006.49  5006.49  5006.49  5006.49  5038.49  5038.49  5038.49  5038.49
   BBC fr=    742.49   742.49   742.49   742.49   774.49   774.49   774.49   774.49
              806.49   806.49   806.49   806.49   838.49   838.49   838.49   838.49
   Bandwd=     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
               16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
    Matching frequency sets:   7

  The following pulse cal sets were used with this setup:

   Pulse cal detection set:   1  PCAL = 1MHZ
    PCALXB1=   S1    S3    S5    S7    S9    S11   S13   S15
    PCALXB2=   S2    S4    S6    S8    S10   S12   S14   S16
    PCALFR1=   490   510   490   510   490   510   490   510
    PCALFR2=   490   510   490   510   490   510   490   510

   Track assignments are:
    track1=   2, 10, 18, 26,  3, 11, 19, 27, 66, 74, 82, 90, 67, 75, 83, 91
    barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* EKDRA	14 37 55.030171	* 14 38 59.915100	14 39 19.430054	0.00
	64 30 21.37563	* 64 17 29.66100	64 13 35.39304	0.00
J1331+3030	13 28 49.657778	* 13 31 08.288070	13 31 48.941659	0.20
* 3C286	30 45 58.64061	* 30 30 32.95925	30 25 57.55813	0.19
* J1441+6318	14 40 51.324342	* 14 41 58.669323	14 42 18.838728	6.63
1440+635	63 31 16.84259	* 63 18 33.43776	63 14 41.54105	3.52
J1640+3946	16 38 48.169686	* 16 40 29.632770	16 40 58.727438	0.13
* NRAO512	39 52 30.08655	* 39 46 46.02836	39 44 57.16837	0.10
J2253+1608	22 51 29.519738	* 22 53 57.747937	22 54 39.164576	0.68
* 3C454.3	15 52 54.34810	* 16 08 53.56093	16 13 24.30796	0.72

SOURCE SCAN SUMMARY FOR SOURCES LISTED ABOVE

Scan hours are for recording scans only.
Baseline hours are only counted for scans above horizon at both ends.

Source	Setup file	Frequency sets (duplicates not shown)	Observing hours Scan	Baseline
EKDRA	sess114.C1024	1 2 3 4 5 6 7 8 9 12 13	6.375	402.336
3C286	sess114.C1024	1 2 3 4 5 6 7 8 9 12 13	0.167	13.000
J1441+6318	sess114.C1024	1 2 3 4 5 6 7 8 9 12 13	2.361	133.777
NRAO512	sess114.C1024	1 2 3 4 5 6 7 8 9 12 13	0.083	6.238
3C454.3	sess114.C1024	1 2 3 4 5 6 7 8 9 12	0.183	9.142

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)
EKDRA	110.4
3C286	137.9
J1441+6318	110.7
NRAO512	98.6
3C454.3	22.1

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
that the Sun will cause amplitude reductions on the longest VLBA baselines
at a solar distance of 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
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
43.0 GHz	6. deg

ea053dtr

5 GHz observation of 1ES 0414+009

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Fax: +81 422 34 3814 Phone during observation: +81 422 34 3939

Observing mode: VLBA/MKIV

Schedule for TORUN (Code Tr) Page 2

5 GHz observation of 1ES 0414+009

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Thu 6 Mar 2014 Day 65 ---										
Next scan frequencies:		4942.49	4942.49	4942.49	4942.49		4974.49	4974.49	4974.49	4974.49
		5006.49	5006.49	5006.49	5006.49		5038.49	5038.49	5038.49	5038.49
Next BBC frequencies:		742.49	742.49	742.49	742.49		774.49	774.49	774.49	774.49
		806.49	806.49	806.49	806.49		838.49	838.49	838.49	838.49
Next scan bandwidths:		16.00	16.00	16.00	16.00		16.00	16.00	16.00	16.00
		16.00	16.00	16.00	16.00		16.00	16.00	16.00	16.00
12 30 00	0414+009	00 40 55	21.5	119.4	-3.6		-31.6	0	0	12 30 00
12 35 30	---	00 46 25	22.2	120.6	-3.5		-31.1	330	42	12 30 01
12 36 00	0414+009	00 46 56	22.3	120.8	-3.5		-31.1	24	42	12 36 00
12 41 30	---	00 52 26	23.0	122.0	-3.4		-30.6	330	84	12 36 01
12 42 00	0414+009	00 52 57	23.1	122.2	-3.4		-30.6	24	84	12 42 00
12 47 30	---	00 58 27	23.8	123.4	-3.3		-30.1	330	127	12 42 01
12 48 00	0414+009	00 58 58	23.8	123.6	-3.3		-30.0	24	127	12 48 00
12 53 30	---	01 04 28	24.5	124.9	-3.2		-29.5	330	169	12 48 01
12 54 00	0414+009	01 04 58	24.6	125.0	-3.2		-29.5	24	169	12 54 00
12 59 30	---	01 10 29	25.3	126.3	-3.1		-28.9	330	211	12 54 01
13 00 00	0414+009	01 10 59	25.3	126.4	-3.1		-28.9	24	211	13 00 00
13 05 30	---	01 16 30	26.0	127.8	-3.0		-28.3	330	253	13 00 01
13 06 00	0414+009	01 17 00	26.0	127.9	-3.0		-28.3	24	253	13 06 00
13 11 30	---	01 22 31	26.7	129.3	-2.9		-27.7	330	296	13 06 01
13 12 00	0414+009	01 23 01	26.7	129.4	-2.9		-27.7	24	296	13 12 00
13 17 30	---	01 28 32	27.4	130.8	-2.8		-27.1	330	338	13 12 01
13 18 00	0414+009	01 29 02	27.4	130.9	-2.8		-27.0	24	338	13 18 00
13 23 30	---	01 34 33	28.1	132.3	-2.7		-26.4	330	380	13 18 01
13 24 30	0422+004	01 35 34	26.8	130.8	-2.8		-27.0	42	380	13 24 30
13 29 30	---	01 40 34	27.4	132.1	-2.7		-26.5	300	419	13 24 31
13 30 00	0414+009	01 41 04	28.8	134.0	-2.6		-25.6	12	419	13 30 00
13 35 30	---	01 46 35	29.4	135.4	-2.5		-25.0	330	461	13 30 01
13 36 00	0414+009	01 47 05	29.4	135.5	-2.5		-24.9	24	461	13 36 00
13 41 30	---	01 52 36	30.0	137.0	-2.4		-24.2	330	503	13 36 01

Schedule for TORUN (Code Tr) Page 3

5 GHz observation of 1ES 0414+009

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Thu 6 Mar 2014 Day 65 ---										
13 42 00	0414+009	01 53 06	30.0	137.1	-2.4		-24.1	24	503	13 42 00
13 47 30	---	01 58 37	30.6	138.5	-2.3		-23.4	330	545	13 42 01
13 48 00	0414+009	01 59 07	30.6	138.7	-2.3		-23.4	24	545	13 48 00
13 53 30	---	02 04 38	31.2	140.2	-2.2		-22.6	330	588	13 48 01
13 54 00	0414+009	02 05 08	31.2	140.3	-2.2		-22.6	24	588	13 54 00
13 59 30	---	02 10 39	31.8	141.8	-2.1		-21.8	330	630	13 54 01
14 00 00	0414+009	02 11 09	31.8	141.9	-2.1		-21.7	24	630	14 00 00
14 05 30	---	02 16 40	32.3	143.4	-2.0		-21.0	330	672	14 00 01
14 06 00	0414+009	02 17 10	32.3	143.6	-2.0		-20.9	24	672	14 06 00
14 11 30	---	02 22 41	32.8	145.1	-1.9		-20.1	330	714	14 06 01
14 12 00	0414+009	02 23 11	32.9	145.3	-1.9		-20.0	24	714	14 12 00
14 17 30	---	02 28 42	33.3	146.8	-1.8		-19.2	330	756	14 12 01
14 18 00	0414+009	02 29 12	33.4	146.9	-1.8		-19.1	24	756	14 18 00
14 23 30	---	02 34 43	33.8	148.5	-1.7		-18.3	330	799	14 18 01
14 24 30	0422+004	02 35 43	32.8	146.7	-1.8		-19.2	42	799	14 24 30
14 29 30	---	02 40 44	33.2	148.2	-1.7		-18.5	300	837	14 24 31
14 31 30	0528+134	02 42 45	38.3	123.6	-2.8		-30.9	55	837	14 31 30
14 41 30	---	02 52 46	39.5	126.3	-2.6		-29.8	600	914	14 31 31
14 43 30	0414+009	02 54 46	35.3	154.3	-1.4		-15.1	50	914	14 43 30
14 48 00	---	02 59 17	35.5	155.7	-1.3		-14.3	270	948	14 43 31
14 48 30	0414+009	02 59 47	35.6	155.8	-1.3		-14.2	24	948	14 48 30
14 54 00	---	03 05 18	35.9	157.5	-1.2		-13.3	330	991	14 48 31
14 54 30	0414+009	03 05 48	35.9	157.6	-1.2		-13.2	24	991	14 54 30
15 00 00	---	03 11 19	36.2	159.3	-1.1		-12.3	330	1033	14 54 31
15 00 30	0414+009	03 11 49	36.3	159.4	-1.1		-12.2	24	1033	15 00 30
15 06 00	---	03 17 20	36.5	161.1	-1.0		-11.2	330	1075	15 00 31
15 06 30	0414+009	03 17 50	36.6	161.3	-1.0		-11.1	24	1075	15 06 30
15 12 00	---	03 23 21	36.8	163.0	-0.9		-10.1	330	1117	15 06 31
15 12 30	0414+009	03 23 51	36.8	163.1	-0.9		-10.0	24	1117	15 12 30
15 18 00	---	03 29 22	37.1	164.8	-0.8		-9.0	330	1160	15 12 31
15 18 30	0414+009	03 29 52	37.1	165.0	-0.8		-9.0	24	1160	15 18 30
15 24 00	---	03 35 23	37.3	166.7	-0.7		-7.9	330	1202	15 18 31
15 25 00	0422+004	03 36 23	36.5	164.6	-0.8		-9.1	41	1202	15 25 00
15 30 00	---	03 41 24	36.7	166.2	-0.7		-8.2	300	1240	15 25 01

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


 ======== Setup file: sess114.C1024
   Matching groups in /usr2/local/sched/catalogs/freq.dat:
     tr6cm           E-mail Borkowski 23Apr03 (CR 1May03)

   Setup group:    5         Station: TORUN            Total bit rate:  1024
   Format: MKIV1:2           Bits per sample: 2        Sample rate: 32.000
   Number of channels: 16    DBE type:                 Speedup factor:   0.50

   Disk used to record data.

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

  The following frequency sets based on these setups were used.

   Frequency Set:   9  Setup file default.  Used pcal sets:   1
   LO sum=   4942.49  4942.49  4942.49  4942.49  4974.49  4974.49  4974.49  4974.49
             5006.49  5006.49  5006.49  5006.49  5038.49  5038.49  5038.49  5038.49
   BBC fr=    742.49   742.49   742.49   742.49   774.49   774.49   774.49   774.49
              806.49   806.49   806.49   806.49   838.49   838.49   838.49   838.49
   Bandwd=     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
               16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
    Matching frequency sets:   9

  The following pulse cal sets were used with this setup:

   Pulse cal detection set:   1  PCAL = 1MHZ
    PCALXB1=   S1    S3    S5    S7    S9    S11   S13   S15
    PCALXB2=   S2    S4    S6    S8    S10   S12   S14   S16
    PCALFR1=   490   510   490   510   490   510   490   510
    PCALFR2=   490   510   490   510   490   510   490   510

   Track assignments are:
    track1=   2, 10, 18, 26,  3, 11, 19, 27, 66, 74, 82, 90, 67, 75, 83, 91
    barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* 0414+009	04 14 17.669943	* 04 16 52.494500	04 17 36.812722	0.00
	00 58 02.93501	* 01 05 23.89900	01 07 14.43896	0.00
* 0422+004	04 22 12.515455	* 04 24 46.842100	04 25 31.056841	0.10
	00 29 16.67882	* 00 36 06.32900	00 37 47.57724	0.10
J0530+1331	05 28 06.759218	* 05 30 56.416749	05 31 45.412529	0.10
* 0528+134	13 29 42.28877	* 13 31 55.14944	13 32 20.34730	0.10

SOURCE SCAN SUMMARY FOR SOURCES LISTED ABOVE

Scan hours are for recording scans only.
Baseline hours are only counted for scans above horizon at both ends.

Source	Setup file	Frequency sets (duplicates not shown)	Observing hours Scan	Baseline
0414+009	sess114.C1024	1 2 3 4 5 6 7 8 9 10 11 14	2.275	201.064
0422+004	sess114.C1024	1 2 3 4 5 6 7 8 9 10 11 14	0.250	21.667
0528+134	sess114.C1024	1 2 3 4 5 6 7 8 9 10 11 14	0.167	15.167

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)
0414+009	77.5
0422+004	79.4
0528+134	97.0

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
that the Sun will cause amplitude reductions on the longest VLBA baselines
at a solar distance of 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
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
43.0 GHz	6. deg

ev019btr

Phase-referencing of NGC4418

PI: *Eskil Varenius*

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Phone: +46 31 7725545 EMAIL: varenius@chalmers.se
Phone during observation: +46 70 6755341

Observing mode: Phase-referencing of NGC4418 at 6cm (1 Gb/s)
Notes: Part of EV019; See also exp. EV019A at L-band.

Schedule for TORUN (Code Tr) Page 2
Phase-referencing of NGC4418
UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator 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 6 Mar 2014 Day 65 ---										
Next scan frequencies:		4942.49	4942.49	4942.49	4942.49	4974.49	4974.49	4974.49	4974.49	
		5006.49	5006.49	5006.49	5006.49	5038.49	5038.49	5038.49	5038.49	
Next BBC frequencies:		742.49	742.49	742.49	742.49	774.49	774.49	774.49	774.49	
		806.49	806.49	806.49	806.49	838.49	838.49	838.49	838.49	
Next scan bandwidths:		16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	
		16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	
19 30 00	J1232	07 42 04	8.3	105.5	-4.8		-35.4	0	0	19 30 00
19 31 00	---	07 43 04	8.4	105.7	-4.8		-35.4	60	8	19 30 01
19 31 29	NGC4418	07 43 33	10.5	105.9	-4.7		-35.3	8	8	19 31 29
19 35 29	---	07 47 34	11.1	106.8	-4.7		-35.1	240	38	19 31 30
19 35 59	J1232	07 48 03	9.1	106.7	-4.7		-35.1	8	38	19 35 59
19 36 59	---	07 49 03	9.3	106.9	-4.7		-35.1	60	46	19 36 00
19 37 28	NGC4418	07 49 33	11.3	107.2	-4.6		-35.0	8	46	19 37 28
19 41 28	---	07 53 33	11.9	108.0	-4.6		-34.8	240	77	19 37 29
19 41 57	J1232	07 54 03	10.0	107.9	-4.6		-34.9	8	77	19 41 57
19 42 57	---	07 55 03	10.1	108.2	-4.6		-34.8	60	84	19 41 58
19 43 26	NGC4418	07 55 32	12.2	108.4	-4.5		-34.7	8	84	19 43 26
19 47 26	---	07 59 33	12.8	109.3	-4.5		-34.5	240	115	19 43 27
19 47 56	J1232	08 00 02	10.9	109.2	-4.5		-34.6	8	115	19 47 56
19 48 56	---	08 01 02	11.0	109.4	-4.5		-34.5	60	123	19 47 57
19 49 25	NGC4418	08 01 32	13.0	109.7	-4.4		-34.4	8	123	19 49 25
19 53 25	---	08 05 32	13.6	110.6	-4.4		-34.2	240	154	19 49 26
19 53 54	J1232	08 06 02	11.7	110.5	-4.4		-34.3	8	154	19 53 54
19 54 54	---	08 07 02	11.8	110.7	-4.4		-34.2	60	161	19 53 55
19 55 23	NGC4418	08 07 31	13.9	111.0	-4.3		-34.1	8	161	19 55 23
19 59 23	---	08 11 32	14.4	111.8	-4.3		-33.9	240	192	19 55 24

Schedule for TORUN (Code Tr) Page 3

Phase-referencing of NGC4418

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Thu 6 Mar 2014 Day 65 ---										
19 59 53	J1232	08 12 01	12.5	111.7	-4.3		-33.9	8	192	19 59 53
20 00 53	---	08 13 01	12.7	111.9	-4.3		-33.9	60	200	19 59 54
20 01 22	NGC4418	08 13 31	14.7	112.3	-4.2		-33.8	8	200	20 01 22
20 05 22	---	08 17 31	15.3	113.1	-4.2		-33.5	240	230	20 01 23
20 05 51	J1232	08 18 01	13.4	113.0	-4.2		-33.6	8	230	20 05 51
20 06 51	---	08 19 01	13.5	113.2	-4.2		-33.5	60	238	20 05 52
20 07 20	NGC4418	08 19 30	15.6	113.5	-4.1		-33.4	8	238	20 07 20
20 11 20	---	08 23 31	16.1	114.4	-4.1		-33.2	240	269	20 07 21
20 11 50	J1232	08 24 00	14.2	114.3	-4.1		-33.2	8	269	20 11 50
20 12 50	---	08 25 00	14.3	114.5	-4.1		-33.2	60	276	20 11 51
20 13 19	NGC4418	08 25 30	16.4	114.9	-4.0		-33.0	8	276	20 13 19
20 17 19	---	08 29 30	16.9	115.7	-4.0		-32.8	240	307	20 13 20
20 17 48	J1232	08 30 00	15.0	115.6	-4.0		-32.8	8	307	20 17 48
20 18 48	---	08 31 00	15.1	115.8	-4.0		-32.8	60	315	20 17 49
20 19 17	NGC4418	08 31 29	17.2	116.2	-3.9		-32.6	8	315	20 19 17
20 23 17	---	08 35 30	17.7	117.1	-3.9		-32.3	240	346	20 19 18
20 23 47	J1232	08 35 59	15.8	116.9	-3.9		-32.4	8	346	20 23 47
20 24 47	---	08 36 59	16.0	117.1	-3.9		-32.3	60	353	20 23 48
20 25 16	NGC4418	08 37 29	18.0	117.5	-3.8		-32.2	8	353	20 25 16
20 29 16	---	08 41 29	18.5	118.4	-3.8		-31.9	240	384	20 25 17
20 30 00	J1256	08 42 13	10.5	114.9	-4.2		-33.2	0	384	20 30 00
20 34 00	---	08 46 14	11.1	115.8	-4.2		-32.9	240	415	20 30 01
20 34 39	J1232	08 46 53	17.3	119.3	-3.8		-31.6	2	415	20 34 39
20 35 39	---	08 47 53	17.4	119.5	-3.7		-31.5	60	422	20 34 40
20 36 08	NGC4418	08 48 23	19.4	119.9	-3.7		-31.4	8	422	20 36 08
20 40 08	---	08 52 23	19.9	120.8	-3.6		-31.0	240	453	20 36 09
20 40 38	J1232	08 52 53	18.0	120.6	-3.7		-31.1	8	453	20 40 38
20 41 38	---	08 53 53	18.2	120.9	-3.6		-31.1	60	461	20 40 39
20 42 07	NGC4418	08 54 22	20.2	121.3	-3.6		-30.9	8	461	20 42 07
20 46 07	---	08 58 23	20.7	122.2	-3.5		-30.5	240	492	20 42 08
20 46 36	J1232	08 58 52	18.8	122.0	-3.6		-30.6	8	492	20 46 36
20 47 36	---	08 59 52	18.9	122.2	-3.5		-30.6	60	499	20 46 37

Schedule for TORUN (Code Tr) Page 4

Phase-referencing of NGC4418

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator 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 6 Mar 2014 Day 65 ---										
20 48 05	NGC4418	09 00 22	21.0	122.7	-3.5		-30.4	8	499	20 48 05
20 52 05	---	09 04 22	21.5	123.6	-3.4		-30.0	240	530	20 48 06
20 52 35	J1232	09 04 52	19.6	123.4	-3.5		-30.1	8	530	20 52 35
20 53 35	---	09 05 52	19.7	123.6	-3.4		-30.0	60	538	20 52 36
20 54 04	NGC4418	09 06 21	21.7	124.1	-3.4		-29.8	8	538	20 54 04
20 58 04	---	09 10 22	22.2	125.0	-3.3		-29.5	240	568	20 54 05
20 58 33	J1232	09 10 51	20.3	124.7	-3.4		-29.6	8	568	20 58 33
20 59 33	---	09 11 51	20.4	125.0	-3.3		-29.5	60	576	20 58 34
21 00 03	NGC4418	09 12 21	22.4	125.5	-3.3		-29.3	8	576	21 00 03
21 04 03	---	09 16 22	22.9	126.4	-3.2		-28.9	240	607	21 00 04
21 04 32	J1232	09 16 51	21.0	126.1	-3.3		-29.0	8	607	21 04 32
21 05 32	---	09 17 51	21.2	126.4	-3.2		-28.9	60	614	21 04 33
21 06 01	NGC4418	09 18 20	23.2	126.9	-3.2		-28.7	8	614	21 06 01
21 10 01	---	09 22 21	23.7	127.9	-3.1		-28.3	240	645	21 06 02
21 10 30	J1232	09 22 50	21.8	127.5	-3.2		-28.5	8	645	21 10 30
21 11 30	---	09 23 51	21.9	127.8	-3.1		-28.4	60	653	21 10 31
21 12 00	NGC4418	09 24 20	23.9	128.3	-3.1		-28.1	8	653	21 12 00
21 16 00	---	09 28 21	24.4	129.3	-3.0		-27.7	240	684	21 12 01
21 16 29	J1232	09 28 50	22.5	129.0	-3.1		-27.9	8	684	21 16 29
21 17 29	---	09 29 50	22.6	129.2	-3.0		-27.8	60	691	21 16 30
21 17 58	NGC4418	09 30 19	24.6	129.8	-3.0		-27.5	8	691	21 17 58
21 21 58	---	09 34 20	25.0	130.8	-2.9		-27.1	240	722	21 17 59
21 22 27	J1232	09 34 49	23.2	130.4	-3.0		-27.2	8	722	21 22 27
21 23 27	---	09 35 50	23.3	130.7	-2.9		-27.1	60	730	21 22 28
21 23 57	NGC4418	09 36 19	25.3	131.3	-2.9		-26.8	8	730	21 23 57
21 27 57	---	09 40 20	25.7	132.2	-2.8		-26.4	240	760	21 23 58
21 28 26	J1232	09 40 49	23.8	131.9	-2.9		-26.6	8	760	21 28 26
21 29 26	---	09 41 49	24.0	132.1	-2.8		-26.5	60	768	21 28 27
21 29 55	NGC4418	09 42 18	25.9	132.7	-2.8		-26.2	8	768	21 29 55
21 33 55	---	09 46 19	26.4	133.7	-2.7		-25.7	240	799	21 29 56
21 34 49	J1256	09 47 13	18.8	129.3	-3.2		-27.9	11	799	21 34 49
21 38 49	---	09 51 13	19.3	130.2	-3.1		-27.4	240	829	21 34 50

Schedule for TORUN (Code Tr) Page 5

Phase-referencing of NGC4418

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Thu 6 Mar 2014 Day 65 ---										
21 39 48	J1232	09 52 12	25.1	134.7	-2.7		-25.3	23	829	21 39 48
21 40 48	---	09 53 13	25.2	134.9	-2.7		-25.2	60	837	21 39 49
21 41 17	NGC4418	09 53 42	27.2	135.6	-2.6		-24.8	8	837	21 41 17
21 45 17	---	09 57 43	27.6	136.6	-2.5		-24.4	240	868	21 41 18
21 45 46	J1232	09 58 12	25.7	136.2	-2.6		-24.6	8	868	21 45 46
21 46 46	---	09 59 12	25.8	136.4	-2.6		-24.5	60	876	21 45 47
21 47 15	NGC4418	09 59 41	27.8	137.2	-2.5		-24.1	8	876	21 47 15
21 51 15	---	10 03 42	28.2	138.2	-2.4		-23.6	240	906	21 47 16
21 51 45	J1232	10 04 11	26.3	137.7	-2.5		-23.9	8	906	21 51 45
21 52 45	---	10 05 12	26.4	138.0	-2.5		-23.7	60	914	21 51 46
21 53 14	NGC4418	10 05 41	28.4	138.7	-2.4		-23.3	8	914	21 53 14
21 57 14	---	10 09 42	28.8	139.8	-2.3		-22.8	240	945	21 53 15
21 57 43	J1232	10 10 11	26.9	139.2	-2.4		-23.1	8	945	21 57 43
21 58 43	---	10 11 11	27.0	139.5	-2.4		-23.0	60	952	21 57 44
21 59 12	NGC4418	10 11 40	29.0	140.3	-2.3		-22.6	8	952	21 59 12
22 03 12	---	10 15 41	29.4	141.3	-2.2		-22.0	240	983	21 59 13
22 03 42	J1232	10 16 10	27.5	140.8	-2.3		-22.3	8	983	22 03 42
22 04 42	---	10 17 11	27.6	141.0	-2.3		-22.2	60	991	22 03 43
22 05 11	NGC4418	10 17 40	29.5	141.9	-2.2		-21.8	8	991	22 05 11
22 09 11	---	10 21 41	29.9	142.9	-2.1		-21.2	240	1021	22 05 12
22 09 40	J1232	10 22 10	28.1	142.4	-2.2		-21.5	9	1021	22 09 40
22 10 40	---	10 23 10	28.2	142.6	-2.2		-21.4	60	1029	22 09 41
22 11 09	NGC4418	10 23 39	30.1	143.5	-2.1		-20.9	8	1029	22 11 09
22 15 09	---	10 27 40	30.4	144.6	-2.0		-20.4	240	1060	22 11 10
22 16 02	J1256	10 28 33	23.2	139.2	-2.5		-23.2	12	1060	22 16 02
22 20 02	---	10 32 34	23.6	140.2	-2.4		-22.7	240	1091	22 16 03
22 20 59	J1232	10 33 31	29.1	145.4	-2.0		-20.0	23	1091	22 20 59
22 21 59	---	10 34 31	29.2	145.6	-2.0		-19.8	60	1098	22 21 00
22 22 29	NGC4418	10 35 01	31.1	146.6	-1.9		-19.3	8	1098	22 22 29
22 26 29	---	10 39 01	31.4	147.7	-1.8		-18.7	240	1129	22 22 30
22 26 58	J1232	10 39 31	29.6	147.0	-1.9		-19.1	9	1129	22 26 58
22 27 58	---	10 40 31	29.7	147.3	-1.9		-19.0	60	1137	22 26 59

Schedule for TORUN (Code Tr) Page 6

Phase-referencing of NGC4418

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Thu 6 Mar 2014 Day 65 ---										
22 28 27	NGC4418	10 41 00	31.5	148.2	-1.8		-18.4	8	1137	22 28 27
22 32 27	---	10 45 01	31.9	149.3	-1.7		-17.8	240	1167	22 28 28
22 32 56	J1232	10 45 30	30.1	148.6	-1.8		-18.2	9	1167	22 32 56
22 33 56	---	10 46 30	30.1	148.9	-1.8		-18.1	60	1175	22 32 57
22 34 26	NGC4418	10 47 00	32.0	149.9	-1.7		-17.5	9	1175	22 34 26
22 38 26	---	10 51 00	32.3	151.0	-1.6		-16.9	240	1206	22 34 27
22 38 55	J1232	10 51 30	30.5	150.3	-1.7		-17.3	9	1206	22 38 55
22 39 55	---	10 52 30	30.6	150.6	-1.7		-17.2	60	1213	22 38 56
22 40 24	NGC4418	10 52 59	32.4	151.6	-1.6		-16.6	9	1213	22 40 24
22 44 24	---	10 57 00	32.7	152.7	-1.5		-16.0	240	1244	22 40 25
22 44 54	J1232	10 57 29	30.9	151.9	-1.6		-16.4	9	1244	22 44 54
22 45 54	---	10 58 29	31.0	152.2	-1.6		-16.3	60	1252	22 44 55
22 46 23	NGC4418	10 58 59	32.9	153.3	-1.5		-15.7	9	1252	22 46 23
22 50 23	---	11 02 59	33.1	154.5	-1.4		-15.0	240	1283	22 46 24
22 50 52	J1232	11 03 29	31.4	153.6	-1.5		-15.5	9	1283	22 50 52
22 51 52	---	11 04 29	31.4	153.9	-1.5		-15.3	60	1290	22 50 53
22 52 21	NGC4418	11 04 58	33.3	155.0	-1.4		-14.7	9	1290	22 52 21
22 56 21	---	11 08 59	33.5	156.2	-1.3		-14.0	240	1321	22 52 22
22 56 51	J1232	11 09 28	31.7	155.3	-1.4		-14.5	9	1321	22 56 51
22 57 51	---	11 10 28	31.8	155.6	-1.4		-14.4	60	1329	22 56 52
22 58 20	NGC4418	11 10 58	33.6	156.8	-1.3		-13.7	9	1329	22 58 20
23 02 20	---	11 14 58	33.9	157.9	-1.2		-13.0	240	1359	22 58 21
23 02 49	J1232	11 15 28	32.1	157.0	-1.3		-13.6	9	1359	23 02 49
23 03 49	---	11 16 28	32.2	157.3	-1.3		-13.4	60	1367	23 02 50
23 04 18	NGC4418	11 16 57	34.0	158.5	-1.2		-12.7	9	1367	23 04 18
23 08 18	---	11 20 58	34.2	159.7	-1.1		-12.0	240	1398	23 04 19
23 09 09	J1256	11 21 49	27.7	153.1	-1.6		-15.9	12	1398	23 09 09
23 13 09	---	11 25 49	28.0	154.1	-1.5		-15.3	240	1428	23 09 10
23 14 04	J1232	11 26 44	32.7	160.3	-1.1		-11.7	23	1428	23 14 04
23 15 04	---	11 27 44	32.8	160.6	-1.1		-11.5	60	1436	23 14 05

Schedule for TORUN (Code Tr) Page 7

Phase-referencing of NGC4418

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator 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 6 Mar 2014 Day 65 ---										
23 15 33	NGC4418	11 28 13	34.5	161.9	-1.0		-10.8	9	1436	23 15 33
23 19 33	---	11 32 14	34.7	163.1	-0.9		-10.1	240	1467	23 15 34
23 20 02	J1232	11 32 43	33.0	162.0	-1.0		-10.7	9	1467	23 20 02
23 21 02	---	11 33 44	33.1	162.3	-1.0		-10.5	60	1475	23 20 03
23 21 31	NGC4418	11 34 13	34.8	163.7	-0.9		-9.7	9	1475	23 21 31
23 25 31	---	11 38 14	35.0	164.9	-0.8		-9.0	240	1505	23 21 32
23 26 01	J1232	11 38 43	33.3	163.8	-0.9		-9.7	9	1505	23 26 01
23 27 01	---	11 39 43	33.3	164.1	-0.9		-9.5	60	1513	23 26 02
23 27 30	NGC4418	11 40 12	35.0	165.5	-0.8		-8.7	9	1513	23 27 30
23 31 30	---	11 44 13	35.2	166.7	-0.7		-8.0	240	1544	23 27 31
23 31 59	J1232	11 44 42	33.5	165.6	-0.8		-8.6	9	1544	23 31 59
23 32 59	---	11 45 43	33.6	165.9	-0.8		-8.4	60	1551	23 32 00
23 33 28	NGC4418	11 46 12	35.3	167.3	-0.7		-7.6	9	1551	23 33 28
23 37 28	---	11 50 13	35.4	168.5	-0.6		-6.9	240	1582	23 33 29
23 37 58	J1232	11 50 42	33.7	167.3	-0.7		-7.6	9	1582	23 37 58
23 38 58	---	11 51 42	33.8	167.6	-0.7		-7.4	60	1590	23 37 59
23 39 27	NGC4418	11 52 11	35.4	169.1	-0.6		-6.5	9	1590	23 39 27
23 43 27	---	11 56 12	35.5	170.3	-0.5		-5.8	240	1620	23 39 28
23 43 56	J1232	11 56 41	33.9	169.1	-0.6		-6.5	9	1620	23 43 56
23 44 56	---	11 57 42	33.9	169.4	-0.6		-6.3	60	1628	23 43 57
23 45 25	NGC4418	11 58 11	35.6	170.9	-0.5		-5.4	9	1628	23 45 25
23 49 25	---	12 02 12	35.7	172.2	-0.4		-4.7	240	1659	23 45 26
23 49 55	J1232	12 02 41	34.1	170.9	-0.5		-5.4	10	1659	23 49 55
23 50 55	---	12 03 41	34.1	171.2	-0.5		-5.3	60	1667	23 49 56
23 51 24	NGC4418	12 04 11	35.7	172.8	-0.4		-4.3	10	1667	23 51 24
23 55 24	---	12 08 11	35.8	174.0	-0.3		-3.6	240	1697	23 51 25
23 55 53	J1232	12 08 41	34.2	172.7	-0.4		-4.4	10	1697	23 55 53
23 56 53	---	12 09 41	34.2	173.0	-0.4		-4.2	60	1705	23 55 54

Schedule for TORUN (Code Tr) Page 8

Phase-referencing of NGC4418

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

--- Start: Thu 6 Mar 2014 Day 65 -- Stop: Fri 7 Mar 2014 Day 66 ---

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
23 57 23	NGC4418	12 10 10	35.8	174.6	-0.3		-3.2	10	1705	23 57 23
00 01 23	---	12 14 11	35.9	175.8	-0.2		-2.5	240	1736	23 57 24
00 01 52	J1232	12 14 40	34.3	174.5	-0.3		-3.3	10	1736	00 01 52
00 02 52	---	12 15 40	34.3	174.8	-0.3		-3.1	60	1743	00 01 53
00 03 21	NGC4418	12 16 10	35.9	176.4	-0.2		-2.1	10	1743	00 03 21
00 07 21	---	12 20 10	35.9	177.7	-0.1		-1.4	240	1774	00 03 22
00 07 50	J1232	12 20 40	34.4	176.3	-0.2		-2.2	10	1774	00 07 50
00 08 50	---	12 21 40	34.4	176.6	-0.2		-2.0	60	1782	00 07 51
00 09 20	NGC4418	12 22 09	35.9	178.3	-0.1		-1.0	10	1782	00 09 20
00 13 20	---	12 26 10	35.9	179.5	-0.0		-0.3	240	1812	00 09 21
00 13 49	J1232	12 26 39	34.4	178.2	-0.1		-1.1	10	1812	00 13 49
00 14 49	---	12 27 39	34.4	178.5	-0.1		-0.9	60	1820	00 13 50
00 15 18	NGC4418	12 28 09	35.9	180.1	0.0		0.1	10	1820	00 15 18
00 19 18	---	12 32 09	35.9	181.4	0.1		0.8	240	1851	00 15 19
00 19 47	J1232	12 32 39	34.4	180.0	-0.0		-0.0	10	1851	00 19 47
00 20 47	---	12 33 39	34.4	180.3	0.0		0.2	60	1859	00 19 48
00 21 17	NGC4418	12 34 08	35.9	182.0	0.1		1.2	10	1859	00 21 17
00 25 17	---	12 38 09	35.9	183.2	0.2		1.9	240	1889	00 21 18
00 26 05	J1256	12 38 57	30.9	174.8	-0.3		-3.1	15	1889	00 26 05
00 30 05	---	12 42 57	31.0	175.9	-0.2		-2.4	240	1920	00 26 06
00 30 53	J1232	12 43 46	34.4	183.3	0.2		2.0	18	1920	00 30 53
00 31 53	---	12 44 46	34.4	183.6	0.2		2.2	60	1928	00 30 54
00 32 22	NGC4418	12 45 15	35.8	185.4	0.3		3.3	10	1928	00 32 22
00 36 22	---	12 49 16	35.8	186.7	0.4		4.0	240	1958	00 32 23
00 36 51	J1232	12 49 45	34.3	185.1	0.3		3.1	10	1958	00 36 51
00 37 51	---	12 50 45	34.3	185.4	0.3		3.3	60	1966	00 36 52
00 38 20	NGC4418	12 51 15	35.7	187.3	0.4		4.4	10	1966	00 38 20
00 42 20	---	12 55 15	35.6	188.5	0.5		5.1	240	1997	00 38 21
00 42 50	J1232	12 55 45	34.2	186.9	0.4		4.2	10	1997	00 42 50
00 43 50	---	12 56 45	34.2	187.2	0.4		4.3	60	2004	00 42 51

Schedule for TORUN (Code Tr) Page 9

Phase-referencing of NGC4418

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 7 Mar 2014 Day 66 ---										
00 44 19	NGC4418	12 57 14	35.6	189.1	0.5		5.5	11	2004	00 44 19
00 48 19	---	13 01 15	35.5	190.3	0.6		6.2	240	2035	00 44 20
00 48 48	J1232	13 01 44	34.1	188.7	0.5		5.2	11	2035	00 48 48
00 49 48	---	13 02 44	34.1	189.1	0.5		5.4	60	2043	00 48 49
00 50 17	NGC4418	13 03 14	35.4	190.9	0.6		6.5	11	2043	00 50 17
00 54 17	---	13 07 14	35.3	192.2	0.7		7.3	240	2074	00 50 18
00 54 47	J1232	13 07 44	33.9	190.5	0.6		6.3	11	2074	00 54 47
00 55 47	---	13 08 44	33.9	190.8	0.6		6.5	60	2081	00 54 48
00 56 16	NGC4418	13 09 13	35.3	192.8	0.7		7.6	11	2081	00 56 16
01 00 16	---	13 13 14	35.1	194.0	0.8		8.3	240	2112	00 56 17
01 00 45	J1232	13 13 43	33.8	192.3	0.7		7.4	11	2112	01 00 45
01 01 45	---	13 14 43	33.7	192.6	0.7		7.6	60	2120	01 00 46
01 02 15	NGC4418	13 15 13	35.0	194.6	0.8		8.7	11	2120	01 02 15
01 06 15	---	13 19 13	34.9	195.8	0.9		9.4	240	2150	01 02 16
01 06 44	J1232	13 19 43	33.6	194.1	0.8		8.4	11	2150	01 06 44
01 07 44	---	13 20 43	33.5	194.4	0.8		8.6	60	2158	01 06 45
01 08 13	NGC4418	13 21 12	34.8	196.4	0.9		9.7	11	2158	01 08 13
01 12 13	---	13 25 13	34.6	197.6	1.0		10.4	240	2189	01 08 14
01 12 42	J1232	13 25 42	33.3	195.9	0.9		9.5	11	2189	01 12 42
01 13 42	---	13 26 42	33.3	196.2	0.9		9.6	60	2196	01 12 43
01 14 12	NGC4418	13 27 12	34.5	198.2	1.0		10.8	11	2196	01 14 12
01 18 12	---	13 31 12	34.3	199.4	1.1		11.5	240	2227	01 14 13
01 18 41	J1232	13 31 42	33.1	197.6	1.0		10.5	11	2227	01 18 41
01 19 41	---	13 32 42	33.0	197.9	1.0		10.7	60	2235	01 18 42
01 20 10	NGC4418	13 33 11	34.2	199.9	1.1		11.8	11	2235	01 20 10
01 24 10	---	13 37 12	34.0	201.1	1.2		12.5	240	2266	01 20 11
01 24 39	J1232	13 37 41	32.8	199.4	1.1		11.5	11	2266	01 24 39
01 25 39	---	13 38 41	32.7	199.7	1.1		11.7	60	2273	01 24 40
01 26 09	NGC4418	13 39 11	33.9	201.7	1.2		12.8	12	2273	01 26 09
01 30 09	---	13 43 11	33.7	202.9	1.3		13.5	240	2304	01 26 10

Schedule for TORUN (Code Tr) Page 10

Phase-referencing of NGC4418

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 7 Mar 2014 Day 66 ---										
01 30 38	J1232	13 43 41	32.5	201.1	1.2		12.5	12	2304	01 30 38
01 31 38	---	13 44 41	32.4	201.4	1.2		12.7	60	2312	01 30 39
01 32 07	NGC4418	13 45 10	33.6	203.5	1.3		13.8	12	2312	01 32 07
01 36 07	---	13 49 11	33.3	204.6	1.4		14.5	240	2342	01 32 08
01 36 36	J1232	13 49 40	32.1	202.9	1.3		13.5	12	2342	01 36 36
01 37 36	---	13 50 40	32.1	203.1	1.3		13.7	60	2350	01 36 37
01 38 06	NGC4418	13 51 10	33.2	205.2	1.4		14.8	12	2350	01 38 06
01 42 06	---	13 55 10	32.9	206.4	1.5		15.5	240	2381	01 38 07
01 42 35	J1232	13 55 40	31.8	204.6	1.4		14.5	12	2381	01 42 35
01 43 35	---	13 56 40	31.7	204.9	1.4		14.6	60	2388	01 42 36
01 44 04	NGC4418	13 57 09	32.8	206.9	1.5		15.8	12	2388	01 44 04
01 48 04	---	14 01 10	32.5	208.1	1.6		16.4	240	2419	01 44 05
01 48 33	J1232	14 01 39	31.4	206.3	1.5		15.4	12	2419	01 48 33
01 49 33	---	14 02 39	31.3	206.6	1.5		15.6	60	2427	01 48 34
01 50 03	NGC4418	14 03 09	32.4	208.6	1.6		16.7	12	2427	01 50 03
01 54 03	---	14 07 09	32.1	209.8	1.7		17.3	240	2458	01 50 04
01 54 55	J1256	14 08 02	29.1	200.3	1.2		12.1	18	2458	01 54 55
01 58 55	---	14 12 03	28.9	201.5	1.3		12.8	240	2488	01 54 56
01 59 40	J1232	14 12 48	30.6	209.4	1.7		17.2	15	2488	01 59 40
02 00 40	---	14 13 48	30.5	209.7	1.7		17.3	60	2496	01 59 41
02 01 10	NGC4418	14 14 18	31.5	211.8	1.8		18.4	12	2496	02 01 10
02 05 10	---	14 18 18	31.2	212.9	1.8		19.0	240	2527	02 01 11
02 05 39	J1232	14 18 48	30.1	211.0	1.8		18.1	12	2527	02 05 39
02 06 39	---	14 19 48	30.1	211.3	1.8		18.2	60	2534	02 05 40
02 07 08	NGC4418	14 20 17	31.1	213.4	1.9		19.3	12	2534	02 07 08
02 11 08	---	14 24 18	30.7	214.5	1.9		19.9	240	2565	02 07 09
02 11 38	J1232	14 24 47	29.7	212.7	1.9		18.9	12	2565	02 11 38
02 12 38	---	14 25 47	29.6	213.0	1.9		19.1	60	2573	02 11 39
02 13 07	NGC4418	14 26 17	30.6	215.1	2.0		20.2	12	2573	02 13 07
02 17 07	---	14 30 17	30.2	216.1	2.0		20.7	240	2604	02 13 08

Schedule for TORUN (Code Tr) Page 11

Phase-referencing of NGC4418

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

--- Fri 7 Mar 2014 Day 66 ---

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
02 17 36	J1232	14 30 47	29.2	214.3	2.0		19.8	12	2604	02 17 36
02 18 36	---	14 31 47	29.1	214.6	2.0		19.9	60	2611	02 17 37
02 19 05	NGC4418	14 32 16	30.0	216.7	2.1		21.0	12	2611	02 19 05
02 23 05	---	14 36 17	29.7	217.8	2.1		21.6	240	2642	02 19 06
02 23 35	J1232	14 36 46	28.7	215.9	2.1		20.6	12	2642	02 23 35
02 24 35	---	14 37 46	28.6	216.2	2.1		20.8	60	2650	02 23 36
02 25 04	NGC4418	14 38 16	29.5	218.3	2.2		21.8	12	2650	02 25 04
02 29 04	---	14 42 17	29.1	219.4	2.2		22.4	240	2680	02 25 05
02 29 33	J1232	14 42 46	28.1	217.5	2.2		21.5	12	2680	02 29 33
02 30 33	---	14 43 46	28.0	217.8	2.2		21.6	60	2688	02 29 34
02 31 03	NGC4418	14 44 16	28.9	219.9	2.3		22.6	12	2688	02 31 03
02 35 03	---	14 48 16	28.5	220.9	2.3		23.2	240	2719	02 31 04
02 35 32	J1232	14 48 46	27.6	219.1	2.3		22.3	12	2719	02 35 32
02 36 32	---	14 49 46	27.5	219.3	2.3		22.4	60	2726	02 35 33
02 37 02	NGC4418	14 50 16	28.3	221.5	2.4		23.4	12	2726	02 37 02
02 41 02	---	14 54 16	27.9	222.5	2.4		23.9	240	2757	02 37 03
02 41 31	J1232	14 54 46	27.0	220.6	2.4		23.0	12	2757	02 41 31
02 42 31	---	14 55 46	26.9	220.9	2.4		23.2	60	2765	02 41 32
02 43 01	NGC4418	14 56 15	27.7	223.0	2.5		24.2	12	2765	02 43 01
02 47 01	---	15 00 16	27.3	224.0	2.5		24.7	240	2796	02 43 02
02 47 30	J1232	15 00 45	26.4	222.2	2.5		23.8	12	2796	02 47 30
02 48 30	---	15 01 46	26.3	222.4	2.5		23.9	60	2803	02 47 31
02 49 00	NGC4418	15 02 15	27.1	224.5	2.6		24.9	12	2803	02 49 00
02 53 00	---	15 06 16	26.7	225.6	2.6		25.4	240	2834	02 49 01
02 53 29	J1232	15 06 45	25.8	223.7	2.6		24.5	12	2834	02 53 29
02 54 29	---	15 07 45	25.7	223.9	2.6		24.6	60	2842	02 53 30
02 54 59	NGC4418	15 08 15	26.5	226.1	2.7		25.6	12	2842	02 54 59
02 58 59	---	15 12 16	26.0	227.1	2.7		26.1	240	2872	02 55 00
02 59 52	J1256	15 13 09	24.4	217.7	2.3		21.7	19	2872	02 59 52
03 03 52	---	15 17 10	24.0	218.7	2.3		22.2	240	2903	02 59 53

Schedule for TORUN (Code Tr) Page 12

Phase-referencing of NGC4418

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

--- Fri 7 Mar 2014 Day 66 ---

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
03 04 41	J1232	15 17 59	24.6	226.5	2.8		25.8	19	2903	03 04 41
03 05 41	---	15 19 00	24.5	226.7	2.8		26.0	60	2911	03 04 42
03 06 11	NGC4418	15 19 29	25.2	228.9	2.9		26.9	12	2911	03 06 11
03 10 11	---	15 23 30	24.8	229.8	2.9		27.3	240	2941	03 06 12
03 10 40	J1232	15 23 59	23.9	228.0	2.9		26.5	12	2941	03 10 40
03 11 40	---	15 25 00	23.8	228.2	2.9		26.6	60	2949	03 10 41
03 12 10	NGC4418	15 25 29	24.5	230.3	3.0		27.5	12	2949	03 12 10
03 16 10	---	15 29 30	24.1	231.3	3.0		28.0	240	2980	03 12 11
03 16 39	J1232	15 29 59	23.2	229.4	3.0		27.2	12	2980	03 16 39
03 17 39	---	15 31 00	23.1	229.7	3.0		27.3	60	2988	03 16 40
03 18 09	NGC4418	15 31 29	23.8	231.8	3.1		28.2	12	2988	03 18 09
03 22 09	---	15 35 30	23.4	232.7	3.1		28.6	240	3018	03 18 10
03 22 38	J1232	15 35 59	22.6	230.9	3.1		27.8	12	3018	03 22 38
03 23 38	---	15 37 00	22.4	231.1	3.1		27.9	60	3026	03 22 39
03 24 08	NGC4418	15 37 29	23.1	233.2	3.2		28.8	12	3026	03 24 08
03 28 08	---	15 41 30	22.6	234.2	3.2		29.1	240	3057	03 24 09
03 28 37	J1232	15 41 59	21.8	232.3	3.2		28.4	12	3057	03 28 37
03 29 37	---	15 43 00	21.7	232.5	3.2		28.5	60	3064	03 28 38
03 30 07	NGC4418	15 43 29	22.4	234.6	3.3		29.3	12	3064	03 30 07
03 34 07	---	15 47 30	21.9	235.6	3.3		29.7	240	3095	03 30 08
03 34 36	J1232	15 47 59	21.1	233.7	3.3		29.0	12	3095	03 34 36
03 35 36	---	15 49 00	21.0	233.9	3.3		29.1	60	3103	03 34 37
03 36 06	NGC4418	15 49 29	21.6	236.1	3.4		29.9	12	3103	03 36 06
03 40 06	---	15 53 30	21.1	237.0	3.4		30.2	240	3133	03 36 07
03 40 35	J1232	15 54 00	20.4	235.1	3.4		29.5	12	3133	03 40 35
03 41 35	---	15 55 00	20.3	235.3	3.4		29.6	60	3141	03 40 36
03 42 05	NGC4418	15 55 29	20.9	237.4	3.5		30.4	12	3141	03 42 05
03 46 05	---	15 59 30	20.4	238.4	3.5		30.8	240	3172	03 42 06
03 46 34	J1232	15 59 59	19.7	236.5	3.5		30.1	12	3172	03 46 34
03 47 34	---	16 01 00	19.5	236.7	3.5		30.2	60	3180	03 46 35
03 48 04	NGC4418	16 01 29	20.1	238.8	3.6		30.9	12	3180	03 48 04
03 52 04	---	16 05 30	19.6	239.7	3.6		31.2	240	3210	03 48 05

Schedule for TORUN (Code Tr) Page 13

Phase-referencing of NGC4418

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

--- Fri 7 Mar 2014 Day 66 ---

Start UT	Source	Start / Stop						Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
03 52 57	J1256	16 06 23	18.8	230.6	3.2		27.8	19	3210	03 52 57
03 56 57	---	16 10 24	18.4	231.6	3.2		28.2	240	3241	03 52 58
03 57 45	J1232	16 11 12	18.2	239.0	3.6		31.0	19	3241	03 57 45
03 58 45	---	16 12 13	18.1	239.3	3.7		31.1	60	3249	03 57 46
03 59 15	NGC4418	16 12 42	18.7	241.4	3.8		31.8	12	3249	03 59 15
04 03 15	---	16 16 43	18.1	242.3	3.8		32.1	240	3279	03 59 16
04 03 44	J1232	16 17 12	17.4	240.4	3.7		31.5	12	3279	04 03 44
04 04 44	---	16 18 13	17.3	240.6	3.8		31.6	60	3287	04 03 45
04 05 14	NGC4418	16 18 42	17.9	242.7	3.9		32.3	12	3287	04 05 14
04 09 14	---	16 22 43	17.3	243.6	3.9		32.5	240	3318	04 05 15
04 09 43	J1232	16 23 12	16.7	241.7	3.8		32.0	12	3318	04 09 43
04 10 43	---	16 24 12	16.5	241.9	3.9		32.0	60	3325	04 09 44
04 11 13	NGC4418	16 24 42	17.1	244.0	4.0		32.7	12	3325	04 11 13
04 15 13	---	16 28 43	16.5	244.9	4.0		32.9	240	3356	04 11 14
04 15 42	J1232	16 29 12	15.9	243.0	3.9		32.4	12	3356	04 15 42
04 16 42	---	16 30 12	15.7	243.3	4.0		32.5	60	3364	04 15 43
04 17 12	NGC4418	16 30 42	16.3	245.3	4.1		33.1	12	3364	04 17 12
04 21 12	---	16 34 43	15.7	246.2	4.1		33.3	240	3395	04 17 13
04 21 41	J1232	16 35 12	15.1	244.3	4.0		32.8	12	3395	04 21 41
04 22 41	---	16 36 12	14.9	244.6	4.1		32.9	60	3402	04 21 42
04 23 11	NGC4418	16 36 42	15.4	246.6	4.2		33.5	12	3402	04 23 11
04 27 11	---	16 40 43	14.9	247.5	4.2		33.7	240	3433	04 23 12
04 27 40	J1232	16 41 12	14.2	245.6	4.1		33.2	12	3433	04 27 40
04 28 40	---	16 42 12	14.1	245.9	4.2		33.3	60	3441	04 27 41
04 29 10	NGC4418	16 42 42	14.6	247.9	4.3		33.8	12	3441	04 29 10
04 33 10	---	16 46 42	14.0	248.8	4.3		34.0	240	3471	04 29 11
04 33 39	J1232	16 47 12	13.4	246.9	4.2		33.6	12	3471	04 33 39
04 34 39	---	16 48 12	13.3	247.1	4.3		33.6	60	3479	04 33 40
04 35 08	NGC4418	16 48 41	13.8	249.2	4.4		34.2	12	3479	04 35 08
04 39 08	---	16 52 42	13.2	250.1	4.4		34.4	240	3510	04 35 09
04 39 38	J1232	16 53 11	12.6	248.2	4.3		33.9	12	3510	04 39 38
04 40 38	---	16 54 12	12.4	248.4	4.4		34.0	60	3517	04 39 39

Schedule for TORUN (Code Tr) Page 14

Phase-referencing of NGC4418

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

--- Fri 7 Mar 2014 Day 66 ---

Start UT / Stop UT	Source	Start LST	Start EL	Start AZ	Stop HA	Stop UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
04 41 07	NGC4418	16 54 41	12.9	250.5	4.5		34.5	12	3517	04 41 07
04 45 07	---	16 58 42	12.3	251.3	4.5		34.7	240	3548	04 41 08
04 45 36	J1232	16 59 11	11.7	249.5	4.4		34.3	12	3548	04 45 36
04 46 36	---	17 00 11	11.6	249.7	4.5		34.3	60	3556	04 45 37
04 47 06	NGC4418	17 00 41	12.1	251.7	4.6		34.8	12	3556	04 47 06
04 51 06	---	17 04 42	11.5	252.6	4.6		35.0	240	3587	04 47 07
04 51 35	J1232	17 05 11	10.9	250.7	4.5		34.6	12	3587	04 51 35
04 52 35	---	17 06 11	10.8	250.9	4.6		34.6	60	3594	04 51 36
04 53 05	NGC4418	17 06 41	11.2	253.0	4.7		35.1	12	3594	04 53 05
04 57 05	---	17 10 41	10.6	253.8	4.7		35.2	240	3625	04 53 06
04 57 34	J1232	17 11 11	10.0	252.0	4.6		34.9	12	3625	04 57 34
04 58 34	---	17 12 11	9.9	252.2	4.7		34.9	60	3633	04 57 35
04 59 03	NGC4418	17 12 40	10.3	254.2	4.8		35.3	12	3633	04 59 03
05 03 03	---	17 16 41	9.8	255.1	4.8		35.5	240	3663	04 59 04
05 03 33	J1232	17 17 10	9.2	253.2	4.7		35.1	12	3663	05 03 33
05 04 33	---	17 18 10	9.0	253.4	4.8		35.2	60	3671	05 03 34
05 05 02	NGC4418	17 18 40	9.5	255.5	4.8		35.5	12	3671	05 05 02
05 09 02	---	17 22 41	8.9	256.3	4.9		35.7	240	3702	05 05 03
05 09 31	J1232	17 23 09	8.3	254.5	4.8		35.4	11	3702	05 09 31
05 10 31	---	17 24 09	8.2	254.7	4.9		35.4	60	3709	05 09 32
05 11 00	NGC4418	17 24 39	8.6	256.7	4.9		35.8	12	3709	05 11 00
05 15 00	---	17 28 40	8.0	257.5	5.0		35.9	240	3740	05 11 01
05 15 29	J1232	17 29 08	7.5	255.7	4.9		35.6	11	3740	05 15 29
05 16 29	---	17 30 08	7.3	255.9	5.0		35.7	60	3748	05 15 30
05 16 58	NGC4418	17 30 38	7.7	257.9	5.0		36.0	12	3748	05 16 58
05 20 58	---	17 34 38	7.1	258.8	5.1		36.1	240	3779	05 16 59
05 21 26	J1232	17 35 07	6.6	256.9	5.0		35.8	11	3779	05 21 26
05 22 26	---	17 36 07	6.4	257.1	5.1		35.9	60	3786	05 21 27
05 22 56	NGC4418	17 36 37	6.8	259.2	5.1		36.1	12	3786	05 22 56
05 26 56	---	17 40 37	6.3	260.0	5.2		36.3	240	3817	05 22 57
05 27 24	J1232	17 41 06	5.7	258.1	5.1		36.0	11	3817	05 27 24
05 28 24	---	17 42 06	5.6	258.3	5.2		36.1	60	3825	05 27 25

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


 ======== Setup file: sess114.C1024
   Matching groups in /opt/sched/sched_11.0/catalogs/freq.dat:
     tr6cm           E-mail Borkowski 23Apr03 (CR 1May03)

   Setup group:    3         Station: TORUN            Total bit rate:  1024
   Format: MKIV1:2           Bits per sample: 2        Sample rate: 32.000
   Number of channels: 16    DBE type:                 Speedup factor:   0.50

   Disk used to record data.

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

  The following frequency sets based on these setups were used.

   Frequency Set:   5  Setup file default.  Used pcal sets:   1
   LO sum=   4942.49  4942.49  4942.49  4942.49  4974.49  4974.49  4974.49  4974.49
             5006.49  5006.49  5006.49  5006.49  5038.49  5038.49  5038.49  5038.49
   BBC fr=    742.49   742.49   742.49   742.49   774.49   774.49   774.49   774.49
              806.49   806.49   806.49   806.49   838.49   838.49   838.49   838.49
   Bandwd=     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
               16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
    Matching frequency sets:   5

  The following pulse cal sets were used with this setup:

   Pulse cal detection set:   1  PCAL = 1MHZ
    PCALXB1=   S1    S3    S5    S7    S9    S11   S13   S15
    PCALXB2=   S2    S4    S6    S8    S10   S12   S14   S16
    PCALFR1=   490   510   490   510   490   510   490   510
    PCALFR2=   490   510   490   510   490   510   490   510

   Track assignments are:
    track1=   2, 10, 18, 26,  3, 11, 19, 27, 66, 74, 82, 90, 67, 75, 83, 91
    barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* NGC4418	12 24 20.753136	* 12 26 54.612600	12 27 40.017185	0.00
	-00 36 03.52524	*-00 52 39.37200	-00 57 32.25383	0.00
* J1232	12 29 25.899380	* 12 32 00.015985	12 32 45.502055	0.00
	-02 07 31.66618	*-02 24 04.79425	-02 28 56.46174	0.00
* J1256	12 53 35.831298	* 12 56 11.166566	12 56 56.987968	0.00
	-05 31 07.99587	*-05 47 21.52473	-05 52 05.88561	0.00

SOURCE SCAN SUMMARY FOR SOURCES LISTED ABOVE

Scan hours are for recording scans only.
Baseline hours are only counted for scans above horizon at both ends.

Source	Setup file	Frequency sets (duplicates not shown)	Observing hours Scan	Baseline
NGC4418	sess114.C1024	1 2 3 4 5 6 9 10 11 12 13 1 +	6.200	363.199
J1232	sess114.C1024	1 2 3 4 5 6 9 10 11 12 13 1 +	1.567	90.600
J1256	sess114.C1024	1 2 3 4 5 6 9 10 11 12 13 1 +	0.533	35.333

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)
NGC4418	159.5
J1232	157.8
J1256	151.0

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
that the Sun will cause amplitude reductions on the longest VLBA baselines
at a solar distance of 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
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
43.0 GHz	6. deg

ea053etr

5 GHz observation of 1ES 1101-232

PI: *Kazunori Akiyama*

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Observing mode: VLBA/MKIV

Schedule for TORUN (Code Tr) Page 2

5 GHz observation of 1ES 1101-232

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator 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 8 Mar 2014 Day 67 ---										
Next scan frequencies:		4942.49	4942.49	4942.49	4942.49		4974.49	4974.49	4974.49	4974.49
		5006.49	5006.49	5006.49	5006.49		5038.49	5038.49	5038.49	5038.49
Next BBC frequencies:		742.49	742.49	742.49	742.49		774.49	774.49	774.49	774.49
		806.49	806.49	806.49	806.49		838.49	838.49	838.49	838.49
Next scan bandwidths:		16.00	16.00	16.00	16.00		16.00	16.00	16.00	16.00
		16.00	16.00	16.00	16.00		16.00	16.00	16.00	16.00
22 00 00	1101-232	10 20 21	12.7	169.7	-0.7		-6.7	0	0	22 00 00
22 05 30	---	10 25 52	12.9	171.0	-0.6		-5.9	330	42	22 00 01
22 06 00	1101-232	10 26 22	12.9	171.1	-0.6		-5.8	24	42	22 06 00
22 11 30	---	10 31 53	13.0	172.4	-0.5		-5.0	330	84	22 06 01
22 12 00	1101-232	10 32 23	13.0	172.5	-0.5		-4.9	24	84	22 12 00
22 17 30	---	10 37 54	13.1	173.8	-0.4		-4.1	330	127	22 12 01
22 18 00	1101-232	10 38 24	13.1	173.9	-0.4		-4.0	24	127	22 18 00
22 23 30	---	10 43 55	13.2	175.2	-0.3		-3.1	330	169	22 18 01
22 24 00	1101-232	10 44 25	13.2	175.3	-0.3		-3.1	24	169	22 24 00
22 29 30	---	10 49 56	13.3	176.6	-0.2		-2.2	330	211	22 24 01
22 30 00	1101-232	10 50 26	13.3	176.7	-0.2		-2.1	24	211	22 30 00
22 35 30	---	10 55 57	13.3	178.0	-0.1		-1.3	330	253	22 30 01
22 36 00	1101-232	10 56 27	13.3	178.1	-0.1		-1.2	24	253	22 36 00
22 41 30	---	11 01 58	13.3	179.4	-0.0		-0.4	330	296	22 36 01
22 42 00	1101-232	11 02 28	13.3	179.6	-0.0		-0.3	24	296	22 42 00
22 47 30	---	11 07 59	13.3	180.9	0.1		0.6	330	338	22 42 01
22 48 00	1101-232	11 08 29	13.3	181.0	0.1		0.6	24	338	22 48 00
22 53 30	---	11 14 00	13.3	182.3	0.2		1.5	330	380	22 48 01
22 54 30	1045-188	11 15 00	17.4	186.5	0.4		4.1	31	380	22 54 30
22 59 30	---	11 20 01	17.4	187.7	0.5		4.9	300	419	22 54 31
23 00 00	1101-232	11 20 31	13.3	183.8	0.3		2.5	1	419	23 00 00
23 05 30	---	11 26 02	13.2	185.1	0.4		3.3	330	461	23 00 01
23 06 00	1101-232	11 26 32	13.2	185.2	0.4		3.4	24	461	23 06 00
23 11 30	---	11 32 03	13.1	186.5	0.5		4.3	330	503	23 06 01

Schedule for TORUN (Code Tr) Page 3

5 GHz observation of 1ES 1101-232

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sat 8 Mar 2014 Day 67 ---										
23 12 00	1101-232	11 32 33	13.1	186.6	0.5		4.3	24	503	23 12 00
23 17 30	---	11 38 04	13.0	187.9	0.6		5.2	330	545	23 12 01
23 18 00	1101-232	11 38 34	13.0	188.0	0.6		5.3	24	545	23 18 00
23 23 30	---	11 44 05	12.8	189.3	0.7		6.1	330	588	23 18 01
23 24 00	1101-232	11 44 35	12.8	189.4	0.7		6.2	24	588	23 24 00
23 29 30	---	11 50 06	12.7	190.7	0.8		7.0	330	630	23 24 01
23 30 00	1101-232	11 50 36	12.7	190.9	0.8		7.1	24	630	23 30 00
23 35 30	---	11 56 07	12.5	192.1	0.9		7.9	330	672	23 30 01
23 36 00	1101-232	11 56 37	12.5	192.3	0.9		8.0	24	672	23 36 00
23 41 30	---	12 02 08	12.3	193.5	1.0		8.8	330	714	23 36 01
23 42 00	1101-232	12 02 38	12.3	193.6	1.0		8.9	24	714	23 42 00
23 47 30	---	12 08 09	12.1	194.9	1.1		9.7	330	756	23 42 01
23 48 00	1101-232	12 08 39	12.1	195.0	1.1		9.8	24	756	23 48 00
23 53 30	---	12 14 10	11.8	196.3	1.2		10.6	330	799	23 48 01
23 54 30	1045-188	12 15 10	15.3	201.1	1.4		13.2	33	799	23 54 30
23 59 30	---	12 20 11	15.0	202.3	1.5		14.0	300	837	23 54 31
--- Sun 9 Mar 2014 Day 68 ---										
00 00 30	1127-145	12 21 11	21.1	193.0	0.8		8.1	23	837	00 00 30
00 10 30	---	12 31 13	20.8	195.6	1.0		9.6	600	914	00 00 31
00 12 30	1101-232	12 33 13	10.9	200.7	1.5		13.4	69	914	00 12 30
00 18 00	---	12 38 44	10.6	201.9	1.6		14.2	330	956	00 12 31
00 18 30	1101-232	12 39 14	10.6	202.0	1.6		14.2	24	956	00 18 30
00 24 00	---	12 44 45	10.3	203.3	1.7		15.0	330	998	00 18 31
00 24 30	1101-232	12 45 15	10.3	203.4	1.7		15.1	24	998	00 24 30
00 30 00	---	12 50 46	9.9	204.6	1.8		15.8	330	1041	00 24 31
00 30 30	1101-232	12 51 16	9.9	204.7	1.8		15.9	24	1041	00 30 30
00 36 00	---	12 56 47	9.5	206.0	1.9		16.7	330	1083	00 30 31
00 36 30	1101-232	12 57 17	9.5	206.1	1.9		16.7	24	1083	00 36 30
00 42 00	---	13 02 48	9.1	207.3	2.0		17.5	330	1125	00 36 31
00 42 30	1101-232	13 03 18	9.1	207.4	2.0		17.6	24	1125	00 42 30
00 48 00	---	13 08 49	8.7	208.6	2.1		18.3	330	1167	00 42 31
00 48 30	1101-232	13 09 19	8.7	208.7	2.1		18.4	24	1167	00 48 30
00 54 00	---	13 14 50	8.3	210.0	2.2		19.1	330	1210	00 48 31
00 55 00	1045-188	13 15 50	11.0	215.1	2.4		21.5	35	1210	00 55 00
01 00 00	---	13 20 51	10.6	216.3	2.5		22.1	300	1248	00 55 01

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


 ======== Setup file: sess114.C1024
   Matching groups in /usr2/local/sched/catalogs/freq.dat:
     tr6cm           E-mail Borkowski 23Apr03 (CR 1May03)

   Setup group:    3         Station: TORUN            Total bit rate:  1024
   Format: MKIV1:2           Bits per sample: 2        Sample rate: 32.000
   Number of channels: 16    DBE type:                 Speedup factor:   0.50

   Disk used to record data.

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

  The following frequency sets based on these setups were used.

   Frequency Set:   6  Setup file default.  Used pcal sets:   1
   LO sum=   4942.49  4942.49  4942.49  4942.49  4974.49  4974.49  4974.49  4974.49
             5006.49  5006.49  5006.49  5006.49  5038.49  5038.49  5038.49  5038.49
   BBC fr=    742.49   742.49   742.49   742.49   774.49   774.49   774.49   774.49
              806.49   806.49   806.49   806.49   838.49   838.49   838.49   838.49
   Bandwd=     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
               16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
    Matching frequency sets:   6

  The following pulse cal sets were used with this setup:

   Pulse cal detection set:   1  PCAL = 1MHZ
    PCALXB1=   S1    S3    S5    S7    S9    S11   S13   S15
    PCALXB2=   S2    S4    S6    S8    S10   S12   S14   S16
    PCALFR1=   490   510   490   510   490   510   490   510
    PCALFR2=   490   510   490   510   490   510   490   510

   Track assignments are:
    track1=   2, 10, 18, 26,  3, 11, 19, 27, 66, 74, 82, 90, 67, 75, 83, 91
    barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* 1101-232	11 01 11.034986	* 11 03 37.615000	11 04 21.392308	0.00
	-23 13 20.45454	*-23 29 31.20200	-23 34 19.93230	0.00
* 1045-188	10 45 40.093260	* 10 48 06.620600	10 48 50.278696	0.11
	-18 53 44.08737	*-19 09 35.72700	-19 14 20.22682	0.11
* 1127-145	11 27 35.667240	* 11 30 07.052600	11 30 52.040232	0.11
	-14 32 54.44283	*-14 49 27.38800	-14 54 21.26633	0.11

SOURCE SCAN SUMMARY FOR SOURCES LISTED ABOVE

Scan hours are for recording scans only.
Baseline hours are only counted for scans above horizon at both ends.

Source	Setup file	Frequency sets (duplicates not shown)	Observing hours Scan	Baseline
1101-232	sess114.C1024	1 2 3 4 5 6 7 8	2.292	64.108
1045-188	sess114.C1024	1 2 3 4 5 6 7 8	0.250	7.000
1127-145	sess114.C1024	1 2 3 4 5 6 7 8	0.167	4.667

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)
1101-232	151.6
1045-188	155.2
1127-145	160.2

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
that the Sun will cause amplitude reductions on the longest VLBA baselines
at a solar distance of 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
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
43.0 GHz	6. deg

eg080btr

Is there a Binary Black Hole system in the BCG of RBS 797 ?

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Observing mode: Continuum C-band

Schedule for TORUN (Code Tr) Page 2
Is there a Binary Black Hole system in the BCG of RBS 797 ?
UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT / Stop UT	Source	Start LST	Start EL	Start AZ	Start HA	Start UP	Start ParA	Early / Dwell	Disk GBytes	TPStart SYNC
--- Sun 9 Mar 2014 Day 68 ---										
Next scan frequencies:		4942.49	4942.49	4942.49	4942.49		4974.49	4974.49	4974.49	4974.49
		5006.49	5006.49	5006.49	5006.49		5038.49	5038.49	5038.49	5038.49
Next BBC frequencies:		742.49	742.49	742.49	742.49		774.49	774.49	774.49	774.49
		806.49	806.49	806.49	806.49		838.49	838.49	838.49	838.49
Next scan bandwidths:		16.00	16.00	16.00	16.00		16.00	16.00	16.00	16.00
		16.00	16.00	16.00	16.00		16.00	16.00	16.00	16.00
20 00 00	J0954+7435	08 23 58	66.6	15.3	-1.5		-143.6	0	0	20 00 00
20 04 15	=0950+748	08 28 14	66.8	14.7	-1.5		-145.2	255	33	20 00 01
20 04 35	RBS797	08 28 34	65.6	11.3	-1.3		-150.2	-1	33	20 04 35
20 08 05	---	08 32 04	65.7	10.9	-1.3		-151.4	209	60	20 04 36
20 08 45	J0954+7435	08 32 45	67.0	14.1	-1.4		-146.9	19	60	20 08 45
20 09 45	=0950+748	08 33 45	67.0	13.9	-1.4		-147.2	60	67	20 08 46
20 10 05	RBS797	08 34 05	65.7	10.6	-1.2		-152.2	-1	67	20 10 05
20 13 35	---	08 37 35	65.8	10.2	-1.2		-153.4	209	94	20 10 06
20 14 15	J0954+7435	08 38 15	67.2	13.3	-1.3		-148.9	19	94	20 14 15
20 15 15	=0950+748	08 39 16	67.2	13.1	-1.3		-149.3	60	102	20 14 16
20 15 35	RBS797	08 39 36	65.9	9.9	-1.2		-154.1	-1	102	20 15 35
20 19 05	---	08 43 06	65.9	9.4	-1.1		-155.4	209	129	20 15 36
20 19 45	J0954+7435	08 43 46	67.4	12.4	-1.2		-151.0	19	129	20 19 45
20 20 45	=0950+748	08 44 47	67.4	12.3	-1.2		-151.4	60	136	20 19 46
20 21 05	RBS797	08 45 07	66.0	9.2	-1.1		-156.1	-1	136	20 21 05
20 24 35	---	08 48 37	66.1	8.7	-1.0		-157.4	209	163	20 21 06
20 25 15	J0954+7435	08 49 17	67.5	11.6	-1.1		-153.1	20	163	20 25 15
20 26 15	=0950+748	08 50 17	67.6	11.4	-1.1		-153.5	60	171	20 25 16
20 26 35	RBS797	08 50 38	66.1	8.4	-1.0		-158.2	0	171	20 26 35
20 30 05	---	08 54 08	66.2	7.9	-0.9		-159.4	210	198	20 26 36

Schedule for TORUN (Code Tr) Page 3

Is there a Binary Black Hole system in the BCG of RBS 797 ?

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sun 9 Mar 2014 Day 68 ---										
20 30 45	J0954+7435	08 54 48	67.7	10.7	-1.0		-155.3	20	198	20 30 45
20 31 45	=0950+748	08 55 48	67.7	10.6	-1.0		-155.7	60	205	20 30 46
20 32 05	RBS797	08 56 08	66.2	7.7	-0.9		-160.2	0	205	20 32 05
20 35 35	---	08 59 39	66.3	7.2	-0.8		-161.5	210	232	20 32 06
20 36 15	J0954+7435	09 00 19	67.8	9.8	-0.9		-157.4	20	232	20 36 15
20 37 15	=0950+748	09 01 19	67.9	9.7	-0.9		-157.8	60	240	20 36 16
20 37 35	RBS797	09 01 39	66.3	6.9	-0.8		-162.2	0	240	20 37 35
20 41 05	---	09 05 10	66.4	6.4	-0.7		-163.5	210	267	20 37 36
20 41 45	J0954+7435	09 05 50	68.0	8.9	-0.8		-159.6	21	267	20 41 45
20 42 45	=0950+748	09 06 50	68.0	8.7	-0.8		-160.0	60	275	20 41 46
20 43 05	RBS797	09 07 10	66.4	6.1	-0.7		-164.3	1	275	20 43 05
20 46 35	---	09 10 41	66.5	5.6	-0.6		-165.6	210	301	20 43 06
20 47 15	J0954+7435	09 11 21	68.1	8.0	-0.7		-161.8	20	301	20 47 15
20 48 15	=0950+748	09 12 21	68.1	7.8	-0.7		-162.2	60	309	20 47 16
20 48 35	RBS797	09 12 41	66.5	5.3	-0.6		-166.3	0	309	20 48 35
20 52 05	---	09 16 12	66.6	4.8	-0.5		-167.7	210	336	20 48 36
20 52 45	J0954+7435	09 16 52	68.2	7.0	-0.7		-164.0	20	336	20 52 45
20 53 45	=0950+748	09 17 52	68.2	6.9	-0.6		-164.4	60	344	20 52 46
20 54 05	RBS797	09 18 12	66.6	4.5	-0.5		-168.4	0	344	20 54 05
20 57 35	---	09 21 43	66.6	4.0	-0.5		-169.7	210	371	20 54 06
20 58 15	J0954+7435	09 22 23	68.3	6.1	-0.6		-166.2	20	371	20 58 15
20 59 15	=0950+748	09 23 23	68.3	5.9	-0.5		-166.6	60	378	20 58 16
20 59 35	RBS797	09 23 43	66.7	3.7	-0.4		-170.5	0	378	20 59 35
21 03 05	---	09 27 13	66.7	3.2	-0.4		-171.8	210	405	20 59 36
21 03 45	J0954+7435	09 27 54	68.4	5.1	-0.5		-168.4	20	405	21 03 45
21 04 45	=0950+748	09 28 54	68.4	4.9	-0.5		-168.8	60	413	21 03 46
21 05 05	RBS797	09 29 14	66.7	2.9	-0.3		-172.6	0	413	21 05 05
21 08 35	---	09 32 44	66.7	2.4	-0.3		-173.9	210	440	21 05 06
21 09 15	J0954+7435	09 33 25	68.4	4.1	-0.4		-170.7	20	440	21 09 15
21 10 15	=0950+748	09 34 25	68.5	3.9	-0.4		-171.1	60	447	21 09 16
21 10 35	RBS797	09 34 45	66.7	2.1	-0.2		-174.7	0	447	21 10 35
21 14 05	---	09 38 15	66.8	1.6	-0.2		-176.0	210	474	21 10 36

Schedule for TORUN (Code Tr) Page 4

Is there a Binary Black Hole system in the BCG of RBS 797 ?

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sun 9 Mar 2014 Day 68 ---										
21 14 45	J0954+7435	09 38 55	68.5	3.1	-0.3		-172.9	20	474	21 14 45
21 15 45	=0950+748	09 39 56	68.5	3.0	-0.3		-173.3	60	482	21 14 46
21 16 05	RBS797	09 40 16	66.8	1.3	-0.1		-176.8	0	482	21 16 05
21 19 35	---	09 43 46	66.8	0.7	-0.1		-178.1	210	509	21 16 06
21 20 15	J0954+7435	09 44 26	68.5	2.1	-0.2		-175.2	20	509	21 20 15
21 21 15	=0950+748	09 45 26	68.5	2.0	-0.2		-175.6	60	516	21 20 16
21 21 35	RBS797	09 45 47	66.8	0.4	-0.0		-178.9	0	516	21 21 35
21 25 05	---	09 49 17	66.8	-0.1	0.0		179.8	210	543	21 21 36
21 25 45	J0954+7435	09 49 57	68.6	1.1	-0.1		-177.4	20	543	21 25 45
21 26 45	=0950+748	09 50 57	68.6	1.0	-0.1		-177.9	60	551	21 25 46
21 27 05	RBS797	09 51 17	66.8	-0.4	0.0		179.0	0	551	21 27 05
21 30 35	---	09 54 48	66.8	-0.9	0.1		177.7	210	578	21 27 06
21 31 15	J0954+7435	09 55 28	68.6	0.1	-0.0		-179.7	20	578	21 31 15
21 32 15	=0950+748	09 56 28	68.6	-0.1	0.0		179.9	60	586	21 31 16
21 32 35	RBS797	09 56 48	66.8	-1.2	0.1		176.9	-1	586	21 32 35
21 36 05	---	10 00 19	66.7	-1.7	0.2		175.6	209	612	21 32 36
21 36 45	J0954+7435	10 00 59	68.6	-0.9	0.1		178.0	19	612	21 36 45
21 37 45	=0950+748	10 01 59	68.6	-1.1	0.1		177.6	60	620	21 36 46
21 38 05	RBS797	10 02 19	66.7	-2.0	0.2		174.8	-1	620	21 38 05
21 41 35	---	10 05 50	66.7	-2.6	0.3		173.5	209	647	21 38 06
21 42 15	J0954+7435	10 06 30	68.5	-1.9	0.2		175.8	19	647	21 42 15
21 43 15	=0950+748	10 07 30	68.5	-2.1	0.2		175.4	60	655	21 42 16
21 43 35	RBS797	10 07 50	66.7	-2.9	0.3		172.7	-1	655	21 43 35
21 47 05	---	10 11 21	66.7	-3.4	0.4		171.4	209	682	21 43 36
21 47 45	J0954+7435	10 12 01	68.5	-2.9	0.3		173.5	19	682	21 47 45
21 48 45	=0950+748	10 13 01	68.5	-3.1	0.3		173.1	60	689	21 47 46
21 49 05	RBS797	10 13 21	66.7	-3.7	0.4		170.6	-1	689	21 49 05
21 52 35	---	10 16 52	66.6	-4.2	0.5		169.3	209	716	21 49 06
21 53 15	J0954+7435	10 17 32	68.5	-3.9	0.4		171.2	19	716	21 53 15
21 54 15	=0950+748	10 18 32	68.4	-4.1	0.4		170.8	60	724	21 53 16
21 54 35	RBS797	10 18 52	66.6	-4.5	0.5		168.6	-1	724	21 54 35
21 58 05	---	10 22 23	66.6	-5.0	0.6		167.2	209	751	21 54 36

Schedule for TORUN (Code Tr) Page 5

Is there a Binary Black Hole system in the BCG of RBS 797 ?

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

Start UT Stop UT	Source	LST	Start / Stop EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sun 9 Mar 2014 Day 68 ---										
21 58 45	J0954+7435	10 23 03	68.4	-4.9	0.4		169.0	19	751	21 58 45
21 59 45	=0950+748	10 24 03	68.4	-5.0	0.5		168.6	60	758	21 58 46
22 00 05	RBS797	10 24 23	66.5	-5.3	0.6		166.5	-1	758	22 00 05
22 03 35	---	10 27 53	66.5	-5.8	0.7		165.2	209	785	22 00 06
22 04 15	J0954+7435	10 28 34	68.3	-5.8	0.5		166.8	19	785	22 04 15
22 05 15	=0950+748	10 29 34	68.3	-6.0	0.6		166.4	60	793	22 04 16
22 05 35	RBS797	10 29 54	66.4	-6.1	0.7		164.4	-1	793	22 05 35
22 09 05	---	10 33 24	66.4	-6.6	0.7		163.1	209	820	22 05 36
22 09 45	J0954+7435	10 34 04	68.2	-6.8	0.6		164.5	19	820	22 09 45
22 10 45	=0950+748	10 35 05	68.2	-7.0	0.6		164.1	60	828	22 09 46
22 11 05	RBS797	10 35 25	66.4	-6.9	0.8		162.4	-1	828	22 11 05
22 14 35	---	10 38 55	66.3	-7.3	0.8		161.1	209	854	22 11 06
22 15 15	J0954+7435	10 39 35	68.1	-7.7	0.7		162.3	19	854	22 15 15
22 16 15	=0950+748	10 40 36	68.1	-7.9	0.7		161.9	60	862	22 15 16
22 16 35	RBS797	10 40 56	66.2	-7.6	0.9		160.3	-1	862	22 16 35
22 20 05	---	10 44 26	66.2	-8.1	0.9		159.0	209	889	22 16 36
22 20 45	J0954+7435	10 45 06	68.0	-8.7	0.8		160.1	19	889	22 20 45
22 21 45	=0950+748	10 46 06	68.0	-8.8	0.8		159.7	60	897	22 20 46
22 22 05	RBS797	10 46 26	66.1	-8.4	1.0		158.3	-1	897	22 22 05
22 25 35	---	10 49 57	66.1	-8.8	1.0		157.0	209	924	22 22 06
22 26 15	J0954+7435	10 50 37	67.9	-9.6	0.9		158.0	19	924	22 26 15
22 27 15	=0950+748	10 51 37	67.8	-9.8	0.9		157.6	60	931	22 26 16
22 27 35	RBS797	10 51 57	66.0	-9.1	1.1		156.3	-1	931	22 27 35
22 31 05	---	10 55 28	65.9	-9.6	1.1		155.0	209	958	22 27 36
22 31 45	J0954+7435	10 56 08	67.7	-10.5	1.0		155.8	19	958	22 31 45
22 32 45	=0950+748	10 57 08	67.7	-10.6	1.0		155.4	60	966	22 31 46
22 33 05	RBS797	10 57 28	65.9	-9.8	1.1		154.3	-1	966	22 33 05
22 36 35	---	11 00 59	65.8	-10.3	1.2		153.0	209	993	22 33 06
22 37 15	J0954+7435	11 01 39	67.6	-11.4	1.1		153.7	19	993	22 37 15
22 38 15	=0950+748	11 02 39	67.5	-11.5	1.1		153.3	60	1000	22 37 16
22 38 35	RBS797	11 02 59	65.7	-10.6	1.2		152.3	-1	1000	22 38 35
22 42 05	---	11 06 30	65.6	-11.0	1.3		151.0	209	1027	22 38 36

Schedule for TORUN (Code Tr) Page 6

Is there a Binary Black Hole system in the BCG of RBS 797 ?

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sun 9 Mar 2014 Day 68 ---										
22 42 45	J0954+7435	11 07 10	67.4	-12.2	1.2		151.6	20	1027	22 42 45
22 43 45	=0950+748	11 08 10	67.4	-12.4	1.2		151.2	60	1035	22 42 46
22 44 05	RBS797	11 08 30	65.6	-11.2	1.3		150.3	0	1035	22 44 05
22 47 35	---	11 12 01	65.5	-11.7	1.4		149.1	210	1062	22 44 06
22 48 15	J0954+7435	11 12 41	67.2	-13.0	1.3		149.5	20	1062	22 48 15
22 49 15	=0950+748	11 13 41	67.2	-13.2	1.3		149.1	60	1069	22 48 16
22 49 35	RBS797	11 14 01	65.4	-11.9	1.4		148.4	0	1069	22 49 35
22 53 05	---	11 17 32	65.3	-12.3	1.5		147.1	210	1096	22 49 36
22 53 45	J0954+7435	11 18 12	67.0	-13.8	1.4		147.4	20	1096	22 53 45
22 54 45	=0950+748	11 19 12	67.0	-14.0	1.4		147.0	60	1104	22 53 46
22 55 05	RBS797	11 19 32	65.2	-12.6	1.5		146.4	0	1104	22 55 05
22 58 35	---	11 23 02	65.1	-13.0	1.6		145.2	210	1131	22 55 06
22 59 15	J0954+7435	11 23 43	66.8	-14.6	1.5		145.3	20	1131	22 59 15
23 00 15	=0950+748	11 24 43	66.8	-14.8	1.5		145.0	60	1139	22 59 16
23 00 35	RBS797	11 25 03	65.0	-13.2	1.6		144.5	0	1139	23 00 35
23 04 05	---	11 28 33	64.9	-13.6	1.7		143.3	210	1165	23 00 36
23 04 45	J0954+7435	11 29 13	66.6	-15.4	1.6		143.3	20	1165	23 04 45
23 05 45	=0950+748	11 30 14	66.6	-15.5	1.6		143.0	60	1173	23 04 46
23 06 05	RBS797	11 30 34	64.8	-13.8	1.7		142.6	0	1173	23 06 05
23 09 35	---	11 34 04	64.7	-14.2	1.8		141.4	210	1200	23 06 06
23 10 15	J0954+7435	11 34 44	66.4	-16.1	1.6		141.3	20	1200	23 10 15
23 11 15	=0950+748	11 35 45	66.3	-16.2	1.7		141.0	60	1208	23 10 16
23 17 06	3C345	11 41 37	38.9	72.8	-5.0		-48.3	159	1208	23 17 06
23 22 06	---	11 46 38	39.6	73.6	-4.9		-48.6	300	1246	23 17 07
23 28 08	J0954+7435	11 52 40	65.6	-18.3	1.9		135.0	163	1246	23 28 08
23 29 08	=0950+748	11 53 40	65.5	-18.4	2.0		134.7	60	1254	23 28 09
23 29 28	RBS797	11 54 00	63.9	-16.2	2.1		134.7	0	1254	23 29 28
23 32 58	---	11 57 31	63.8	-16.6	2.1		133.6	210	1281	23 29 29
23 33 38	J0954+7435	11 58 11	65.3	-18.9	2.0		133.1	21	1281	23 33 38
23 34 38	=0950+748	11 59 11	65.3	-19.0	2.1		132.8	60	1288	23 33 39

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Schedule for TORUN     (Code Tr )                                  Page   7
               Is there a Binary Black Hole system in the BCG of RBS 797 ?
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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   9 Mar 2014   Day  68 ---

23 34 58  RBS797       11 59 31  63.7 -16.8  2.2     132.9     1     1288   23 34 58
23 38 28  ---          12 03 02  63.5 -17.1  2.2     131.8   210     1315   23 34 59

23 39 08  J0954+7435   12 03 42  65.0 -19.5  2.1     131.3    21     1315   23 39 08
23 40 08  =0950+748    12 04 42  65.0 -19.6  2.1     130.9    60     1323   23 39 09

23 40 28  RBS797       12 05 02  63.5 -17.2  2.3     131.2     1     1323   23 40 28
23 43 58  ---          12 08 33  63.3 -17.5  2.3     130.0   210     1350   23 40 29

23 44 38  J0954+7435   12 09 13  64.8 -20.1  2.2     129.4    21     1350   23 44 38
23 45 38  =0950+748    12 10 13  64.7 -20.2  2.2     129.1    60     1357   23 44 39

23 45 58  RBS797       12 10 33  63.2 -17.7  2.4     129.4     1     1357   23 45 58
23 49 28  ---          12 14 03  63.0 -18.0  2.4     128.3   210     1384   23 45 59

23 50 08  J0954+7435   12 14 44  64.5 -20.6  2.3     127.6    21     1384   23 50 08
23 51 08  =0950+748    12 15 44  64.4 -20.7  2.3     127.3    60     1392   23 50 09

23 51 28  RBS797       12 16 04  63.0 -18.2  2.5     127.7     1     1392   23 51 28
23 54 58  ---          12 19 34  62.8 -18.4  2.5     126.6   210     1419   23 51 29

23 55 38  J0954+7435   12 20 14  64.2 -21.1  2.4     125.8    20     1419   23 55 38
23 56 38  =0950+748    12 21 15  64.1 -21.2  2.4     125.5    60     1427   23 55 39

 --- Start: Sun   9 Mar 2014   Day  68 -- Stop: Mon  10 Mar 2014   Day  69 ---

23 56 58  RBS797       12 21 35  62.7 -18.6  2.5     125.9     1     1427   23 56 58
00 00 28  ---          12 25 05  62.5 -18.9  2.6     124.9   210     1453   23 56 59

00 01 08  J0954+7435   12 25 45  63.9 -21.6  2.5     124.1    20     1453   00 01 08
00 02 08  =0950+748    12 26 46  63.8 -21.7  2.5     123.7    60     1461   00 01 09

00 02 28  RBS797       12 27 06  62.4 -19.0  2.6     124.2     0     1461   00 02 28
00 05 58  ---          12 30 36  62.3 -19.2  2.7     123.2   210     1488   00 02 29

00 06 38  J0954+7435   12 31 16  63.6 -22.0  2.6     122.3    20     1488   00 06 38
00 07 38  =0950+748    12 32 16  63.5 -22.1  2.6     122.0    60     1496   00 06 39

00 07 58  RBS797       12 32 37  62.2 -19.4  2.7     122.6     0     1496   00 07 58
00 11 28  ---          12 36 07  62.0 -19.6  2.8     121.5   210     1523   00 07 59

00 12 08  J0954+7435   12 36 47  63.3 -22.5  2.7     120.6    20     1523   00 12 08
00 13 08  =0950+748    12 37 47  63.2 -22.6  2.7     120.3    60     1530   00 12 09
```

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Schedule for TORUN     (Code Tr )                                  Page   8
               Is there a Binary Black Hole system in the BCG of RBS 797 ?
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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  10 Mar 2014   Day  69 ---

00 13 28  RBS797       12 38 07  61.9 -19.8  2.8     120.9     0     1530   00 13 28
00 16 58  ---          12 41 38  61.7 -20.0  2.9     119.8   210     1557   00 13 29

00 17 38  J0954+7435   12 42 18  62.9 -22.9  2.8     118.9    20     1557   00 17 38
00 18 38  =0950+748    12 43 18  62.9 -23.0  2.8     118.6    60     1565   00 17 39

00 18 58  RBS797       12 43 38  61.6 -20.1  2.9     119.3     0     1565   00 18 58
00 22 28  ---          12 47 09  61.4 -20.3  3.0     118.2   210     1592   00 18 59

00 23 08  J0954+7435   12 47 49  62.6 -23.3  2.9     117.3    20     1592   00 23 08
00 24 08  =0950+748    12 48 49  62.6 -23.3  2.9     117.0    60     1599   00 23 09

00 24 28  RBS797       12 49 09  61.3 -20.4  3.0     117.6     0     1599   00 24 28
00 27 58  ---          12 52 40  61.1 -20.6  3.1     116.6   210     1626   00 24 29

00 28 38  J0954+7435   12 53 20  62.3 -23.6  3.0     115.6    20     1626   00 28 38
00 29 38  =0950+748    12 54 20  62.2 -23.7  3.0     115.3    60     1634   00 28 39

00 29 58  RBS797       12 54 40  61.0 -20.7  3.1     116.0     0     1634   00 29 58
00 33 28  ---          12 58 11  60.8 -20.9  3.2     115.0   210     1661   00 29 59

00 34 08  J0954+7435   12 58 51  62.0 -23.9  3.0     114.0    19     1661   00 34 08
00 35 08  =0950+748    12 59 51  61.9 -24.0  3.1     113.7    60     1668   00 34 09

00 35 28  RBS797       13 00 11  60.7 -21.0  3.2     114.4     0     1668   00 35 28
00 38 58  ---          13 03 42  60.5 -21.2  3.2     113.4   210     1695   00 35 29

00 39 38  J0954+7435   13 04 22  61.6 -24.2  3.1     112.4    19     1695   00 39 38
00 40 38  =0950+748    13 05 22  61.6 -24.3  3.2     112.1    60     1703   00 39 39

00 40 58  RBS797       13 05 42  60.4 -21.3  3.3     112.9    -1     1703   00 40 58
00 44 28  ---          13 09 12  60.2 -21.4  3.3     111.9   209     1730   00 40 59

00 45 08  J0954+7435   13 09 53  61.3 -24.5  3.2     110.8    19     1730   00 45 08
00 46 08  =0950+748    13 10 53  61.2 -24.6  3.2     110.5    60     1738   00 45 09

00 46 28  RBS797       13 11 13  60.1 -21.5  3.4     111.3    -1     1738   00 46 28
00 49 58  ---          13 14 43  59.9 -21.7  3.4     110.3   209     1764   00 46 29

00 50 38  J0954+7435   13 15 24  60.9 -24.8  3.3     109.3    19     1764   00 50 38
00 51 38  =0950+748    13 16 24  60.9 -24.8  3.3     109.0    60     1772   00 50 39

00 51 58  RBS797       13 16 44  59.8 -21.8  3.5     109.8    -1     1772   00 51 58
00 55 28  ---          13 20 14  59.6 -21.9  3.5     108.8   209     1799   00 51 59
```

Schedule for TORUN (Code Tr) Page 9

Is there a Binary Black Hole system in the BCG of RBS 797 ?

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 10 Mar 2014 Day 69 ---										
00 56 08	J0954+7435	13 20 54	60.6	-25.0	3.4		107.7	19	1799	00 56 08
00 57 08	=0950+748	13 21 55	60.5	-25.1	3.4		107.4	60	1807	00 56 09
00 57 28	RBS797	13 22 15	59.5	-22.0	3.6		108.2	-1	1807	00 57 28
01 00 58	---	13 25 45	59.3	-22.1	3.6		107.3	209	1834	00 57 29
01 01 38	J0954+7435	13 26 25	60.2	-25.2	3.5		106.2	19	1834	01 01 38
01 02 38	=0950+748	13 27 25	60.2	-25.3	3.5		105.9	60	1841	01 01 39
01 02 58	RBS797	13 27 46	59.2	-22.2	3.7		106.7	-1	1841	01 02 58
01 06 28	---	13 31 16	59.0	-22.3	3.7		105.8	209	1868	01 02 59
01 07 08	J0954+7435	13 31 56	59.9	-25.4	3.6		104.7	19	1868	01 07 08
01 08 08	=0950+748	13 32 56	59.8	-25.5	3.6		104.4	60	1876	01 07 09
01 08 28	RBS797	13 33 16	58.9	-22.3	3.7		105.3	-1	1876	01 08 28
01 11 58	---	13 36 47	58.7	-22.4	3.8		104.3	209	1903	01 08 29
01 12 38	J0954+7435	13 37 27	59.5	-25.6	3.7		103.2	19	1903	01 12 38
01 13 38	=0950+748	13 38 27	59.5	-25.7	3.7		103.0	60	1910	01 12 39
01 13 58	RBS797	13 38 47	58.6	-22.5	3.8		103.8	-1	1910	01 13 58
01 17 28	---	13 42 18	58.4	-22.6	3.9		102.9	209	1937	01 13 59
01 18 08	J0954+7435	13 42 58	59.2	-25.8	3.8		101.8	19	1937	01 18 08
01 19 08	=0950+748	13 43 58	59.1	-25.8	3.8		101.5	60	1945	01 18 09
01 19 28	RBS797	13 44 18	58.2	-22.6	3.9		102.3	-1	1945	01 19 28
01 22 58	---	13 47 49	58.0	-22.7	4.0		101.4	209	1972	01 19 29
01 23 38	J0954+7435	13 48 29	58.8	-25.9	3.9		100.3	19	1972	01 23 38
01 24 38	=0950+748	13 49 29	58.7	-25.9	3.9		100.1	60	1980	01 23 39
01 24 58	RBS797	13 49 49	57.9	-22.8	4.0		100.9	-1	1980	01 24 58
01 28 28	---	13 53 20	57.7	-22.8	4.1		100.0	209	2006	01 24 59
01 29 08	J0954+7435	13 54 00	58.4	-26.0	4.0		98.9	19	2006	01 29 08
01 30 08	=0950+748	13 55 00	58.4	-26.1	4.0		98.6	60	2014	01 29 09
01 35 59	3C345	14 00 52	59.5	99.3	-2.7		-50.5	86	2014	01 35 59
01 40 59	---	14 05 53	60.3	100.5	-2.6		-50.2	300	2052	01 36 00
01 47 00	J0954+7435	14 11 55	57.2	-26.3	4.3		94.3	93	2052	01 47 00
01 48 00	=0950+748	14 12 56	57.2	-26.3	4.3		94.1	60	2060	01 47 01

```
Schedule for TORUN     (Code Tr )                                  Page  10
               Is there a Binary Black Hole system in the BCG of RBS 797 ?
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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  10 Mar 2014   Day  69 ---

01 48 20  RBS797       14 13 16  56.6 -23.1  4.4      94.9    -1     2060   01 48 20
01 51 50  ---          14 16 46  56.3 -23.1  4.5      94.0   209     2087   01 48 21

01 52 30  J0954+7435   14 17 26  56.9 -26.3  4.4      93.0    19     2087   01 52 30
01 53 30  =0950+748    14 18 26  56.8 -26.3  4.4      92.7    60     2095   01 52 31

01 53 50  RBS797       14 18 47  56.2 -23.1  4.5      93.5    -1     2095   01 53 50
01 57 20  ---          14 22 17  56.0 -23.2  4.6      92.6   209     2122   01 53 51

01 58 00  J0954+7435   14 22 57  56.5 -26.4  4.4      91.6    19     2122   01 58 00
01 59 00  =0950+748    14 23 57  56.4 -26.4  4.5      91.4    60     2129   01 58 01

01 59 20  RBS797       14 24 17  55.9 -23.2  4.6      92.1    -1     2129   01 59 20
02 02 50  ---          14 27 48  55.7 -23.2  4.7      91.3   209     2156   01 59 21

02 03 30  J0954+7435   14 28 28  56.1 -26.4  4.5      90.3    19     2156   02 03 30
02 04 30  =0950+748    14 29 28  56.1 -26.4  4.6      90.0    60     2164   02 03 31

02 04 50  RBS797       14 29 48  55.6 -23.2  4.7      90.8    -1     2164   02 04 50
02 08 20  ---          14 33 19  55.4 -23.2  4.7      89.9   209     2191   02 04 51

02 09 00  J0954+7435   14 33 59  55.8 -26.4  4.6      89.0    19     2191   02 09 00
02 10 00  =0950+748    14 34 59  55.7 -26.4  4.6      88.7    60     2198   02 09 01

02 10 20  RBS797       14 35 19  55.3 -23.2  4.8      89.5    -1     2198   02 10 20
02 13 50  ---          14 38 50  55.0 -23.2  4.8      88.6   209     2225   02 10 21

02 14 30  J0954+7435   14 39 30  55.4 -26.3  4.7      87.7    19     2225   02 14 30
02 15 30  =0950+748    14 40 30  55.3 -26.3  4.7      87.4    60     2233   02 14 31

02 15 50  RBS797       14 40 50  54.9 -23.2  4.9      88.1    -1     2233   02 15 50
02 19 20  ---          14 44 21  54.7 -23.2  4.9      87.3   209     2260   02 15 51

02 20 00  J0954+7435   14 45 01  55.0 -26.3  4.8      86.4    19     2260   02 20 00
02 21 00  =0950+748    14 46 01  55.0 -26.3  4.8      86.1    60     2268   02 20 01

02 21 20  RBS797       14 46 21  54.6 -23.2  5.0      86.8    -1     2268   02 21 20
02 24 50  ---          14 49 52  54.4 -23.1  5.0      86.0   209     2294   02 21 21

02 25 30  J0954+7435   14 50 32  54.7 -26.3  4.9      85.1    19     2294   02 25 30
02 26 30  =0950+748    14 51 32  54.6 -26.3  4.9      84.8    60     2302   02 25 31

02 26 50  RBS797       14 51 52  54.3 -23.1  5.1      85.5    -1     2302   02 26 50
02 30 20  ---          14 55 23  54.1 -23.1  5.1      84.7   209     2329   02 26 51

02 31 00  J0954+7435   14 56 03  54.3 -26.2  5.0      83.8    19     2329   02 31 00
02 32 00  =0950+748    14 57 03  54.2 -26.2  5.0      83.6    60     2337   02 31 01
```

Schedule for TORUN (Code Tr) Page 11

Is there a Binary Black Hole system in the BCG of RBS 797 ?

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 10 Mar 2014 Day 69 ---										
02 32 20	RBS797	14 57 23	53.9	-23.1	5.1		84.2	-1	2337	02 32 20
02 35 50	---	15 00 53	53.7	-23.0	5.2		83.4	209	2364	02 32 21
02 36 30	J0954+7435	15 01 34	53.9	-26.1	5.1		82.5	19	2364	02 36 30
02 37 30	=0950+748	15 02 34	53.9	-26.1	5.1		82.3	60	2371	02 36 31
02 37 50	RBS797	15 02 54	53.6	-23.0	5.2		82.9	-1	2371	02 37 50
02 41 20	---	15 06 24	53.4	-23.0	5.3		82.1	209	2398	02 37 51
02 42 00	J0954+7435	15 07 04	53.6	-26.0	5.2		81.3	19	2398	02 42 00
02 43 00	=0950+748	15 08 05	53.5	-26.0	5.2		81.0	60	2406	02 42 01
02 43 20	RBS797	15 08 25	53.3	-22.9	5.3		81.6	-1	2406	02 43 20
02 46 50	---	15 11 55	53.1	-22.9	5.4		80.8	209	2433	02 43 21
02 47 30	J0954+7435	15 12 35	53.2	-25.9	5.3		80.0	19	2433	02 47 30
02 48 30	=0950+748	15 13 36	53.2	-25.9	5.3		79.8	60	2440	02 47 31
02 48 50	RBS797	15 13 56	53.0	-22.8	5.4		80.4	-1	2440	02 48 50
02 52 20	---	15 17 26	52.8	-22.8	5.5		79.6	209	2467	02 48 51
02 53 00	J0954+7435	15 18 06	52.9	-25.8	5.4		78.8	19	2467	02 53 00
02 54 00	=0950+748	15 19 06	52.8	-25.8	5.4		78.5	60	2475	02 53 01
02 54 20	RBS797	15 19 26	52.7	-22.8	5.5		79.1	-1	2475	02 54 20
02 57 50	---	15 22 57	52.5	-22.7	5.6		78.3	209	2502	02 54 21
02 58 30	J0954+7435	15 23 37	52.5	-25.7	5.5		77.5	19	2502	02 58 30
02 59 30	=0950+748	15 24 37	52.4	-25.7	5.5		77.3	60	2509	02 58 31
02 59 50	RBS797	15 24 57	52.3	-22.6	5.6		77.8	-1	2509	02 59 50
03 03 20	---	15 28 28	52.1	-22.6	5.7		77.0	209	2536	02 59 51
03 04 00	J0954+7435	15 29 08	52.1	-25.6	5.5		76.3	19	2536	03 04 00
03 05 00	=0950+748	15 30 08	52.1	-25.5	5.6		76.1	60	2544	03 04 01
03 05 20	RBS797	15 30 28	52.0	-22.5	5.7		76.6	-1	2544	03 05 20
03 08 50	---	15 33 59	51.8	-22.4	5.8		75.8	209	2571	03 05 21
03 09 30	J0954+7435	15 34 39	51.8	-25.4	5.6		75.1	20	2571	03 09 30
03 10 30	=0950+748	15 35 39	51.7	-25.4	5.7		74.9	60	2579	03 09 31
03 10 50	RBS797	15 35 59	51.7	-22.4	5.8		75.4	0	2579	03 10 50
03 14 20	---	15 39 30	51.5	-22.3	5.8		74.6	210	2605	03 10 51
03 15 00	J0954+7435	15 40 10	51.4	-25.3	5.7		73.9	20	2605	03 15 00
03 16 00	=0950+748	15 41 10	51.4	-25.2	5.7		73.7	60	2613	03 15 01

Schedule for TORUN (Code Tr) Page 12

Is there a Binary Black Hole system in the BCG of RBS 797 ?

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 10 Mar 2014 Day 69 ---										
03 16 20	RBS797	15 41 30	51.4	-22.3	5.9		74.1	0	2613	03 16 20
03 19 50	---	15 45 01	51.2	-22.2	5.9		73.3	210	2640	03 16 21
03 20 30	J0954+7435	15 45 41	51.1	-25.1	5.8		72.7	20	2640	03 20 30
03 21 30	=0950+748	15 46 41	51.0	-25.1	5.8		72.5	60	2648	03 20 31
03 21 50	RBS797	15 47 01	51.1	-22.1	6.0		72.9	0	2648	03 21 50
03 25 20	---	15 50 32	50.9	-22.0	6.0		72.1	210	2675	03 21 51
03 26 00	J0954+7435	15 51 12	50.7	-24.9	5.9		71.5	20	2675	03 26 00
03 27 00	=0950+748	15 52 12	50.7	-24.9	5.9		71.3	60	2682	03 26 01
03 27 20	RBS797	15 52 32	50.8	-22.0	6.1		71.7	0	2682	03 27 20
03 30 50	---	15 56 02	50.6	-21.9	6.1		70.9	210	2709	03 27 21
03 31 30	J0954+7435	15 56 43	50.4	-24.7	6.0		70.3	20	2709	03 31 30
03 32 30	=0950+748	15 57 43	50.3	-24.7	6.0		70.1	60	2717	03 31 31
03 32 50	RBS797	15 58 03	50.5	-21.8	6.2		70.5	0	2717	03 32 50
03 36 20	---	16 01 33	50.3	-21.7	6.2		69.7	210	2744	03 32 51
03 37 00	J0954+7435	16 02 13	50.0	-24.5	6.1		69.2	20	2744	03 37 00
03 38 00	=0950+748	16 03 14	50.0	-24.5	6.1		68.9	60	2751	03 37 01
03 38 20	RBS797	16 03 34	50.2	-21.6	6.2		69.3	0	2751	03 38 20
03 41 50	---	16 07 04	50.0	-21.5	6.3		68.5	210	2778	03 38 21
03 42 30	J0954+7435	16 07 44	49.7	-24.3	6.2		68.0	20	2778	03 42 30
03 43 30	=0950+748	16 08 45	49.6	-24.3	6.2		67.8	60	2786	03 42 31
03 43 50	RBS797	16 09 05	49.8	-21.4	6.3		68.1	0	2786	03 43 50
03 47 20	---	16 12 35	49.7	-21.3	6.4		67.3	210	2813	03 43 51
03 48 00	J0954+7435	16 13 15	49.4	-24.1	6.3		66.8	20	2813	03 48 00
03 49 00	=0950+748	16 14 15	49.3	-24.1	6.3		66.6	60	2820	03 48 01
03 49 20	RBS797	16 14 36	49.5	-21.2	6.4		66.9	0	2820	03 49 20
03 52 50	---	16 18 06	49.4	-21.1	6.5		66.1	210	2847	03 49 21
03 53 30	J0954+7435	16 18 46	49.0	-23.9	6.4		65.7	20	2847	03 53 30
03 54 30	=0950+748	16 19 46	49.0	-23.8	6.4		65.5	60	2855	03 53 31
03 54 50	RBS797	16 20 06	49.3	-21.0	6.5		65.7	0	2855	03 54 50
03 58 20	---	16 23 37	49.1	-20.9	6.6		64.9	210	2882	03 54 51
03 59 00	J0954+7435	16 24 17	48.7	-23.6	6.5		64.5	20	2882	03 59 00
04 00 00	=0950+748	16 25 17	48.6	-23.6	6.5		64.3	60	2890	03 59 01

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


 ======== Setup file: sess114.C1024
   Matching groups in /irasoft/sched-11.1beta/catalogs/freq.dat:
     tr6cm           E-mail Borkowski 23Apr03 (CR 1May03)

   Setup group:    1         Station: TORUN            Total bit rate:  1024
   Format: MKIV1:2           Bits per sample: 2        Sample rate: 32.000
   Number of channels: 16    DBE type:                 Speedup factor:   0.50

   Disk used to record data.

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

  The following frequency sets based on these setups were used.

   Frequency Set:   5  Setup file default.  Used pcal sets:   1
   LO sum=   4942.49  4942.49  4942.49  4942.49  4974.49  4974.49  4974.49  4974.49
             5006.49  5006.49  5006.49  5006.49  5038.49  5038.49  5038.49  5038.49
   BBC fr=    742.49   742.49   742.49   742.49   774.49   774.49   774.49   774.49
              806.49   806.49   806.49   806.49   838.49   838.49   838.49   838.49
   Bandwd=     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
               16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
    Matching frequency sets:   5

  The following pulse cal sets were used with this setup:

   Pulse cal detection set:   1  PCAL = 1MHZ
    PCALXB1=   S1    S3    S5    S7    S9    S11   S13   S15
    PCALXB2=   S2    S4    S6    S8    S10   S12   S14   S16
    PCALFR1=   490   510   490   510   490   510   490   510
    PCALFR2=   490   510   490   510   490   510   490   510

   Track assignments are:
    track1=   2, 10, 18, 26,  3, 11, 19, 27, 66, 74, 82, 90, 67, 75, 83, 91
    barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* RBS797	09 42 04.064047	* 09 47 12.760000	09 48 43.380453	0.00
	76 37 05.87934	* 76 23 13.74000	76 19 12.51778	0.00
* J0954+7435	09 50 04.561123	* 09 54 47.442227	09 56 10.584259	4.94
0950+748	74 50 07.76577	* 74 35 57.14561	74 31 50.25457	0.94
J1642+3948	16 41 17.606228	* 16 42 58.809965	16 43 27.955278	0.77
* 3C345	39 54 10.81496	* 39 48 36.99402	39 46 51.09640	0.52

SOURCE SCAN SUMMARY FOR SOURCES LISTED ABOVE

Scan hours are for recording scans only.
Baseline hours are only counted for scans above horizon at both ends.

Source	Setup file	Frequency sets (duplicates not shown)	Observing hours Scan	Baseline
RBS797	sess114.C1024	1 2 3 4 5 6 7 10 11 12 13	4.667	358.665
J0954+7435	sess114.C1024	1 2 3 4 5 6 7 10 11 12 13	1.438	112.125
3C345	sess114.C1024	1 2 3 4 5 6 7 10 11 12 13	0.167	13.000

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)
RBS797	106.8
J0954+7435	108.6
3C345	99.9

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
that the Sun will cause amplitude reductions on the longest VLBA baselines
at a solar distance of 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
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
43.0 GHz	6. deg

f14k1tr

FTP Fringe Test

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Observing mode:

Notes: 1.3cm FTP Fringe Test for session 1/2014
1024 Mbps, 2-bit sampling, 16 MHz filters
Participation from Sr (with DBBC), and Sh65 (TIANMA65 or T6) expected
Additional DBBC testing data from Mc, Tr, and Ys is also expected.

COVER LETTER:

Dear EVN friends,

This is the schedule for the 1.3cm FTP-FT on March 10 2011,
involving 22 stations: Eb Jb2 On20 Mc Nt Tr Sv Zc Bd Ur Sh Hh Ys
Mh Sr Ky, Ku, Kt, as well as Md Td Yd (Mc Tr and Ys with DBBC)
and Sh65. The test uses a standard setup with 1024 Mbps and consists
of two ftp fringe tests, interspersed with a longer set of scans on
0234+285 (~1.5 Jy source at 22 GHz).

The two ftp fringe-test scans, start at:

(1) 12:07:30 UT (scan 2, 2 sec)
(2) 12:56:00 UT (scan 8, 2 sec)

See you on Skype group chat
and
Good luck with the session!

Ivan
Support Scientist, JIVE
Skype account: JIVE.Support.Scientist

```
Schedule for TORUN     (Code Tr )                                Page   2
               FTP Fringe Test
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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  10 Mar 2014   Day  69 ---

Next scan frequencies:22187.49 22187.49 22187.49 22187.49 22219.49 22219.49 22219.49 22219.49
                      22251.49 22251.49 22251.49 22251.49 22283.49 22283.49 22283.49 22283.49
Next BBC frequencies:   687.49   687.49   687.49   687.49   719.49   719.49   719.49   719.49
                        751.49   751.49   751.49   751.49   783.49   783.49   783.49   783.49
Next scan bandwidths:    16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
                         16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00

12 00 00  0234+285     00 26 36  55.8 121.9 -2.2     -35.6     0         0   12 00 00
12 04 00  ---          00 30 36  56.3 123.2 -2.1     -35.0   240        31   12 00 01

12 04 30  0234+285     00 31 07  56.4 123.4 -2.1     -34.9    24        31   12 04 30
12 08 30  ---          00 35 07  56.9 124.7 -2.1     -34.3   240        61   12 04 31

12 10 30  0234+285     00 37 08  57.1 125.3 -2.0     -34.0   113        61   12 10 30
12 18 30  ---          00 45 09  58.1 128.1 -1.9     -32.7   480       123   12 10 31

12 19 00  0234+285     00 45 39  58.1 128.2 -1.9     -32.6    24       123   12 19 00
12 27 00  ---          00 53 40  59.0 131.1 -1.8     -31.1   480       184   12 19 01

12 27 30  0234+285     00 54 10  59.1 131.3 -1.7     -31.0    24       184   12 27 30
12 35 30  ---          01 02 12  60.0 134.3 -1.6     -29.4   480       246   12 27 31

12 36 00  0234+285     01 02 42  60.0 134.5 -1.6     -29.3    24       246   12 36 00
12 44 00  ---          01 10 43  60.9 137.6 -1.5     -27.5   480       307   12 36 01

12 44 30  0234+285     01 11 13  60.9 137.8 -1.5     -27.4    24       307   12 44 30
12 52 30  ---          01 19 14  61.7 141.1 -1.3     -25.5   480       369   12 44 31

12 53 00  0234+285     01 19 45  61.8 141.3 -1.3     -25.4    23       369   12 53 00
12 57 00  ---          01 23 45  62.1 143.0 -1.2     -24.4   240       399   12 53 01

12 59 00  0234+285     01 25 46  62.3 143.9 -1.2     -23.9   113       399   12 59 00
13 00 00  ---          01 26 46  62.4 144.3 -1.2     -23.6    60       407   12 59 01



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


 ======== Setup file: sess114.K1024
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

   Setup group:    8         Station: TORUN            Total bit rate:  1024
   Format: MKIV1:2           Bits per sample: 2        Sample rate: 32.000
   Number of channels: 16    DBE type:                 Speedup factor:   0.50
```

```
  Disk used to record data.

  1st LO=  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00
           21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00
  Net SB=         L         L         U         U         L         L         U         U
                  L         L         U         U         L         L         U         U
  IF SB =         U         U         U         U         U         U         U         U
                  U         U         U         U         U         U         U         U
  Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
                RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2         3         4         3         4
                  5         6         5         6         7         8         7         8
  BBC SB=         L         L         U         U         L         L         U         U
                  L         L         U         U         L         L         U         U
  IF    =         C         A         C         A         C         A         C         A
                  C         A         C         A         C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   6  Setup file default.  Used pcal sets:   1
  LO sum=   22187.49  22187.49  22187.49  22187.49  22219.49  22219.49  22219.49  22219.49
            22251.49  22251.49  22251.49  22251.49  22283.49  22283.49  22283.49  22283.49
  BBC fr=     687.49    687.49    687.49    687.49    719.49    719.49    719.49    719.49
              751.49    751.49    751.49    751.49    783.49    783.49    783.49    783.49
  Bandwd=      16.00     16.00     16.00     16.00     16.00     16.00     16.00     16.00
               16.00     16.00     16.00     16.00     16.00     16.00     16.00     16.00
   Matching frequency sets:   6

 The following pulse cal sets were used with this setup:

  Pulse cal detection set:   1  PCAL = OFF
   PCALXB1=   S1    S2    S3    S4    S5    S6    S7    S8
   PCALXB2=   M1    M2    M3    M4    M5    M6    M7    M8
   PCALFR1=     0     0     0     0     0     0     0     0
   PCALFR2=     0     0     0     0     0     0     0     0

  Track assignments are:
   track1=   2, 10, 18, 26,  3, 11, 19, 27, 66, 74, 82, 90, 67, 75, 83, 91
   barrel=roll_off


POSITIONS OF SOURCES USED IN RECORDING SCANS

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

  J0237+2848        02 34 55.589591   * 02 37 52.405678     02 38 42.679952       0.11
* 0234+285          28 35 11.40773    * 28 48 08.98998      28 51 46.49950        0.10


EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
  Source         Sun distance (deg)
  0234+285            57.4
```

ga030dtr

Probing the innermost regions of AGN jets and their magnetic fields

PI: *Andrei Lobanov*


```
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Phone:    +49 (228) 525 191                        EMAIL:    alobanov@mpifr-bonn.mpg.de
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```


Observing mode: K-band, dual-pol

```
Schedule for TORUN     (Code Tr )                                    Page   2
               Probing the innermost regions of AGN jets and their magnetic fields
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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  10 Mar 2014   Day  69 ---

 ---------- Ground segment 05: Scans on target and D-term calibrator ----------

 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

19 40 00  1253-055     08 07 51   5.7 107.8 -4.8     -35.1     0         0   19 40 00
19 42 00  ---          08 09 52   6.0 108.2 -4.8     -35.0   120         4   19 40 01

19 42 40  1253-055     08 10 32   6.1 108.3 -4.8     -35.0    34         4   19 42 40
19 47 40  ---          08 15 33   6.8 109.3 -4.7     -34.7   300        13   19 42 41

19 48 20  1243-072     08 16 13   6.9 112.5 -4.5     -34.0    19        13   19 48 20
19 53 20  ---          08 21 14   7.6 113.6 -4.4     -33.7   300        23   19 48 21

19 54 00  1253-055     08 21 54   7.7 110.7 -4.6     -34.4    19        23   19 54 00
19 59 00  ---          08 26 55   8.4 111.7 -4.5     -34.1   300        33   19 54 01

19 59 40  1243-072     08 27 35   8.5 114.9 -4.3     -33.3    19        33   19 59 40
20 04 40  ---          08 32 35   9.2 116.0 -4.2     -33.0   300        42   19 59 41

20 05 20  1253-055     08 33 16   9.3 113.0 -4.4     -33.8    19        42   20 05 20
20 10 20  ---          08 38 16  10.0 114.1 -4.3     -33.4   300        52   20 05 21

20 11 00  1243-072     08 38 56  10.0 117.3 -4.1     -32.6    19        52   20 11 00
20 16 00  ---          08 43 57  10.7 118.4 -4.0     -32.2   300        61   20 11 01

20 16 40  1253-055     08 44 37  10.9 115.4 -4.2     -33.0    19        61   20 16 40
20 21 40  ---          08 49 38  11.6 116.5 -4.1     -32.7   300        71   20 16 41

20 22 20  1243-072     08 50 18  11.5 119.7 -3.9     -31.7    19        71   20 22 20
20 27 20  ---          08 55 19  12.2 120.8 -3.9     -31.3   300        81   20 22 21

20 28 00  1253-055     08 55 59  12.4 117.8 -4.0     -32.3    19        81   20 28 00
20 33 00  ---          09 01 00  13.1 118.9 -3.9     -31.9   300        90   20 28 01
```

```
Schedule for TORUN     (Code Tr )                                   Page   3
               Probing the innermost regions of AGN jets and their magnetic fields
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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  10 Mar 2014   Day  69 ---

20 33 40  1243-072     09 01 40  13.0 122.2 -3.8     -30.8    19        90   20 33 40
20 38 40  ---          09 06 41  13.6 123.3 -3.7     -30.4   300       100   20 33 41

20 39 20  1253-055     09 07 21  13.9 120.3 -3.8     -31.4    19       100   20 39 20
20 46 20  ---          09 14 22  14.8 121.9 -3.7     -30.8   420       113   20 39 21

20 47 00  1253-055     09 15 02  14.9 122.0 -3.7     -30.8    34       113   20 47 00
20 49 00  ---          09 17 03  15.1 122.4 -3.7     -30.6   120       117   20 47 01

 ---------- Space segment 05 ----------

20 50 00  1253-055     09 18 03  15.3 122.7 -3.6     -30.5    54       117   20 50 00
20 59 30  ---          09 27 34  16.4 124.8 -3.5     -29.7   570       135   20 50 01

21 00 00  1253-055     09 28 05  16.5 124.9 -3.5     -29.7    24       135   21 00 00
21 09 30  ---          09 37 36  17.7 127.1 -3.3     -28.8   570       154   21 00 01

21 10 00  1253-055     09 38 06  17.7 127.2 -3.3     -28.7    24       154   21 10 00
21 19 30  ---          09 47 38  18.9 129.4 -3.2     -27.8   570       172   21 10 01

 ---------- Ground segment 06: Scans on target and D-term calibrator ----------

21 20 00  1253-055     09 48 08  18.9 129.5 -3.1     -27.8    24       172   21 20 00
21 25 00  ---          09 53 09  19.5 130.7 -3.1     -27.2   300       181   21 20 01

21 25 40  1243-072     09 53 49  19.1 134.0 -2.9     -25.8    19       181   21 25 40
21 30 40  ---          09 58 50  19.7 135.2 -2.8     -25.3   300       191   21 25 41

21 31 20  1253-055     09 59 30  20.2 132.2 -3.0     -26.6    19       191   21 31 20
21 36 20  ---          10 04 31  20.8 133.4 -2.9     -26.0   300       201   21 31 21

21 37 00  1243-072     10 05 11  20.3 136.7 -2.7     -24.5    19       201   21 37 00
21 42 00  ---          10 10 11  20.8 137.9 -2.6     -23.9   300       210   21 37 01

21 42 40  1253-055     10 10 52  21.4 134.9 -2.8     -25.3    19       210   21 42 40
21 47 40  ---          10 15 52  22.0 136.1 -2.7     -24.7   300       220   21 42 41

21 48 20  1243-072     10 16 32  21.5 139.5 -2.5     -23.2    19       220   21 48 20
21 53 20  ---          10 21 33  22.0 140.7 -2.4     -22.5   300       229   21 48 21

21 54 00  1253-055     10 22 13  22.6 137.7 -2.6     -24.0    19       229   21 54 00
21 59 00  ---          10 27 14  23.1 138.9 -2.5     -23.4   300       239   21 54 01

21 59 40  1243-072     10 27 54  22.6 142.3 -2.3     -21.7    19       239   21 59 40
22 04 40  ---          10 32 55  23.0 143.6 -2.2     -21.1   300       249   21 59 41

22 05 20  1253-055     10 33 35  23.7 140.5 -2.4     -22.6    19       249   22 05 20
22 10 20  ---          10 38 36  24.2 141.7 -2.3     -21.9   300       258   22 05 21
```

```
Schedule for TORUN     (Code Tr )                                   Page   4
               Probing the innermost regions of AGN jets and their magnetic fields
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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  10 Mar 2014   Day  69 ---

22 11 00  1243-072     10 39 16  23.6 145.2 -2.1     -20.2    19      258   22 11 00
22 16 00  ---          10 44 17  24.0 146.4 -2.0     -19.6   300      268   22 11 01

22 16 40  1253-055     10 44 57  24.8 143.4 -2.2     -21.1    19      268   22 16 40
22 21 40  ---          10 49 58  25.2 144.6 -2.1     -20.4   300      277   22 16 41

22 22 20  1243-072     10 50 38  24.5 148.1 -1.9     -18.7    19      277   22 22 20
22 27 20  ---          10 55 39  24.9 149.4 -1.9     -18.0   300      287   22 22 21

22 28 00  1253-055     10 56 19  25.8 146.3 -2.0     -19.6    19      287   22 28 00
22 33 00  ---          11 01 20  26.2 147.6 -1.9     -18.9   300      297   22 28 01

22 33 40  1243-072     11 02 00  25.4 151.0 -1.7     -17.1    19      297   22 33 40
22 38 40  ---          11 07 01  25.7 152.3 -1.7     -16.3   300      306   22 33 41

22 39 20  1253-055     11 07 41  26.7 149.3 -1.8     -18.0    19      306   22 39 20
22 44 20  ---          11 12 42  27.1 150.6 -1.7     -17.2   300      316   22 39 21

22 45 00  1243-072     11 13 22  26.2 154.0 -1.6     -15.4    19      316   22 45 00
22 50 00  ---          11 18 23  26.5 155.4 -1.5     -14.6   300      325   22 45 01

22 50 40  1253-055     11 19 03  27.5 152.3 -1.6     -16.3    19      325   22 50 40
22 54 20  ---          11 22 43  27.8 153.3 -1.6     -15.7   220      332   22 50 41

 ---------- Space segment 06 ----------

22 55 00  1253-055     11 23 23  27.8 153.5 -1.6     -15.6    34      332   22 55 00
23 04 30  ---          11 32 55  28.4 156.1 -1.4     -14.2   570      351   22 55 01

23 05 00  1253-055     11 33 25  28.4 156.2 -1.4     -14.1    24      351   23 05 00
23 14 30  ---          11 42 57  29.0 158.8 -1.2     -12.6   570      369   23 05 01

23 15 00  1253-055     11 43 27  29.0 159.0 -1.2     -12.5    24      369   23 15 00
23 24 30  ---          11 52 58  29.5 161.6 -1.1     -11.0   570      387   23 15 01

23 25 00  1253-055     11 53 28  29.5 161.8 -1.1     -10.9    24      387   23 25 00
23 34 30  ---          12 03 00  29.9 164.5 -0.9      -9.3   570      405   23 25 01

23 35 00  1253-055     12 03 30  30.0 164.6 -0.9      -9.2    24      405   23 35 00
23 44 30  ---          12 13 02  30.3 167.3 -0.7      -7.6   570      424   23 35 01

23 45 00  1253-055     12 13 32  30.3 167.5 -0.7      -7.5    24      424   23 45 00
23 54 30  ---          12 23 03  30.6 170.2 -0.6      -5.9   570      442   23 45 01

 --- Start: Mon  10 Mar 2014   Day  69 -- Stop: Tue  11 Mar 2014   Day  70 ---

23 55 00  1253-055     12 23 33  30.6 170.3 -0.6      -5.8    24      442   23 55 00
00 04 30  ---          12 33 05  30.8 173.1 -0.4      -4.2   570      460   23 55 01
```

```
Schedule for TORUN     (Code Tr )                                   Page   5
               Probing the innermost regions of AGN jets and their magnetic fields
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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  11 Mar 2014   Day  70 ---

00 05 00  1253-055     12 33 35  30.8 173.2 -0.4      -4.1    24      460   00 05 00
00 14 30  ---          12 43 07  31.0 176.0 -0.2      -2.4   570      478   00 05 01

00 15 00  1253-055     12 43 37  31.0 176.1 -0.2      -2.3    24      478   00 15 00
00 24 30  ---          12 53 08  31.0 178.9 -0.1      -0.7   570      497   00 15 01

00 25 00  1253-055     12 53 38  31.0 179.0 -0.1      -0.6    24      497   00 25 00
00 34 30  ---          13 03 10  31.0 181.8  0.1       1.1   570      515   00 25 01

00 35 00  1253-055     13 03 40  31.0 181.9  0.1       1.2    24      515   00 35 00
00 44 30  ---          13 13 11  30.9 184.7  0.3       2.8   570      533   00 35 01

00 45 00  1253-055     13 13 42  30.9 184.9  0.3       2.9    24      533   00 45 00
00 54 30  ---          13 23 13  30.8 187.6  0.4       4.6   570      551   00 45 01

00 55 00  1253-055     13 23 43  30.8 187.8  0.4       4.7    24      551   00 55 00
01 04 30  ---          13 33 15  30.5 190.5  0.6       6.3   570      570   00 55 01

 ---------- Ground segment 07: Scans on target and D-term calibrator ----------

01 05 00  1253-055     13 33 45  30.5 190.6  0.6       6.4    24      570   01 05 00
01 10 00  ---          13 38 46  30.4 192.1  0.7       7.3   300      579   01 05 01

01 10 40  1243-072     13 39 26  28.3 194.8  0.9       8.9    18      579   01 10 40
01 15 40  ---          13 44 27  28.1 196.2  1.0       9.7   300      589   01 10 41

01 16 20  1253-055     13 45 07  30.2 193.9  0.8       8.3    18      589   01 16 20
01 21 20  ---          13 50 07  30.0 195.3  0.9       9.2   300      598   01 16 21

01 22 00  1243-072     13 50 48  27.8 198.0  1.1      10.8    18      598   01 22 00
01 27 00  ---          13 55 48  27.6 199.4  1.1      11.6   300      608   01 22 01

01 27 40  1253-055     13 56 29  29.7 197.1  1.0      10.2    18      608   01 27 40
01 32 40  ---          14 01 29  29.5 198.5  1.1      11.1   300      618   01 27 41

01 33 20  1243-072     14 02 09  27.2 201.1  1.3      12.6    18      618   01 33 20
01 38 20  ---          14 07 10  27.0 202.5  1.3      13.4   300      627   01 33 21

01 39 00  1253-055     14 07 50  29.2 200.3  1.2      12.1    18      627   01 39 00
01 44 00  ---          14 12 51  28.9 201.7  1.3      12.9   300      637   01 39 01

01 44 40  1243-072     14 13 31  26.6 204.2  1.4      14.4    18      637   01 44 40
01 49 40  ---          14 18 32  26.3 205.5  1.5      15.1   300      646   01 44 41

01 50 20  1253-055     14 19 12  28.5 203.4  1.4      13.9    18      646   01 50 20
01 54 20  ---          14 23 13  28.3 204.5  1.4      14.5   240      654   01 50 21

01 55 00  1243-072     14 23 53  25.9 206.9  1.6      15.9    17      654   01 55 00
01 59 00  ---          14 27 54  25.6 208.0  1.7      16.5   240      662   01 55 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 ./ga030d_freq_sess313rdbe.dat:
     tr1cm

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

   Disk used to record data.

   1st LO=  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:  17  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:  17

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



 POSITIONS OF SOURCES USED IN RECORDING SCANS

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

 * 1243-072          12 43 28.787939   * 12 46 04.232101     12 46 50.196736       0.00
   J1246-0730       -07 14 23.49353    *-07 30 46.57479     -07 35 34.31825        0.00

 * 1253-055          12 53 35.831289   * 12 56 11.166557     12 56 57.054431       0.00
   J1256-0547       -05 31 07.99603    *-05 47 21.52489     -05 52 06.28974        0.00


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)
   1243-072           156.3
   1253-055           154.8
```

ga032atr

NRAO 150 K-band Phase Ref. Calibrator Search

PI: *Ivan Agudo*


```
Address:  JIVE          Postbus 2, 7990 AA          Dwingeloo, The Netherlands
Phone:    +31 (0)521 596 539              EMAIL:    agudo@jive.nl
```


```
Observing mode: e-VLBI @ 1024 Mbps

Notes:    K-band inverse phase-ref of NRAO150 with three
          sources to look for optimum calibrators for Qband


Schedule for TORUN     (Code Tr )                                   Page   2
               NRAO 150 K-band Phase Ref. Calibrator Search
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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  11 Mar 2014   Day  70 ---

Next scan frequencies:22187.49 22187.49 22187.49 22187.49 22219.49 22219.49 22219.49 22219.49
                      22251.49 22251.49 22251.49 22251.49 22283.49 22283.49 22283.49 22283.49
Next BBC frequencies:   687.49   687.49   687.49   687.49   719.49   719.49   719.49   719.49
                        751.49   751.49   751.49   751.49   783.49   783.49   783.49   783.49
Next scan bandwidths:    16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
                         16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00

08 00 00  NRAO150      20 29 53  28.4  41.3 -7.5     -39.0     0        0   08 00 00
08 10 00  ---          20 39 55  29.4  42.7 -7.3     -40.3   600       77   08 00 01

08 10 15  NRAO150      20 40 10  29.4  42.7 -7.3     -40.4     9       77   08 10 15
08 20 00  ---          20 49 56  30.5  44.1 -7.2     -41.6   585      152   08 10 16

08 20 15  NRAO150      20 50 11  30.5  44.1 -7.2     -41.6     9      152   08 20 15
08 30 00  ---          20 59 58  31.5  45.4 -7.0     -42.8   585      227   08 20 16

08 30 15  NRAO150      21 00 13  31.5  45.5 -7.0     -42.9     9      227   08 30 15
08 40 00  ---          21 10 00  32.6  46.8 -6.8     -44.1   585      301   08 30 16

08 40 15  NRAO150      21 10 15  32.6  46.8 -6.8     -44.1     9      301   08 40 15
08 50 00  ---          21 20 01  33.7  48.1 -6.7     -45.3   585      376   08 40 16

08 50 15  NRAO150      21 20 16  33.7  48.2 -6.7     -45.3     9      376   08 50 15
09 00 00  ---          21 30 03  34.8  49.5 -6.5     -46.5   585      451   08 50 16

09 00 15  NRAO150      21 30 18  34.9  49.5 -6.5     -46.5     9      451   09 00 15
09 10 00  ---          21 40 04  36.0  50.8 -6.3     -47.7   585      526   09 00 16

09 10 15  NRAO150      21 40 20  36.0  50.8 -6.3     -47.7     9      526   09 10 15
09 20 00  ---          21 50 06  37.2  52.1 -6.2     -48.8   585      601   09 10 16

09 20 15  NRAO150      21 50 21  37.2  52.1 -6.2     -48.9     9      601   09 20 15
09 30 00  ---          22 00 08  38.4  53.4 -6.0     -50.0   585      676   09 20 16

09 30 15  NRAO150      22 00 23  38.4  53.4 -6.0     -50.0     9      676   09 30 15
09 40 00  ---          22 10 09  39.6  54.7 -5.8     -51.1   585      751   09 30 16
```

Schedule for TORUN (Code Tr) Page 3

NRAO 150 K-band Phase Ref. Calibrator Search

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 11 Mar 2014 Day 70 ---										
09 40 15	NRAO150	22 10 24	39.6	54.7	-5.8		-51.2	9	751	09 40 15
09 50 00	---	22 20 11	40.8	56.0	-5.7		-52.2	585	826	09 40 16
09 50 15	NRAO150	22 20 26	40.9	56.0	-5.7		-52.3	9	826	09 50 15
10 00 00	---	22 30 13	42.1	57.2	-5.5		-53.4	585	900	09 50 16
10 00 15	NRAO150	22 30 28	42.1	57.3	-5.5		-53.4	9	900	10 00 15
10 00 45	---	22 30 58	42.2	57.3	-5.5		-53.4	30	904	10 00 16
10 01 05	J0350+5138	22 31 18	43.8	57.7	-5.3		-55.0	0	904	10 01 05
10 01 45	---	22 31 58	43.9	57.8	-5.3		-55.1	40	909	10 01 06
10 02 05	NRAO150	22 32 18	42.3	57.5	-5.5		-53.6	1	909	10 02 05
10 02 35	---	22 32 48	42.4	57.5	-5.5		-53.6	30	913	10 02 06
10 02 55	J0350+5201	22 33 08	44.2	57.5	-5.3		-55.5	0	913	10 02 55
10 03 35	---	22 33 48	44.3	57.6	-5.3		-55.5	40	918	10 02 56
10 04 10	NRAO150	22 34 23	42.6	57.8	-5.4		-53.8	15	918	10 04 10
10 04 40	---	22 34 53	42.7	57.8	-5.4		-53.9	30	922	10 04 11
10 05 10	J0347+4842	22 35 24	43.0	62.0	-5.2		-53.5	7	922	10 05 10
10 05 50	---	22 36 04	43.1	62.0	-5.2		-53.6	40	927	10 05 11
10 06 20	NRAO150	22 36 34	42.9	58.0	-5.4		-54.0	7	927	10 06 20
10 06 50	---	22 37 04	43.0	58.1	-5.4		-54.1	30	931	10 06 21
10 07 10	J0350+5138	22 37 24	44.5	58.5	-5.2		-55.7	0	931	10 07 10
10 07 50	---	22 38 04	44.6	58.6	-5.2		-55.7	40	936	10 07 11
10 08 10	NRAO150	22 38 24	43.1	58.3	-5.4		-54.2	1	936	10 08 10
10 08 40	---	22 38 54	43.2	58.3	-5.4		-54.3	30	940	10 08 11
10 09 00	J0350+5201	22 39 14	45.0	58.2	-5.2		-56.1	0	940	10 09 00
10 09 40	---	22 39 54	45.0	58.3	-5.2		-56.2	40	945	10 09 01
10 10 15	NRAO150	22 40 29	43.4	58.5	-5.3		-54.5	15	945	10 10 15
10 10 45	---	22 40 59	43.5	58.6	-5.3		-54.5	30	949	10 10 16
10 11 15	J0347+4842	22 41 30	43.8	62.8	-5.1		-54.1	7	949	10 11 15
10 11 55	---	22 42 10	43.9	62.9	-5.1		-54.2	40	954	10 11 16
10 12 25	NRAO150	22 42 40	43.7	58.8	-5.3		-54.7	7	954	10 12 25
10 12 55	---	22 43 10	43.7	58.9	-5.3		-54.8	30	958	10 12 26
10 13 15	J0350+5138	22 43 30	45.3	59.2	-5.1		-56.3	0	958	10 13 15
10 13 55	---	22 44 10	45.4	59.3	-5.1		-56.4	40	963	10 13 16

Schedule for TORUN (Code Tr) Page 4

NRAO 150 K-band Phase Ref. Calibrator Search

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 11 Mar 2014 Day 70 ---										
10 14 15	NRAO150	22 44 30	43.9	59.0	-5.3		-54.9	1	963	10 14 15
10 14 45	---	22 45 00	44.0	59.1	-5.3		-55.0	30	967	10 14 16
10 15 05	J0350+5201	22 45 20	45.7	59.0	-5.1		-56.8	0	967	10 15 05
10 15 45	---	22 46 00	45.8	59.0	-5.1		-56.9	40	972	10 15 06
10 16 20	NRAO150	22 46 35	44.2	59.3	-5.2		-55.1	15	972	10 16 20
10 16 50	---	22 47 05	44.2	59.3	-5.2		-55.2	30	976	10 16 21
10 17 20	J0347+4842	22 47 36	44.6	63.6	-5.0		-54.7	7	976	10 17 20
10 18 00	---	22 48 16	44.7	63.7	-5.0		-54.7	40	981	10 17 21
10 18 30	NRAO150	22 48 46	44.5	59.6	-5.2		-55.4	7	981	10 18 30
10 19 00	---	22 49 16	44.5	59.6	-5.2		-55.4	30	985	10 18 31
10 19 20	J0350+5138	22 49 36	46.1	60.0	-5.0		-57.0	0	985	10 19 20
10 20 00	---	22 50 16	46.2	60.1	-5.0		-57.1	40	990	10 19 21
10 20 20	NRAO150	22 50 36	44.7	59.8	-5.2		-55.6	1	990	10 20 20
10 20 50	---	22 51 06	44.8	59.9	-5.2		-55.6	30	994	10 20 21
10 21 10	J0350+5201	22 51 26	46.5	59.7	-5.0		-57.5	0	994	10 21 10
10 21 50	---	22 52 06	46.6	59.8	-5.0		-57.6	40	999	10 21 11
10 22 25	NRAO150	22 52 41	45.0	60.0	-5.1		-55.8	15	999	10 22 25
10 22 55	---	22 53 11	45.0	60.1	-5.1		-55.8	30	1003	10 22 26
10 23 25	J0347+4842	22 53 42	45.5	64.4	-4.9		-55.2	7	1003	10 23 25
10 24 05	---	22 54 22	45.6	64.5	-4.9		-55.3	40	1008	10 23 26
10 24 35	NRAO150	22 54 52	45.2	60.3	-5.1		-56.0	7	1008	10 24 35
10 25 05	---	22 55 22	45.3	60.4	-5.1		-56.1	30	1012	10 24 36
10 25 25	J0350+5138	22 55 42	46.9	60.7	-4.9		-57.7	0	1012	10 25 25
10 26 05	---	22 56 22	47.0	60.8	-4.9		-57.7	40	1017	10 25 26
10 26 25	NRAO150	22 56 42	45.5	60.6	-5.1		-56.2	1	1017	10 26 25
10 26 55	---	22 57 12	45.6	60.6	-5.1		-56.3	30	1021	10 26 26
10 27 15	J0350+5201	22 57 32	47.3	60.4	-4.9		-58.2	0	1021	10 27 15
10 27 55	---	22 58 12	47.4	60.5	-4.9		-58.2	40	1026	10 27 16
10 28 30	NRAO150	22 58 47	45.8	60.8	-5.0		-56.4	15	1026	10 28 30
10 29 00	---	22 59 17	45.8	60.9	-5.0		-56.5	30	1030	10 28 31
10 29 30	J0347+4842	22 59 48	46.3	65.2	-4.8		-55.8	6	1030	10 29 30
10 30 10	---	23 00 28	46.4	65.3	-4.8		-55.9	40	1035	10 29 31

Schedule for TORUN (Code Tr) Page 5

NRAO 150 K-band Phase Ref. Calibrator Search

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 11 Mar 2014 Day 70 ---										
10 30 40	NRAO150	23 00 58	46.0	61.1	-5.0		-56.6	7	1035	10 30 40
10 31 10	---	23 01 28	46.1	61.1	-5.0		-56.7	30	1039	10 30 41
10 31 30	J0350+5138	23 01 48	47.7	61.5	-4.8		-58.3	0	1039	10 31 30
10 32 10	---	23 02 28	47.8	61.5	-4.8		-58.4	40	1044	10 31 31
10 32 30	NRAO150	23 02 48	46.3	61.3	-5.0		-56.8	1	1044	10 32 30
10 33 00	---	23 03 18	46.4	61.4	-5.0		-56.9	30	1048	10 32 31
10 33 20	J0350+5201	23 03 38	48.1	61.2	-4.8		-58.8	0	1048	10 33 20
10 34 00	---	23 04 18	48.2	61.2	-4.8		-58.9	40	1053	10 33 21
10 34 35	NRAO150	23 04 53	46.6	61.6	-4.9		-57.1	15	1053	10 34 35
10 35 05	---	23 05 23	46.6	61.6	-4.9		-57.1	30	1057	10 34 36
10 35 35	J0347+4842	23 05 54	47.1	66.0	-4.7		-56.3	6	1057	10 35 35
10 36 15	---	23 06 34	47.2	66.1	-4.7		-56.4	40	1062	10 35 36
10 36 45	NRAO150	23 07 04	46.9	61.8	-4.9		-57.3	6	1062	10 36 45
10 37 15	---	23 07 34	46.9	61.9	-4.9		-57.3	30	1066	10 36 46
10 37 35	J0350+5138	23 07 54	48.5	62.2	-4.7		-59.0	0	1066	10 37 35
10 38 15	---	23 08 34	48.6	62.3	-4.7		-59.0	40	1071	10 37 36
10 38 35	NRAO150	23 08 54	47.1	62.1	-4.9		-57.5	1	1071	10 38 35
10 39 05	---	23 09 24	47.2	62.1	-4.9		-57.5	30	1075	10 38 36
10 39 25	J0350+5201	23 09 44	48.9	61.9	-4.7		-59.5	0	1075	10 39 25
10 40 05	---	23 10 24	49.0	62.0	-4.7		-59.6	40	1080	10 39 26
10 40 40	NRAO150	23 10 59	47.4	62.3	-4.8		-57.7	15	1080	10 40 40
10 41 10	---	23 11 29	47.4	62.4	-4.8		-57.7	30	1084	10 40 41
10 41 40	J0347+4842	23 12 00	48.0	66.9	-4.6		-56.9	6	1084	10 41 40
10 42 20	---	23 12 40	48.1	67.0	-4.6		-56.9	40	1089	10 41 41
10 42 50	NRAO150	23 13 10	47.7	62.6	-4.8		-57.9	6	1089	10 42 50
10 43 20	---	23 13 40	47.7	62.7	-4.8		-58.0	30	1092	10 42 51
10 43 40	J0350+5138	23 14 00	49.3	62.9	-4.6		-59.6	0	1092	10 43 40
10 44 20	---	23 14 40	49.4	63.0	-4.6		-59.7	40	1098	10 43 41
10 44 40	NRAO150	23 15 00	47.9	62.8	-4.8		-58.1	1	1098	10 44 40
10 45 10	---	23 15 30	48.0	62.9	-4.8		-58.1	30	1101	10 44 41
10 45 30	J0350+5201	23 15 50	49.7	62.6	-4.6		-60.1	0	1101	10 45 30
10 46 10	---	23 16 30	49.8	62.7	-4.6		-60.2	40	1107	10 45 31

Schedule for TORUN (Code Tr) Page 6

NRAO 150 K-band Phase Ref. Calibrator Search

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 11 Mar 2014 Day 70 ---										
10 46 45	NRAO150	23 17 05	48.2	63.1	-4.7		-58.3	15	1107	10 46 45
10 47 15	---	23 17 35	48.3	63.1	-4.7		-58.4	30	1110	10 46 46
10 47 45	J0347+4842	23 18 06	48.8	67.7	-4.5		-57.4	6	1110	10 47 45
10 48 25	---	23 18 46	48.9	67.8	-4.5		-57.5	40	1116	10 47 46
10 48 55	NRAO150	23 19 16	48.5	63.4	-4.7		-58.5	6	1116	10 48 55
10 49 25	---	23 19 46	48.5	63.4	-4.7		-58.6	30	1119	10 48 56
10 49 45	J0350+5138	23 20 06	50.2	63.7	-4.5		-60.2	0	1119	10 49 45
10 50 25	---	23 20 46	50.2	63.7	-4.5		-60.3	40	1124	10 49 46
10 50 45	NRAO150	23 21 06	48.7	63.6	-4.7		-58.7	1	1124	10 50 45
10 51 15	---	23 21 36	48.8	63.6	-4.6		-58.8	30	1128	10 50 46
10 51 35	J0350+5201	23 21 56	50.5	63.3	-4.5		-60.8	0	1128	10 51 35
10 52 15	---	23 22 36	50.6	63.4	-4.5		-60.9	40	1133	10 51 36
10 52 50	NRAO150	23 23 11	49.0	63.8	-4.6		-58.9	15	1133	10 52 50
10 53 20	---	23 23 41	49.1	63.9	-4.6		-59.0	30	1137	10 52 51
10 53 50	J0347+4842	23 24 12	49.7	68.5	-4.4		-57.9	6	1137	10 53 50
10 54 30	---	23 24 52	49.8	68.6	-4.4		-58.0	40	1142	10 53 51
10 55 00	NRAO150	23 25 22	49.3	64.1	-4.6		-59.1	6	1142	10 55 00
10 55 30	---	23 25 52	49.4	64.2	-4.6		-59.2	30	1146	10 55 01
10 55 50	J0350+5138	23 26 12	51.0	64.4	-4.4		-60.9	0	1146	10 55 50
10 56 30	---	23 26 52	51.1	64.5	-4.4		-60.9	40	1151	10 55 51
10 56 50	NRAO150	23 27 12	49.5	64.3	-4.6		-59.3	1	1151	10 56 50
10 57 20	---	23 27 42	49.6	64.4	-4.5		-59.4	30	1155	10 56 51
10 57 40	J0350+5201	23 28 02	51.4	64.0	-4.4		-61.4	0	1155	10 57 40
10 58 20	---	23 28 42	51.5	64.1	-4.4		-61.5	40	1160	10 57 41
10 58 55	NRAO150	23 29 17	49.8	64.6	-4.5		-59.5	15	1160	10 58 55
10 59 25	---	23 29 47	49.9	64.7	-4.5		-59.6	30	1164	10 58 56
10 59 55	J0347+4842	23 30 18	50.5	69.3	-4.3		-58.5	6	1164	10 59 55
11 00 35	---	23 30 58	50.6	69.4	-4.3		-58.5	40	1169	10 59 56
11 01 05	NRAO150	23 31 28	50.1	64.9	-4.5		-59.8	6	1169	11 01 05
11 01 35	---	23 31 58	50.2	64.9	-4.5		-59.8	30	1173	11 01 06

Schedule for TORUN (Code Tr) Page 7

NRAO 150 K-band Phase Ref. Calibrator Search

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 11 Mar 2014 Day 70 ---										
11 01 55	J0350+5138	23 32 18	51.8	65.1	-4.3		-61.5	0	1173	11 01 55
11 02 35	---	23 32 58	51.9	65.2	-4.3		-61.6	40	1178	11 01 56
11 02 55	NRAO150	23 33 18	50.4	65.1	-4.5		-59.9	1	1178	11 02 55
11 03 25	---	23 33 48	50.4	65.2	-4.4		-60.0	30	1182	11 02 56
11 03 45	J0350+5201	23 34 08	52.2	64.8	-4.3		-62.1	0	1182	11 03 45
11 04 25	---	23 34 48	52.3	64.8	-4.3		-62.1	40	1187	11 03 46
11 05 00	NRAO150	23 35 23	50.7	65.3	-4.4		-60.1	15	1187	11 05 00
11 05 30	---	23 35 53	50.7	65.4	-4.4		-60.2	30	1191	11 05 01
11 06 00	J0347+4842	23 36 24	51.4	70.2	-4.2		-59.0	6	1191	11 06 00
11 06 40	---	23 37 04	51.5	70.3	-4.2		-59.0	40	1196	11 06 01
11 07 10	NRAO150	23 37 34	51.0	65.6	-4.4		-60.4	6	1196	11 07 10
11 07 40	---	23 38 04	51.0	65.7	-4.4		-60.4	30	1200	11 07 11
11 08 00	J0350+5138	23 38 24	52.6	65.9	-4.2		-62.1	0	1200	11 08 00
11 08 40	---	23 39 04	52.7	65.9	-4.2		-62.2	40	1205	11 08 01
11 09 00	NRAO150	23 39 24	51.2	65.8	-4.4		-60.5	1	1205	11 09 00
11 09 30	---	23 39 54	51.3	65.9	-4.3		-60.6	30	1209	11 09 01
11 09 50	J0350+5201	23 40 14	53.0	65.5	-4.2		-62.7	0	1209	11 09 50
11 10 30	---	23 40 54	53.1	65.6	-4.2		-62.8	40	1214	11 09 51
11 11 05	NRAO150	23 41 29	51.5	66.1	-4.3		-60.7	15	1214	11 11 05
11 11 35	---	23 41 59	51.6	66.2	-4.3		-60.8	30	1218	11 11 06
11 12 05	J0347+4842	23 42 30	52.2	71.0	-4.1		-59.4	5	1218	11 12 05
11 12 45	---	23 43 10	52.3	71.1	-4.1		-59.5	40	1223	11 12 06
11 13 15	NRAO150	23 43 40	51.8	66.4	-4.3		-61.0	6	1223	11 13 15
11 13 45	---	23 44 10	51.9	66.4	-4.3		-61.0	30	1227	11 13 16
11 14 05	J0350+5138	23 44 30	53.5	66.6	-4.1		-62.7	0	1227	11 14 05
11 14 45	---	23 45 10	53.6	66.7	-4.1		-62.8	40	1232	11 14 06
11 15 05	NRAO150	23 45 30	52.0	66.6	-4.3		-61.1	1	1232	11 15 05
11 15 35	---	23 46 00	52.1	66.7	-4.2		-61.2	30	1236	11 15 06
11 15 55	J0350+5201	23 46 20	53.9	66.2	-4.1		-63.3	0	1236	11 15 55
11 16 35	---	23 47 00	54.0	66.3	-4.1		-63.4	40	1241	11 15 56

Schedule for TORUN (Code Tr) Page 8

NRAO 150 K-band Phase Ref. Calibrator Search

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 11 Mar 2014 Day 70 ---										
11 17 10	NRAO150	23 47 35	52.3	66.9	-4.2		-61.3	15	1241	11 17 10
11 17 40	---	23 48 05	52.4	66.9	-4.2		-61.4	30	1245	11 17 11
11 18 10	J0347+4842	23 48 36	53.1	71.8	-4.0		-59.9	5	1245	11 18 10
11 18 50	---	23 49 16	53.2	71.9	-4.0		-60.0	40	1250	11 18 11
11 19 20	NRAO150	23 49 46	52.6	67.1	-4.2		-61.5	5	1250	11 19 20
11 19 50	---	23 50 16	52.7	67.2	-4.2		-61.6	30	1254	11 19 21
11 20 10	J0350+5138	23 50 36	54.3	67.3	-4.0		-63.3	0	1254	11 20 10
11 20 50	---	23 51 16	54.4	67.4	-4.0		-63.4	40	1259	11 20 11
11 21 10	NRAO150	23 51 36	52.9	67.4	-4.1		-61.7	1	1259	11 21 10
11 21 40	---	23 52 06	53.0	67.4	-4.1		-61.8	30	1263	11 21 11
11 22 00	J0350+5201	23 52 26	54.7	66.9	-4.0		-64.0	0	1263	11 22 00
11 22 40	---	23 53 06	54.8	67.0	-4.0		-64.0	40	1268	11 22 01
11 23 15	NRAO150	23 53 41	53.2	67.6	-4.1		-61.9	15	1268	11 23 15
11 23 45	---	23 54 11	53.2	67.7	-4.1		-62.0	30	1272	11 23 16
11 24 15	J0347+4842	23 54 42	54.0	72.7	-3.9		-60.4	5	1272	11 24 15
11 24 55	---	23 55 22	54.1	72.8	-3.9		-60.4	40	1277	11 24 16
11 25 25	NRAO150	23 55 52	53.5	67.9	-4.1		-62.1	5	1277	11 25 25
11 25 55	---	23 56 22	53.5	67.9	-4.1		-62.2	30	1281	11 25 26
11 26 15	J0350+5138	23 56 42	55.2	68.0	-3.9		-63.9	0	1281	11 26 15
11 26 55	---	23 57 22	55.3	68.1	-3.9		-64.0	40	1286	11 26 16
11 27 15	NRAO150	23 57 42	53.7	68.1	-4.0		-62.3	1	1286	11 27 15
11 27 45	---	23 58 12	53.8	68.2	-4.0		-62.4	30	1290	11 27 16
11 28 05	J0350+5201	23 58 32	55.5	67.6	-3.9		-64.6	0	1290	11 28 05
11 28 45	---	23 59 12	55.6	67.7	-3.9		-64.6	40	1295	11 28 06
11 29 20	NRAO150	23 59 47	54.0	68.4	-4.0		-62.5	15	1295	11 29 20
11 29 50	---	00 00 17	54.1	68.4	-4.0		-62.6	30	1299	11 29 21
11 30 20	J0347+4842	00 00 48	54.9	73.5	-3.8		-60.9	5	1299	11 30 20
11 31 00	---	00 01 28	54.9	73.6	-3.8		-60.9	40	1304	11 30 21
11 31 30	NRAO150	00 01 58	54.3	68.6	-4.0		-62.7	5	1304	11 31 30
11 32 00	---	00 02 28	54.4	68.7	-4.0		-62.8	30	1308	11 31 31

Schedule for TORUN (Code Tr) Page 9

NRAO 150 K-band Phase Ref. Calibrator Search

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 11 Mar 2014 Day 70 ---										
11 32 20	J0350+5138	00 02 48	56.0	68.8	-3.8		-64.5	0	1308	11 32 20
11 33 00	---	00 03 28	56.1	68.8	-3.8		-64.6	40	1313	11 32 21
11 33 20	NRAO150	00 03 48	54.6	68.9	-3.9		-62.9	1	1313	11 33 20
11 33 50	---	00 04 18	54.7	68.9	-3.9		-62.9	30	1316	11 33 21
11 34 10	J0350+5201	00 04 38	56.4	68.3	-3.8		-65.2	0	1316	11 34 10
11 34 50	---	00 05 18	56.5	68.4	-3.8		-65.3	40	1322	11 34 11
11 35 25	NRAO150	00 05 53	54.9	69.1	-3.9		-63.1	15	1322	11 35 25
11 35 55	---	00 06 23	55.0	69.2	-3.9		-63.1	30	1325	11 35 26
11 36 25	J0347+4842	00 06 54	55.7	74.4	-3.7		-61.3	5	1325	11 36 25
11 37 05	---	00 07 34	55.8	74.5	-3.7		-61.3	40	1331	11 36 26
11 37 35	NRAO150	00 08 04	55.2	69.4	-3.9		-63.3	5	1331	11 37 35
11 38 05	---	00 08 34	55.3	69.4	-3.9		-63.3	30	1334	11 37 36
11 38 25	J0350+5138	00 08 54	56.9	69.5	-3.7		-65.1	0	1334	11 38 25
11 39 05	---	00 09 34	57.0	69.6	-3.7		-65.2	40	1340	11 38 26
11 39 25	NRAO150	00 09 54	55.4	69.6	-3.8		-63.4	1	1340	11 39 25
11 39 55	---	00 10 24	55.5	69.7	-3.8		-63.5	30	1343	11 39 26
11 40 15	J0350+5201	00 10 44	57.2	69.0	-3.7		-65.8	0	1343	11 40 15
11 40 55	---	00 11 24	57.3	69.1	-3.7		-65.9	40	1348	11 40 16
11 41 30	NRAO150	00 11 59	55.7	69.9	-3.8		-63.6	15	1348	11 41 30
11 42 00	---	00 12 29	55.8	69.9	-3.8		-63.7	30	1352	11 41 31
11 42 30	J0347+4842	00 13 00	56.6	75.2	-3.6		-61.7	4	1352	11 42 30
11 43 10	---	00 13 40	56.7	75.3	-3.6		-61.8	40	1357	11 42 31
11 43 40	NRAO150	00 14 10	56.0	70.1	-3.8		-63.8	5	1357	11 43 40
11 44 10	---	00 14 40	56.1	70.2	-3.8		-63.9	30	1361	11 43 41
11 44 30	J0350+5138	00 15 00	57.7	70.2	-3.6		-65.7	0	1361	11 44 30
11 45 10	---	00 15 40	57.8	70.3	-3.6		-65.8	40	1366	11 44 31
11 45 30	NRAO150	00 16 00	56.3	70.4	-3.7		-64.0	1	1366	11 45 30
11 46 00	---	00 16 30	56.4	70.4	-3.7		-64.0	30	1370	11 45 31
11 46 20	J0350+5201	00 16 50	58.1	69.7	-3.6		-66.4	0	1370	11 46 20
11 47 00	---	00 17 30	58.2	69.8	-3.6		-66.5	40	1375	11 46 21

Schedule for TORUN (Code Tr) Page 10

NRAO 150 K-band Phase Ref. Calibrator Search

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 11 Mar 2014 Day 70 ---										
11 47 35	NRAO150	00 18 05	56.6	70.6	-3.7		-64.2	15	1375	11 47 35
11 48 05	---	00 18 35	56.7	70.7	-3.7		-64.2	30	1379	11 47 36
11 48 35	J0347+4842	00 19 06	57.5	76.1	-3.5		-62.1	4	1379	11 48 35
11 49 15	---	00 19 46	57.6	76.2	-3.5		-62.2	40	1384	11 48 36
11 49 45	NRAO150	00 20 16	56.9	70.9	-3.7		-64.4	4	1384	11 49 45
11 50 15	---	00 20 46	57.0	71.0	-3.7		-64.4	30	1388	11 49 46
11 50 35	J0350+5138	00 21 06	58.6	71.0	-3.5		-66.3	0	1388	11 50 35
11 51 15	---	00 21 46	58.7	71.0	-3.5		-66.3	40	1393	11 50 36
11 51 35	NRAO150	00 22 06	57.2	71.1	-3.6		-64.6	1	1393	11 51 35
11 52 05	---	00 22 36	57.2	71.2	-3.6		-64.6	30	1397	11 51 36
11 52 25	J0350+5201	00 22 56	59.0	70.5	-3.5		-67.0	0	1397	11 52 25
11 53 05	---	00 23 36	59.1	70.5	-3.5		-67.1	40	1402	11 52 26
11 53 40	NRAO150	00 24 11	57.5	71.4	-3.6		-64.7	15	1402	11 53 40
11 54 10	---	00 24 41	57.5	71.5	-3.6		-64.8	30	1406	11 53 41
11 54 40	J0347+4842	00 25 12	58.4	77.0	-3.4		-62.6	4	1406	11 54 40
11 55 20	---	00 25 52	58.5	77.1	-3.4		-62.6	40	1411	11 54 41
11 55 50	NRAO150	00 26 22	57.8	71.7	-3.6		-64.9	4	1411	11 55 50
11 56 20	---	00 26 52	57.8	71.7	-3.6		-65.0	30	1415	11 55 51
11 56 40	J0350+5138	00 27 12	59.5	71.7	-3.4		-66.9	0	1415	11 56 40
11 57 20	---	00 27 52	59.6	71.8	-3.4		-66.9	40	1420	11 56 41
11 57 40	NRAO150	00 28 12	58.0	71.9	-3.5		-65.1	1	1420	11 57 40
11 58 10	---	00 28 42	58.1	72.0	-3.5		-65.1	30	1424	11 57 41
11 58 30	J0350+5201	00 29 02	59.8	71.2	-3.4		-67.6	0	1424	11 58 30
11 59 10	---	00 29 42	59.9	71.2	-3.4		-67.7	40	1429	11 58 31
11 59 45	NRAO150	00 30 17	58.3	72.2	-3.5		-65.3	15	1429	11 59 45
12 00 15	---	00 30 47	58.4	72.2	-3.5		-65.3	30	1433	11 59 46
12 00 45	J0347+4842	00 31 18	59.3	77.9	-3.3		-62.9	4	1433	12 00 45
12 01 25	---	00 31 58	59.4	78.0	-3.3		-63.0	40	1438	12 00 46
12 01 55	NRAO150	00 32 28	58.6	72.4	-3.5		-65.5	4	1438	12 01 55
12 02 25	---	00 32 58	58.7	72.5	-3.5		-65.5	30	1442	12 01 56

Schedule for TORUN (Code Tr) Page 11

NRAO 150 K-band Phase Ref. Calibrator Search

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 11 Mar 2014 Day 70 ---										
12 02 45	J0350+5138	00 33 18	60.3	72.4	-3.3		-67.4	0	1442	12 02 45
12 03 25	---	00 33 58	60.4	72.5	-3.3		-67.5	40	1447	12 02 46
12 03 45	NRAO150	00 34 18	58.9	72.7	-3.4		-65.6	1	1447	12 03 45
12 04 15	---	00 34 48	59.0	72.7	-3.4		-65.7	30	1451	12 03 46
12 04 35	J0350+5201	00 35 08	60.7	71.9	-3.3		-68.2	0	1451	12 04 35
12 05 15	---	00 35 48	60.8	72.0	-3.3		-68.2	40	1456	12 04 36
12 05 50	NRAO150	00 36 23	59.2	72.9	-3.4		-65.8	15	1456	12 05 50
12 06 20	---	00 36 53	59.3	73.0	-3.4		-65.9	30	1460	12 05 51
12 06 50	J0347+4842	00 37 24	60.2	78.8	-3.2		-63.3	3	1460	12 06 50
12 07 30	---	00 38 04	60.3	78.9	-3.2		-63.3	40	1465	12 06 51
12 08 00	NRAO150	00 38 34	59.5	73.2	-3.4		-66.0	4	1465	12 08 00
12 08 30	---	00 39 04	59.6	73.3	-3.4		-66.0	30	1469	12 08 01
12 08 50	J0350+5138	00 39 24	61.2	73.1	-3.2		-68.0	0	1469	12 08 50
12 09 30	---	00 40 04	61.3	73.2	-3.2		-68.0	40	1474	12 08 51
12 09 50	NRAO150	00 40 24	59.8	73.4	-3.3		-66.2	1	1474	12 09 50
12 10 20	---	00 40 54	59.9	73.5	-3.3		-66.2	30	1478	12 09 51
12 10 40	J0350+5201	00 41 14	61.6	72.6	-3.2		-68.8	0	1478	12 10 40
12 11 20	---	00 41 54	61.7	72.7	-3.2		-68.8	40	1483	12 10 41
12 11 55	NRAO150	00 42 29	60.1	73.7	-3.3		-66.3	15	1483	12 11 55
12 12 25	---	00 42 59	60.2	73.8	-3.3		-66.4	30	1487	12 11 56
12 12 55	J0347+4842	00 43 30	61.1	79.7	-3.1		-63.7	3	1487	12 12 55
12 13 35	---	00 44 10	61.2	79.8	-3.1		-63.7	40	1492	12 12 56
12 14 05	NRAO150	00 44 40	60.4	74.0	-3.3		-66.5	3	1492	12 14 05
12 14 35	---	00 45 10	60.5	74.0	-3.3		-66.6	30	1496	12 14 06
12 14 55	J0350+5138	00 45 30	62.1	73.9	-3.1		-68.5	0	1496	12 14 55
12 15 35	---	00 46 10	62.2	74.0	-3.1		-68.6	40	1501	12 14 56
12 15 55	NRAO150	00 46 30	60.7	74.2	-3.2		-66.7	1	1501	12 15 55
12 16 25	---	00 47 00	60.7	74.3	-3.2		-66.7	30	1505	12 15 56
12 16 45	J0350+5201	00 47 20	62.4	73.3	-3.1		-69.3	0	1505	12 16 45
12 17 25	---	00 48 00	62.5	73.4	-3.1		-69.4	40	1510	12 16 46

Schedule for TORUN (Code Tr) Page 12

NRAO 150 K-band Phase Ref. Calibrator Search

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 11 Mar 2014 Day 70 ---										
12 18 00	NRAO150	00 48 35	61.0	74.5	-3.2		-66.8	15	1510	12 18 00
12 18 30	---	00 49 05	61.0	74.5	-3.2		-66.9	30	1514	12 18 01
12 19 00	J0347+4842	00 49 36	62.0	80.6	-3.0		-64.0	3	1514	12 19 00
12 19 40	---	00 50 16	62.1	80.7	-3.0		-64.0	40	1519	12 19 01
12 20 10	NRAO150	00 50 46	61.3	74.7	-3.2		-67.0	3	1519	12 20 10
12 20 40	---	00 51 16	61.4	74.8	-3.2		-67.1	30	1523	12 20 11
12 21 00	J0350+5138	00 51 36	63.0	74.6	-3.0		-69.1	0	1523	12 21 00
12 21 40	---	00 52 16	63.1	74.7	-3.0		-69.1	40	1528	12 21 01
12 22 00	NRAO150	00 52 36	61.5	75.0	-3.1		-67.2	1	1528	12 22 00
12 22 30	---	00 53 06	61.6	75.0	-3.1		-67.2	30	1532	12 22 01
12 22 50	J0350+5201	00 53 26	63.3	74.0	-3.0		-69.9	0	1532	12 22 50
12 23 30	---	00 54 06	63.4	74.1	-3.0		-70.0	40	1537	12 22 51
12 24 05	NRAO150	00 54 41	61.9	75.2	-3.1		-67.3	15	1537	12 24 05
12 24 35	---	00 55 11	61.9	75.3	-3.1		-67.4	30	1540	12 24 06
12 25 05	J0347+4842	00 55 42	62.9	81.6	-2.9		-64.3	3	1540	12 25 05
12 25 45	---	00 56 22	63.0	81.7	-2.9		-64.3	40	1546	12 25 06
12 26 15	NRAO150	00 56 52	62.2	75.5	-3.1		-67.5	3	1546	12 26 15
12 26 45	---	00 57 22	62.2	75.6	-3.1		-67.6	30	1549	12 26 16
12 27 05	J0350+5138	00 57 42	63.9	75.4	-2.9		-69.6	0	1549	12 27 05
12 27 45	---	00 58 22	64.0	75.5	-2.9		-69.6	40	1555	12 27 06
12 28 05	NRAO150	00 58 42	62.4	75.8	-3.0		-67.7	1	1555	12 28 05
12 28 35	---	00 59 12	62.5	75.8	-3.0		-67.7	30	1558	12 28 06
12 28 55	J0350+5201	00 59 32	64.2	74.7	-2.9		-70.5	0	1558	12 28 55
12 29 35	---	01 00 12	64.3	74.8	-2.9		-70.5	40	1564	12 28 56
12 30 10	NRAO150	01 00 47	62.7	76.0	-3.0		-67.8	15	1564	12 30 10
12 30 40	---	01 01 17	62.8	76.1	-3.0		-67.9	30	1567	12 30 11
12 31 10	J0347+4842	01 01 48	63.8	82.5	-2.8		-64.6	2	1567	12 31 10
12 31 50	---	01 02 28	63.9	82.6	-2.8		-64.6	40	1572	12 31 11
12 32 20	NRAO150	01 02 58	63.1	76.3	-3.0		-68.0	2	1572	12 32 20
12 32 50	---	01 03 28	63.1	76.4	-3.0		-68.0	30	1576	12 32 21

Schedule for TORUN (Code Tr) Page 13

NRAO 150 K-band Phase Ref. Calibrator Search

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 11 Mar 2014 Day 70 ---										
12 33 10	J0350+5138	01 03 48	64.7	76.1	-2.8		-70.1	0	1576	12 33 10
12 33 50	---	01 04 28	64.8	76.2	-2.8		-70.2	40	1581	12 33 11
12 34 10	NRAO150	01 04 48	63.3	76.6	-2.9		-68.1	1	1581	12 34 10
12 34 40	---	01 05 18	63.4	76.6	-2.9		-68.2	30	1585	12 34 11
12 35 00	J0350+5201	01 05 38	65.1	75.5	-2.8		-71.0	0	1585	12 35 00
12 35 40	---	01 06 18	65.2	75.5	-2.8		-71.1	40	1590	12 35 01
12 36 15	NRAO150	01 06 53	63.6	76.8	-2.9		-68.3	15	1590	12 36 15
12 36 45	---	01 07 23	63.7	76.9	-2.9		-68.3	30	1594	12 36 16
12 37 15	J0347+4842	01 07 54	64.7	83.5	-2.7		-64.8	2	1594	12 37 15
12 37 55	---	01 08 34	64.8	83.6	-2.7		-64.9	40	1599	12 37 16
12 38 25	NRAO150	01 09 04	63.9	77.1	-2.9		-68.5	2	1599	12 38 25
12 38 55	---	01 09 34	64.0	77.2	-2.9		-68.5	30	1603	12 38 26
12 39 15	J0350+5138	01 09 54	65.6	76.9	-2.7		-70.6	0	1603	12 39 15
12 39 55	---	01 10 34	65.7	77.0	-2.7		-70.7	40	1608	12 39 16
12 40 15	NRAO150	01 10 54	64.2	77.4	-2.8		-68.6	1	1608	12 40 15
12 40 45	---	01 11 24	64.3	77.4	-2.8		-68.6	30	1612	12 40 16
12 41 05	J0350+5201	01 11 44	66.0	76.2	-2.7		-71.5	0	1612	12 41 05
12 41 45	---	01 12 24	66.1	76.3	-2.7		-71.6	40	1617	12 41 06
12 42 20	NRAO150	01 12 59	64.5	77.6	-2.8		-68.8	15	1617	12 42 20
12 42 50	---	01 13 29	64.6	77.7	-2.8		-68.8	30	1621	12 42 21
12 43 20	J0347+4842	01 14 00	65.6	84.5	-2.6		-65.1	1	1621	12 43 20
12 44 00	---	01 14 40	65.7	84.7	-2.6		-65.1	40	1626	12 43 21
12 44 30	NRAO150	01 15 10	64.8	77.9	-2.8		-68.9	1	1626	12 44 30
12 45 00	---	01 15 40	64.9	78.0	-2.7		-69.0	30	1630	12 44 31
12 45 20	J0350+5138	01 16 00	66.5	77.6	-2.6		-71.1	0	1630	12 45 20
12 46 00	---	01 16 40	66.6	77.7	-2.6		-71.2	40	1635	12 45 21
12 46 20	NRAO150	01 17 00	65.1	78.2	-2.7		-69.1	1	1635	12 46 20
12 46 50	---	01 17 30	65.2	78.2	-2.7		-69.1	30	1639	12 46 21
12 47 10	J0350+5201	01 17 50	66.9	76.9	-2.6		-72.1	0	1639	12 47 10
12 47 50	---	01 18 30	67.0	77.0	-2.6		-72.1	40	1644	12 47 11
12 48 25	NRAO150	01 19 05	65.4	78.4	-2.7		-69.2	15	1644	12 48 25
12 48 55	---	01 19 35	65.5	78.5	-2.7		-69.3	30	1648	12 48 26

```
Schedule for TORUN     (Code Tr )                                Page  14
               NRAO 150 K-band Phase Ref. Calibrator Search
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator 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  11 Mar 2014   Day  70 ---

12 49 25  J0347+4842   01 20 06  66.5  85.6 -2.5     -65.2     1     1648   12 49 25
12 50 05  ---          01 20 46  66.6  85.7 -2.5     -65.3    40     1653   12 49 26

12 50 35  NRAO150      01 21 16  65.7  78.7 -2.7     -69.4     1     1653   12 50 35
12 51 05  ---          01 21 46  65.8  78.8 -2.6     -69.4    30     1657   12 50 36

12 51 25  J0350+5138   01 22 06  67.4  78.4 -2.5     -71.6     0     1657   12 51 25
12 52 05  ---          01 22 46  67.5  78.5 -2.5     -71.7    40     1662   12 51 26

12 52 25  NRAO150      01 23 06  66.0  79.0 -2.6     -69.5     1     1662   12 52 25
12 52 55  ---          01 23 36  66.1  79.1 -2.6     -69.5    30     1666   12 52 26

12 53 15  J0350+5201   01 23 56  67.8  77.7 -2.5     -72.6     0     1666   12 53 15
12 53 55  ---          01 24 36  67.9  77.7 -2.5     -72.7    40     1671   12 53 16

12 54 30  NRAO150      01 25 11  66.3  79.3 -2.6     -69.6    15     1671   12 54 30
12 55 00  ---          01 25 41  66.4  79.3 -2.6     -69.7    30     1675   12 54 31

12 55 30  J0347+4842   01 26 12  67.4  86.7 -2.4     -65.4     0     1675   12 55 30
12 56 10  ---          01 26 52  67.5  86.8 -2.4     -65.4    40     1680   12 55 31

12 56 40  NRAO150      01 27 22  66.6  79.6 -2.6     -69.8     1     1680   12 56 40
12 57 10  ---          01 27 52  66.7  79.6 -2.5     -69.8    30     1684   12 56 41

12 57 30  J0350+5138   01 28 12  68.3  79.2 -2.4     -72.1     0     1684   12 57 30
12 58 10  ---          01 28 52  68.4  79.3 -2.4     -72.1    40     1689   12 57 31

12 58 30  NRAO150      01 29 12  66.9  79.8 -2.5     -69.9     1     1689   12 58 30
13 00 00  ---          01 30 42  67.1  80.0 -2.5     -70.0    90     1700   12 58 31


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


 ======== Setup file: sess114.K1024
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

   Setup group:    4         Station: TORUN            Total bit rate:  1024
   Format: MKIV1:2           Bits per sample: 2        Sample rate: 32.000
   Number of channels: 16    DBE type:                 Speedup factor:   0.50
```

```
  Disk used to record data.

  1st LO=  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00
           21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00
  Net SB=         L         L         U         U         L         L         U         U
                  L         L         U         U         L         L         U         U
  IF SB =         U         U         U         U         U         U         U         U
                  U         U         U         U         U         U         U         U
  Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
                RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
  BBC   =         1         2         1         2         3         4         3         4
                  5         6         5         6         7         8         7         8
  BBC SB=         L         L         U         U         L         L         U         U
                  L         L         U         U         L         L         U         U
  IF    =         C         A         C         A         C         A         C         A
                  C         A         C         A         C         A         C         A

 The following frequency sets based on these setups were used.

  Frequency Set:   6  Setup file default.  Used pcal sets:   1
  LO sum=   22187.49  22187.49  22187.49  22187.49  22219.49  22219.49  22219.49  22219.49
            22251.49  22251.49  22251.49  22251.49  22283.49  22283.49  22283.49  22283.49
  BBC fr=     687.49    687.49    687.49    687.49    719.49    719.49    719.49    719.49
              751.49    751.49    751.49    751.49    783.49    783.49    783.49    783.49
  Bandwd=      16.00     16.00     16.00     16.00     16.00     16.00     16.00     16.00
               16.00     16.00     16.00     16.00     16.00     16.00     16.00     16.00
   Matching frequency sets:   6

 The following pulse cal sets were used with this setup:

  Pulse cal detection set:   1  PCAL = 1MHZ
   PCALXB1=   S1    S3    S5    S7    S9    S11   S13   S15
   PCALXB2=   S2    S4    S6    S8    S10   S12   S14   S16
   PCALFR1=   490   510   490   510   490   510   490   510
   PCALFR2=   490   510   490   510   490   510   490   510

  Track assignments are:
   track1=   2, 10, 18, 26,  3, 11, 19, 27, 66, 74, 82, 90, 67, 75, 83, 91
   barrel=roll_off



POSITIONS OF SOURCES USED IN RECORDING SCANS

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

* NRAO150           03 55 45.261371   * 03 59 29.747272     04 00 34.174403       0.00
                    50 49 20.28579    * 50 57 50.16174      51 00 16.65678        0.00

* J0350+5138        03 46 40.589587   * 03 50 25.051489     03 51 29.431294       0.00
                    51 29 35.10800    * 51 38 38.73468      51 41 15.16339        0.00

* J0350+5201        03 46 59.005870   * 03 50 44.499505     03 51 49.179843       0.00
                    51 52 19.27863    * 52 01 21.74506      52 03 57.94240        0.00

* J0347+4842        03 43 34.718920   * 03 47 11.613322     03 48 13.785333       0.00
                    48 33 22.28290    * 48 42 37.47323      48 45 16.42034        0.00
```

n14k1tr

Network Monitoring Experiment

PI: *Ciriaco Goddi*

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Notes: 1.3 cm NME for session 1/2014
1 Gbps, 2-bit sampling, 16 MHz filters
Send the disk pack by express to JIVE

COVER LETTER:

Dear EVN friends,

This is the schedule for the 1.3cm NME on March 11 2014,
involving 16 EVN antennas: Eb Jb2 On20 Mc Nt Tr Sv Zc Bd Ur Sh Sh65 Hh Ys Mh Sr,
plus the KVN stations KVNYS KVNUS KVNTN.
Stations testing their new DBBC backends are also included:
MC_DBBC (Md), TR_DBBC (Td), and YS_DBBC (Yd).
The NME uses a setup with 1 Gbps and consists of
integrations on the VLBI fringe finder DA193 (~1.8Jy at 22 GHz)
as well as phase-referencing cycles between continuum calibrators
(1st phase-reference cycle: J2040+4527 -- J2039+4159;
2nd phase-reference cycle: DA193 -- J0605+4030).

There are three ftp fringe-test scans

(1) 14:09:00 UT (scan 2, 2 sec, DA193)
(2) 15:31:00 UT (scan 38, 2 sec, DA193)
(3) 16:29:00 UT (scan 69, 2 sec, DA193)

See you on Skype group chat
and
Good luck with the session!

Ciriaco
Skype account: ciriaco.goddi

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

 --- Tue  11 Mar 2014   Day  70 ---

Next scan frequencies:22187.49 22187.49 22187.49 22187.49 22219.49 22219.49 22219.49 22219.49
                      22251.49 22251.49 22251.49 22251.49 22283.49 22283.49 22283.49 22283.49
Next BBC frequencies:   687.49   687.49   687.49   687.49   719.49   719.49   719.49   719.49
                        751.49   751.49   751.49   751.49   783.49   783.49   783.49   783.49
Next scan bandwidths:    16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
                         16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00

14 00 00  DA193        02 30 52  53.1  89.9 -3.4     -51.4     0        0   14 00 00
14 04 00  ---          02 34 53  53.7  90.7 -3.4     -51.4   240       31   14 00 01

14 06 00  DA193        02 36 53  54.0  91.1 -3.3     -51.4   114       31   14 06 00
14 10 00  ---          02 40 54  54.6  91.9 -3.3     -51.4   240       62   14 06 01

14 12 00  DA193        02 42 54  54.9  92.3 -3.2     -51.4   114       62   14 12 00
14 13 00  ---          02 43 54  55.1  92.5 -3.2     -51.4    60       70   14 12 01

14 22 00  J2040+4527   02 52 56  33.3 -56.9  6.2      45.8   225       70   14 22 00
14 23 00  =2039+452    02 53 56  33.2 -56.7  6.2      45.8    60       77   14 22 01

14 23 40  J2039+4159   02 54 36  30.4 -59.2  6.3      44.0    16       77   14 23 40
14 24 40  ---          02 55 36  30.3 -59.1  6.3      43.9    60       85   14 23 41

14 25 20  J2040+4527   02 56 16  32.9 -56.4  6.2      45.5    16       85   14 25 20
14 26 20  =2039+452    02 57 16  32.8 -56.2  6.3      45.4    60       93   14 25 21

14 27 00  J2039+4159   02 57 57  30.0 -58.7  6.3      43.7    16       93   14 27 00
14 28 00  ---          02 58 57  29.9 -58.6  6.3      43.6    60      101   14 27 01

14 28 40  J2040+4527   02 59 37  32.5 -55.9  6.3      45.2    16      101   14 28 40
14 29 40  =2039+452    03 00 37  32.3 -55.7  6.3      45.1    60      108   14 28 41

14 30 20  J2039+4159   03 01 17  29.6 -58.2  6.4      43.4    16      108   14 30 20
14 31 20  ---          03 02 17  29.4 -58.1  6.4      43.3    60      116   14 30 21

14 32 00  J2040+4527   03 02 57  32.0 -55.4  6.4      44.9    16      116   14 32 00
14 33 00  =2039+452    03 03 58  31.9 -55.3  6.4      44.8    60      124   14 32 01

14 33 40  J2039+4159   03 04 38  29.1 -57.7  6.4      43.1    16      124   14 33 40
14 34 40  ---          03 05 38  29.0 -57.5  6.4      43.0    60      132   14 33 41

14 35 20  J2040+4527   03 06 18  31.6 -54.9  6.4      44.5    16      132   14 35 20
14 36 20  =2039+452    03 07 18  31.5 -54.8  6.4      44.4    60      139   14 35 21

14 37 00  J2039+4159   03 07 58  28.7 -57.2  6.5      42.8    16      139   14 37 00
14 38 00  ---          03 08 58  28.6 -57.0  6.5      42.7    60      147   14 37 01
```

Schedule for TORUN (Code Tr) Page 3

Network Monitoring Experiment

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 11 Mar 2014 Day 70 ---										
14 38 40	J2040+4527	03 09 38	31.2	-54.4	6.5		44.2	16	147	14 38 40
14 39 40	=2039+452	03 10 39	31.1	-54.3	6.5		44.1	60	155	14 38 41
14 40 20	J2039+4159	03 11 19	28.3	-56.7	6.5		42.5	16	155	14 40 20
14 41 20	---	03 12 19	28.2	-56.5	6.5		42.4	60	163	14 40 21
14 42 00	J2040+4527	03 12 59	30.8	-53.9	6.5		43.8	16	163	14 42 00
14 43 00	=2039+452	03 13 59	30.7	-53.8	6.5		43.7	60	170	14 42 01
14 43 40	J2039+4159	03 14 39	27.9	-56.1	6.6		42.2	16	170	14 43 40
14 44 40	---	03 15 39	27.8	-56.0	6.6		42.1	60	178	14 43 41
14 45 20	J2040+4527	03 16 20	30.4	-53.4	6.6		43.5	16	178	14 45 20
14 46 20	=2039+452	03 17 20	30.3	-53.3	6.6		43.4	60	186	14 45 21
14 47 00	J2039+4159	03 18 00	27.5	-55.6	6.6		41.9	16	186	14 47 00
14 48 00	---	03 19 00	27.3	-55.5	6.7		41.8	60	194	14 47 01
14 48 40	J2040+4527	03 19 40	30.0	-52.9	6.6		43.1	16	194	14 48 40
14 49 40	=2039+452	03 20 40	29.9	-52.8	6.7		43.0	60	201	14 48 41
14 50 20	J2039+4159	03 21 20	27.0	-55.1	6.7		41.5	16	201	14 50 20
14 51 20	---	03 22 21	26.9	-54.9	6.7		41.4	60	209	14 50 21
14 52 00	J2040+4527	03 23 01	29.6	-52.5	6.7		42.8	16	209	14 52 00
14 53 00	=2039+452	03 24 01	29.5	-52.3	6.7		42.7	60	217	14 52 01
14 53 40	J2039+4159	03 24 41	26.6	-54.6	6.8		41.2	16	217	14 53 40
14 54 40	---	03 25 41	26.5	-54.4	6.8		41.1	60	225	14 53 41
14 55 20	J2040+4527	03 26 21	29.2	-52.0	6.8		42.4	16	225	14 55 20
14 56 20	=2039+452	03 27 21	29.1	-51.8	6.8		42.3	60	232	14 55 21
14 57 00	J2039+4159	03 28 01	26.2	-54.0	6.8		40.9	16	232	14 57 00
14 58 00	---	03 29 02	26.1	-53.9	6.8		40.8	60	240	14 57 01
14 58 40	J2040+4527	03 29 42	28.8	-51.5	6.8		42.1	16	240	14 58 40
14 59 40	=2039+452	03 30 42	28.7	-51.3	6.8		42.0	60	248	14 58 41
15 00 20	J2039+4159	03 31 22	25.8	-53.5	6.9		40.6	15	248	15 00 20
15 01 20	---	03 32 22	25.7	-53.4	6.9		40.5	60	255	15 00 21
15 02 00	J2040+4527	03 33 02	28.4	-51.0	6.9		41.7	16	255	15 02 00
15 03 00	=2039+452	03 34 02	28.3	-50.8	6.9		41.6	60	263	15 02 01

Schedule for TORUN (Code Tr) Page 4

Network Monitoring Experiment

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 11 Mar 2014 Day 70 ---										
15 03 40	J2039+4159	03 34 43	25.4	-53.0	6.9		40.2	15	263	15 03 40
15 04 40	---	03 35 43	25.3	-52.8	6.9		40.1	60	271	15 03 41
15 05 20	J2040+4527	03 36 23	28.0	-50.5	6.9		41.4	16	271	15 05 20
15 06 20	=2039+452	03 37 23	27.9	-50.3	6.9		41.3	60	279	15 05 21
15 07 00	J2039+4159	03 38 03	25.0	-52.5	7.0		39.9	15	279	15 07 00
15 08 00	---	03 39 03	24.9	-52.3	7.0		39.8	60	286	15 07 01
15 08 40	J2040+4527	03 39 43	27.7	-50.0	7.0		41.0	16	286	15 08 40
15 09 40	=2039+452	03 40 44	27.5	-49.8	7.0		40.9	60	294	15 08 41
15 10 20	J2039+4159	03 41 24	24.6	-51.9	7.0		39.5	15	294	15 10 20
15 11 20	---	03 42 24	24.5	-51.8	7.0		39.4	60	302	15 10 21
15 12 00	J2040+4527	03 43 04	27.3	-49.5	7.0		40.6	16	302	15 12 00
15 13 00	=2039+452	03 44 04	27.2	-49.3	7.0		40.5	60	310	15 12 01
15 13 40	J2039+4159	03 44 44	24.2	-51.4	7.1		39.2	15	310	15 13 40
15 14 40	---	03 45 44	24.1	-51.3	7.1		39.1	60	317	15 13 41
15 15 20	J2040+4527	03 46 24	26.9	-49.0	7.1		40.3	16	317	15 15 20
15 16 20	=2039+452	03 47 25	26.8	-48.8	7.1		40.2	60	325	15 15 21
15 25 00	DA193	03 56 06	65.6	110.9	-2.0		-46.9	188	325	15 25 00
15 26 00	---	03 57 06	65.8	111.2	-2.0		-46.8	60	333	15 25 01
15 28 00	DA193	03 59 07	66.1	111.8	-2.0		-46.5	113	333	15 28 00
15 32 00	---	04 03 07	66.6	113.2	-1.9		-46.0	240	364	15 28 01
15 34 00	DA193	04 05 08	66.9	113.8	-1.9		-45.6	113	364	15 34 00
15 35 00	---	04 06 08	67.0	114.2	-1.8		-45.5	60	372	15 34 01
15 35 40	DA193	04 06 48	67.1	114.4	-1.8		-45.4	34	372	15 35 40
15 36 40	---	04 07 48	67.3	114.8	-1.8		-45.2	60	379	15 35 41
15 37 20	J0605+4030	04 08 28	66.4	110.3	-2.0		-47.8	16	379	15 37 20
15 38 20	=0602+405	04 09 28	66.5	110.6	-2.0		-47.7	60	387	15 37 21
15 39 00	DA193	04 10 08	67.6	115.6	-1.8		-44.8	15	387	15 39 00
15 40 00	---	04 11 09	67.7	116.0	-1.8		-44.7	60	395	15 39 01
15 40 40	J0605+4030	04 11 49	66.9	111.4	-1.9		-47.3	16	395	15 40 40
15 41 40	=0602+405	04 12 49	67.0	111.7	-1.9		-47.2	60	403	15 40 41

Schedule for TORUN (Code Tr) Page 5

Network Monitoring Experiment

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 11 Mar 2014 Day 70 ---										
15 42 20	DA193	04 13 29	68.0	116.8	-1.7		-44.2	15	403	15 42 20
15 43 20	---	04 14 29	68.2	117.2	-1.7		-44.1	60	410	15 42 21
15 44 00	J0605+4030	04 15 09	67.3	112.5	-1.9		-46.9	15	410	15 44 00
15 45 00	=0602+405	04 16 09	67.5	112.8	-1.8		-46.7	60	418	15 44 01
15 45 40	DA193	04 16 49	68.5	118.1	-1.7		-43.6	15	418	15 45 40
15 46 40	---	04 17 50	68.6	118.4	-1.6		-43.4	60	426	15 45 41
15 47 20	J0605+4030	04 18 30	67.8	113.6	-1.8		-46.4	15	426	15 47 20
15 48 20	=0602+405	04 19 30	67.9	114.0	-1.8		-46.2	60	434	15 47 21
15 49 00	DA193	04 20 10	68.9	119.3	-1.6		-43.0	14	434	15 49 00
15 50 00	---	04 21 10	69.1	119.7	-1.6		-42.8	60	441	15 49 01
15 50 40	J0605+4030	04 21 50	68.3	114.8	-1.8		-45.8	15	441	15 50 40
15 51 40	=0602+405	04 22 50	68.4	115.1	-1.7		-45.6	60	449	15 50 41
15 52 20	DA193	04 23 31	69.4	120.7	-1.6		-42.3	14	449	15 52 20
15 53 20	---	04 24 31	69.5	121.1	-1.5		-42.0	60	457	15 52 21
15 54 00	J0605+4030	04 25 11	68.7	116.0	-1.7		-45.2	15	457	15 54 00
15 55 00	=0602+405	04 26 11	68.8	116.4	-1.7		-45.0	60	464	15 54 01
15 55 40	DA193	04 26 51	69.8	122.0	-1.5		-41.5	14	464	15 55 40
15 56 40	---	04 27 51	69.9	122.5	-1.5		-41.3	60	472	15 55 41
15 57 20	J0605+4030	04 28 31	69.2	117.3	-1.6		-44.6	14	472	15 57 20
15 58 20	=0602+405	04 29 32	69.3	117.6	-1.6		-44.4	60	480	15 57 21
15 59 00	DA193	04 30 12	70.2	123.5	-1.4		-40.7	14	480	15 59 00
16 00 00	---	04 31 12	70.3	123.9	-1.4		-40.5	60	488	15 59 01
16 00 40	J0605+4030	04 31 52	69.6	118.5	-1.6		-43.9	14	488	16 00 40
16 01 40	=0602+405	04 32 52	69.7	118.9	-1.6		-43.7	60	495	16 00 41
16 02 20	DA193	04 33 32	70.6	124.9	-1.4		-39.9	13	495	16 02 20
16 03 20	---	04 34 32	70.7	125.4	-1.4		-39.6	60	503	16 02 21
16 04 00	J0605+4030	04 35 12	70.0	119.9	-1.5		-43.2	14	503	16 04 00
16 05 00	=0602+405	04 36 13	70.2	120.3	-1.5		-43.0	60	511	16 04 01
16 05 40	DA193	04 36 53	71.0	126.4	-1.3		-39.0	13	511	16 05 40
16 06 40	---	04 37 53	71.1	126.9	-1.3		-38.7	60	519	16 05 41

Schedule for TORUN (Code Tr) Page 6

Network Monitoring Experiment

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 11 Mar 2014 Day 70 ---										
16 07 20	J0605+4030	04 38 33	70.5	121.3	-1.5		-42.5	13	519	16 07 20
16 08 20	=0602+405	04 39 33	70.6	121.7	-1.5		-42.2	60	526	16 07 21
16 09 00	DA193	04 40 13	71.4	128.0	-1.3		-38.0	13	526	16 09 00
16 10 00	---	04 41 13	71.5	128.5	-1.3		-37.7	60	534	16 09 01
16 10 40	J0605+4030	04 41 54	70.9	122.7	-1.4		-41.7	13	534	16 10 40
16 11 40	=0602+405	04 42 54	71.0	123.1	-1.4		-41.4	60	542	16 10 41
16 12 20	DA193	04 43 34	71.8	129.6	-1.2		-37.0	12	542	16 12 20
16 13 20	---	04 44 34	71.9	130.1	-1.2		-36.7	60	550	16 12 21
16 14 00	J0605+4030	04 45 14	71.3	124.2	-1.4		-40.8	13	550	16 14 00
16 15 00	=0602+405	04 46 14	71.4	124.6	-1.3		-40.5	60	557	16 14 01
16 15 40	DA193	04 46 54	72.2	131.3	-1.2		-36.0	12	557	16 15 40
16 16 40	---	04 47 55	72.3	131.8	-1.1		-35.7	60	565	16 15 41
16 17 20	J0605+4030	04 48 35	71.7	125.7	-1.3		-39.9	13	565	16 17 20
16 18 20	=0602+405	04 49 35	71.8	126.2	-1.3		-39.6	60	573	16 17 21
16 19 00	DA193	04 50 15	72.6	133.0	-1.1		-34.9	12	573	16 19 00
16 20 00	---	04 51 15	72.7	133.5	-1.1		-34.5	60	581	16 19 01
16 20 40	J0605+4030	04 51 55	72.1	127.3	-1.2		-38.9	12	581	16 20 40
16 21 40	=0602+405	04 52 55	72.2	127.8	-1.2		-38.6	60	588	16 20 41
16 23 40	DA193	04 54 56	73.1	135.5	-1.0		-33.2	91	588	16 23 40
16 24 40	---	04 55 56	73.2	136.1	-1.0		-32.8	60	596	16 23 41
16 26 00	DA193	04 57 16	73.3	136.8	-1.0		-32.3	73	596	16 26 00
16 30 00	---	05 01 17	73.7	139.1	-0.9		-30.8	240	627	16 26 01
16 32 00	DA193	05 03 17	73.9	140.3	-0.9		-29.9	112	627	16 32 00
16 40 00	---	05 11 18	74.6	145.3	-0.8		-26.4	480	689	16 32 01
16 42 00	DA193	05 13 19	74.8	146.7	-0.7		-25.4	112	689	16 42 00
16 50 00	---	05 21 20	75.4	152.2	-0.6		-21.4	480	751	16 42 01
16 52 00	DA193	05 23 20	75.6	153.6	-0.6		-20.3	112	751	16 52 00
17 00 00	---	05 31 22	76.0	159.6	-0.4		-15.8	480	813	16 52 01

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


 ======== Setup file: sess114.K1024
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

   Setup group:    8         Station: TORUN            Total bit rate: 1024
   Format: MKIV1:2           Bits per sample: 2        Sample rate: 32.000
   Number of channels: 16    DBE type:                 Speedup factor:   0.50

   Disk used to record data.

   1st LO=  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00
            21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00  21500.00
   Net SB=         L         L         U         U         L         L         U         U
                   L         L         U         U         L         L         U         U
   Pol.  =       RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
                 RCP       LCP       RCP       LCP       RCP       LCP       RCP       LCP
   BBC   =         1         2         1         2         3         4         3         4
                   5         6         5         6         7         8         7         8
   BBC SB=         L         L         U         U         L         L         U         U
                   L         L         U         U         L         L         U         U
   IF    =         C         A         C         A         C         A         C         A
                   C         A         C         A         C         A         C         A

  The following frequency sets based on these setups were used.

   Frequency Set:   6  Setup file default.  Used pcal sets:   1
   LO sum=   22187.49  22187.49  22187.49  22187.49  22219.49  22219.49  22219.49  22219.49
             22251.49  22251.49  22251.49  22251.49  22283.49  22283.49  22283.49  22283.49
   BBC fr=     687.49    687.49    687.49    687.49    719.49    719.49    719.49    719.49
               751.49    751.49    751.49    751.49    783.49    783.49    783.49    783.49
   Bandwd=      16.00     16.00     16.00     16.00     16.00     16.00     16.00     16.00
                16.00     16.00     16.00     16.00     16.00     16.00     16.00     16.00
    Matching frequency sets:   6

  The following pulse cal sets were used with this setup:

   Pulse cal detection set:   1  PCAL = 1MHZ
    PCALXB1=   S1    S3    S5    S7    S9    S11   S13   S15
    PCALXB2=   S2    S4    S6    S8    S10   S12   S14   S16
    PCALFR1=   490   510   490   510   490   510   490   510
    PCALFR2=   490   510   490   510   490   510   490   510

   Track assignments are:
    track1=   2, 10, 18, 26,  3, 11, 19, 27, 66, 74, 82, 90, 67, 75, 83, 91
    barrel=roll_off
```

```
SOURCES USED IN RECORDING SCANS --     Network Monitoring Experiment
    Catalog positions marked with *.
    Precession of date coordinates is based on stop time of first scan.
    Names used in schedule marked with *.
    Short names used in VLA and SNAP files marked with +.
    Observation date used in B1950/J2000 coordinate conversion (PRECDATE):  1979.900
    No adjustments are made for rates (DRA, DDEC).
    Scan hours are for recording scans only.
    Baseline hours are only counted for scans above horizon at both ends.

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

* J2039+4159        20 37 18.148706   * 20 39 05.710000     20 39 35.612228       0.00
                    41 49 02.37998    * 41 59 40.40000      42 02 36.74521        0.00

  J0555+3948        05 52 01.407174   * 05 55 30.805616     05 56 31.341888       0.13
* DA193             39 48 21.94578    * 39 48 49.16493      39 48 52.48027        0.10

* J0605+4030        06 02 20.058852   * 06 05 50.855372     06 06 51.839612       0.15
  0602+405          40 30 26.00787    * 40 30 08.10354      40 29 58.54527        0.12

* J2040+4527        20 39 06.383159   * 20 40 48.333100     20 41 16.571449       0.46
  2039+452          45 16 33.23001    * 45 27 17.14599      45 30 14.98033        0.54


 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)
  J2039+4159          59.3
  DA193               98.0
  J0605+4030          99.9
  J2040+4527          61.3

 Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
 that the Sun will cause amplitude reductions on the  longest VLBA baselines
 at a solar distance of 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      327 MHz        117. deg
      610 MHz         81. deg
      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
     43.0 GHz          6. deg
```

rk01vjtr

RadioAstron AGN survey

PI: *Yuri Kovalev*


```
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Phone:    +7-495-3332512           EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378           Phone during observation: +7-903-6614865
```


Observing mode: L-band, dual-pol

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

 --- Wed  12 Mar 2014   Day  71 ---

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

00 00 00  1150+497     12 32 31  83.0 242.4  0.6      54.9     0        0   00 00 00
00 14 30  ---          12 47 03  81.0 251.4  0.9      61.1   870       28   00 00 01

00 15 00  1150+497     12 47 33  80.9 251.7  0.9      61.2    23       28   00 15 00
00 29 30  ---          13 02 06  78.8 257.8  1.1      64.5   870       56   00 15 01

00 30 00  1150+497     13 02 36  78.7 258.0  1.1      64.6    24       56   00 30 00
00 44 30  ---          13 17 08  76.6 262.5  1.4      66.3   870       84   00 30 01

00 45 00  1150+497     13 17 38  76.5 262.7  1.4      66.3    24       84   00 45 00
01 00 00  ---          13 32 41  74.2 266.5  1.6      67.2   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: ra18cm2.set
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

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

   Disk used to record data.
```

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

The following frequency sets based on these setups were used.

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

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* 1150+497	11 50 47.999856	* 11 53 24.466639	11 54 10.643460	0.00
J1153+4931	49 47 50.09409	* 49 31 08.83012	49 26 13.01525	0.00

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)
1150+497	133.7

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk01vktr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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


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


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

 --- Wed  12 Mar 2014   Day  71 ---

 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

16 00 00  0607-157     04 35 08  18.2 155.9 -1.6     -14.8     0         0   16 00 00
16 14 30  ---          04 49 41  19.0 159.5 -1.3     -12.6   870        28   16 00 01

16 15 00  0607-157     04 50 11  19.0 159.6 -1.3     -12.6    24        28   16 15 00
16 29 30  ---          05 04 43  19.7 163.2 -1.1     -10.4   870        56   16 15 01

16 30 00  0607-157     05 05 13  19.8 163.3 -1.1     -10.3    24        56   16 30 00
16 44 30  ---          05 19 46  20.3 167.0 -0.8      -8.1   870        84   16 30 01

16 45 00  0607-157     05 20 16  20.3 167.1 -0.8      -8.0    24        84   16 45 00
16 59 30  ---          05 34 48  20.8 170.9 -0.6      -5.7   870       111   16 45 01

17 00 00  0607-157     05 35 18  20.8 171.0 -0.6      -5.6    24       111   17 00 00
17 10 00  ---          05 45 20  21.0 173.6 -0.4      -4.0   600       131   17 00 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 ./rk01vk_freq.dat:
     tr1cm           Values from Bob Campbell by email (23-04-2013)

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

   Disk used to record data.
```

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

The following frequency sets based on these setups were used.

 Frequency Set:   4  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:   4

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


POSITIONS OF SOURCES USED IN RECORDING SCANS

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

* 0607-157          06 07 25.981282   * 06 09 40.949536     06 10 20.062392       0.00
  J0609-1542       -15 42 03.30591    *-15 42 40.67271     -15 43 13.49709        0.00


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)
  0607-157            98.6

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

rk01vltr

RadioAstron AGN survey

PI: *Yuri Kovalev*


```
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Phone:    +7-495-3332512           EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378           Phone during observation: +7-903-6614865
```


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


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

 --- Wed  12 Mar 2014   Day  71 ---

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

22 00 00  0805-077     10 36 08  21.5 219.6  2.5      22.7     0        0   22 00 00
22 19 30  ---          10 55 41  19.5 224.3  2.8      25.1  1170       37   22 00 01

22 20 00  0805-077     10 56 11  19.5 224.5  2.8      25.1    24       37   22 20 00
22 40 00  ---          11 16 14  17.3 229.1  3.1      27.3  1200       76   22 20 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 ./rk01vl_freq.dat:
     tr1cm           Values from Bob Campbell by email (23-04-2013)

   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:   1  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:   1

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


POSITIONS OF SOURCES USED IN RECORDING SCANS

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

* 0805-077          08 05 49.552833   * 08 08 15.536034     08 08 58.400631       0.00
  J0808-0751       -07 42 22.40698    *-07 51 09.88656     -07 53 59.55638        0.00


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)
  0805-077           128.3

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

rk01vmtr

RadioAstron AGN survey

PI: *Yuri Kovalev*


```
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```


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

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

 --- Thu  13 Mar 2014   Day  72 ---

 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  0851+202     13 36 37  27.7 266.9  4.7      39.7     0        0   01 00 00
01 14 30  ---          13 51 09  25.5 269.8  4.9      39.7   870       28   01 00 01

01 15 00  0851+202     13 51 40  25.4 269.9  4.9      39.7    24       28   01 15 00
01 29 30  ---          14 06 12  23.3 272.8  5.2      39.7   870       56   01 15 01

01 30 00  0851+202     14 06 42  23.2 272.9  5.2      39.7    24       56   01 30 00
01 44 30  ---          14 21 14  21.0 275.7  5.4      39.5   870       84   01 30 01

01 45 00  0851+202     14 21 44  20.9 275.8  5.4      39.5    24       84   01 45 00
02 00 00  ---          14 36 47  18.7 278.8  5.7      39.2   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 ./rk01vm_freq.dat:
     tr1cm           Values from Bob Campbell by email (23-04-2013)

   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:   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)
* 0851+202	08 51 57.250618	* 08 54 48.874930	08 55 39.127938	0.00
J0854+2006	20 17 58.41733	* 20 06 30.64078	20 03 02.01896	0.00

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	138.2

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
that the Sun will cause amplitude reductions on the longest VLBA baselines
at a solar distance of 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk01vntr

RadioAstron AGN survey

PI: *Yuri Kovalev*


```
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Phone:    +7-495-3332512           EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378           Phone during observation: +7-903-6614865
```


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


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

 --- Thu  13 Mar 2014   Day  72 ---

 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

16 00 00  0607-157     04 39 05  18.4 156.8 -1.5     -14.2     0         0   16 00 00
16 14 30  ---          04 53 37  19.2 160.4 -1.3     -12.1   870        28   16 00 01

16 15 00  0607-157     04 54 07  19.3 160.6 -1.3     -12.0    24        28   16 15 00
16 29 30  ---          05 08 40  19.9 164.2 -1.0      -9.8   870        56   16 15 01

16 30 00  0607-157     05 09 10  19.9 164.3 -1.0      -9.7    24        56   16 30 00
16 44 30  ---          05 23 42  20.5 168.0 -0.8      -7.4   870        84   16 30 01

16 45 00  0607-157     05 24 12  20.5 168.1 -0.8      -7.4    24        84   16 45 00
17 00 00  ---          05 39 15  20.9 172.0 -0.5      -5.0   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: ra1cm2.set
   Matching groups in ./rk01vn_freq.dat:
     tr1cm           Values from Bob Campbell by email (23-04-2013)

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

   Disk used to record data.
```

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

The following frequency sets based on these setups were used.

 Frequency Set:   4  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:   4

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


POSITIONS OF SOURCES USED IN RECORDING SCANS

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

* 0607-157          06 07 25.981282   * 06 09 40.949536     06 10 20.041589       0.00
  J0609-1542       -15 42 03.30591    *-15 42 40.67271     -15 43 13.49822        0.00


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)
  0607-157            97.9

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

rk01votr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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


```
                UWAGA: zmiana pasma w czasie tego eksperymentu!!!

##########################################################################################
######################  Observing mode: K&C-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  13 Mar 2014   Day  72 ---

 ---------- 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

21 00 00  0648-165     09 39 54  11.4 221.0  2.8      24.3     0        0   21 00 00
21 14 30  ---          09 54 27   9.9 224.2  3.1      25.9   870       28   21 00 01

21 15 00  0648-165     09 54 57   9.8 224.4  3.1      26.0    24       28   21 15 00
21 25 00  ---          10 04 58   8.8 226.5  3.2      27.1   600       47   21 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

21 30 00  0648-165     10 09 59   8.2 227.6  3.3      27.6   293       47   21 30 00
21 44 30  ---          10 24 32   6.6 230.7  3.6      29.0   870       75   21 30 01

21 45 00  0648-165     10 25 02   6.5 230.8  3.6      29.1    24       75   21 45 00
22 00 00  ---          10 40 04   4.7 234.0  3.8      30.4   900      104   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: ra1cm2.set
   Matching groups in ./rk01vo_freq.dat:
     tr1cm           Values from Bob Campbell by email (23-04-2013)

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

   Disk used to record data.


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

  The following frequency sets based on these setups were used.

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

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


 ======== Setup file: ra6cm2.set
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

   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:   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)                       Error
                      (B1950)            (J2000)            (Date)            (mas)

* 0648-165          06 48 10.295571   * 06 50 24.581861     06 51 03.720714       0.00
  J0650-1637       -16 34 05.88130    *-16 37 39.72548     -16 39 03.07821        0.00


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)
  0648-165           107.3

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

rk01vptr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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


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

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

 --- Fri  14 Mar 2014   Day  73 ---

 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  0953+254     15 40 53  22.3 -77.3  5.7      40.3     0         0   03 00 00
03 14 30  ---          15 55 26  20.2 -74.6  6.0      39.8   870        28   03 00 01

03 15 00  0953+254     15 55 56  20.1 -74.6  6.0      39.8    24        28   03 15 00
03 29 30  ---          16 10 28  18.1 -71.9  6.2      39.1   870        56   03 15 01

03 30 00  0953+254     16 10 58  18.0 -71.8  6.2      39.1    24        56   03 30 00
03 44 30  ---          16 25 31  15.9 -69.1  6.5      38.3   870        84   03 30 01

03 45 00  0953+254     16 26 01  15.9 -69.0  6.5      38.3    24        84   03 45 00
04 00 00  ---          16 41 03  13.8 -66.2  6.7      37.4   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
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

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

   Disk used to record data.
```

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

 The following frequency sets based on these setups were used.

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

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


POSITIONS OF SOURCES USED IN RECORDING SCANS

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

* 0953+254          09 53 59.738485   * 09 56 49.875379     09 57 39.820328       0.00
  J0956+2515        25 29 33.58568    * 25 15 16.04978      25 11 00.09735        0.00


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)
  0953+254           147.3

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

rk01vqtr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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


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

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

 --- Fri  14 Mar 2014   Day  73 ---

  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

16 30 00  0607-157     05 13 06  20.1 165.3 -1.0      -9.1     0         0   16 30 00
16 44 30  ---          05 27 39  20.6 169.0 -0.7      -6.8   870        28   16 30 01

16 45 00  0607-157     05 28 09  20.6 169.2 -0.7      -6.7    24        28   16 45 00
16 59 30  ---          05 42 41  20.9 172.9 -0.5      -4.4   870        56   16 45 01

17 00 00  0607-157     05 43 11  20.9 173.0 -0.5      -4.4    24        56   17 00 00
17 14 30  ---          05 57 44  21.1 176.7 -0.2      -2.0   870        84   17 00 01

17 15 00  0607-157     05 58 14  21.1 176.9 -0.2      -1.9    24        84   17 15 00
17 30 00  ---          06 13 16  21.2 180.8  0.0       0.5   900       112   17 15 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
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

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

   Disk used to record data.
```

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

The following frequency sets based on these setups were used.

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

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* 0607-157	06 07 25.981282	* 06 09 40.949536	06 10 20.018634	0.00
J0609-1542	-15 42 03.30591	*-15 42 40.67271	-15 43 13.49876	0.00

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)
0607-157	97.1

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk01vrtr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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


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


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

 --- Fri  14 Mar 2014   Day  73 ---

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

22 00 00  0642+449     10 44 01  51.5 -77.7  3.9      55.8     0         0   22 00 00
22 14 30  ---          10 58 33  49.4 -75.4  4.2      55.0   870        28   22 00 01

22 15 00  0642+449     10 59 03  49.3 -75.4  4.2      55.0    24        28   22 15 00
22 29 30  ---          11 13 35  47.2 -73.1  4.4      54.1   870        56   22 15 01

22 30 00  0642+449     11 14 06  47.1 -73.0  4.4      54.1    24        56   22 30 00
22 44 30  ---          11 28 38  45.0 -70.8  4.7      53.1   870        84   22 30 01

22 45 00  0642+449     11 29 08  45.0 -70.8  4.7      53.1    24        84   22 45 00
23 00 00  ---          11 44 10  42.9 -68.5  4.9      52.0   900       112   22 45 01



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


 ======== Setup file: ra18cm2.set
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

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

   Disk used to record data.
```

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

 The following frequency sets based on these setups were used.

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

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


POSITIONS OF SOURCES USED IN RECORDING SCANS

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

* 0642+449          06 42 53.021453   * 06 46 32.026000     06 47 35.461067       0.00
  J0646+4451        44 54 30.82735    * 44 51 16.59010      44 50 17.43286        0.00


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)
  0642+449           103.7

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

rk01vstr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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


```
                UWAGA: zmiana pasma w czasie tego eksperymentu!!!

##########################################################################################
######################## Observing mode: K&C-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  16 Mar 2014   Day  75 ---

 ---------- 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

00 00 00  0754+100     12 48 17  18.3 262.0  4.8      37.1     0        0   00 00 00
00 15 00  ---          13 03 19  16.1 265.1  5.1      37.4   900       29   00 00 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

00 20 00  0754+100     13 08 20  15.3 266.1  5.2      37.5   293       29   00 20 00
00 40 00  ---          13 28 23  12.3 270.1  5.5      37.6  1200       67   00 20 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 ./rk01vs_freq.dat:
     tr1cm           Values from Bob Campbell by email (23-04-2013)

   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  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


 ======== Setup file: ra6cm2.set
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

   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:   6  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:   6

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


POSITIONS OF SOURCES USED IN RECORDING SCANS

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

* 0754+100          07 54 22.579229   * 07 57 06.642950     07 57 54.511696       0.00
  J0757+0956        10 04 39.66684    * 09 56 34.85224      09 54 01.64257        0.00


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)
  0754+100           123.5

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

rk01vttr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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


```
                UWAGA: zmiana pasma w czasie tego eksperymentu!!!

##########################################################################################
#######################  Observing mode: K&C-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  16 Mar 2014   Day  75 ---

 ---------- 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  0851+202     14 48 37  16.9 -79.0  5.9      38.9     0        0   02 00 00
02 14 30  ---          15 03 09  14.8 -76.2  6.1      38.4   870       28   02 00 01

02 15 00  0851+202     15 03 39  14.7 -76.1  6.1      38.4    24       28   02 15 00
02 25 00  ---          15 13 41  13.3 -74.2  6.3      38.0   600       47   02 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

02 30 00  0851+202     15 18 42  12.6 -73.3  6.4      37.7   293       47   02 30 00
02 44 30  ---          15 33 14  10.5 -70.5  6.6      37.0   870       75   02 30 01

02 45 00  0851+202     15 33 44  10.4 -70.4  6.6      37.0    24       75   02 45 00
03 00 00  ---          15 48 46   8.3 -67.5  6.9      36.2   900      104   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 ./rk01vt_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  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


======== Setup file: ra6cm2.set
--- WARNING ---  This group does not match an entry in the frequency catalog.
                 This might be ok because the catalog is not complete.
                 But be very careful to be sure that the setup is correct.

  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)
* 0851+202	08 51 57.250618	* 08 54 48.874930	08 55 39.084956	0.00
J0854+2006	20 17 58.41733	* 20 06 30.64078	20 03 02.28879	0.00

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           135.2

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

rk01vutr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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


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

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

 --- Sun  16 Mar 2014   Day  75 ---

 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

17 00 00  0607-157     05 51 04  21.1 175.0 -0.3      -3.1     0         0   17 00 00
17 14 30  ---          06 05 37  21.2 178.8 -0.1      -0.8   870        28   17 00 01

17 15 00  0607-157     06 06 07  21.2 178.9 -0.1      -0.7    24        28   17 15 00
17 29 30  ---          06 20 39  21.1 182.7  0.2       1.7   870        56   17 15 01

17 30 00  0607-157     06 21 09  21.1 182.8  0.2       1.7    24        56   17 30 00
17 44 30  ---          06 35 42  21.0 186.5  0.4       4.1   870        84   17 30 01

17 45 00  0607-157     06 36 12  21.0 186.7  0.4       4.2    24        84   17 45 00
18 00 00  ---          06 51 14  20.6 190.5  0.7       6.5   900       112   17 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
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

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

   Disk used to record data.
```

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

The following frequency sets based on these setups were used.

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

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* 0607-157	06 07 25.981282	* 06 09 40.949536	06 10 19.969462	0.00
J0609-1542	-15 42 03.30591	*-15 42 40.67271	-15 43 13.51879	0.00

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)
0607-157	95.5

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
that the Sun will cause amplitude reductions on the longest VLBA baselines
at a solar distance of 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk01vvtr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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


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

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

 --- Sun  16 Mar 2014   Day  75 ---

 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

23 00 00  0722+145     11 52 04  25.5 259.8  4.4      37.6     0         0   23 00 00
23 19 30  ---          12 11 37  22.6 263.9  4.8      38.1  1170        37   23 00 01

23 20 00  0722+145     12 12 07  22.5 264.0  4.8      38.1    24        37   23 20 00
23 40 00  ---          12 32 10  19.5 268.1  5.1      38.3  1200        76   23 20 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
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

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

   Disk used to record data.
```

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

The following frequency sets based on these setups were used.

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

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* 0722+145	07 22 26.966166	* 07 25 16.807764	07 26 06.175431	0.00
J0725+1425	14 31 12.28332	* 14 25 13.74657	14 23 17.90986	0.00

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)
 0722+145           114.5

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

rk01vxtr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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


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

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

 --- Mon  17 Mar 2014   Day  76 ---

 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 20 00  1128+385     16 12 46  40.8 -77.9  4.7      48.3     0        0   03 20 00
03 39 30  ---          16 32 20  38.0 -74.5  5.0      47.4  1170       37   03 20 01

03 40 00  1128+385     16 32 50  37.9 -74.5  5.0      47.4    24       37   03 40 00
04 00 00  ---          16 52 53  35.0 -71.1  5.4      46.3  1200       76   03 40 01



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


 ======== Setup file: ra18cm2.set
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

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

   Disk used to record data.
```

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

The following frequency sets based on these setups were used.

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

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


POSITIONS OF SOURCES USED IN RECORDING SCANS

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

* 1128+385          11 28 12.513446   * 11 30 53.282615     11 31 40.629992       0.00
  J1130+3815        38 31 51.62112    * 38 15 18.54689      38 10 25.63533        0.00


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)
  1128+385           143.1

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

rk01vztr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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


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

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

 --- Mon  17 Mar 2014   Day  76 ---

 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

21 00 00  0805-077     09 55 40  24.9 209.4  1.8      17.3     0        0   21 00 00
21 19 30  ---          10 15 14  23.4 214.4  2.1      20.0  1170       37   21 00 01

21 20 00  0805-077     10 15 44  23.3 214.5  2.1      20.1    24       37   21 20 00
21 40 00  ---          10 35 47  21.5 219.5  2.4      22.7  1200       76   21 20 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 ./rk01vz_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:   4  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:   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)
* 0805-077	08 05 49.552833	* 08 08 15.536034	08 08 58.310045	0.00
J0808-0751	-07 42 22.40698	*-07 51 09.88656	-07 53 59.72090	0.00

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)
 0805-077           124.2

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

rk01watr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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


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

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

 --- Mon  17 Mar 2014   Day  76 ---

 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

23 00 00  1128+385     11 56 00  74.5 198.2  0.4      13.8     0        0   23 00 00
23 19 30  ---          12 15 33  73.3 211.3  0.7      23.4  1170       37   23 00 01

23 20 00  1128+385     12 16 03  73.2 211.6  0.7      23.6    23       37   23 20 00
23 40 00  ---          12 36 07  71.4 223.1  1.1      31.5  1200       76   23 20 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
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

   Setup group:   11         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:   8  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:   8

 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)
* 1128+385	11 28 12.513446	* 11 30 53.282615	11 31 40.627304	0.00
J1130+3815	38 31 51.62112	* 38 15 18.54689	38 10 25.80955	0.00

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)
1128+385	142.7

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
that the Sun will cause amplitude reductions on the longest VLBA baselines
at a solar distance of 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk01wctr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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```


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

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

 --- Tue  18 Mar 2014   Day  77 ---

 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

04 20 00  1641+399     17 16 53  75.5 206.5  0.6      20.4     0        0   04 20 00
04 39 30  ---          17 36 26  73.9 219.4  0.9      29.8  1170       37   04 20 01

04 40 00  1641+399     17 36 56  73.9 219.7  0.9      30.0    23       37   04 40 00
05 00 00  ---          17 56 59  71.7 230.6  1.2      37.1  1200       76   04 40 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 ./rk01wc_freq.dat:
     tr1cm

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

   Disk used to record data.
```

```
 1st LO=  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:   7  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:   7

 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)
* 1641+399	16 41 17.606226	* 16 42 58.809963	16 43 28.225090	0.00
J1642+3948	39 54 10.81479	* 39 48 36.99385	39 46 51.23068	0.00

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)
3C286	142.0
1641+399	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 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk01wdtr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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```


```
                UWAGA: zmiana pasma w czasie tego eksperymentu!!!

##########################################################################################
######################## Observing mode: K&C-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  19 Mar 2014   Day  78 ---

 ---------- 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  1611+343     15 00 26  67.0 137.9 -1.2     -29.1     0         0   02 00 00
02 15 00  ---          15 15 29  68.4 145.3 -1.0     -24.4   900        29   02 00 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

02 20 00  1611+343     15 20 30  68.8 147.9 -0.9     -22.7   292        29   02 20 00
02 40 00  ---          15 40 33  70.2 159.1 -0.6     -15.0  1200        67   02 20 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 ./rk01wd_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:   6  Setup file default.  Used with PCAL = off
   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


 ======== Setup file: ra6cm2.set
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

   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:   8  Setup file default.  Used with PCAL = off
  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:   8

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



POSITIONS OF SOURCES USED IN RECORDING SCANS

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

* 1611+343          16 11 47.914251   * 16 13 41.064242     16 14 14.076722       0.00
  J1613+3412        34 20 19.83376    * 34 12 47.90878      34 10 29.35388        0.00



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)
  1611+343           110.8

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

rk01wetr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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```


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

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

 --- Wed  19 Mar 2014   Day  78 ---

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

04 20 00  1508+572     17 20 49  71.1 -65.1  2.2      88.0     0        0   04 20 00
04 39 30  ---          17 40 22  68.5 -64.5  2.5      84.4  1170       37   04 20 01

04 40 00  1508+572     17 40 53  68.4 -64.5  2.5      84.3    24       37   04 40 00
05 00 00  ---          18 00 56  65.7 -63.6  2.8      80.9  1200       76   04 40 01



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


 ======== Setup file: ra18cm2.set
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

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

   Disk used to record data.
```

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

The following frequency sets based on these setups were used.

 Frequency Set:   5  Setup file default.  Used with PCAL = off
 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)
* 1508+572	15 08 45.204538	* 15 10 02.922371	15 10 26.267834	0.00
J1510+5702	57 14 02.08966	* 57 02 43.37583	56 59 17.64452	0.00

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
1508+572	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 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk01wftr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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```


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

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

 --- Wed  19 Mar 2014   Day  78 ---

 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

06 20 00  0716+714     19 21 09  34.4  -0.2 12.0       0.4     0        0   06 20 00
06 34 30  ---          19 35 41  34.4   1.2-11.8      -2.2   870       28   06 20 01

06 35 00  0716+714     19 36 11  34.4   1.2-11.8      -2.3    24       28   06 35 00
06 50 00  ---          19 51 14  34.5   2.7-11.5      -5.0   900       57   06 35 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 ./rk01wf_freq.dat:
     tr1cm

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

   Disk used to record data.
```

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

 The following frequency sets based on these setups were used.

  Frequency Set:   4  Setup file default.  Used with PCAL = off
  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:   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)
* 0716+714	07 16 13.029739	* 07 21 53.448474	07 23 31.947164	0.00
J0721+7120	71 26 15.17406	* 71 20 36.36340	71 19 01.44496	0.00

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            97.5

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

rk07bbtr

RadioAstron Maser observations

PI: *Alexei Alakoz*


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```


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

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

 --- Wed  19 Mar 2014   Day  78 ---

 ---------- This is a fringe finder/clock offset calibrator 4.8 deg. from NGC4258_H2O ----------

 Next scan frequencies:  22204.00  22204.00  22204.00  22204.00
 Next BBC frequencies:     704.00    704.00    704.00    704.00
 Next scan bandwidths:      16.00     16.00     16.00     16.00

08 00 00  1150+497     21 01 25  18.8 -28.0  9.1      25.7     0         0   08 00 00
08 05 00  ---          21 06 26  18.5 -27.3  9.2      25.0   300        10   08 00 01

 ---------- Please, make sure PCAL is OFF for NGC4258_H2O maser observations. ----------

08 10 00  NGC4258_H2O  21 11 27  18.0 -31.5  8.9      27.5   275        10   08 10 00
08 19 30  ---          21 20 59  17.3 -30.0  9.0      26.2   570        28   08 10 01

08 20 00  NGC4258_H2O  21 21 29  17.2 -29.9  9.0      26.2    24        28   08 20 00
08 29 30  ---          21 31 00  16.5 -28.4  9.2      24.9   570        46   08 20 01

08 30 00  NGC4258_H2O  21 31 30  16.5 -28.3  9.2      24.8    24        46   08 30 00
08 39 30  ---          21 41 02  15.8 -26.8  9.4      23.5   570        64   08 30 01

08 40 00  NGC4258_H2O  21 41 32  15.8 -26.7  9.4      23.4    24        64   08 40 00
08 49 30  ---          21 51 04  15.2 -25.2  9.5      22.1   570        83   08 40 01

08 50 00  NGC4258_H2O  21 51 34  15.2 -25.1  9.5      22.0    24        83   08 50 00
08 55 00  ---          21 56 34  14.8 -24.3  9.6      21.3   300        92   08 50 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 ./rk07bb_freq.dat:
     tr1cm

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

```
  Disk used to record data.

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

 The following frequency sets based on these setups were used.

  Frequency Set:   4  Setup file default.  Used with PCAL = off
  LO sum=   22204.00  22204.00  22204.00  22204.00
  BBC fr=     704.00    704.00    704.00    704.00
  Bandwd=      16.00     16.00     16.00     16.00
   Matching frequency sets:   4

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


POSITIONS OF SOURCES USED IN RECORDING SCANS

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

* NGC4258_H2O       12 16 29.364915   * 12 18 57.504600     12 19 41.297700       0.00
                    47 34 53.16919    * 47 18 14.30300      47 13 20.30429        0.00

* 1150+497          11 50 47.999856   * 11 53 24.466639     11 54 10.673316       0.00
  J1153+4931        49 47 50.09409    * 49 31 08.83012      49 26 14.85680        0.00


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)
  NGC4258_H2O        133.0
  1150+497           131.1

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

rk01wgtr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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


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

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

 --- Wed  19 Mar 2014   Day  78 ---

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

20 00 00  1150+497     09 03 24  63.4  80.5 -2.8     -65.6     0         0   20 00 00
20 19 30  ---          09 22 57  66.3  83.5 -2.5     -66.6  1170        37   20 00 01

20 20 00  1150+497     09 23 27  66.4  83.6 -2.5     -66.6    24        37   20 20 00
20 40 00  ---          09 43 30  69.4  87.0 -2.2     -67.2  1200        76   20 20 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
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

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

   Disk used to record data.
```

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

The following frequency sets based on these setups were used.

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

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* 1150+497	11 50 47.999856	* 11 53 24.466639	11 54 10.673222	0.00
J1153+4931	49 47 50.09409	* 49 31 08.83012	49 26 14.98256	0.00

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)
1150+497	130.9

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
that the Sun will cause amplitude reductions on the longest VLBA baselines
at a solar distance of 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk01witr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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


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

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

 --- Thu  20 Mar 2014   Day  79 ---

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

01 00 00  0642+449     14 04 13  25.1 -47.7  7.3      38.8     0         0   01 00 00
01 14 30  ---          14 18 45  23.5 -45.5  7.5      37.1   870        28   01 00 01

01 15 00  0642+449     14 19 15  23.5 -45.4  7.5      37.1    24        28   01 15 00
01 29 30  ---          14 33 48  21.9 -43.1  7.8      35.4   870        56   01 15 01

01 30 00  0642+449     14 34 18  21.9 -43.1  7.8      35.3    24        56   01 30 00
01 44 30  ---          14 48 50  20.4 -40.8  8.0      33.6   870        84   01 30 01

01 45 00  0642+449     14 49 20  20.4 -40.7  8.0      33.5    24        84   01 45 00
02 00 00  ---          15 04 23  18.9 -38.3  8.3      31.7   900       112   01 45 01



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


 ======== Setup file: ra18cm2.set
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

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

   Disk used to record data.
```

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

The following frequency sets based on these setups were used.

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

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* 0642+449	06 42 53.021453	* 06 46 32.026000	06 47 35.299680	0.00
J0646+4451	44 54 30.82735	* 44 51 16.59010	44 50 17.67045	0.00

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)
0642+449	99.0

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
that the Sun will cause amplitude reductions on the longest VLBA baselines
at a solar distance of 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk01wjtr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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```


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

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

 --- Thu  20 Mar 2014   Day  79 ---

 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  0648-165     09 07 20  14.3 213.6  2.3      20.3     0        0   20 00 00
20 19 30  ---          09 26 53  12.6 218.1  2.6      22.8  1170       37   20 00 01

20 20 00  0648-165     09 27 24  12.6 218.2  2.6      22.8    24       37   20 20 00
20 40 00  ---          09 47 27  10.6 222.7  2.9      25.2  1200       76   20 20 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 ./rk01wj_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)
* 0648-165	06 48 10.295571	* 06 50 24.581861	06 51 03.563758	0.00
J0650-1637	-16 34 05.88130	*-16 37 39.72548	-16 39 03.40107	0.00

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)
  0648-165           102.1

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

rk01wktr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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```


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

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

 --- Thu  20 Mar 2014   Day  79 ---

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

22 00 00  0642+449     11 07 40  48.0 -74.0  4.3      54.5     0         0   22 00 00
22 14 30  ---          11 22 12  46.0 -71.8  4.6      53.6   870        28   22 00 01

22 15 00  0642+449     11 22 42  45.9 -71.7  4.6      53.5    24        28   22 15 00
22 29 30  ---          11 37 15  43.8 -69.5  4.8      52.5   870        56   22 15 01

22 30 00  0642+449     11 37 45  43.8 -69.5  4.8      52.5    24        56   22 30 00
22 44 30  ---          11 52 17  41.7 -67.3  5.1      51.4   870        84   22 30 01

22 45 00  0642+449     11 52 47  41.7 -67.2  5.1      51.3    24        84   22 45 00
23 00 00  ---          12 07 50  39.6 -65.0  5.3      50.1   900       112   22 45 01



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


 ======== Setup file: ra18cm2.set
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

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

   Disk used to record data.
```

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

The following frequency sets based on these setups were used.

 Frequency Set:   7  Setup file default.  Used with PCAL = 1MHz
 LO sum=   1668.00  1668.00  1668.00  1668.00
 BBC fr=    732.00   732.00   732.00   732.00
 Bandwd=     16.00    16.00    16.00    16.00
  Matching frequency sets:   7

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* 0642+449	06 42 53.021453	* 06 46 32.026000	06 47 35.277312	0.00
J0646+4451	44 54 30.82735	* 44 51 16.59010	44 50 17.67448	0.00

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)
0642+449	98.2

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
that the Sun will cause amplitude reductions on the longest VLBA baselines
at a solar distance of 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk01wltr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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```


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

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

 --- Fri  21 Mar 2014   Day  80 ---

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

01 00 00  0827+243     14 08 10  22.5 -79.4  5.6      40.3     0        0   01 00 00
01 14 30  ---          14 22 42  20.4 -76.6  5.8      39.8   870       28   01 00 01

01 15 00  0827+243     14 23 12  20.3 -76.5  5.9      39.8    24       28   01 15 00
01 29 30  ---          14 37 44  18.2 -73.8  6.1      39.2   870       56   01 15 01

01 30 00  0827+243     14 38 14  18.1 -73.7  6.1      39.2    24       56   01 30 00
01 44 30  ---          14 52 47  16.1 -71.0  6.4      38.5   870       84   01 30 01

01 45 00  0827+243     14 53 17  16.0 -70.9  6.4      38.5    24       84   01 45 00
02 00 00  ---          15 08 19  13.9 -68.1  6.6      37.6   900      112   01 45 01



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


 ======== Setup file: ra18cm2.set
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

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

   Disk used to record data.
```

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

The following frequency sets based on these setups were used.

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

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* 0827+243	08 27 54.398594	* 08 30 52.086193	08 31 43.865168	0.00
J0830+2410	24 21 07.66367	* 24 10 59.82026	24 07 55.66164	0.00

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)
 0827+243           123.8

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

rk01wntr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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```


```
                UWAGA: zmiana pasma w czasie tego eksperymentu!!!

##########################################################################################
#######################  Observing mode: K&C-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  22 Mar 2014   Day  81 ---

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

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

22 00 00  0722+145     11 15 33  30.8 251.8  3.8      36.1     0        0   22 00 00
22 14 30  ---          11 30 05  28.7 255.0  4.1      36.8   870       28   22 00 01

22 15 00  0722+145     11 30 36  28.7 255.2  4.1      36.8    24       28   22 15 00
22 25 00  ---          11 40 37  27.2 257.3  4.2      37.2   600       47   22 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

22 30 00  0722+145     11 45 38  26.5 258.4  4.3      37.4   293       47   22 30 00
22 44 30  ---          12 00 10  24.3 261.5  4.6      37.8   870       75   22 30 01

22 45 00  0722+145     12 00 40  24.2 261.6  4.6      37.8    24       75   22 45 00
23 00 00  ---          12 15 43  22.0 264.7  4.8      38.1   900      104   22 45 01
```

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


 ======== Setup file: ra1cm2.set
   Matching groups in ./rk01wn_freq.dat:
     tr1cm

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

   Disk used to record data.

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

  The following frequency sets based on these setups were used.

   Frequency Set:   7  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:   7

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


 ======== Setup file: ra6cm2.set
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

   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:  10  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:  10

  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)
* 0722+145	07 22 26.966166	* 07 25 16.807764	07 26 06.068422	0.00
J0725+1425	14 31 12.28332	* 14 25 13.74657	14 23 17.86611	0.00

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)
  0722+145           108.6

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

rk01wotr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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


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

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

 --- Sun  23 Mar 2014   Day  82 ---

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

01 00 00  1150+497     14 16 03  67.7 275.0  2.4      66.9     0         0   01 00 00
01 14 30  ---          14 30 35  65.6 277.3  2.6      66.3   870        28   01 00 01

01 15 00  1150+497     14 31 05  65.5 277.4  2.6      66.3    24        28   01 15 00
01 29 30  ---          14 45 37  63.3 279.6  2.9      65.6   870        56   01 15 01

01 30 00  1150+497     14 46 08  63.3 279.7  2.9      65.5    24        56   01 30 00
01 44 30  ---          15 00 40  61.1 281.8  3.1      64.7   870        84   01 30 01

01 45 00  1150+497     15 01 10  61.1 281.9  3.1      64.6    24        84   01 45 00
02 00 00  ---          15 16 12  58.9 284.0  3.4      63.6   900       112   01 45 01



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


 ======== Setup file: ra18cm2.set
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

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

   Disk used to record data.
```

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

The following frequency sets based on these setups were used.

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

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


POSITIONS OF SOURCES USED IN RECORDING SCANS

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

* 1150+497          11 50 47.999856   * 11 53 24.466639     11 54 10.685443       0.00
  J1153+4931        49 47 50.09409    * 49 31 08.83012      49 26 15.68491        0.00


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)
  1150+497           129.5

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

rk01wptr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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


```
Observing mode: C-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  23 Mar 2014   Day  82 ---

 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  0648-165     05 18 30  17.5 156.8 -1.5     -14.3     0         0   16 00 00
16 14 30  ---          05 33 03  18.3 160.3 -1.3     -12.2   870        28   16 00 01

16 15 00  0648-165     05 33 33  18.3 160.4 -1.3     -12.1    24        28   16 15 00
16 29 30  ---          05 48 05  18.9 164.0 -1.0      -9.9   870        56   16 15 01

16 30 00  0648-165     05 48 35  19.0 164.2 -1.0      -9.8    24        56   16 30 00
16 44 30  ---          06 03 08  19.5 167.8 -0.8      -7.6   870        84   16 30 01

16 45 00  0648-165     06 03 38  19.5 167.9 -0.8      -7.5    24        84   16 45 00
17 00 00  ---          06 18 40  19.9 171.7 -0.5      -5.2   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
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

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

   Disk used to record data.
```

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

The following frequency sets based on these setups were used.

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

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* 0648-165	06 48 10.295571	* 06 50 24.581861	06 51 03.519121	0.00
J0650-1637	-16 34 05.88130	*-16 37 39.72548	-16 39 03.56322	0.00

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)
3C147	84.7
0648-165	100.0

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
that the Sun will cause amplitude reductions on the longest VLBA baselines
at a solar distance of 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk01wqtr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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


Observing mode: K-band, dual-pol

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

 --- Sun  23 Mar 2014   Day  82 ---

 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

21 00 00  0805-077     10 19 20  23.0 215.4  2.2      20.6     0        0   21 00 00
21 19 30  ---          10 38 53  21.2 220.3  2.5      23.1  1170       37   21 00 01

21 20 00  0805-077     10 39 23  21.2 220.4  2.5      23.1    24       37   21 20 00
21 40 00  ---          10 59 26  19.1 225.2  2.8      25.5  1200       76   21 20 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 ./rk01wq_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:   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)
* 0805-077	08 05 49.552833	* 08 08 15.536034	08 08 58.225014	0.00
J0808-0751	-07 42 22.40698	*-07 51 09.88656	-07 54 00.15673	0.00

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)
0805-077	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 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk01wrtr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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```


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


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

 --- Sun  23 Mar 2014   Day  82 ---

 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

23 20 00  0748+126     12 39 43  20.7 263.2  4.8      37.6     0         0   23 20 00
23 39 30  ---          12 59 16  17.8 267.2  5.1      37.9  1170        37   23 20 01

23 40 00  0748+126     12 59 46  17.7 267.3  5.1      37.9    24        37   23 40 00
23 59 59  ---          13 19 48  14.7 271.3  5.5      37.9  1199        76   23 40 01



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


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

   Setup group:    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)
* 0748+126	07 48 05.060493	* 07 50 52.045731	07 51 40.591516	0.00
J0750+1231	12 38 45.47747	* 12 31 04.82815	12 28 39.22144	0.00

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)
  0748+126           114.0

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

rk01wstr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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```


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



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

 --- Mon  24 Mar 2014   Day  83 ---

 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  1642+690     15 20 09  71.5  23.4 -1.4    -138.5     0         0   02 00 00
02 14 30  ---          15 34 41  72.3  20.1 -1.1    -145.0   870        28   02 00 01

02 15 00  1642+690     15 35 12  72.4  20.0 -1.1    -145.2    24        28   02 15 00
02 29 30  ---          15 49 44  73.0  16.2 -0.9    -152.2   870        56   02 15 01

02 30 00  1642+690     15 50 14  73.1  16.1 -0.9    -152.5    24        56   02 30 00
02 44 30  ---          16 04 46  73.6  11.9 -0.6    -159.8   870        84   02 30 01

02 45 00  1642+690     16 05 16  73.6  11.8 -0.6    -160.1    24        84   02 45 00
03 00 00  ---          16 20 19  74.0   7.1 -0.4    -168.1   900       112   02 45 01


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


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

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

   Disk used to record data.
```

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

The following frequency sets based on these setups were used.

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

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* 1642+690	16 42 18.064877	* 16 42 07.848507	16 42 05.925218	0.00
J1642+6856	69 02 13.21708	* 68 56 39.75636	68 54 51.42149	0.00

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)
1642+690	96.7

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
that the Sun will cause amplitude reductions on the longest VLBA baselines
at a solar distance of 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk01wttr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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


```
                UWAGA: zmiana pasma w czasie tego eksperymentu!!!

##########################################################################################
#######################  Observing mode: K&C-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  24 Mar 2014   Day  83 ---

 ---------- 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

16 50 00  0736+017     06 12 35  35.4 152.8 -1.5     -15.9     0        0   16 50 00
17 05 00  ---          06 27 38  36.3 157.3 -1.2     -13.4   900       29   16 50 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

17 10 00  0736+017     06 32 39  36.6 158.8 -1.1     -12.5   293       29   17 10 00
17 30 00  ---          06 52 42  37.6 165.0 -0.8      -8.9  1200       67   17 10 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 ./rk01wt_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:   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



 ======== Setup file: ra6cm2.set
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

   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:   9  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:   9

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


POSITIONS OF SOURCES USED IN RECORDING SCANS

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

* 0736+017          07 36 42.512339   * 07 39 18.033897     07 40 03.262812       0.00
  J0739+0137        01 44 00.18080    * 01 37 04.61773      01 34 48.51972        0.00


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)
  0736+017           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 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

rk01wutr

RadioAstron AGN survey

PI: *Yuri Kovalev*


```
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```


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


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

 --- Mon  24 Mar 2014   Day  83 ---

 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

19 00 00  0743-006     08 22 57  35.6 191.2  0.6       6.7     0         0   19 00 00
19 19 30  ---          08 42 30  34.9 197.1  0.9      10.2  1170        37   19 00 01

19 20 00  0743-006     08 43 00  34.9 197.3  0.9      10.3    24        37   19 20 00
19 40 00  ---          09 03 03  33.8 203.2  1.3      13.7  1200        76   19 20 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
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

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

   Disk used to record data.
```

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

The following frequency sets based on these setups were used.

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

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* 0743-006	07 43 21.047495	* 07 45 54.082322	07 46 38.637549	0.00
J0745-0044	-00 36 55.80448	*-00 44 17.54000	-00 46 41.74562	0.00

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)
0743-006	112.9

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk01wxtr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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


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


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

 --- Tue  25 Mar 2014   Day  84 ---

 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 20 00  1040+244     16 44 19  19.0 -74.9  6.0      39.4     0        0   03 20 00
03 39 30  ---          17 03 52  16.2 -71.3  6.3      38.5  1170       37   03 20 01

03 40 00  1040+244     17 04 22  16.1 -71.2  6.3      38.5    24       37   03 40 00
04 00 00  ---          17 24 25  13.3 -67.5  6.7      37.4  1200       76   03 40 01



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


 ======== Setup file: ra18cm2.set
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

   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)
* 1040+244	10 40 25.199377	* 10 43 09.035778	10 43 57.199119	0.00
J1043+2408	24 24 19.59847	* 24 08 35.40933	24 03 55.76536	0.00

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)
1040+244	145.8

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
that the Sun will cause amplitude reductions on the longest VLBA baselines
at a solar distance of 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

eg082btr

e-EVN runs: EG082B, EG079B, and RR009

PI: *Marcin Gawronski, Krisztina Gabanyi, Anthony Rushton*


```
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```


Observing mode: realtime e-vlbi

```
Schedule for TORUN     (Code Tr )                                    Page   2
               e-EVN runs: EG082B, EG079B, and RR009
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                 Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-------------------------------------------------------------------------------------------

 --- Tue  25 Mar 2014   Day  84 ---

 Next scan frequencies:  4942.49  4942.49  4942.49  4942.49  4974.49  4974.49  4974.49  4974.49
                         5006.49  5006.49  5006.49  5006.49  5038.49  5038.49  5038.49  5038.49
 Next BBC frequencies:    742.49   742.49   742.49   742.49   774.49   774.49   774.49   774.49
                          806.49   806.49   806.49   806.49   838.49   838.49   838.49   838.49
 Next scan bandwidths:     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
                           16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00

09 00 00  0234+285     22 25 15  38.4  91.8 -4.2     -43.3     0        0   09 00 00
09 15 00  ---          22 40 17  40.7  94.9 -4.0     -43.1   900      115   09 00 01

09 15 40  0234+285     22 40 57  40.8  95.0 -4.0     -43.1    34      115   09 15 40
09 30 00  ---          22 55 20  42.9  98.1 -3.7     -42.7   860      225   09 15 41

09 30 40  0234+285     22 56 00  43.0  98.3 -3.7     -42.7    34      225   09 30 40
09 45 00  ---          23 10 22  45.2 101.5 -3.5     -42.2   860      335   09 30 41

09 45 40  0234+285     23 11 02  45.3 101.6 -3.5     -42.2    34      335   09 45 40
10 00 00  ---          23 25 24  47.4 105.0 -3.2     -41.5   860      445   09 45 41

10 00 40  0234+285     23 26 05  47.5 105.2 -3.2     -41.4    34      445   10 00 40
10 15 00  ---          23 40 27  49.5 108.8 -3.0     -40.5   860      556   10 00 41

10 15 40  0234+285     23 41 07  49.6 109.0 -3.0     -40.4    34      556   10 15 40
10 30 00  ---          23 55 29  51.6 112.8 -2.7     -39.2   860      666   10 15 41

10 30 40  0234+285     23 56 09  51.7 113.0 -2.7     -39.2    34      666   10 30 40
10 45 00  ---          00 10 32  53.7 117.0 -2.5     -37.6   860      776   10 30 41

10 45 40  0234+285     00 11 12  53.8 117.2 -2.5     -37.6    34      776   10 45 40
11 00 00  ---          00 25 34  55.7 121.6 -2.2     -35.7   860      886   10 45 41

11 00 40  0234+285     00 26 14  55.7 121.8 -2.2     -35.6    34      886   11 00 40
11 15 00  ---          00 40 37  57.5 126.5 -2.0     -33.4   860      996   11 00 41

11 15 40  0234+285     00 41 17  57.6 126.7 -2.0     -33.3    34      996   11 15 40
11 30 00  ---          00 55 39  59.3 131.8 -1.7     -30.7   860     1106   11 15 41
```

```
Schedule for TORUN     (Code Tr )                                  Page   3
               e-EVN runs: EG082B, EG079B, and RR009
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                  Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------------

 --- Tue  25 Mar 2014   Day  84 ---

11 30 40  0234+285     00 56 19  59.3 132.1 -1.7     -30.6    34     1106   11 30 40
11 45 00  ---          01 10 42  60.9 137.6 -1.5     -27.5   860     1216   11 30 41

11 45 40  0234+285     01 11 22  60.9 137.9 -1.5     -27.4    33     1216   11 45 40
12 00 00  ---          01 25 44  62.3 143.8 -1.2     -23.9   860     1326   11 45 41

12 03 00  0528+134     01 28 45  28.2 105.8 -4.1     -36.5    38     1326   12 03 00
12 15 00  ---          01 40 47  29.9 108.5 -3.8     -35.9   720     1418   12 03 01

12 15 40  0528+134     01 41 27  30.0 108.6 -3.8     -35.8    34     1418   12 15 40
12 30 00  ---          01 55 49  32.0 111.9 -3.6     -35.0   860     1528   12 15 41

12 30 40  0528+134     01 56 29  32.1 112.1 -3.6     -34.9    34     1528   12 30 40
12 45 00  ---          02 10 52  34.1 115.5 -3.3     -33.9   860     1638   12 30 41

 ---------- please do the Eff pointing check before the start of EG082B ----------

12 46 00  J0519+0848   02 11 52  31.8 121.7 -3.1     -31.1    33     1638   12 46 00
13 00 00  =0516+087    02 25 54  33.6 125.3 -2.9     -29.8   840     1746   12 46 01

13 00 00  J0519+0848   02 25 54  33.6 125.3 -2.9     -29.8    -5     1746   No stop
13 01 30  =0516+087    02 27 24  33.8 125.6 -2.9     -29.6    85     1757   13 00 01

13 01 30  J0530+0900   02 27 24  32.5 122.7 -3.1     -30.8   -20     1757   No stop
13 05 00  ---          02 30 55  33.0 123.6 -3.0     -30.4   190     1784   13 01 31

13 05 30  J0519+0848   02 31 25  34.2 126.7 -2.8     -29.2     9     1784   13 05 30
13 06 30  =0516+087    02 32 25  34.4 126.9 -2.8     -29.1    60     1792   13 05 31

13 06 30  V998ORI      02 32 25  33.6 123.0 -3.0     -30.7   -23     1792   No stop
13 10 00  ---          02 35 56  34.1 123.9 -3.0     -30.4   187     1819   13 06 31

13 10 00  J0519+0848   02 35 56  34.8 127.9 -2.7     -28.7   -23     1819   No stop
13 11 30  =0516+087    02 37 26  35.0 128.3 -2.7     -28.5    67     1830   13 10 01

13 11 30  V998ORI      02 37 26  34.2 124.3 -2.9     -30.2   -23     1830   No stop
13 15 00  ---          02 40 56  34.7 125.2 -2.9     -29.9   187     1857   13 11 31

13 15 30  J0519+0848   02 41 27  35.4 129.3 -2.6     -28.0     7     1857   13 15 30
13 16 30  =0516+087    02 42 27  35.5 129.6 -2.6     -27.9    60     1865   13 15 31

13 16 30  V998ORI      02 42 27  34.9 125.6 -2.8     -29.7   -23     1865   No stop
13 20 00  ---          02 45 57  35.3 126.5 -2.8     -29.3   187     1892   13 16 31

13 20 00  J0519+0848   02 45 57  35.9 130.5 -2.6     -27.5   -23     1892   No stop
13 21 30  =0516+087    02 47 28  36.1 131.0 -2.5     -27.3    67     1903   13 20 01
```

```
Schedule for TORUN     (Code Tr )                                   Page   4
               e-EVN runs: EG082B, and RR009
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                  Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Tue  25 Mar 2014   Day  84 ---

13 21 30  V998ORI      02 47 28  35.5 126.9 -2.8     -29.2   -23     1903   No stop
13 25 00  ---          02 50 58  35.9 127.8 -2.7     -28.8   187     1930   13 21 31

13 25 30  J0519+0848   02 51 28  36.6 132.0 -2.5     -26.8     7     1930   13 25 30
13 26 30  =0516+087    02 52 28  36.7 132.3 -2.5     -26.7    60     1938   13 25 31

13 26 30  V998ORI      02 52 28  36.1 128.2 -2.7     -28.6   -23     1938   No stop
13 30 00  ---          02 55 59  36.5 129.1 -2.6     -28.2   187     1965   13 26 31

13 30 00  J0519+0848   02 55 59  37.1 133.3 -2.4     -26.3   -23     1965   No stop
13 31 30  =0516+087    02 57 29  37.2 133.7 -2.4     -26.1    67     1976   13 30 01

13 31 30  J0530+0900   02 57 29  36.2 130.5 -2.6     -27.5   -21     1976   No stop
13 35 00  ---          03 01 00  36.6 131.5 -2.5     -27.1   189     2003   13 31 31

13 35 30  J0519+0848   03 01 30  37.7 134.8 -2.3     -25.5     9     2003   13 35 30
13 36 30  =0516+087    03 02 30  37.8 135.1 -2.3     -25.4    60     2011   13 35 31

13 36 30  V998ORI      03 02 30  37.2 130.9 -2.5     -27.4   -23     2011   No stop
13 40 00  ---          03 06 01  37.6 131.9 -2.5     -27.0   187     2038   13 36 31

13 40 00  J0519+0848   03 06 01  38.1 136.1 -2.2     -24.9   -24     2038   No stop
13 41 30  =0516+087    03 07 31  38.3 136.5 -2.2     -24.7    66     2049   13 40 01

13 41 30  V998ORI      03 07 31  37.8 132.3 -2.4     -26.8   -23     2049   No stop
13 45 00  ---          03 11 01  38.2 133.3 -2.4     -26.3   187     2076   13 41 31

13 45 30  J0519+0848   03 11 32  38.7 137.7 -2.1     -24.1     6     2076   13 45 30
13 46 30  =0516+087    03 12 32  38.8 138.0 -2.1     -24.0    60     2084   13 45 31

13 46 30  V998ORI      03 12 32  38.3 133.7 -2.3     -26.1   -23     2084   No stop
13 50 00  ---          03 16 02  38.7 134.7 -2.3     -25.7   187     2111   13 46 31

13 50 00  J0519+0848   03 16 02  39.2 139.0 -2.1     -23.5   -24     2111   No stop
13 51 30  =0516+087    03 17 32  39.3 139.4 -2.0     -23.3    66     2122   13 50 01

13 51 30  V998ORI      03 17 32  38.9 135.1 -2.3     -25.5   -23     2122   No stop
13 55 00  ---          03 21 03  39.3 136.1 -2.2     -25.0   187     2149   13 51 31

13 55 30  J0519+0848   03 21 33  39.7 140.6 -2.0     -22.7     6     2149   13 55 30
13 56 30  =0516+087    03 22 33  39.8 140.9 -2.0     -22.5    60     2157   13 55 31

13 56 30  V998ORI      03 22 33  39.4 136.6 -2.2     -24.8   -23     2157   No stop
14 00 00  ---          03 26 04  39.8 137.6 -2.1     -24.3   187     2184   13 56 31

14 00 00  J0519+0848   03 26 04  40.1 142.0 -1.9     -22.0   -24     2184   No stop
14 01 30  =0516+087    03 27 34  40.3 142.4 -1.9     -21.8    66     2195   14 00 01
```

```
Schedule for TORUN     (Code Tr )                                   Page   5
               e-EVN runs: EG082B, and RR009
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                  Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Tue  25 Mar 2014   Day  84 ---

14 01 30  J0530+0900   03 27 34  39.4 139.0 -2.1     -23.5   -21     2195   No stop
14 05 00  ---          03 31 05  39.7 140.0 -2.0     -23.0   189     2222   14 01 31

14 05 30  J0519+0848   03 31 35  40.6 143.6 -1.8     -21.1     8     2222   14 05 30
14 06 30  =0516+087    03 32 35  40.7 143.9 -1.8     -21.0    60     2230   14 05 31

14 06 30  V998ORI      03 32 35  40.4 139.5 -2.0     -23.3   -24     2230   No stop
14 10 00  ---          03 36 06  40.8 140.6 -1.9     -22.8   186     2257   14 06 31

14 10 00  J0519+0848   03 36 06  41.0 145.0 -1.7     -20.4   -24     2257   No stop
14 11 30  =0516+087    03 37 36  41.1 145.5 -1.7     -20.1    66     2268   14 10 01

14 11 30  V998ORI      03 37 36  40.9 141.0 -1.9     -22.5   -24     2268   No stop
14 15 00  ---          03 41 06  41.2 142.1 -1.9     -22.0   186     2295   14 11 31

14 15 30  J0519+0848   03 41 36  41.5 146.7 -1.6     -19.5     6     2295   14 15 30
14 16 30  =0516+087    03 42 37  41.6 147.0 -1.6     -19.3    60     2303   14 15 31

14 16 30  V998ORI      03 42 37  41.4 142.5 -1.8     -21.8   -24     2303   No stop
14 20 00  ---          03 46 07  41.7 143.6 -1.8     -21.2   186     2330   14 16 31

14 20 00  J0519+0848   03 46 07  41.8 148.1 -1.6     -18.7   -24     2330   No stop
14 21 30  =0516+087    03 47 37  42.0 148.6 -1.5     -18.5    66     2341   14 20 01

14 21 30  V998ORI      03 47 37  41.8 144.1 -1.8     -21.0   -24     2341   No stop
14 25 00  ---          03 51 08  42.1 145.2 -1.7     -20.4   186     2368   14 21 31

14 25 30  J0519+0848   03 51 38  42.3 149.9 -1.5     -17.8     6     2368   14 25 30
14 26 30  =0516+087    03 52 38  42.3 150.2 -1.5     -17.6    60     2376   14 25 31

14 26 30  V998ORI      03 52 38  42.2 145.6 -1.7     -20.1   -24     2376   No stop
14 30 00  ---          03 56 09  42.5 146.7 -1.6     -19.5   186     2403   14 26 31

14 30 00  J0519+0848   03 56 09  42.6 151.3 -1.4     -17.0   -24     2403   No stop
14 31 30  =0516+087    03 57 39  42.7 151.8 -1.4     -16.7    66     2414   14 30 01

14 31 30  J0530+0900   03 57 39  42.0 148.1 -1.6     -18.7   -22     2414   No stop
14 35 00  ---          04 01 10  42.3 149.3 -1.5     -18.1   188     2441   14 31 31

14 35 30  J0519+0848   04 01 40  43.0 153.1 -1.3     -16.0     8     2441   14 35 30
14 36 30  =0516+087    04 02 40  43.1 153.4 -1.3     -15.8    60     2449   14 35 31

14 36 30  V998ORI      04 02 40  43.1 148.8 -1.5     -18.4   -24     2449   No stop
14 40 00  ---          04 06 10  43.3 149.9 -1.4     -17.8   186     2476   14 36 31

14 40 00  J0519+0848   04 06 10  43.3 154.6 -1.2     -15.1   -24     2476   No stop
14 41 30  =0516+087    04 07 41  43.4 155.1 -1.2     -14.8    66     2487   14 40 01
```

Schedule for TORUN (Code Tr) Page 6

e-EVN runs: EG082B, EG079B, and RR009

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 25 Mar 2014 Day 84 ---										
14 41 30	V998ORI	04 07 41	43.4	150.4	-1.4		-17.5	-24	2487	No stop
14 45 00	---	04 11 11	43.7	151.6	-1.4		-16.9	186	2514	14 41 31
14 45 30	J0519+0848	04 11 41	43.6	156.4	-1.1		-14.1	5	2514	14 45 30
14 46 30	=0516+087	04 12 42	43.7	156.7	-1.1		-13.9	60	2522	14 45 31
14 46 30	V998ORI	04 12 42	43.8	152.0	-1.3		-16.6	-24	2522	No stop
14 50 00	---	04 16 12	44.0	153.2	-1.3		-16.0	186	2548	14 46 31
14 50 00	J0519+0848	04 16 12	43.9	157.9	-1.1		-13.2	-25	2548	No stop
14 51 30	=0516+087	04 17 42	44.0	158.4	-1.0		-12.9	65	2560	14 50 01
14 51 30	V998ORI	04 17 42	44.1	153.7	-1.3		-15.7	-24	2560	No stop
14 55 00	---	04 21 13	44.4	154.9	-1.2		-15.0	186	2587	14 51 31
14 55 30	J0519+0848	04 21 43	44.2	159.7	-1.0		-12.2	5	2587	14 55 30
14 56 30	=0516+087	04 22 43	44.2	160.1	-1.0		-12.0	60	2595	14 55 31
14 56 30	V998ORI	04 22 43	44.5	155.4	-1.2		-14.7	-24	2595	No stop
15 00 00	---	04 26 14	44.7	156.5	-1.1		-14.0	186	2621	14 56 31
15 00 00	J0519+0848	04 26 14	44.4	161.3	-0.9		-11.3	-25	2621	No stop
15 01 30	=0516+087	04 27 44	44.5	161.8	-0.9		-11.0	65	2633	15 00 01
15 01 30	J0530+0900	04 27 44	44.1	157.9	-1.1		-13.2	-22	2633	No stop
15 05 00	---	04 31 15	44.3	159.1	-1.0		-12.5	188	2660	15 01 31
15 05 30	J0519+0848	04 31 45	44.7	163.1	-0.8		-10.2	7	2660	15 05 30
15 06 30	=0516+087	04 32 45	44.7	163.5	-0.8		-10.0	60	2668	15 05 31
15 06 30	V998ORI	04 32 45	45.1	158.7	-1.0		-12.8	-24	2668	No stop
15 10 00	---	04 36 15	45.2	159.9	-0.9		-12.1	186	2694	15 06 31
15 10 00	J0519+0848	04 36 15	44.9	164.7	-0.7		-9.2	-25	2694	No stop
15 11 30	=0516+087	04 37 46	44.9	165.2	-0.7		-8.9	65	2706	15 10 01
15 11 30	V998ORI	04 37 46	45.3	160.4	-0.9		-11.8	-24	2706	No stop
15 15 00	---	04 41 16	45.5	161.7	-0.9		-11.1	186	2733	15 11 31
15 15 30	J0519+0848	04 41 46	45.1	166.6	-0.6		-8.1	5	2733	15 15 30
15 16 30	=0516+087	04 42 46	45.1	166.9	-0.6		-7.9	60	2740	15 15 31
15 20 30	J0147+5840	04 46 47	64.9	300.9	3.0		83.4	-43	2740	15 20 30
15 22 00	=0144+584	04 48 17	64.7	300.9	3.0		83.1	47	2752	15 20 31

Schedule for TORUN (Code Tr) Page 7

e-EVN runs: EG082B, EG079B, and RR009

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

Start UT Stop UT	Source	Start / Stop LST	 EL	 AZ	 HA	 UP	 ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 25 Mar 2014 Day 84 ---										
15 22 20	J0147+5840	04 48 37	64.7	301.0	3.0		83.1	14	2752	15 22 20
15 23 50	=0144+584	04 50 08	64.5	301.0	3.0		82.8	90	2764	15 22 21
15 23 50	J0151+5454	04 50 08	64.3	292.2	3.0		75.6	-33	2764	No stop
15 27 20	---	04 53 38	63.8	292.5	3.0		75.2	177	2790	15 23 51
15 27 50	J0147+5840	04 54 08	64.0	301.2	3.1		82.1	-2	2790	15 27 50
15 28 50	=0144+584	04 55 08	63.9	301.2	3.1		81.9	58	2798	15 27 51
15 28 50	V596CAS	04 55 08	65.3	300.4	2.9		83.6	-19	2798	No stop
15 32 20	---	04 58 39	64.9	300.5	3.0		83.0	191	2825	15 28 51
15 32 20	J0147+5840	04 58 39	63.4	301.4	3.2		81.3	-19	2825	No stop
15 33 50	=0144+584	05 00 09	63.2	301.4	3.2		81.0	71	2836	15 32 21
15 33 50	V596CAS	05 00 09	64.7	300.6	3.0		82.7	-19	2836	No stop
15 37 20	---	05 03 40	64.2	300.7	3.1		82.1	191	2863	15 33 51
15 37 50	J0147+5840	05 04 10	62.7	301.6	3.3		80.3	11	2863	15 37 50
15 38 50	=0144+584	05 05 10	62.6	301.7	3.3		80.2	60	2871	15 37 51
15 38 50	V596CAS	05 05 10	64.0	300.8	3.1		81.9	-19	2871	No stop
15 42 20	---	05 08 41	63.6	300.9	3.1		81.2	191	2898	15 38 51
15 42 20	J0147+5840	05 08 41	62.1	301.8	3.3		79.6	-19	2898	No stop
15 43 50	=0144+584	05 10 11	61.9	301.9	3.4		79.3	71	2909	15 42 21
15 43 50	V596CAS	05 10 11	63.4	301.0	3.2		81.0	-19	2909	No stop
15 47 20	---	05 13 42	62.9	301.2	3.2		80.4	191	2936	15 43 51
15 47 50	J0147+5840	05 14 12	61.4	302.1	3.4		78.6	11	2936	15 47 50
15 48 50	=0144+584	05 15 12	61.3	302.2	3.4		78.5	60	2944	15 47 51
15 48 50	V596CAS	05 15 12	62.7	301.2	3.2		80.1	-19	2944	No stop
15 52 20	---	05 18 42	62.3	301.4	3.3		79.5	191	2971	15 48 51
15 52 20	J0147+5840	05 18 42	60.8	302.4	3.5		77.9	-19	2971	No stop
15 53 50	=0144+584	05 20 13	60.7	302.4	3.5		77.6	71	2982	15 52 21
15 53 50	J0151+5454	05 20 13	60.2	294.8	3.5		71.8	-30	2982	No stop
15 57 20	---	05 23 43	59.7	295.1	3.5		71.3	180	3009	15 53 51
15 57 50	J0147+5840	05 24 13	60.1	302.7	3.6		77.0	0	3009	15 57 50
15 58 50	=0144+584	05 25 13	60.0	302.7	3.6		76.8	60	3017	15 57 51

Schedule for TORUN (Code Tr) Page 8

e-EVN runs: EG082B, EG079B, and RR009

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 25 Mar 2014 Day 84 ---										
15 58 50	V596CAS	05 25 13	61.5	301.8	3.4		78.4	-19	3017	No stop
16 02 20	---	05 28 44	61.0	301.9	3.5		77.9	191	3044	15 58 51
16 02 20	J0147+5840	05 28 44	59.6	302.9	3.7		76.2	-19	3044	No stop
16 03 50	=0144+584	05 30 14	59.4	303.0	3.7		76.0	71	3055	16 02 21
16 03 50	V596CAS	05 30 14	60.8	302.0	3.5		77.6	-19	3055	No stop
16 07 20	---	05 33 45	60.4	302.2	3.6		77.0	191	3082	16 03 51
16 07 50	J0147+5840	05 34 15	58.9	303.3	3.8		75.4	11	3082	16 07 50
16 08 50	=0144+584	05 35 15	58.8	303.4	3.8		75.2	60	3090	16 07 51
16 08 50	V596CAS	05 35 15	60.2	302.3	3.6		76.8	-19	3090	No stop
16 12 20	---	05 38 46	59.7	302.5	3.6		76.2	191	3117	16 08 51
16 12 20	J0147+5840	05 38 46	58.3	303.6	3.8		74.6	-19	3117	No stop
16 13 50	=0144+584	05 40 16	58.1	303.7	3.9		74.4	71	3128	16 12 21
16 13 50	V596CAS	05 40 16	59.6	302.6	3.7		76.0	-19	3128	No stop
16 17 20	---	05 43 46	59.1	302.9	3.7		75.4	191	3155	16 13 51
16 17 50	J0147+5840	05 44 17	57.6	303.9	3.9		73.8	11	3155	16 17 50
16 18 50	=0144+584	05 45 17	57.5	304.0	3.9		73.6	60	3163	16 17 51
16 18 50	V596CAS	05 45 17	58.9	303.0	3.7		75.2	-19	3163	No stop
16 22 20	---	05 48 47	58.5	303.2	3.8		74.7	191	3190	16 18 51
16 22 20	J0147+5840	05 48 47	57.1	304.3	4.0		73.1	-19	3190	No stop
16 23 50	=0144+584	05 50 18	56.9	304.4	4.0		72.8	71	3201	16 22 21
16 23 50	J0151+5454	05 50 18	56.1	297.6	4.0		68.0	-28	3201	No stop
16 27 20	---	05 53 48	55.6	298.0	4.0		67.6	182	3228	16 23 51
16 27 50	J0147+5840	05 54 18	56.4	304.6	4.1		72.2	2	3228	16 27 50
16 28 50	=0144+584	05 55 18	56.3	304.7	4.1		72.1	60	3236	16 27 51
16 28 50	V596CAS	05 55 18	57.7	303.6	3.9		73.6	-19	3236	No stop
16 32 20	---	05 58 49	57.2	303.9	4.0		73.1	191	3263	16 28 51
16 32 20	J0147+5840	05 58 49	55.8	305.0	4.2		71.5	-19	3263	No stop
16 33 50	=0144+584	06 00 19	55.6	305.1	4.2		71.3	71	3274	16 32 21
16 33 50	V596CAS	06 00 19	57.0	304.0	4.0		72.9	-18	3274	No stop
16 37 20	---	06 03 50	56.6	304.2	4.1		72.3	192	3301	16 33 51

```
Schedule for TORUN     (Code Tr )                                Page   9
               e-EVN runs: EG082B, EG079B, and RR009
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                  Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Tue  25 Mar 2014   Day  84 ---

16 37 50  J0147+5840   06 04 20  55.2 305.4  4.3      70.7    11     3301   16 37 50
16 38 50  =0144+584    06 05 20  55.0 305.5  4.3      70.5    60     3309   16 37 51

16 38 50  V596CAS      06 05 20  56.4 304.3  4.1      72.1   -18     3309   No stop
16 42 20  ---          06 08 51  56.0 304.6  4.1      71.6   192     3336   16 38 51

16 42 20  J0147+5840   06 08 51  54.6 305.7  4.3      70.0   -19     3336   No stop
16 43 50  =0144+584    06 10 21  54.4 305.8  4.4      69.8    71     3347   16 42 21

16 43 50  V596CAS      06 10 21  55.8 304.7  4.2      71.3   -18     3347   No stop
16 47 20  ---          06 13 51  55.4 305.0  4.2      70.8   192     3374   16 43 51

16 47 50  J0147+5840   06 14 21  53.9 306.2  4.4      69.2    11     3374   16 47 50
16 48 50  =0144+584    06 15 22  53.8 306.2  4.4      69.0    60     3382   16 47 51

16 48 50  V596CAS      06 15 22  55.2 305.1  4.2      70.6   -18     3382   No stop
16 52 20  ---          06 18 52  54.7 305.3  4.3      70.0   192     3409   16 48 51

16 52 20  J0147+5840   06 18 52  53.4 306.5  4.5      68.5   -19     3409   No stop
16 53 50  =0144+584    06 20 22  53.2 306.6  4.5      68.3    71     3420   16 52 21

16 53 50  J0151+5454   06 20 22  52.2 300.6  4.5      64.3   -27     3420   No stop
16 57 20  ---          06 23 53  51.7 300.9  4.5      63.8   183     3447   16 53 51

16 57 50  J0147+5840   06 24 23  52.7 307.0  4.6      67.7     3     3447   16 57 50
16 58 50  =0144+584    06 25 23  52.6 307.0  4.6      67.5    60     3455   16 57 51

16 58 50  V596CAS      06 25 23  53.9 305.8  4.4      69.1   -18     3455   No stop
17 02 20  ---          06 28 54  53.5 306.1  4.5      68.5   192     3482   16 58 51

17 02 20  J0147+5840   06 28 54  52.2 307.3  4.7      67.0   -19     3482   No stop
17 03 50  =0144+584    06 30 24  52.0 307.4  4.7      66.8    71     3493   17 02 21

17 03 50  V596CAS      06 30 24  53.3 306.2  4.5      68.3   -18     3493   No stop
17 07 20  ---          06 33 55  52.9 306.5  4.6      67.8   192     3520   17 03 51

17 07 50  J0147+5840   06 34 25  51.5 307.8  4.8      66.2    12     3520   17 07 50
17 08 50  =0144+584    06 35 25  51.4 307.9  4.8      66.0    60     3528   17 07 51

17 08 50  V596CAS      06 35 25  52.7 306.7  4.6      67.6   -18     3528   No stop
17 12 20  ---          06 38 55  52.3 306.9  4.6      67.0   192     3555   17 08 51

17 12 20  J0147+5840   06 38 55  51.0 308.2  4.8      65.5   -18     3555   No stop
17 13 50  =0144+584    06 40 26  50.8 308.3  4.9      65.3    72     3566   17 12 21
```

Schedule for TORUN (Code Tr) Page 10

e-EVN runs: EG082B, EG079B, and RR009

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 25 Mar 2014 Day 84 ---										
17 13 50	V596CAS	06 40 26	52.1	307.1	4.7		66.8	-18	3566	No stop
17 17 20	---	06 43 56	51.7	307.4	4.7		66.3	192	3593	17 13 51
17 17 50	J0147+5840	06 44 26	50.3	308.6	4.9		64.7	12	3593	17 17 50
17 18 50	=0144+584	06 45 27	50.2	308.7	4.9		64.6	60	3601	17 17 51
17 18 50	V596CAS	06 45 27	51.5	307.5	4.8		66.1	-18	3601	No stop
17 22 20	---	06 48 57	51.1	307.8	4.8		65.6	192	3628	17 18 51
17 22 20	J0147+5840	06 48 57	49.8	309.0	5.0		64.0	-18	3628	No stop
17 23 50	=0144+584	06 50 27	49.6	309.2	5.0		63.8	72	3639	17 22 21
17 23 50	J0151+5454	06 50 27	48.3	303.7	5.0		60.5	-26	3639	No stop
17 27 20	---	06 53 58	47.9	304.1	5.0		60.1	184	3666	17 23 51
17 27 50	J0147+5840	06 54 28	49.2	309.5	5.1		63.2	4	3666	17 27 50
17 28 50	=0144+584	06 55 28	49.1	309.6	5.1		63.1	60	3674	17 27 51
17 28 50	V596CAS	06 55 28	50.3	308.4	4.9		64.6	-18	3674	No stop
17 32 20	---	06 58 59	49.9	308.7	5.0		64.1	192	3700	17 28 51
17 32 50	J0147+5840	06 59 29	48.6	310.0	5.2		62.5	12	3700	17 32 50
17 33 50	=0144+584	07 00 29	48.5	310.1	5.2		62.4	60	3708	17 32 51
17 39 50	J1038+0512	07 06 30	25.4	117.9	-3.6		-32.2	-39	3708	17 39 50
17 41 20	=1036+054	07 08 00	25.6	118.3	-3.5		-32.1	51	3720	17 39 51
17 41 40	J1038+0512	07 08 20	25.7	118.3	-3.5		-32.1	14	3720	17 41 40
17 44 40	=1036+054	07 11 21	26.1	119.0	-3.5		-31.8	180	3743	17 41 41
17 44 40	J1035+0522	07 11 21	26.7	119.8	-3.4		-31.5	-14	3743	No stop
17 48 10	---	07 14 51	27.2	120.7	-3.3		-31.2	196	3770	17 44 41
17 48 40	J1038+0512	07 15 21	26.6	120.0	-3.4		-31.5	16	3770	17 48 40
17 49 40	=1036+054	07 16 22	26.7	120.2	-3.4		-31.4	60	3777	17 48 41
17 49 40	RYSEX	07 16 22	27.0	120.9	-3.3		-31.1	-13	3777	No stop
17 53 10	---	07 19 52	27.4	121.8	-3.3		-30.8	197	3804	17 49 41
17 53 10	J1038+0512	07 19 52	27.2	121.1	-3.3		-31.1	-12	3804	No stop
17 54 40	=1036+054	07 21 22	27.4	121.4	-3.3		-31.0	78	3816	17 53 11
17 54 40	RYSEX	07 21 22	27.6	122.1	-3.3		-30.7	-13	3816	No stop
17 58 10	---	07 24 53	28.1	123.0	-3.2		-30.4	197	3843	17 54 41

Schedule for TORUN (Code Tr) Page 11

e-EVN runs: EG082B, EG079B, and RR009

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 25 Mar 2014 Day 84 ---										
17 58 40	J1038+0512	07 25 23	27.9	122.4	-3.2		-30.6	18	3843	17 58 40
17 59 40	=1036+054	07 26 23	28.0	122.6	-3.2		-30.5	60	3850	17 58 41
17 59 40	RYSEX	07 26 23	28.3	123.4	-3.2		-30.2	-13	3850	No stop
18 03 10	---	07 29 54	28.7	124.2	-3.1		-29.9	197	3877	17 59 41
18 03 10	J1038+0512	07 29 54	28.4	123.5	-3.2		-30.2	-12	3877	No stop
18 04 40	=1036+054	07 31 24	28.6	123.9	-3.1		-30.0	78	3889	18 03 11
18 04 40	RYSEX	07 31 24	28.9	124.6	-3.1		-29.8	-13	3889	No stop
18 08 10	---	07 34 55	29.3	125.5	-3.0		-29.4	197	3916	18 04 41
18 08 40	J1038+0512	07 35 25	29.1	124.9	-3.1		-29.7	17	3916	18 08 40
18 09 40	=1036+054	07 36 25	29.2	125.1	-3.1		-29.6	60	3923	18 08 41
18 09 40	RYSEX	07 36 25	29.5	125.8	-3.0		-29.3	-13	3923	No stop
18 13 10	---	07 39 55	29.9	126.7	-2.9		-28.9	197	3950	18 09 41
18 13 10	J1038+0512	07 39 55	29.7	126.0	-3.0		-29.2	-13	3950	No stop
18 14 40	=1036+054	07 41 26	29.9	126.4	-3.0		-29.0	77	3962	18 13 11
18 14 40	J1035+0522	07 41 26	30.5	127.2	-2.9		-28.7	-14	3962	No stop
18 18 10	---	07 44 56	30.9	128.1	-2.8		-28.3	196	3988	18 14 41
18 18 40	J1038+0512	07 45 26	30.3	127.4	-2.9		-28.6	16	3988	18 18 40
18 19 40	=1036+054	07 46 27	30.5	127.6	-2.9		-28.5	60	3996	18 18 41
18 19 40	RYSEX	07 46 27	30.7	128.4	-2.8		-28.2	-13	3996	No stop
18 23 10	---	07 49 57	31.1	129.3	-2.8		-27.8	197	4023	18 19 41
18 23 10	J1038+0512	07 49 57	30.9	128.5	-2.8		-28.1	-13	4023	No stop
18 24 40	=1036+054	07 51 27	31.1	128.9	-2.8		-28.0	77	4035	18 23 11
18 24 40	RYSEX	07 51 27	31.3	129.7	-2.8		-27.7	-13	4035	No stop
18 28 10	---	07 54 58	31.7	130.6	-2.7		-27.3	197	4061	18 24 41
18 28 40	J1038+0512	07 55 28	31.5	129.9	-2.7		-27.5	17	4061	18 28 40
18 29 40	=1036+054	07 56 28	31.6	130.2	-2.7		-27.4	60	4069	18 28 41
18 29 40	RYSEX	07 56 28	31.9	131.0	-2.7		-27.1	-13	4069	No stop
18 33 10	---	07 59 59	32.3	131.9	-2.6		-26.7	197	4096	18 29 41
18 33 10	J1038+0512	07 59 59	32.0	131.1	-2.7		-27.0	-13	4096	No stop
18 34 40	=1036+054	08 01 29	32.2	131.5	-2.6		-26.8	77	4108	18 33 11

Schedule for TORUN (Code Tr) Page 12

e-EVN runs: EG082B, EG079B, and RR009

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 25 Mar 2014 Day 84 ---										
18 34 40	RYSEX	08 01 29	32.4	132.3	-2.6		-26.5	-13	4108	No stop
18 38 10	---	08 05 00	32.8	133.2	-2.5		-26.1	197	4134	18 34 41
18 38 40	J1038+0512	08 05 30	32.6	132.6	-2.6		-26.4	17	4134	18 38 40
18 39 40	=1036+054	08 06 30	32.8	132.8	-2.6		-26.2	60	4142	18 38 41
18 39 40	RYSEX	08 06 30	33.0	133.6	-2.5		-25.9	-13	4142	No stop
18 43 10	---	08 10 00	33.4	134.5	-2.4		-25.4	197	4169	18 39 41
18 43 10	J1038+0512	08 10 00	33.1	133.8	-2.5		-25.8	-13	4169	No stop
18 44 40	=1036+054	08 11 31	33.3	134.2	-2.5		-25.6	77	4180	18 43 11
18 44 40	J1035+0522	08 11 31	33.9	135.1	-2.4		-25.2	-14	4180	No stop
18 48 10	---	08 15 01	34.2	136.1	-2.3		-24.7	196	4207	18 44 41
18 48 40	J1038+0512	08 15 31	33.7	135.2	-2.4		-25.1	16	4207	18 48 40
18 49 40	=1036+054	08 16 31	33.8	135.5	-2.4		-25.0	60	4215	18 48 41
18 49 40	RYSEX	08 16 31	34.0	136.3	-2.3		-24.6	-13	4215	No stop
18 53 10	---	08 20 02	34.4	137.3	-2.3		-24.1	197	4242	18 49 41
18 53 10	J1038+0512	08 20 02	34.2	136.5	-2.3		-24.5	-13	4242	No stop
18 54 40	=1036+054	08 21 32	34.4	136.9	-2.3		-24.3	77	4253	18 53 11
18 54 40	RYSEX	08 21 32	34.6	137.7	-2.3		-23.9	-13	4253	No stop
18 58 10	---	08 25 03	34.9	138.7	-2.2		-23.5	197	4280	18 54 41
18 58 40	J1038+0512	08 25 33	34.8	138.0	-2.2		-23.8	17	4280	18 58 40
18 59 40	=1036+054	08 26 33	34.9	138.3	-2.2		-23.7	60	4288	18 58 41
18 59 40	RYSEX	08 26 33	35.1	139.1	-2.2		-23.3	-13	4288	No stop
19 03 10	---	08 30 04	35.4	140.1	-2.1		-22.8	197	4315	18 59 41
19 03 10	J1038+0512	08 30 04	35.2	139.3	-2.2		-23.2	-13	4315	No stop
19 04 40	=1036+054	08 31 34	35.4	139.7	-2.1		-23.0	77	4326	19 03 11
19 04 40	RYSEX	08 31 34	35.5	140.5	-2.1		-22.5	-13	4326	No stop
19 08 10	---	08 35 05	35.9	141.5	-2.0		-22.0	197	4353	19 04 41
19 08 40	J1038+0512	08 35 35	35.7	140.8	-2.1		-22.4	17	4353	19 08 40
19 09 40	=1036+054	08 36 35	35.8	141.1	-2.0		-22.2	60	4361	19 08 41
19 09 40	RYSEX	08 36 35	36.0	141.9	-2.0		-21.8	-13	4361	No stop
19 13 10	---	08 40 05	36.3	142.9	-1.9		-21.3	197	4388	19 09 41

Schedule for TORUN (Code Tr) Page 13

e-EVN runs: EG082B, EG079B, and RR009

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 25 Mar 2014 Day 84 ---										
19 13 10	J1038+0512	08 40 05	36.2	142.1	-2.0		-21.7	-13	4388	No stop
19 14 40	=1036+054	08 41 36	36.3	142.5	-2.0		-21.5	77	4399	19 13 11
19 14 40	J1035+0522	08 41 36	36.8	143.6	-1.9		-21.0	-14	4399	No stop
19 18 10	---	08 45 06	37.1	144.6	-1.8		-20.5	196	4426	19 14 41
19 18 40	J1038+0512	08 45 36	36.7	143.7	-1.9		-20.9	16	4426	19 18 40
19 19 40	=1036+054	08 46 36	36.8	144.0	-1.9		-20.8	60	4434	19 18 41
19 19 40	RYSEX	08 46 36	36.9	144.8	-1.8		-20.3	-13	4434	No stop
19 23 10	---	08 50 07	37.2	145.9	-1.8		-19.8	197	4461	19 19 41
19 23 10	J1038+0512	08 50 07	37.1	145.0	-1.8		-20.2	-13	4461	No stop
19 24 40	=1036+054	08 51 37	37.2	145.4	-1.8		-20.0	77	4472	19 23 11
19 24 40	RYSEX	08 51 37	37.3	146.3	-1.8		-19.5	-13	4472	No stop
19 28 10	---	08 55 08	37.6	147.3	-1.7		-19.0	197	4499	19 24 41
19 28 40	J1038+0512	08 55 38	37.5	146.6	-1.7		-19.4	17	4499	19 28 40
19 29 40	=1036+054	08 56 38	37.6	146.9	-1.7		-19.2	60	4507	19 28 41
19 29 40	RYSEX	08 56 38	37.8	147.8	-1.7		-18.7	-13	4507	No stop
19 33 10	---	09 00 09	38.0	148.8	-1.6		-18.2	197	4534	19 29 41
19 33 10	J1038+0512	09 00 09	37.9	148.0	-1.7		-18.6	-13	4534	No stop
19 34 40	=1036+054	09 01 39	38.0	148.4	-1.6		-18.4	77	4545	19 33 11
19 34 40	RYSEX	09 01 39	38.1	149.3	-1.6		-17.9	-14	4545	No stop
19 38 10	---	09 05 09	38.4	150.3	-1.5		-17.4	196	4572	19 34 41
19 38 40	J1038+0512	09 05 40	38.3	149.6	-1.6		-17.7	17	4572	19 38 40
19 39 40	=1036+054	09 06 40	38.4	149.9	-1.5		-17.6	60	4580	19 38 41
19 39 40	RYSEX	09 06 40	38.5	150.8	-1.5		-17.1	-14	4580	No stop
19 43 10	---	09 10 10	38.8	151.9	-1.4		-16.5	196	4607	19 39 41
19 43 10	J1038+0512	09 10 10	38.7	151.0	-1.5		-17.0	-13	4607	No stop
19 44 40	=1036+054	09 11 41	38.8	151.5	-1.5		-16.7	77	4618	19 43 11
19 44 40	J1035+0522	09 11 41	39.2	152.6	-1.4		-16.1	-15	4618	No stop
19 48 10	---	09 15 11	39.4	153.7	-1.3		-15.5	195	4645	19 44 41
19 48 40	J1038+0512	09 15 41	39.0	152.7	-1.4		-16.1	16	4645	19 48 40
19 49 40	=1036+054	09 16 41	39.1	153.0	-1.4		-15.9	60	4653	19 48 41

Schedule for TORUN (Code Tr) Page 14

e-EVN runs: EG082B, EG079B, and RR009

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 25 Mar 2014 Day 84 ---										
19 49 40	RYSEX	09 16 41	39.2	153.9	-1.3		-15.4	-14	4653	No stop
19 53 10	---	09 20 12	39.4	155.0	-1.3		-14.8	196	4680	19 49 41
19 53 10	J1038+0512	09 20 12	39.4	154.1	-1.3		-15.3	-13	4680	No stop
19 54 40	=1036+054	09 21 42	39.5	154.5	-1.3		-15.0	77	4691	19 53 11
19 54 40	RYSEX	09 21 42	39.5	155.4	-1.3		-14.5	-14	4691	No stop
19 58 10	---	09 25 13	39.8	156.5	-1.2		-13.9	196	4718	19 54 41
19 58 10	J1038+0512	09 25 13	39.7	155.6	-1.2		-14.4	-13	4718	No stop
19 59 40	=1036+054	09 26 43	39.8	156.1	-1.2		-14.1	77	4730	19 58 11
20 09 40	J1927+6117	09 36 45	27.2	16.7	-9.8		-21.1	305	4730	20 09 40
20 15 40	=1926+611	09 42 46	27.5	17.5	-9.7		-22.1	360	4776	20 09 41
20 16 40	J1933+6540	09 43 46	31.3	15.0	-9.8		-22.2	32	4776	20 16 40
20 21 40	=1933+655	09 48 47	31.5	15.5	-9.8		-23.0	300	4814	20 16 41
20 21 40	1927+654	09 48 47	31.7	16.3	-9.6		-24.1	-13	4814	No stop
20 25 10	---	09 52 17	31.9	16.7	-9.6		-24.7	197	4841	20 21 41
20 25 10	J1933+6540	09 52 17	31.7	15.9	-9.7		-23.6	-13	4841	No stop
20 26 40	=1933+655	09 53 47	31.8	16.1	-9.7		-23.9	77	4852	20 25 11
20 26 40	1927+654	09 53 47	31.9	16.9	-9.6		-25.0	-13	4852	No stop
20 30 10	---	09 57 18	32.1	17.3	-9.5		-25.5	197	4879	20 26 41
20 30 40	J1933+6540	09 57 48	31.9	16.5	-9.6		-24.5	17	4879	20 30 40
20 31 40	=1933+655	09 58 48	32.0	16.6	-9.6		-24.7	60	4887	20 30 41
20 31 40	1927+654	09 58 48	32.2	17.4	-9.5		-25.8	-13	4887	No stop
20 35 10	---	10 02 19	32.3	17.8	-9.4		-26.4	197	4914	20 31 41
20 35 10	J1933+6540	10 02 19	32.1	17.0	-9.5		-25.3	-13	4914	No stop
20 36 40	=1933+655	10 03 49	32.2	17.2	-9.5		-25.6	77	4925	20 35 11
20 36 40	1927+654	10 03 49	32.4	18.0	-9.4		-26.6	-13	4925	No stop
20 40 10	---	10 07 20	32.5	18.4	-9.3		-27.2	197	4952	20 36 41
20 40 40	J1933+6540	10 07 50	32.4	17.6	-9.4		-26.2	17	4952	20 40 40
20 41 40	=1933+655	10 08 50	32.4	17.7	-9.4		-26.4	60	4960	20 40 41
20 41 40	1927+654	10 08 50	32.6	18.5	-9.3		-27.5	-13	4960	No stop
20 45 10	---	10 12 20	32.8	18.9	-9.3		-28.1	197	4987	20 41 41

Schedule for TORUN (Code Tr) Page 15

e-EVN runs: EG082B, EG079B, and RR009

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 25 Mar 2014 Day 84 ---										
20 45 10	J1933+6540	10 12 20	32.6	18.1	-9.4		-27.0	-13	4987	No stop
20 46 40	=1933+655	10 13 51	32.6	18.3	-9.3		-27.3	77	4998	20 45 11
20 46 40	1927+654	10 13 51	32.9	19.1	-9.2		-28.3	-13	4998	No stop
20 50 10	---	10 17 21	33.0	19.4	-9.2		-28.9	197	5025	20 46 41
20 50 40	J1933+6540	10 17 51	32.8	18.7	-9.3		-27.9	17	5025	20 50 40
20 51 40	=1933+655	10 18 52	32.9	18.8	-9.3		-28.1	60	5033	20 50 41
20 51 40	1927+654	10 18 52	33.1	19.6	-9.1		-29.2	-13	5033	No stop
20 55 10	---	10 22 22	33.3	20.0	-9.1		-29.8	197	5060	20 51 41
20 55 10	J1933+6540	10 22 22	33.1	19.2	-9.2		-28.7	-13	5060	No stop
20 56 40	=1933+655	10 23 52	33.1	19.4	-9.2		-28.9	77	5071	20 55 11
20 56 40	1927+654	10 23 52	33.4	20.1	-9.1		-30.0	-13	5071	No stop
21 00 10	---	10 27 23	33.6	20.5	-9.0		-30.6	197	5098	20 56 41
21 00 40	J1933+6540	10 27 53	33.3	19.8	-9.1		-29.6	17	5098	21 00 40
21 01 40	=1933+655	10 28 53	33.4	19.9	-9.1		-29.8	60	5106	21 00 41
21 01 40	1927+654	10 28 53	33.6	20.7	-9.0		-30.9	-13	5106	No stop
21 05 10	---	10 32 24	33.8	21.1	-8.9		-31.5	197	5133	21 01 41
21 05 10	J1933+6540	10 32 24	33.6	20.3	-9.0		-30.4	-13	5133	No stop
21 06 40	=1933+655	10 33 54	33.6	20.4	-9.0		-30.6	77	5144	21 05 11
21 06 40	1927+654	10 33 54	33.9	21.2	-8.9		-31.7	-13	5144	No stop
21 10 10	---	10 37 25	34.1	21.6	-8.8		-32.3	197	5171	21 06 41
21 10 40	J1933+6540	10 37 55	33.9	20.9	-8.9		-31.3	17	5171	21 10 40
21 11 40	=1933+655	10 38 55	33.9	21.0	-8.9		-31.5	60	5179	21 10 41
21 11 40	1927+654	10 38 55	34.2	21.7	-8.8		-32.6	-13	5179	No stop
21 15 10	---	10 42 25	34.4	22.1	-8.7		-33.2	197	5206	21 11 41
21 15 10	J1933+6540	10 42 25	34.1	21.3	-8.9		-32.1	-13	5206	No stop
21 16 40	=1933+655	10 43 56	34.2	21.5	-8.8		-32.3	77	5217	21 15 11
21 16 40	1927+654	10 43 56	34.5	22.3	-8.7		-33.4	-13	5217	No stop
21 20 10	---	10 47 26	34.7	22.6	-8.7		-34.0	197	5244	21 16 41
21 20 40	J1933+6540	10 47 56	34.4	21.9	-8.8		-33.0	17	5244	21 20 40
21 21 40	=1933+655	10 48 56	34.5	22.0	-8.8		-33.2	60	5252	21 20 41

Schedule for TORUN (Code Tr) Page 16

e-EVN runs: EG082B, EG079B, and RR009

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 25 Mar 2014 Day 84 ---										
21 21 40	1927+654	10 48 56	34.7	22.8	-8.6		-34.3	-13	5252	No stop
21 25 10	---	10 52 27	35.0	23.2	-8.6		-34.9	197	5279	21 21 41
21 25 10	J1933+6540	10 52 27	34.7	22.4	-8.7		-33.8	-13	5279	No stop
21 26 40	=1933+655	10 53 57	34.7	22.6	-8.7		-34.0	77	5290	21 25 11
21 26 40	1927+654	10 53 57	35.0	23.3	-8.6		-35.1	-13	5290	No stop
21 30 10	---	10 57 28	35.3	23.7	-8.5		-35.7	197	5317	21 26 41
21 30 40	J1933+6540	10 57 58	35.0	23.0	-8.6		-34.7	17	5317	21 30 40
21 31 40	=1933+655	10 58 58	35.0	23.1	-8.6		-34.9	60	5325	21 30 41
21 31 40	1927+654	10 58 58	35.3	23.8	-8.5		-35.9	-13	5325	No stop
21 35 10	---	11 02 29	35.6	24.2	-8.4		-36.5	197	5352	21 31 41
21 35 10	J1933+6540	11 02 29	35.2	23.4	-8.5		-35.5	-13	5352	No stop
21 36 40	=1933+655	11 03 59	35.3	23.6	-8.5		-35.7	77	5363	21 35 11
21 36 40	1927+654	11 03 59	35.6	24.3	-8.4		-36.8	-13	5363	No stop
21 40 10	---	11 07 29	35.9	24.7	-8.3		-37.4	197	5390	21 36 41
21 40 40	J1933+6540	11 08 00	35.6	24.0	-8.4		-36.4	17	5390	21 40 40
21 41 40	=1933+655	11 09 00	35.6	24.1	-8.4		-36.6	60	5398	21 40 41
21 41 40	1927+654	11 09 00	36.0	24.9	-8.3		-37.6	-13	5398	No stop
21 45 10	---	11 12 30	36.2	25.2	-8.2		-38.2	197	5425	21 41 41
21 45 10	J1933+6540	11 12 30	35.9	24.5	-8.4		-37.2	-13	5425	No stop
21 46 40	=1933+655	11 14 01	35.9	24.6	-8.3		-37.4	77	5436	21 45 11
21 46 40	1927+654	11 14 01	36.3	25.4	-8.2		-38.5	-13	5436	No stop
21 50 10	---	11 17 31	36.5	25.7	-8.2		-39.1	197	5463	21 46 41
21 50 40	J1933+6540	11 18 01	36.2	25.0	-8.3		-38.1	17	5463	21 50 40
21 51 40	=1933+655	11 19 01	36.3	25.1	-8.3		-38.3	60	5471	21 50 41
21 51 40	1927+654	11 19 01	36.6	25.9	-8.1		-39.3	-13	5471	No stop
21 55 10	---	11 22 32	36.8	26.2	-8.1		-39.9	197	5498	21 51 41
21 55 10	J1933+6540	11 22 32	36.5	25.5	-8.2		-38.8	-13	5498	No stop
21 56 40	=1933+655	11 24 02	36.6	25.6	-8.2		-39.1	77	5509	21 55 11
21 56 40	1927+654	11 24 02	36.9	26.4	-8.1		-40.2	-13	5509	No stop
22 00 10	---	11 27 33	37.2	26.7	-8.0		-40.8	197	5536	21 56 41

Schedule for TORUN (Code Tr) Page 17

e-EVN runs: EG082B, EG079B, and RR009

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 25 Mar 2014 Day 84 ---										
22 00 40	J1933+6540	11 28 03	36.8	26.0	-8.1		-39.8	17	5536	22 00 40
22 01 40	=1933+655	11 29 03	36.9	26.1	-8.1		-39.9	60	5544	22 00 41
22 01 40	1927+654	11 29 03	37.3	26.8	-8.0		-41.0	-13	5544	No stop
22 05 10	---	11 32 34	37.5	27.2	-7.9		-41.6	197	5571	22 01 41
22 05 10	J1933+6540	11 32 34	37.1	26.5	-8.0		-40.5	-13	5571	No stop
22 06 40	=1933+655	11 34 04	37.2	26.6	-8.0		-40.8	77	5582	22 05 11
22 06 40	1927+654	11 34 04	37.6	27.3	-7.9		-41.9	-13	5582	No stop
22 10 10	---	11 37 34	37.9	27.7	-7.8		-42.4	197	5609	22 06 41
22 10 40	J1933+6540	11 38 04	37.5	27.0	-7.9		-41.5	17	5609	22 10 40
22 11 40	=1933+655	11 39 05	37.6	27.1	-7.9		-41.6	60	5617	22 10 41
22 11 40	1927+654	11 39 05	38.0	27.8	-7.8		-42.7	-13	5617	No stop
22 15 10	---	11 42 35	38.2	28.2	-7.7		-43.3	197	5644	22 11 41
22 15 10	J1933+6540	11 42 35	37.8	27.4	-7.9		-42.2	-13	5644	No stop
22 16 40	=1933+655	11 44 05	37.9	27.6	-7.8		-42.5	77	5655	22 15 11
22 16 40	1927+654	11 44 05	38.3	28.3	-7.7		-43.5	-13	5655	No stop
22 20 10	---	11 47 36	38.6	28.6	-7.7		-44.1	197	5682	22 16 41
22 20 40	J1933+6540	11 48 06	38.2	28.0	-7.8		-43.2	17	5682	22 20 40
22 21 40	=1933+655	11 49 06	38.3	28.1	-7.7		-43.3	60	5690	22 20 41
22 21 40	1927+654	11 49 06	38.7	28.8	-7.6		-44.4	-13	5690	No stop
22 25 10	---	11 52 37	38.9	29.1	-7.6		-45.0	197	5716	22 21 41
22 25 10	J1933+6540	11 52 37	38.5	28.4	-7.7		-43.9	-13	5716	No stop
22 26 40	=1933+655	11 54 07	38.6	28.5	-7.7		-44.2	77	5728	22 25 11
22 26 40	1927+654	11 54 07	39.0	29.2	-7.6		-45.2	-13	5728	No stop
22 30 10	---	11 57 38	39.3	29.6	-7.5		-45.8	197	5755	22 26 41
22 30 40	J1933+6540	11 58 08	38.9	28.9	-7.6		-44.9	17	5755	22 30 40
22 31 40	=1933+655	11 59 08	39.0	29.0	-7.6		-45.0	60	5763	22 30 41
22 32 40	J1927+6117	12 00 08	36.4	33.6	-7.5		-43.8	36	5763	22 32 40
22 35 40	=1926+611	12 03 09	36.7	33.9	-7.4		-44.3	180	5786	22 32 41
22 36 40	J1933+6540	12 04 09	39.4	29.5	-7.5		-45.9	36	5786	22 36 40
22 37 40	=1933+655	12 05 09	39.4	29.6	-7.5		-46.0	60	5793	22 36 41

Schedule for TORUN (Code Tr) Page 18

e-EVN runs: EG082B, EG079B, and RR009

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 25 Mar 2014 Day 84 ---										
22 37 40	1927+654	12 05 09	39.9	30.3	-7.4		-47.1	-13	5793	No stop
22 41 10	---	12 08 39	40.1	30.6	-7.3		-47.7	197	5820	22 37 41
22 41 10	J1933+6540	12 08 39	39.7	29.9	-7.4		-46.6	-12	5820	No stop
22 42 40	=1933+655	12 10 10	39.8	30.0	-7.4		-46.9	78	5832	22 41 11
22 42 40	1927+654	12 10 10	40.2	30.7	-7.3		-47.9	-13	5832	No stop
22 46 10	---	12 13 40	40.5	31.0	-7.2		-48.5	197	5859	22 42 41
22 46 40	J1933+6540	12 14 10	40.1	30.4	-7.3		-47.6	17	5859	22 46 40
22 47 40	=1933+655	12 15 11	40.2	30.5	-7.3		-47.7	60	5866	22 46 41
22 47 40	1927+654	12 15 11	40.6	31.2	-7.2		-48.8	-13	5866	No stop
22 51 10	---	12 18 41	40.9	31.5	-7.1		-49.4	197	5893	22 47 41
22 51 10	J1933+6540	12 18 41	40.5	30.8	-7.3		-48.3	-13	5893	No stop
22 52 40	=1933+655	12 20 11	40.6	30.9	-7.2		-48.6	77	5905	22 51 11
22 52 40	1927+654	12 20 11	41.0	31.6	-7.1		-49.6	-13	5905	No stop
22 56 10	---	12 23 42	41.3	31.9	-7.1		-50.2	197	5932	22 52 41
22 56 40	J1933+6540	12 24 12	40.9	31.3	-7.2		-49.3	17	5932	22 56 40
22 57 40	=1933+655	12 25 12	41.0	31.4	-7.1		-49.4	60	5939	22 56 41
22 57 40	1927+654	12 25 12	41.4	32.1	-7.0		-50.5	-13	5939	No stop
23 01 10	---	12 28 43	41.7	32.4	-7.0		-51.1	197	5966	22 57 41
23 01 10	J1933+6540	12 28 43	41.2	31.7	-7.1		-50.0	-13	5966	No stop
23 02 40	=1933+655	12 30 13	41.4	31.8	-7.1		-50.3	77	5978	23 01 11
23 02 40	1927+654	12 30 13	41.8	32.5	-7.0		-51.3	-13	5978	No stop
23 06 10	---	12 33 44	42.1	32.8	-6.9		-51.9	197	6004	23 02 41
23 06 40	J1933+6540	12 34 14	41.7	32.2	-7.0		-51.0	17	6004	23 06 40
23 07 40	=1933+655	12 35 14	41.8	32.3	-7.0		-51.1	60	6012	23 06 41
23 07 40	1927+654	12 35 14	42.2	32.9	-6.9		-52.2	-13	6012	No stop
23 11 10	---	12 38 44	42.5	33.2	-6.8		-52.8	197	6039	23 07 41
23 11 10	J1933+6540	12 38 44	42.0	32.6	-6.9		-51.7	-13	6039	No stop
23 12 40	=1933+655	12 40 15	42.2	32.7	-6.9		-52.0	77	6051	23 11 11
23 12 40	1927+654	12 40 15	42.6	33.4	-6.8		-53.0	-13	6051	No stop
23 16 10	---	12 43 45	42.9	33.7	-6.7		-53.6	197	6077	23 12 41

Schedule for TORUN (Code Tr) Page 19

e-EVN runs: EG082B, EG079B, and RR009

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Tue 25 Mar 2014 Day 84 ---										
23 16 40	J1933+6540	12 44 15	42.5	33.0	-6.8		-52.7	17	6077	23 16 40
23 17 40	=1933+655	12 45 15	42.6	33.1	-6.8		-52.9	60	6085	23 16 41
23 17 40	1927+654	12 45 15	43.1	33.8	-6.7		-53.9	-13	6085	No stop
23 21 10	---	12 48 46	43.4	34.1	-6.6		-54.5	197	6112	23 17 41
23 21 10	J1933+6540	12 48 46	42.9	33.4	-6.8		-53.5	-13	6112	No stop
23 22 40	=1933+655	12 50 16	43.0	33.5	-6.7		-53.7	77	6124	23 21 11
23 22 40	1927+654	12 50 16	43.5	34.2	-6.6		-54.8	-13	6124	No stop
23 26 10	---	12 53 47	43.8	34.5	-6.6		-55.4	197	6150	23 22 41
23 26 40	J1933+6540	12 54 17	43.3	33.9	-6.7		-54.4	17	6150	23 26 40
23 27 40	=1933+655	12 55 17	43.4	33.9	-6.6		-54.6	60	6158	23 26 41
23 27 40	1927+654	12 55 17	43.9	34.6	-6.5		-55.6	-13	6158	No stop
23 31 10	---	12 58 48	44.2	34.9	-6.5		-56.2	197	6185	23 27 41
23 31 10	J1933+6540	12 58 48	43.7	34.2	-6.6		-55.2	-13	6185	No stop
23 32 40	=1933+655	13 00 18	43.8	34.4	-6.6		-55.4	77	6196	23 31 11
23 32 40	1927+654	13 00 18	44.3	35.0	-6.5		-56.5	-13	6196	No stop
23 36 10	---	13 03 49	44.6	35.3	-6.4		-57.1	197	6223	23 32 41
23 36 40	J1933+6540	13 04 19	44.2	34.7	-6.5		-56.1	17	6223	23 36 40
23 37 40	=1933+655	13 05 19	44.3	34.8	-6.5		-56.3	60	6231	23 36 41
23 37 40	1927+654	13 05 19	44.8	35.4	-6.4		-57.3	-13	6231	No stop
23 41 10	---	13 08 49	45.1	35.7	-6.3		-58.0	197	6258	23 37 41
23 41 10	J1933+6540	13 08 49	44.6	35.0	-6.4		-56.9	-13	6258	No stop
23 42 40	=1933+655	13 10 20	44.7	35.2	-6.4		-57.2	77	6269	23 41 11
23 42 40	1927+654	13 10 20	45.2	35.8	-6.3		-58.2	-13	6269	No stop
23 46 10	---	13 13 50	45.5	36.1	-6.2		-58.8	197	6296	23 42 41
23 46 40	J1933+6540	13 14 20	45.0	35.5	-6.3		-57.8	17	6296	23 46 40
23 47 40	=1933+655	13 15 20	45.1	35.5	-6.3		-58.0	60	6304	23 46 41
23 47 40	1927+654	13 15 20	45.7	36.2	-6.2		-59.1	-13	6304	No stop
23 51 10	---	13 18 51	46.0	36.4	-6.1		-59.7	197	6331	23 47 41
23 51 10	J1933+6540	13 18 51	45.4	35.8	-6.3		-58.6	-13	6331	No stop
23 52 40	=1933+655	13 20 21	45.6	35.9	-6.2		-58.9	77	6342	23 51 11

```
Schedule for TORUN     (Code Tr )                                  Page  20
               e-EVN runs: EG082B, EG079B, and RR009
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                  Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Tue  25 Mar 2014   Day  84 ---

23 52 40  1927+654     13 20 21  46.1  36.6 -6.1     -59.9   -14     6342   No stop
23 56 10  ---          13 23 52  46.4  36.8 -6.1     -60.6   196     6369   23 52 41

23 56 40  J1933+6540   13 24 22  45.9  36.2 -6.2     -59.6    17     6369   23 56 40
23 57 40  =1933+655    13 25 22  46.0  36.3 -6.1     -59.8    60     6377   23 56 41

 --- Start: Tue  25 Mar 2014   Day  84 -- Stop: Wed  26 Mar 2014   Day  85 ---

23 57 40  1927+654     13 25 22  46.5  36.9 -6.0     -60.8   -14     6377   No stop
00 01 10  ---          13 28 53  46.9  37.2 -6.0     -61.4   196     6404   23 57 41

00 01 10  J1933+6540   13 28 53  46.3  36.6 -6.1     -60.4   -13     6404   No stop
00 02 40  =1933+655    13 30 23  46.5  36.7 -6.1     -60.6    77     6415   00 01 11

00 02 40  1927+654     13 30 23  47.0  37.3 -6.0     -61.7   -14     6415   No stop
00 06 10  ---          13 33 53  47.3  37.5 -5.9     -62.3   196     6442   00 02 41

00 06 40  J1933+6540   13 34 24  46.8  37.0 -6.0     -61.3    17     6442   00 06 40
00 07 40  =1933+655    13 35 24  46.9  37.0 -6.0     -61.5    60     6450   00 06 41

00 07 40  1927+654     13 35 24  47.5  37.7 -5.9     -62.6   -14     6450   No stop
00 11 10  ---          13 38 54  47.8  37.9 -5.8     -63.2   196     6477   00 07 41

00 11 10  J1933+6540   13 38 54  47.2  37.3 -5.9     -62.1   -14     6477   No stop
00 12 40  =1933+655    13 40 25  47.4  37.4 -5.9     -62.4    76     6488   00 11 11

00 12 40  1927+654     13 40 25  47.9  38.0 -5.8     -63.5   -14     6488   No stop
00 16 10  ---          13 43 55  48.2  38.2 -5.7     -64.1   196     6515   00 12 41

00 16 40  J1933+6540   13 44 25  47.7  37.7 -5.8     -63.1    16     6515   00 16 40
00 17 40  =1933+655    13 45 25  47.8  37.7 -5.8     -63.3    60     6523   00 16 41

00 17 40  1927+654     13 45 25  48.4  38.3 -5.7     -64.3   -14     6523   No stop
00 21 10  ---          13 48 56  48.7  38.6 -5.6     -65.0   196     6550   00 17 41

00 21 10  J1933+6540   13 48 56  48.1  38.0 -5.8     -63.9   -14     6550   No stop
00 22 40  =1933+655    13 50 26  48.3  38.1 -5.7     -64.2    76     6561   00 21 11

00 22 40  1927+654     13 50 26  48.9  38.7 -5.6     -65.2   -14     6561   No stop
00 26 10  ---          13 53 57  49.2  38.9 -5.6     -65.9   196     6588   00 22 41

00 26 40  J1933+6540   13 54 27  48.7  38.4 -5.7     -64.9    16     6588   00 26 40
00 27 40  =1933+655    13 55 27  48.8  38.4 -5.6     -65.1    60     6596   00 26 41
```

Schedule for TORUN (Code Tr) Page 21

e-EVN runs: EG082B, EG079B, and RR009

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 26 Mar 2014 Day 85 ---										
00 27 40	1927+654	13 55 27	49.3	39.0	-5.5		-66.1	-14	6596	No stop
00 31 10	---	13 58 58	49.7	39.2	-5.5		-66.8	196	6623	00 27 41
00 31 10	J1933+6540	13 58 58	49.1	38.6	-5.6		-65.7	-14	6623	No stop
00 32 40	=1933+655	14 00 28	49.2	38.7	-5.6		-66.0	76	6634	00 31 11
00 32 40	1927+654	14 00 28	49.8	39.3	-5.4		-67.0	-14	6634	No stop
00 36 10	---	14 03 58	50.1	39.5	-5.4		-67.7	196	6661	00 32 41
00 36 40	J1933+6540	14 04 28	49.6	39.0	-5.5		-66.7	16	6661	00 36 40
00 37 40	=1933+655	14 05 29	49.7	39.1	-5.5		-66.9	60	6669	00 36 41
00 37 40	1927+654	14 05 29	50.3	39.6	-5.4		-67.9	-14	6669	No stop
00 41 10	---	14 08 59	50.6	39.8	-5.3		-68.6	196	6696	00 37 41
00 41 10	J1933+6540	14 08 59	50.0	39.3	-5.4		-67.5	-14	6696	No stop
00 42 40	=1933+655	14 10 29	50.2	39.4	-5.4		-67.8	76	6707	00 41 11
00 42 40	1927+654	14 10 29	50.8	39.9	-5.3		-68.8	-14	6707	No stop
00 46 10	---	14 14 00	51.1	40.1	-5.2		-69.5	196	6734	00 42 41
00 46 40	J1933+6540	14 14 30	50.6	39.6	-5.3		-68.5	16	6734	00 46 40
00 47 40	=1933+655	14 15 30	50.6	39.7	-5.3		-68.7	60	6742	00 46 41
00 48 40	J1927+6117	14 16 30	49.7	46.5	-5.2		-65.1	32	6742	00 48 40
00 51 40	=1926+611	14 19 31	50.0	46.7	-5.1		-65.6	180	6765	00 48 41
00 51 40	1927+654	14 19 31	51.6	40.4	-5.1		-70.5	-27	6765	No stop
00 55 10	---	14 23 02	52.0	40.6	-5.1		-71.1	183	6792	00 51 41
00 55 10	J1933+6540	14 23 02	51.4	40.1	-5.2		-70.1	-14	6792	No stop
00 56 40	=1933+655	14 24 32	51.5	40.2	-5.2		-70.3	76	6803	00 55 11
00 56 40	1927+654	14 24 32	52.1	40.7	-5.0		-71.4	-14	6803	No stop
01 00 10	---	14 28 02	52.5	40.9	-5.0		-72.1	196	6830	00 56 41
01 00 40	J1933+6540	14 28 32	51.9	40.4	-5.1		-71.1	16	6830	01 00 40
01 01 40	=1933+655	14 29 33	52.0	40.5	-5.1		-71.3	60	6838	01 00 41
01 01 40	1927+654	14 29 33	52.6	41.0	-5.0		-72.4	-14	6838	No stop
01 05 10	---	14 33 03	53.0	41.2	-4.9		-73.0	196	6865	01 01 41
01 05 10	J1933+6540	14 33 03	52.3	40.6	-5.0		-71.9	-14	6865	No stop
01 06 40	=1933+655	14 34 33	52.5	40.7	-5.0		-72.2	76	6876	01 05 11

Schedule for TORUN (Code Tr) Page 22

e-EVN runs: EG082B, EG079B, and RR009

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 26 Mar 2014 Day 85 ---										
01 06 40	1927+654	14 34 33	53.1	41.2	-4.9		-73.3	-14	6876	No stop
01 10 10	---	14 38 04	53.5	41.4	-4.8		-74.0	196	6903	01 06 41
01 10 40	J1933+6540	14 38 34	52.9	40.9	-4.9		-72.9	16	6903	01 10 40
01 11 40	=1933+655	14 39 34	53.0	41.0	-4.9		-73.1	60	6911	01 10 41
01 11 40	1927+654	14 39 34	53.6	41.5	-4.8		-74.2	-14	6911	No stop
01 15 10	---	14 43 05	54.0	41.6	-4.7		-74.9	196	6938	01 11 41
01 15 10	J1933+6540	14 43 05	53.3	41.2	-4.8		-73.8	-14	6938	No stop
01 16 40	=1933+655	14 44 35	53.5	41.2	-4.8		-74.1	76	6949	01 15 11
01 16 40	1927+654	14 44 35	54.1	41.7	-4.7		-75.2	-14	6949	No stop
01 20 10	---	14 48 06	54.5	41.9	-4.7		-75.9	196	6976	01 16 41
01 20 40	J1933+6540	14 48 36	53.9	41.4	-4.8		-74.8	16	6976	01 20 40
01 21 40	=1933+655	14 49 36	54.0	41.5	-4.7		-75.0	60	6984	01 20 41
01 21 40	1927+654	14 49 36	54.6	41.9	-4.6		-76.2	-14	6984	No stop
01 25 10	---	14 53 06	55.0	42.1	-4.6		-76.8	196	7011	01 21 41
01 25 10	J1933+6540	14 53 06	54.3	41.6	-4.7		-75.7	-14	7011	No stop
01 26 40	=1933+655	14 54 37	54.5	41.7	-4.7		-76.0	76	7022	01 25 11
01 26 40	1927+654	14 54 37	55.1	42.1	-4.5		-77.1	-14	7022	No stop
01 30 10	---	14 58 07	55.5	42.3	-4.5		-77.8	196	7049	01 26 41
01 30 40	J1933+6540	14 58 37	54.9	41.8	-4.6		-76.8	16	7049	01 30 40
01 31 40	=1933+655	14 59 38	55.0	41.9	-4.6		-77.0	60	7057	01 30 41
01 31 40	1927+654	14 59 38	55.6	42.3	-4.5		-78.1	-14	7057	No stop
01 35 10	---	15 03 08	56.0	42.5	-4.4		-78.8	196	7084	01 31 41
01 35 10	J1933+6540	15 03 08	55.3	42.0	-4.5		-77.7	-14	7084	No stop
01 36 40	=1933+655	15 04 38	55.5	42.1	-4.5		-78.0	76	7095	01 35 11
01 36 40	1927+654	15 04 38	56.1	42.5	-4.4		-79.1	-14	7095	No stop
01 40 10	---	15 08 09	56.5	42.6	-4.3		-79.8	196	7122	01 36 41
01 40 40	J1933+6540	15 08 39	55.9	42.2	-4.4		-78.7	16	7122	01 40 40
01 41 40	=1933+655	15 09 39	56.0	42.3	-4.4		-78.9	60	7130	01 40 41
01 41 40	1927+654	15 09 39	56.6	42.7	-4.3		-80.1	-14	7130	No stop
01 45 10	---	15 13 10	57.0	42.8	-4.2		-80.8	196	7156	01 41 41

Schedule for TORUN (Code Tr) Page 23

e-EVN runs: EG082B, EG079B, and RR009

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 26 Mar 2014 Day 85 ---										
01 45 10	J1933+6540	15 13 10	56.3	42.4	-4.3		-79.6	-14	7156	No stop
01 46 40	=1933+655	15 14 40	56.5	42.4	-4.3		-79.9	76	7168	01 45 11
01 46 40	1927+654	15 14 40	57.2	42.8	-4.2		-81.1	-14	7168	No stop
01 50 10	---	15 18 11	57.5	42.9	-4.2		-81.8	196	7195	01 46 41
01 50 40	J1933+6540	15 18 41	56.9	42.6	-4.3		-80.8	16	7195	01 50 40
01 51 40	=1933+655	15 19 41	57.0	42.6	-4.2		-81.0	60	7203	01 50 41
01 54 40	J1847+0810	15 22 41	29.0	117.9	-3.4		-32.4	15	7203	01 54 40
02 00 40	=1844+081	15 28 42	29.8	119.4	-3.3		-31.9	360	7249	01 54 41
02 01 40	J1922+0841	15 29 42	25.7	111.1	-3.9		-34.5	28	7249	02 01 40
02 04 40	=1919+086	15 32 43	26.1	111.7	-3.8		-34.4	180	7272	02 01 41
02 05 40	J1905+0952	15 33 43	29.5	115.1	-3.5		-33.5	34	7272	02 05 40
02 08 40	=1903+097	15 36 44	29.9	115.8	-3.5		-33.3	180	7295	02 05 41
02 08 40	XTEJ1908	15 36 44	29.0	115.3	-3.5		-33.4	-15	7295	No stop
02 12 00	---	15 40 04	29.5	116.1	-3.5		-33.1	185	7320	02 08 41
02 12 00	J1905+0952	15 40 04	30.3	116.6	-3.4		-33.0	-16	7320	No stop
02 13 30	=1903+097	15 41 34	30.5	117.0	-3.4		-32.9	74	7332	02 12 01
02 13 30	XTEJ1908	15 41 34	29.7	116.5	-3.5		-33.0	-15	7332	No stop
02 17 00	---	15 45 05	30.2	117.3	-3.4		-32.7	195	7359	02 13 31
02 17 40	J1905+0952	15 45 45	31.1	118.0	-3.3		-32.6	24	7359	02 17 40
02 18 40	=1903+097	15 46 45	31.2	118.2	-3.3		-32.5	60	7366	02 17 41
02 18 40	XTEJ1908	15 46 45	30.4	117.7	-3.4		-32.6	-15	7366	No stop
02 22 00	---	15 50 06	30.8	118.5	-3.3		-32.3	185	7392	02 18 41
02 22 00	J1905+0952	15 50 06	31.7	119.0	-3.3		-32.2	-16	7392	No stop
02 23 30	=1903+097	15 51 36	31.9	119.4	-3.2		-32.1	74	7404	02 22 01
02 23 30	XTEJ1908	15 51 36	31.0	118.9	-3.3		-32.2	-15	7404	No stop
02 27 00	---	15 55 07	31.5	119.8	-3.2		-31.9	195	7430	02 23 31
02 27 40	J1905+0952	15 55 47	32.4	120.4	-3.2		-31.7	24	7430	02 27 40
02 28 40	=1903+097	15 56 47	32.5	120.7	-3.2		-31.6	60	7438	02 27 41
02 28 40	XTEJ1908	15 56 47	31.7	120.2	-3.2		-31.7	-15	7438	No stop
02 32 00	---	16 00 07	32.1	121.0	-3.2		-31.4	185	7464	02 28 41

```
Schedule for TORUN     (Code Tr )                                  Page  24
               e-EVN runs: EG082B, EG079B, and RR009
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                   Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------------

 --- Wed  26 Mar 2014   Day  85 ---

02 32 00  J1905+0952   16 00 07  33.0 121.5 -3.1     -31.3   -16     7464   No stop
02 33 30  =1903+097    16 01 38  33.2 121.9 -3.1     -31.2    74     7475   02 32 01

02 33 30  XTEJ1908     16 01 38  32.3 121.4 -3.1     -31.3   -15     7475   No stop
02 37 00  ---          16 05 08  32.8 122.3 -3.1     -31.0   195     7502   02 33 31

02 37 40  J1905+0952   16 05 48  33.7 122.9 -3.0     -30.8    24     7502   02 37 40
02 38 40  =1903+097    16 06 49  33.8 123.2 -3.0     -30.7    60     7510   02 37 41

02 38 40  J1907+0907   16 06 49  32.9 123.1 -3.0     -30.6   -16     7510   No stop
02 40 10  =1905+090    16 08 19  33.1 123.5 -3.0     -30.5    74     7521   02 38 41

02 40 10  J1905+0952   16 08 19  34.0 123.6 -3.0     -30.5   -16     7521   No stop
02 41 40  =1903+097    16 09 49  34.2 124.0 -2.9     -30.4    74     7533   02 40 11

02 41 40  J1907+0907   16 09 49  33.3 123.9 -3.0     -30.3   -16     7533   No stop
02 43 10  =1905+090    16 11 19  33.5 124.3 -3.0     -30.2    74     7544   02 41 41

02 43 50  J1905+0952   16 11 59  34.5 124.5 -2.9     -30.1    24     7544   02 43 50
02 44 50  =1903+097    16 13 00  34.6 124.8 -2.9     -30.0    60     7552   02 43 51

02 44 50  J1907+0907   16 13 00  33.7 124.7 -2.9     -30.0   -16     7552   No stop
02 46 20  =1905+090    16 14 30  33.9 125.1 -2.9     -29.8    74     7564   02 44 51

02 46 20  J1905+0952   16 14 30  34.8 125.2 -2.9     -29.9   -16     7564   No stop
02 47 50  =1903+097    16 16 00  35.0 125.6 -2.8     -29.7    74     7575   02 46 21

02 47 50  J1907+0907   16 16 00  34.1 125.5 -2.9     -29.7   -16     7575   No stop
02 49 20  =1905+090    16 17 30  34.2 125.9 -2.8     -29.5    74     7587   02 47 51

02 50 00  J1905+0952   16 18 10  35.2 126.1 -2.8     -29.5    24     7587   02 50 00
02 51 00  =1903+097    16 19 11  35.3 126.4 -2.8     -29.4    60     7594   02 50 01

02 51 00  J1907+0907   16 19 11  34.4 126.3 -2.8     -29.3   -16     7594   No stop
02 52 30  =1905+090    16 20 41  34.6 126.7 -2.8     -29.2    74     7606   02 51 01

02 52 30  J1905+0952   16 20 41  35.5 126.8 -2.8     -29.2   -16     7606   No stop
02 54 00  =1903+097    16 22 11  35.7 127.2 -2.7     -29.0    74     7617   02 52 31

02 54 00  J1907+0907   16 22 11  34.8 127.1 -2.8     -29.0   -16     7617   No stop
02 55 30  =1905+090    16 23 41  35.0 127.5 -2.7     -28.8    74     7629   02 54 01

02 56 10  J1905+0952   16 24 21  36.0 127.8 -2.7     -28.8    24     7629   02 56 10
02 57 10  =1903+097    16 25 22  36.1 128.0 -2.7     -28.7    60     7636   02 56 11
```

Schedule for TORUN (Code Tr) Page 25

e-EVN runs: EG082B, EG079B, and RR009

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 26 Mar 2014 Day 85 ---										
02 57 10	XTEJ1908	16 25 22	35.3	127.5	-2.7		-28.9	-15	7636	No stop
03 00 30	---	16 28 42	35.7	128.4	-2.7		-28.5	185	7662	02 57 11
03 00 30	J1905+0952	16 28 42	36.5	128.9	-2.6		-28.3	-15	7662	No stop
03 02 00	=1903+097	16 30 12	36.6	129.4	-2.6		-28.1	75	7674	03 00 31
03 02 00	XTEJ1908	16 30 12	35.8	128.8	-2.7		-28.3	-15	7674	No stop
03 05 30	---	16 33 43	36.3	129.7	-2.6		-27.9	195	7700	03 02 01
03 06 10	J1905+0952	16 34 23	37.1	130.5	-2.5		-27.6	25	7700	03 06 10
03 07 10	=1903+097	16 35 23	37.2	130.8	-2.5		-27.5	60	7708	03 06 11
03 07 10	XTEJ1908	16 35 23	36.4	130.2	-2.6		-27.7	-15	7708	No stop
03 10 30	---	16 38 44	36.8	131.1	-2.5		-27.3	185	7734	03 07 11
03 10 30	J1905+0952	16 38 44	37.6	131.7	-2.5		-27.1	-15	7734	No stop
03 12 00	=1903+097	16 40 14	37.8	132.1	-2.4		-26.9	75	7745	03 10 31
03 12 00	XTEJ1908	16 40 14	37.0	131.5	-2.5		-27.1	-15	7745	No stop
03 15 30	---	16 43 45	37.4	132.5	-2.4		-26.7	195	7772	03 12 01
03 16 10	J1905+0952	16 44 25	38.2	133.3	-2.4		-26.3	25	7772	03 16 10
03 17 10	=1903+097	16 45 25	38.4	133.6	-2.3		-26.2	60	7780	03 16 11
03 17 10	XTEJ1908	16 45 25	37.6	132.9	-2.4		-26.5	-15	7780	No stop
03 20 30	---	16 48 45	37.9	133.9	-2.3		-26.0	185	7805	03 17 11
03 20 30	J1905+0952	16 48 45	38.7	134.5	-2.3		-25.8	-15	7805	No stop
03 22 00	=1903+097	16 50 16	38.9	134.9	-2.3		-25.6	75	7817	03 20 31
03 22 00	XTEJ1908	16 50 16	38.1	134.3	-2.3		-25.8	-15	7817	No stop
03 25 30	---	16 53 46	38.5	135.3	-2.3		-25.4	195	7844	03 22 01
03 26 10	J1905+0952	16 54 26	39.3	136.1	-2.2		-25.0	25	7844	03 26 10
03 27 10	=1903+097	16 55 26	39.4	136.4	-2.2		-24.8	60	7852	03 26 11
03 28 10	J1847+0810	16 56 27	39.7	143.0	-1.9		-21.4	32	7852	03 28 10
03 31 10	=1844+081	16 59 27	40.0	143.9	-1.8		-20.9	180	7875	03 28 11
03 32 10	J1922+0841	17 00 27	37.1	133.7	-2.4		-26.0	24	7875	03 32 10
03 35 10	=1919+086	17 03 28	37.5	134.6	-2.3		-25.6	180	7898	03 32 11
03 36 10	J1905+0952	17 04 28	40.3	139.1	-2.0		-23.5	36	7898	03 36 10
03 37 10	=1903+097	17 05 28	40.4	139.4	-2.0		-23.4	60	7905	03 36 11

Schedule for TORUN (Code Tr) Page 26

e-EVN runs: EG082B, EG079B, and RR009

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 26 Mar 2014 Day 85 ---										
03 37 10	XTEJ1908	17 05 28	39.7	138.7	-2.1		-23.7	-15	7905	No stop
03 40 30	---	17 08 49	40.0	139.6	-2.0		-23.2	185	7931	03 37 11
03 40 30	J1905+0952	17 08 49	40.8	140.4	-2.0		-22.9	-15	7931	No stop
03 42 00	=1903+097	17 10 19	40.9	140.8	-1.9		-22.7	75	7942	03 40 31
03 42 00	XTEJ1908	17 10 19	40.1	140.1	-2.0		-23.0	-15	7942	No stop
03 45 30	---	17 13 49	40.5	141.1	-1.9		-22.5	195	7969	03 42 01
03 46 10	J1905+0952	17 14 30	41.3	142.1	-1.9		-22.0	25	7969	03 46 10
03 47 10	=1903+097	17 15 30	41.4	142.4	-1.8		-21.8	60	7977	03 46 11
03 47 10	XTEJ1908	17 15 30	40.6	141.6	-1.9		-22.2	-15	7977	No stop
03 50 30	---	17 18 50	40.9	142.6	-1.8		-21.7	185	8003	03 47 11
03 50 30	J1905+0952	17 18 50	41.7	143.4	-1.8		-21.3	-15	8003	No stop
03 52 00	=1903+097	17 20 21	41.8	143.9	-1.8		-21.1	75	8014	03 50 31
03 52 00	XTEJ1908	17 20 21	41.1	143.1	-1.8		-21.4	-15	8014	No stop
03 55 30	---	17 23 51	41.4	144.2	-1.8		-20.9	195	8041	03 52 01
03 56 10	J1905+0952	17 24 31	42.2	145.2	-1.7		-20.4	25	8041	03 56 10
03 57 10	=1903+097	17 25 31	42.3	145.5	-1.7		-20.2	60	8049	03 56 11
03 57 10	XTEJ1908	17 25 31	41.5	144.7	-1.7		-20.6	-15	8049	No stop
04 00 30	---	17 28 52	41.8	145.7	-1.7		-20.0	185	8074	03 57 11
04 00 30	J1905+0952	17 28 52	42.5	146.5	-1.6		-19.7	-15	8074	No stop
04 02 00	=1903+097	17 30 22	42.7	147.0	-1.6		-19.4	75	8086	04 00 31
04 02 00	XTEJ1908	17 30 22	41.9	146.2	-1.7		-19.8	-15	8086	No stop
04 05 30	---	17 33 53	42.2	147.3	-1.6		-19.2	195	8113	04 02 01
04 06 10	J1905+0952	17 34 33	43.0	148.3	-1.5		-18.7	25	8113	04 06 10
04 07 10	=1903+097	17 35 33	43.1	148.6	-1.5		-18.5	60	8120	04 06 11
04 07 10	J1907+0907	17 35 33	42.2	148.3	-1.5		-18.6	-16	8120	No stop
04 08 40	=1905+090	17 37 03	42.3	148.8	-1.5		-18.4	74	8132	04 07 11
04 08 40	J1905+0952	17 37 03	43.2	149.1	-1.5		-18.2	-16	8132	No stop
04 10 10	=1903+097	17 38 34	43.3	149.6	-1.5		-18.0	74	8143	04 08 41
04 10 10	J1907+0907	17 38 34	42.5	149.3	-1.5		-18.1	-16	8143	No stop
04 11 40	=1905+090	17 40 04	42.6	149.7	-1.5		-17.8	74	8155	04 10 11

Schedule for TORUN (Code Tr) Page 27

e-EVN runs: EG082B, EG079B, and RR009

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 26 Mar 2014 Day 85 ---										
04 12 20	J1905+0952	17 40 44	43.5	150.3	-1.4		-17.6	24	8155	04 12 20
04 13 20	=1903+097	17 41 44	43.6	150.6	-1.4		-17.4	60	8163	04 12 21
04 13 20	J1907+0907	17 41 44	42.7	150.3	-1.4		-17.6	-16	8163	No stop
04 14 50	=1905+090	17 43 14	42.8	150.8	-1.4		-17.3	74	8174	04 13 21
04 14 50	J1905+0952	17 43 14	43.7	151.1	-1.4		-17.1	-16	8174	No stop
04 16 20	=1903+097	17 44 45	43.8	151.6	-1.4		-16.9	74	8186	04 14 51
04 16 20	J1907+0907	17 44 45	42.9	151.2	-1.4		-17.0	-16	8186	No stop
04 17 50	=1905+090	17 46 15	43.0	151.7	-1.4		-16.7	74	8197	04 16 21
04 18 30	J1905+0952	17 46 55	43.9	152.3	-1.3		-16.5	24	8197	04 18 30
04 19 30	=1903+097	17 47 55	44.0	152.6	-1.3		-16.3	60	8205	04 18 31
04 19 30	J1907+0907	17 47 55	43.1	152.3	-1.3		-16.4	-16	8205	No stop
04 21 00	=1905+090	17 49 25	43.2	152.8	-1.3		-16.2	74	8216	04 19 31
04 21 00	J1905+0952	17 49 25	44.1	153.1	-1.3		-16.0	-16	8216	No stop
04 22 30	=1903+097	17 50 56	44.2	153.6	-1.3		-15.7	74	8228	04 21 01
04 22 30	J1907+0907	17 50 56	43.3	153.2	-1.3		-15.9	-16	8228	No stop
04 24 00	=1905+090	17 52 26	43.4	153.7	-1.3		-15.6	74	8239	04 22 31
04 24 40	J1905+0952	17 53 06	44.3	154.4	-1.2		-15.3	24	8239	04 24 40
04 25 40	=1903+097	17 54 06	44.4	154.7	-1.2		-15.1	60	8247	04 24 41
04 25 40	XTEJ1908	17 54 06	43.7	153.8	-1.3		-15.6	-14	8247	No stop
04 29 00	---	17 57 27	43.9	154.9	-1.2		-15.0	186	8273	04 25 41
04 29 00	J1905+0952	17 57 27	44.6	155.8	-1.1		-14.5	-15	8273	No stop
04 30 30	=1903+097	17 58 57	44.7	156.3	-1.1		-14.2	75	8284	04 29 01
04 30 30	XTEJ1908	17 58 57	44.0	155.4	-1.2		-14.7	-14	8284	No stop
04 34 00	---	18 02 27	44.3	156.6	-1.1		-14.0	196	8311	04 30 31
04 34 40	J1905+0952	18 03 08	45.0	157.7	-1.1		-13.4	26	8311	04 34 40
04 35 40	=1903+097	18 04 08	45.0	158.1	-1.0		-13.2	60	8319	04 34 41
04 35 40	XTEJ1908	18 04 08	44.4	157.1	-1.1		-13.7	-14	8319	No stop
04 39 00	---	18 07 28	44.5	158.3	-1.0		-13.0	186	8344	04 35 41
04 39 00	J1905+0952	18 07 28	45.2	159.2	-1.0		-12.5	-14	8344	No stop
04 40 30	=1903+097	18 08 59	45.3	159.7	-1.0		-12.2	76	8356	04 39 01

Schedule for TORUN (Code Tr) Page 28

e-EVN runs: EG082B, EG079B, and RR009

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

Start UT / Stop UT	Source	Start LST	Start EL	Start AZ	Start HA	Start UP	Start ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 26 Mar 2014 Day 85 ---										
04 40 30	XTEJ1908	18 08 59	44.6	158.8	-1.0		-12.7	-14	8356	No stop
04 44 00	---	18 12 29	44.8	160.0	-1.0		-12.0	196	8383	04 40 31
04 44 40	J1905+0952	18 13 09	45.5	161.1	-0.9		-11.4	26	8383	04 44 40
04 45 40	=1903+097	18 14 09	45.5	161.5	-0.9		-11.2	60	8390	04 44 41
04 45 40	XTEJ1908	18 14 09	44.9	160.5	-0.9		-11.7	-14	8390	No stop
04 49 00	---	18 17 30	45.1	161.7	-0.9		-11.0	186	8416	04 45 41
04 49 00	J1905+0952	18 17 30	45.7	162.6	-0.8		-10.5	-14	8416	No stop
04 50 30	=1903+097	18 19 00	45.8	163.2	-0.8		-10.2	76	8428	04 49 01
04 50 30	XTEJ1908	18 19 00	45.1	162.2	-0.8		-10.7	-14	8428	No stop
04 54 00	---	18 22 31	45.3	163.4	-0.8		-10.0	196	8454	04 50 31
04 54 40	J1905+0952	18 23 11	45.9	164.6	-0.7		-9.3	26	8454	04 54 40
04 55 40	=1903+097	18 24 11	46.0	165.0	-0.7		-9.1	60	8462	04 54 41
04 55 40	XTEJ1908	18 24 11	45.4	164.0	-0.8		-9.7	-14	8462	No stop
04 59 00	---	18 27 32	45.5	165.1	-0.7		-9.0	186	8488	04 55 41
04 59 00	J1905+0952	18 27 32	46.1	166.1	-0.6		-8.4	-14	8488	No stop
05 00 30	=1903+097	18 29 02	46.1	166.7	-0.6		-8.1	76	8499	04 59 01
05 00 30	XTEJ1908	18 29 02	45.6	165.6	-0.7		-8.7	-14	8499	No stop
05 04 00	---	18 32 32	45.7	166.9	-0.6		-7.9	196	8526	05 00 31
05 04 40	J1905+0952	18 33 12	46.3	168.1	-0.6		-7.2	26	8526	05 04 40
05 05 40	=1903+097	18 34 13	46.3	168.5	-0.5		-7.0	60	8534	05 04 41
05 05 40	XTEJ1908	18 34 13	45.7	167.5	-0.6		-7.6	-14	8534	No stop
05 09 00	---	18 37 33	45.8	168.6	-0.5		-6.9	186	8559	05 05 41
05 09 00	J1905+0952	18 37 33	46.4	169.7	-0.5		-6.3	-14	8559	No stop
05 10 30	=1903+097	18 39 03	46.4	170.2	-0.5		-5.9	76	8571	05 09 01
05 10 30	XTEJ1908	18 39 03	45.9	169.2	-0.5		-6.6	-14	8571	No stop
05 14 00	---	18 42 34	46.0	170.4	-0.5		-5.8	196	8598	05 10 31
05 14 40	J1905+0952	18 43 14	46.5	171.7	-0.4		-5.0	25	8598	05 14 40
05 15 40	=1903+097	18 44 14	46.6	172.1	-0.4		-4.8	60	8605	05 14 41
05 15 40	XTEJ1908	18 44 14	46.0	171.0	-0.4		-5.5	-14	8605	No stop
05 19 00	---	18 47 35	46.1	172.2	-0.4		-4.8	186	8631	05 15 41

Schedule for TORUN (Code Tr) Page 29

e-EVN runs: EG082B, EG079B, and RR009

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 26 Mar 2014 Day 85 ---										
05 19 00	J1905+0952	18 47 35	46.6	173.3	-0.3		-4.1	-15	8631	No stop
05 20 30	=1903+097	18 49 05	46.7	173.8	-0.3		-3.8	75	8643	05 19 01
05 20 30	XTEJ1908	18 49 05	46.1	172.7	-0.3		-4.4	-14	8643	No stop
05 24 00	---	18 52 36	46.2	173.9	-0.3		-3.7	196	8669	05 20 31
05 24 40	J1905+0952	18 53 16	46.7	175.3	-0.2		-2.9	25	8669	05 24 40
05 25 40	=1903+097	18 54 16	46.7	175.7	-0.2		-2.6	60	8677	05 24 41
05 26 40	J1847+0810	18 55 16	45.1	182.6	0.1		1.6	32	8677	05 26 40
05 29 40	=1844+081	18 58 17	45.0	183.6	0.2		2.2	180	8700	05 26 41
05 30 40	J1922+0841	18 59 17	45.4	171.6	-0.4		-5.1	21	8700	05 30 40
05 33 40	=1919+086	19 02 17	45.4	172.7	-0.3		-4.4	180	8723	05 30 41
05 34 40	J1905+0952	19 03 17	46.8	178.9	-0.1		-0.7	33	8723	05 34 40
05 35 40	=1903+097	19 04 18	46.8	179.3	-0.0		-0.4	60	8731	05 34 41
05 35 40	XTEJ1908	19 04 18	46.3	178.1	-0.1		-1.1	-14	8731	No stop
05 39 00	---	19 07 38	46.3	179.3	-0.0		-0.4	186	8756	05 35 41
05 39 00	J1905+0952	19 07 38	46.8	180.5	0.0		0.3	-15	8756	No stop
05 40 30	=1903+097	19 09 08	46.8	181.0	0.0		0.6	75	8768	05 39 01
05 40 30	XTEJ1908	19 09 08	46.3	179.8	-0.0		-0.1	-14	8768	No stop
05 44 00	---	19 12 39	46.3	181.1	0.1		0.7	196	8795	05 40 31
05 44 40	J1905+0952	19 13 19	46.8	182.5	0.1		1.5	25	8795	05 44 40
05 45 40	=1903+097	19 14 19	46.8	182.9	0.1		1.7	60	8803	05 44 41
05 45 40	XTEJ1908	19 14 19	46.3	181.7	0.1		1.0	-14	8803	No stop
05 49 00	---	19 17 40	46.3	182.9	0.1		1.8	186	8828	05 45 41
05 49 00	J1905+0952	19 17 40	46.7	184.1	0.2		2.5	-15	8828	No stop
05 50 30	=1903+097	19 19 10	46.7	184.6	0.2		2.8	75	8840	05 49 01
05 50 30	XTEJ1908	19 19 10	46.3	183.4	0.2		2.1	-14	8840	No stop
05 54 00	---	19 22 41	46.2	184.7	0.2		2.8	196	8867	05 50 31
05 54 40	J1905+0952	19 23 21	46.7	186.1	0.3		3.7	25	8867	05 54 40
05 55 40	=1903+097	19 24 21	46.6	186.5	0.3		3.9	60	8874	05 54 41
05 55 40	XTEJ1908	19 24 21	46.2	185.3	0.2		3.2	-15	8874	No stop
05 59 00	---	19 27 41	46.2	186.5	0.3		3.9	185	8900	05 55 41

Schedule for TORUN (Code Tr) Page 30

e-EVN runs: EG082B, EG079B, and RR009

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 26 Mar 2014 Day 85 ---										
05 59 00	J1905+0952	19 27 41	46.6	187.7	0.4		4.7	-15	8900	No stop
06 00 30	=1903+097	19 29 12	46.5	188.2	0.4		5.0	75	8911	05 59 01
06 00 30	XTEJ1908	19 29 12	46.1	187.0	0.3		4.3	-15	8911	No stop
06 04 00	---	19 32 42	46.1	188.2	0.4		5.0	195	8938	06 00 31
06 04 40	J1905+0952	19 33 22	46.5	189.7	0.5		5.9	25	8938	06 04 40
06 05 40	=1903+097	19 34 23	46.4	190.0	0.5		6.1	60	8946	06 04 41
06 05 40	XTEJ1908	19 34 23	46.0	188.8	0.4		5.4	-15	8946	No stop
06 09 00	---	19 37 43	45.9	190.0	0.5		6.1	185	8971	06 05 41
06 09 00	J1905+0952	19 37 43	46.3	191.2	0.5		6.8	-15	8971	No stop
06 10 30	=1903+097	19 39 13	46.3	191.8	0.5		7.1	75	8983	06 09 01
06 10 30	XTEJ1908	19 39 13	45.9	190.5	0.5		6.4	-15	8983	No stop
06 14 00	---	19 42 44	45.8	191.8	0.6		7.1	195	9010	06 10 31
06 14 40	J1905+0952	19 43 24	46.2	193.2	0.6		8.0	25	9010	06 14 40
06 15 40	=1903+097	19 44 24	46.1	193.6	0.6		8.2	60	9018	06 14 41
06 15 40	XTEJ1908	19 44 24	45.7	192.4	0.6		7.5	-15	9018	No stop
06 19 00	---	19 47 45	45.6	193.5	0.6		8.2	185	9043	06 15 41
06 19 00	J1905+0952	19 47 45	46.0	194.8	0.7		8.9	-15	9043	No stop
06 20 30	=1903+097	19 49 15	45.9	195.3	0.7		9.2	75	9055	06 19 01
06 20 30	XTEJ1908	19 49 15	45.6	194.1	0.7		8.5	-15	9055	No stop
06 24 00	---	19 52 46	45.4	195.3	0.7		9.2	195	9082	06 20 31
06 24 40	J1905+0952	19 53 26	45.8	196.7	0.8		10.1	25	9082	06 24 40
06 25 40	=1903+097	19 54 26	45.7	197.1	0.8		10.3	60	9089	06 24 41
06 25 40	XTEJ1908	19 54 26	45.4	195.9	0.7		9.6	-15	9089	No stop
06 29 00	---	19 57 46	45.2	197.0	0.8		10.3	185	9115	06 25 41
06 29 00	J1905+0952	19 57 46	45.6	198.2	0.9		11.0	-15	9115	No stop
06 30 30	=1903+097	19 59 17	45.5	198.8	0.9		11.3	75	9126	06 29 01
06 30 30	XTEJ1908	19 59 17	45.2	197.5	0.8		10.6	-15	9126	No stop
06 34 00	---	20 02 47	45.0	198.7	0.9		11.3	195	9153	06 30 31
06 34 40	J1905+0952	20 03 27	45.3	200.2	1.0		12.2	25	9153	06 34 40
06 35 40	=1903+097	20 04 27	45.2	200.5	1.0		12.4	60	9161	06 34 41

Schedule for TORUN (Code Tr) Page 31

e-EVN runs: EG082B, EG079B, and RR009

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 26 Mar 2014 Day 85 ---										
06 35 40	J1907+0907	20 04 27	44.6	199.6	0.9		11.8	-14	9161	No stop
06 37 10	=1905+090	20 05 58	44.5	200.1	1.0		12.1	76	9172	06 35 41
06 37 10	J1905+0952	20 05 58	45.2	201.1	1.0		12.7	-14	9172	No stop
06 38 40	=1903+097	20 07 28	45.1	201.6	1.0		12.9	76	9184	06 37 11
06 38 40	J1907+0907	20 07 28	44.5	200.6	1.0		12.4	-14	9184	No stop
06 40 10	=1905+090	20 08 58	44.4	201.2	1.0		12.7	76	9195	06 38 41
06 40 50	J1905+0952	20 09 38	45.0	202.3	1.1		13.4	26	9195	06 40 50
06 41 50	=1903+097	20 10 38	44.9	202.6	1.1		13.6	60	9203	06 40 51
06 41 50	J1907+0907	20 10 38	44.3	201.7	1.0		13.0	-14	9203	No stop
06 43 20	=1905+090	20 12 09	44.2	202.2	1.1		13.3	76	9215	06 41 51
06 43 20	J1905+0952	20 12 09	44.8	203.2	1.1		13.9	-14	9215	No stop
06 44 50	=1903+097	20 13 39	44.7	203.7	1.1		14.2	76	9226	06 43 21
06 44 50	J1907+0907	20 13 39	44.1	202.7	1.1		13.6	-14	9226	No stop
06 46 20	=1905+090	20 15 09	44.0	203.2	1.1		13.9	76	9238	06 44 51
06 47 00	J1905+0952	20 15 49	44.6	204.4	1.2		14.6	26	9238	06 47 00
06 48 00	=1903+097	20 16 49	44.5	204.7	1.2		14.8	60	9245	06 47 01
06 48 00	J1907+0907	20 16 49	43.9	203.8	1.1		14.2	-14	9245	No stop
06 49 30	=1905+090	20 18 20	43.8	204.3	1.2		14.5	76	9257	06 48 01
06 49 30	J1905+0952	20 18 20	44.4	205.2	1.2		15.1	-14	9257	No stop
06 51 00	=1903+097	20 19 50	44.3	205.7	1.2		15.3	76	9268	06 49 31
06 51 00	J1907+0907	20 19 50	43.7	204.8	1.2		14.8	-14	9268	No stop
06 52 30	=1905+090	20 21 20	43.6	205.3	1.2		15.1	76	9280	06 51 01
06 53 10	J1905+0952	20 22 00	44.2	206.4	1.3		15.8	26	9280	06 53 10
06 54 10	=1903+097	20 23 00	44.1	206.8	1.3		15.9	60	9288	06 53 11
06 54 10	XTEJ1908	20 23 00	43.9	205.5	1.2		15.2	-15	9288	No stop
06 57 30	---	20 26 21	43.6	206.6	1.3		15.8	185	9313	06 54 11
06 57 30	J1905+0952	20 26 21	43.9	207.9	1.3		16.6	-15	9313	No stop
06 59 00	=1903+097	20 27 51	43.8	208.4	1.4		16.8	75	9325	06 57 31
06 59 00	XTEJ1908	20 27 51	43.5	207.1	1.3		16.1	-15	9325	No stop
07 02 30	---	20 31 22	43.3	208.3	1.4		16.8	195	9352	06 59 01

Schedule for TORUN (Code Tr) Page 32

e-EVN runs: EG082B, EG079B, and RR009

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 26 Mar 2014 Day 85 ---										
07 03 10	J1905+0952	20 32 02	43.5	209.7	1.4		17.6	25	9352	07 03 10
07 04 10	=1903+097	20 33 02	43.4	210.0	1.4		17.8	60	9359	07 03 11
07 04 10	XTEJ1908	20 33 02	43.2	208.8	1.4		17.1	-15	9359	No stop
07 07 30	---	20 36 23	42.9	209.9	1.4		17.7	185	9385	07 04 11
07 07 30	J1905+0952	20 36 23	43.1	211.1	1.5		18.4	-15	9385	No stop
07 09 00	=1903+097	20 37 53	43.0	211.6	1.5		18.6	75	9396	07 07 31
07 09 00	XTEJ1908	20 37 53	42.8	210.4	1.5		17.9	-15	9396	No stop
07 12 30	---	20 41 23	42.5	211.5	1.5		18.5	195	9423	07 09 01
07 13 10	J1905+0952	20 42 04	42.7	212.9	1.6		19.4	25	9423	07 13 10
07 14 10	=1903+097	20 43 04	42.6	213.2	1.6		19.5	60	9431	07 13 11
07 14 10	XTEJ1908	20 43 04	42.4	212.0	1.6		18.8	-15	9431	No stop
07 17 30	---	20 46 24	42.1	213.1	1.6		19.4	185	9457	07 14 11
07 17 30	J1905+0952	20 46 24	42.3	214.3	1.7		20.1	-15	9457	No stop
07 19 00	=1903+097	20 47 55	42.2	214.8	1.7		20.3	75	9468	07 17 31
07 19 00	XTEJ1908	20 47 55	42.0	213.5	1.6		19.7	-15	9468	No stop
07 22 30	---	20 51 25	41.7	214.6	1.7		20.2	195	9495	07 19 01
07 23 10	J1905+0952	20 52 05	41.8	216.1	1.8		21.0	25	9495	07 23 10
07 24 10	=1903+097	20 53 05	41.8	216.4	1.8		21.2	60	9503	07 23 11
07 24 10	XTEJ1908	20 53 05	41.6	215.1	1.7		20.5	-15	9503	No stop
07 27 30	---	20 56 26	41.3	216.2	1.8		21.1	185	9528	07 24 11
07 27 30	J1905+0952	20 56 26	41.5	217.4	1.8		21.7	-15	9528	No stop
07 29 00	=1903+097	20 57 56	41.3	217.9	1.9		22.0	75	9540	07 27 31
07 29 00	XTEJ1908	20 57 56	41.2	216.6	1.8		21.3	-15	9540	No stop
07 32 30	---	21 01 27	40.8	217.7	1.9		21.9	195	9567	07 29 01
07 33 10	J1905+0952	21 02 07	40.9	219.1	1.9		22.6	25	9567	07 33 10
07 34 10	=1903+097	21 03 07	40.8	219.4	1.9		22.8	60	9574	07 33 11
07 34 10	XTEJ1908	21 03 07	40.7	218.2	1.9		22.1	-15	9574	No stop
07 37 30	---	21 06 28	40.4	219.2	1.9		22.6	185	9600	07 34 11
07 37 30	J1905+0952	21 06 28	40.5	220.4	2.0		23.3	-15	9600	No stop
07 39 00	=1903+097	21 07 58	40.4	220.9	2.0		23.5	75	9611	07 37 31

```
Schedule for TORUN     (Code Tr )                                Page  33
               e-EVN runs: EG082B, EG079B, and RR009
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                  Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Wed  26 Mar 2014   Day  85 ---

07 39 00  XTEJ1908     21 07 58  40.2 219.7  2.0      22.9   -15     9611   No stop
07 42 30  ---          21 11 28  39.9 220.7  2.0      23.4   195     9638   07 39 01

07 43 10  J1905+0952   21 12 09  39.9 222.1  2.1      24.1    25     9638   07 43 10
07 44 10  =1903+097    21 13 09  39.8 222.4  2.1      24.3    60     9646   07 43 11

07 44 10  XTEJ1908     21 13 09  39.7 221.2  2.1      23.6   -15     9646   No stop
07 47 30  ---          21 16 29  39.4 222.2  2.1      24.1   185     9672   07 44 11

07 47 30  J1905+0952   21 16 29  39.5 223.4  2.2      24.7   -15     9672   No stop
07 49 00  =1903+097    21 17 59  39.3 223.8  2.2      25.0    75     9683   07 47 31

07 49 00  XTEJ1908     21 17 59  39.2 222.6  2.1      24.3   -15     9683   No stop
07 52 30  ---          21 21 30  38.9 223.6  2.2      24.8   195     9710   07 49 01

07 53 10  J1905+0952   21 22 10  38.9 225.0  2.3      25.5    25     9710   07 53 10
07 54 10  =1903+097    21 23 10  38.8 225.3  2.3      25.7    60     9718   07 53 11

07 55 10  J1847+0810   21 24 11  35.1 229.7  2.6      27.6    33     9718   07 55 10
07 58 10  =1844+081    21 27 11  34.8 230.5  2.7      27.9   180     9741   07 55 11

07 59 10  J1922+0841   21 28 11  38.9 221.3  2.1      23.6    26     9741   07 59 10
08 02 10  =1919+086    21 31 12  38.6 222.2  2.1      24.1   180     9764   07 59 11

08 03 10  J1905+0952   21 32 12  37.8 227.8  2.4      26.9    34     9764   08 03 10
08 04 10  =1903+097    21 33 12  37.7 228.1  2.4      27.0    60     9771   08 03 11

08 04 10  XTEJ1908     21 33 12  37.6 226.9  2.4      26.4   -14     9771   No stop
08 07 30  ---          21 36 33  37.3 227.9  2.4      26.8   186     9797   08 04 11

08 07 30  J1905+0952   21 36 33  37.3 229.0  2.5      27.4   -15     9797   No stop
08 09 00  =1903+097    21 38 03  37.2 229.4  2.5      27.6    75     9809   08 07 31

08 09 00  XTEJ1908     21 38 03  37.1 228.3  2.5      27.0   -14     9809   No stop
08 12 30  ---          21 41 33  36.7 229.2  2.5      27.5   196     9835   08 09 01

08 13 10  J1905+0952   21 42 13  36.7 230.6  2.6      28.1    25     9835   08 13 10
08 14 10  =1903+097    21 43 14  36.6 230.8  2.6      28.2    60     9843   08 13 11

08 14 10  XTEJ1908     21 43 14  36.5 229.7  2.6      27.7   -14     9843   No stop
08 17 30  ---          21 46 34  36.1 230.6  2.6      28.1   186     9869   08 14 11

08 17 30  J1905+0952   21 46 34  36.2 231.7  2.7      28.6   -15     9869   No stop
08 19 00  =1903+097    21 48 04  36.0 232.2  2.7      28.8    75     9880   08 17 31
```

```
Schedule for TORUN     (Code Tr )                                  Page  34
               e-EVN runs: EG082B, EG079B, and RR009
  UP:  D => Below limits;  H => Below horizon mask;  W => still slewing at end;  blank => Up.
  Early: Seconds between end of slew and start.   Dwell: On source seconds.
  Disk: GBytes recorded to this point.
  TPStart:  Recording start time.  Frequencies are LO sum (band edge).
  SYNC: Time correlator is expected to sync up.
-----------------------------------------------------------------------------------------
Start UT  Source               Start / Stop                  Early    Disk   TPStart
Stop UT                  LST      EL    AZ   HA  UP   ParA  Dwell   GBytes    SYNC
-----------------------------------------------------------------------------------------

 --- Wed  26 Mar 2014   Day  85 ---

08 19 00  XTEJ1908     21 48 04  35.9 231.0  2.6      28.2   -14     9880   No stop
08 22 30  ---          21 51 35  35.5 231.9  2.7      28.6   196     9907   08 19 01

08 23 10  J1905+0952   21 52 15  35.5 233.3  2.8      29.2    25     9907   08 23 10
08 24 10  =1903+097    21 53 15  35.4 233.5  2.8      29.3    60     9915   08 23 11

08 24 10  XTEJ1908     21 53 15  35.3 232.4  2.7      28.8   -14     9915   No stop
08 27 30  ---          21 56 36  34.9 233.3  2.8      29.2   186     9940   08 24 11

08 27 30  J1905+0952   21 56 36  35.0 234.4  2.8      29.7   -15     9940   No stop
08 29 00  =1903+097    21 58 06  34.8 234.8  2.9      29.9    75     9952   08 27 31

08 29 00  XTEJ1908     21 58 06  34.8 233.7  2.8      29.4   -14     9952   No stop
08 32 30  ---          22 01 37  34.3 234.6  2.9      29.7   196     9979   08 29 01

08 33 10  J1905+0952   22 02 17  34.3 235.9  2.9      30.3    25     9979   08 33 10
08 34 10  =1903+097    22 03 17  34.1 236.1  2.9      30.4    60     9987   08 33 11

08 34 10  XTEJ1908     22 03 17  34.1 235.0  2.9      29.9   -14     9987   No stop
08 37 30  ---          22 06 37  33.7 235.9  3.0      30.3   186    10012   08 34 11

08 37 30  J1905+0952   22 06 37  33.7 237.0  3.0      30.7   -15    10012   No stop
08 39 00  =1903+097    22 08 08  33.5 237.4  3.0      30.9    75    10024   08 37 31

08 39 00  XTEJ1908     22 08 08  33.5 236.3  3.0      30.4   -14    10024   No stop
08 42 30  ---          22 11 38  33.1 237.1  3.0      30.8   196    10051   08 39 01

08 43 10  J1905+0952   22 12 18  33.0 238.4  3.1      31.3    25    10051   08 43 10
08 44 10  =1903+097    22 13 19  32.9 238.7  3.1      31.4    60    10058   08 43 11

08 44 10  XTEJ1908     22 13 19  32.9 237.6  3.1      30.9   -14    10058   No stop
08 47 30  ---          22 16 39  32.4 238.4  3.1      31.2   186    10084   08 44 11

08 47 30  J1905+0952   22 16 39  32.4 239.5  3.2      31.7   -15    10084   No stop
08 49 00  =1903+097    22 18 09  32.2 239.9  3.2      31.8    75    10095   08 47 31

08 49 00  XTEJ1908     22 18 09  32.2 238.8  3.1      31.4   -14    10095   No stop
08 52 30  ---          22 21 40  31.8 239.6  3.2      31.7   196    10122   08 49 01

08 53 10  J1905+0952   22 22 20  31.7 240.9  3.3      32.2    25    10122   08 53 10
08 54 10  =1903+097    22 23 20  31.6 241.2  3.3      32.3    60    10130   08 53 11

08 54 10  XTEJ1908     22 23 20  31.6 240.1  3.2      31.8   -14    10130   No stop
08 57 30  ---          22 26 41  31.1 240.9  3.3      32.1   186    10155   08 54 11
```

Schedule for TORUN (Code Tr) Page 35

e-EVN runs: EG082B, EG079B, and RR009

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 26 Mar 2014 Day 85 ---										
08 57 30	J1905+0952	22 26 41	31.1	242.0	3.3		32.5	-14	10155	No stop
08 59 00	=1903+097	22 28 11	30.9	242.3	3.4		32.7	76	10167	08 57 31
08 59 00	XTEJ1908	22 28 11	30.9	241.2	3.3		32.3	-14	10167	No stop
09 02 30	---	22 31 42	30.5	242.1	3.4		32.5	196	10194	08 59 01
09 03 10	J1905+0952	22 32 22	30.4	243.3	3.4		33.0	26	10194	09 03 10
09 04 10	=1903+097	22 33 22	30.2	243.6	3.5		33.1	60	10202	09 03 11
09 04 10	J1907+0907	22 33 22	29.9	242.6	3.4		32.7	-14	10202	No stop
09 05 40	=1905+090	22 34 52	29.7	243.0	3.4		32.8	76	10213	09 04 11
09 05 40	J1905+0952	22 34 52	30.0	243.9	3.5		33.2	-14	10213	No stop
09 07 10	=1903+097	22 36 22	29.8	244.3	3.5		33.3	76	10225	09 05 41
09 07 10	J1907+0907	22 36 22	29.5	243.3	3.5		32.9	-14	10225	No stop
09 08 40	=1905+090	22 37 53	29.3	243.7	3.5		33.0	76	10236	09 07 11
09 09 20	J1905+0952	22 38 33	29.5	244.8	3.5		33.5	26	10236	09 09 20
09 10 20	=1903+097	22 39 33	29.4	245.0	3.6		33.5	60	10244	09 09 21
09 10 20	J1907+0907	22 39 33	29.0	244.1	3.5		33.2	-14	10244	No stop
09 11 50	=1905+090	22 41 03	28.8	244.4	3.5		33.3	76	10255	09 10 21
09 11 50	J1905+0952	22 41 03	29.2	245.4	3.6		33.7	-14	10255	No stop
09 13 20	=1903+097	22 42 33	29.0	245.7	3.6		33.8	76	10267	09 11 51
09 13 20	J1907+0907	22 42 33	28.6	244.8	3.6		33.4	-14	10267	No stop
09 14 50	=1905+090	22 44 04	28.4	245.2	3.6		33.5	76	10278	09 13 21
09 15 30	J1905+0952	22 44 44	28.7	246.3	3.6		33.9	26	10278	09 15 30
09 16 30	=1903+097	22 45 44	28.6	246.5	3.7		34.0	60	10286	09 15 31
09 16 30	J1907+0907	22 45 44	28.2	245.5	3.6		33.6	-14	10286	No stop
09 18 00	=1905+090	22 47 14	28.0	245.9	3.6		33.7	76	10298	09 16 31
09 18 00	J1905+0952	22 47 14	28.3	246.8	3.7		34.1	-14	10298	No stop
09 19 30	=1903+097	22 48 44	28.1	247.2	3.7		34.2	76	10309	09 18 01
09 19 30	J1907+0907	22 48 44	27.8	246.2	3.7		33.8	-14	10309	No stop
09 21 00	=1905+090	22 50 15	27.6	246.6	3.7		33.9	76	10321	09 19 31
09 21 40	J1905+0952	22 50 55	27.8	247.7	3.7		34.3	26	10321	09 21 40
09 22 40	=1903+097	22 51 55	27.7	247.9	3.8		34.4	60	10328	09 21 41

Schedule for TORUN (Code Tr) Page 36

e-EVN runs: EG082B, EG079B, and RR009

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 26 Mar 2014 Day 85 ---										
09 22 40	XTEJ1908	22 51 55	27.7	246.9	3.7		34.0	-14	10328	No stop
09 26 00	---	22 55 15	27.3	247.6	3.8		34.3	186	10354	09 22 41
09 26 00	J1905+0952	22 55 15	27.2	248.7	3.8		34.6	-14	10354	No stop
09 27 30	=1903+097	22 56 46	27.0	249.0	3.8		34.7	76	10365	09 26 01
09 27 30	XTEJ1908	22 56 46	27.1	248.0	3.8		34.4	-14	10365	No stop
09 31 00	---	23 00 16	26.6	248.8	3.8		34.6	196	10392	09 27 31
09 31 40	J1905+0952	23 00 56	26.4	250.0	3.9		34.9	26	10392	09 31 40
09 32 40	=1903+097	23 01 57	26.3	250.2	3.9		35.0	60	10400	09 31 41
09 32 40	XTEJ1908	23 01 57	26.3	249.2	3.9		34.7	-14	10400	No stop
09 36 00	---	23 05 17	25.9	249.9	3.9		34.9	186	10426	09 32 41
09 36 00	J1905+0952	23 05 17	25.8	250.9	4.0		35.2	-14	10426	No stop
09 37 30	=1903+097	23 06 47	25.6	251.3	4.0		35.3	76	10437	09 36 01
09 37 30	XTEJ1908	23 06 47	25.7	250.3	4.0		35.0	-14	10437	No stop
09 41 00	---	23 10 18	25.2	251.0	4.0		35.1	196	10464	09 37 31
09 41 40	J1905+0952	23 10 58	25.0	252.2	4.1		35.5	26	10464	09 41 40
09 42 40	=1903+097	23 11 58	24.9	252.4	4.1		35.5	60	10472	09 41 41
09 48 40	3C48	23 17 59	58.1	114.4	-2.3		-40.8	68	10472	09 48 40
09 58 40	---	23 28 01	59.5	117.5	-2.2		-39.6	600	10548	09 48 41
10 05 40	J2113+4012	23 35 02	63.0	256.0	2.3		49.8	129	10548	10 05 40
10 06 40	=2111+400	23 36 02	62.9	256.2	2.4		49.9	60	10556	10 05 41
10 06 40	J2115+3742	23 36 02	61.4	251.9	2.3		46.2	-23	10556	No stop
10 10 10	---	23 39 33	60.9	252.9	2.4		46.5	187	10583	10 06 41
10 10 10	J2113+4012	23 39 33	62.3	257.2	2.4		50.1	-24	10583	No stop
10 11 40	=2111+400	23 41 03	62.1	257.6	2.5		50.2	66	10595	10 10 11
10 11 40	V1396CYG	23 41 03	60.1	260.7	2.7		50.8	-22	10595	No stop
10 15 10	---	23 44 34	59.5	261.5	2.7		51.0	188	10621	10 11 41
10 15 10	J2113+4012	23 44 34	61.6	258.5	2.5		50.5	-21	10621	No stop
10 16 40	=2111+400	23 46 04	61.4	258.9	2.5		50.5	69	10633	10 15 11
10 16 40	V1396CYG	23 46 04	59.3	261.9	2.8		51.0	-22	10633	No stop
10 20 10	---	23 49 34	58.8	262.7	2.8		51.2	188	10660	10 16 41

Schedule for TORUN (Code Tr) Page 37

e-EVN runs: EG082B, EG079B, and RR009

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 26 Mar 2014 Day 85 ---										
10 20 40	J2113+4012	23 50 04	60.8	259.9	2.6		50.8	9	10660	10 20 40
10 21 40	=2111+400	23 51 05	60.6	260.1	2.6		50.8	60	10667	10 20 41
10 21 40	V1396CYG	23 51 05	58.6	263.1	2.8		51.2	-22	10667	No stop
10 25 10	---	23 54 35	58.0	263.9	2.9		51.3	188	10694	10 21 41
10 25 10	J2113+4012	23 54 35	60.1	261.0	2.7		51.0	-22	10694	No stop
10 26 40	=2111+400	23 56 05	59.9	261.3	2.7		51.1	68	10706	10 25 11
10 26 40	V1396CYG	23 56 05	57.8	264.2	2.9		51.4	-22	10706	No stop
10 30 10	---	23 59 36	57.3	265.0	3.0		51.5	188	10733	10 26 41
10 30 40	J2113+4012	00 00 06	59.3	262.3	2.8		51.2	8	10733	10 30 40
10 31 40	=2111+400	00 01 06	59.2	262.5	2.8		51.3	60	10740	10 30 41
---------- fringe finder ----------										
10 33 40	J2202+4216	00 03 07	67.4	253.7	2.0		51.3	75	10740	10 33 40
10 39 40	=BLLAC	00 09 08	66.5	255.5	2.1		51.9	360	10787	10 33 41
10 40 40	J2113+4012	00 10 08	57.8	264.6	2.9		51.6	14	10787	10 40 40
10 42 40	=2111+400	00 12 08	57.5	265.0	3.0		51.6	120	10802	10 40 41
10 42 40	J2115+3742	00 12 08	56.1	261.2	2.9		48.6	-22	10802	No stop
10 46 10	---	00 15 39	55.6	262.0	3.0		48.8	188	10829	10 42 41
10 46 40	J2113+4012	00 16 09	56.9	265.9	3.0		51.7	8	10829	10 46 40
10 47 40	=2111+400	00 17 09	56.8	266.1	3.1		51.7	60	10836	10 46 41
10 47 40	V1396CYG	00 17 09	54.7	268.7	3.3		51.7	-22	10836	No stop
10 51 10	---	00 20 39	54.1	269.4	3.3		51.7	188	10863	10 47 41
10 51 10	J2113+4012	00 20 39	56.2	266.8	3.1		51.8	-22	10863	No stop
10 52 40	=2111+400	00 22 10	56.0	267.2	3.1		51.8	68	10875	10 51 11
10 52 40	V1396CYG	00 22 10	53.9	269.7	3.4		51.7	-22	10875	No stop
10 56 10	---	00 25 40	53.4	270.4	3.4		51.7	188	10902	10 52 41
10 56 40	J2113+4012	00 26 10	55.4	268.0	3.2		51.9	8	10902	10 56 40
10 57 40	=2111+400	00 27 10	55.3	268.2	3.2		51.9	60	10909	10 56 41
10 57 40	V1396CYG	00 27 10	53.2	270.7	3.4		51.7	-22	10909	No stop
11 01 10	---	00 30 41	52.6	271.4	3.5		51.7	188	10936	10 57 41

Schedule for TORUN (Code Tr) Page 38

e-EVN runs: EG082B, EG079B, and RR009

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 26 Mar 2014 Day 85 ---										
11 01 10	J2113+4012	00 30 41	54.7	268.9	3.3		51.9	-22	10936	No stop
11 02 40	=2111+400	00 32 11	54.5	269.2	3.3		51.9	68	10948	11 01 11
11 02 40	V1396CYG	00 32 11	52.4	271.7	3.5		51.7	-22	10948	No stop
11 06 10	---	00 35 42	51.9	272.4	3.6		51.7	188	10975	11 02 41
11 06 40	J2113+4012	00 36 12	53.9	270.0	3.4		51.9	8	10975	11 06 40
11 07 40	=2111+400	00 37 12	53.8	270.2	3.4		51.9	60	10982	11 06 41
11 07 40	V1396CYG	00 37 12	51.7	272.7	3.6		51.7	-22	10982	No stop
11 11 10	---	00 40 43	51.1	273.3	3.7		51.6	188	11009	11 07 41
11 11 10	J2113+4012	00 40 43	53.2	270.9	3.4		51.9	-22	11009	No stop
11 12 40	=2111+400	00 42 13	53.0	271.2	3.5		51.9	68	11021	11 11 11
11 12 40	J2115+3742	00 42 13	51.6	267.8	3.4		49.4	-21	11021	No stop
11 16 10	---	00 45 44	51.1	268.5	3.5		49.4	189	11048	11 12 41
11 16 40	J2113+4012	00 46 14	52.4	272.0	3.5		51.9	8	11048	11 16 40
11 17 40	=2111+400	00 47 14	52.3	272.2	3.6		51.9	60	11055	11 16 41
11 17 40	V1396CYG	00 47 14	50.2	274.5	3.8		51.5	-22	11055	No stop
11 21 10	---	00 50 44	49.6	275.2	3.8		51.5	188	11082	11 17 41
11 21 10	J2113+4012	00 50 44	51.7	272.9	3.6		51.8	-22	11082	No stop
11 22 40	=2111+400	00 52 15	51.5	273.2	3.6		51.8	68	11094	11 21 11
11 22 40	V1396CYG	00 52 15	49.4	275.5	3.9		51.4	-22	11094	No stop
11 26 10	---	00 55 45	48.9	276.1	3.9		51.3	188	11121	11 22 41
11 26 40	J2113+4012	00 56 15	50.9	273.9	3.7		51.7	8	11121	11 26 40
11 27 40	=2111+400	00 57 15	50.7	274.1	3.7		51.7	60	11128	11 26 41
11 27 40	V1396CYG	00 57 15	48.7	276.4	3.9		51.3	-22	11128	No stop
11 31 10	---	01 00 46	48.1	277.0	4.0		51.2	188	11155	11 27 41
11 31 10	J2113+4012	01 00 46	50.2	274.8	3.8		51.7	-22	11155	No stop
11 32 40	=2111+400	01 02 16	50.0	275.0	3.8		51.6	68	11167	11 31 11
11 32 40	V1396CYG	01 02 16	47.9	277.3	4.0		51.2	-22	11167	No stop
11 36 10	---	01 05 47	47.4	277.9	4.1		51.1	188	11194	11 32 41
11 36 40	J2113+4012	01 06 17	49.4	275.8	3.9		51.5	8	11194	11 36 40
11 37 40	=2111+400	01 07 17	49.2	276.0	3.9		51.5	60	11201	11 36 41

Schedule for TORUN (Code Tr) Page 39

e-EVN runs: EG082B, EG079B, and RR009

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 26 Mar 2014 Day 85 ---										
11 37 40	V1396CYG	01 07 17	47.2	278.2	4.1		51.0	-22	11201	No stop
11 41 10	---	01 10 48	46.6	278.8	4.2		50.9	188	11228	11 37 41
11 41 10	J2113+4012	01 10 48	48.7	276.6	3.9		51.4	-22	11228	No stop
11 42 40	=2111+400	01 12 18	48.5	276.9	4.0		51.4	68	11240	11 41 11
11 42 40	J2115+3742	01 12 18	47.1	273.8	4.0		49.3	-21	11240	No stop
11 46 10	---	01 15 48	46.6	274.4	4.0		49.2	189	11266	11 42 41
11 46 40	J2113+4012	01 16 19	47.9	277.6	4.0		51.3	9	11266	11 46 40
11 47 40	=2111+400	01 17 19	47.8	277.8	4.1		51.2	60	11274	11 46 41
11 47 40	V1396CYG	01 17 19	45.7	279.9	4.3		50.7	-22	11274	No stop
11 51 10	---	01 20 49	45.2	280.5	4.3		50.5	188	11301	11 47 41
11 51 10	J2113+4012	01 20 49	47.2	278.4	4.1		51.1	-21	11301	No stop
11 52 40	=2111+400	01 22 20	47.0	278.6	4.1		51.1	69	11313	11 51 11
11 52 40	V1396CYG	01 22 20	44.9	280.8	4.4		50.5	-22	11313	No stop
11 56 10	---	01 25 50	44.4	281.4	4.4		50.3	188	11339	11 52 41
11 56 40	J2113+4012	01 26 20	46.4	279.3	4.2		50.9	9	11339	11 56 40
11 57 40	=2111+400	01 27 20	46.3	279.5	4.2		50.9	60	11347	11 56 41
11 57 40	V1396CYG	01 27 20	44.2	281.7	4.4		50.3	-22	11347	No stop
12 01 10	---	01 30 51	43.7	282.3	4.5		50.1	188	11374	11 57 41
12 01 10	J2113+4012	01 30 51	45.7	280.1	4.3		50.8	-21	11374	No stop
12 02 40	=2111+400	01 32 21	45.5	280.4	4.3		50.7	69	11386	12 01 11
12 02 40	V1396CYG	01 32 21	43.5	282.5	4.5		50.1	-22	11386	No stop
12 06 10	---	01 35 52	42.9	283.1	4.6		49.9	188	11412	12 02 41
12 06 40	J2113+4012	01 36 22	44.9	281.1	4.4		50.6	9	11412	12 06 40
12 07 40	=2111+400	01 37 22	44.8	281.2	4.4		50.5	60	11420	12 06 41
12 07 40	V1396CYG	01 37 22	42.7	283.4	4.6		49.8	-22	11420	No stop
12 11 10	---	01 40 53	42.2	283.9	4.7		49.7	188	11447	12 07 41
12 11 10	J2113+4012	01 40 53	44.3	281.8	4.4		50.4	-21	11447	No stop
12 12 40	=2111+400	01 42 23	44.0	282.1	4.5		50.3	69	11458	12 11 11
12 12 40	J2115+3742	01 42 23	42.6	279.3	4.5		48.6	-20	11458	No stop
12 16 10	---	01 45 53	42.1	279.9	4.5		48.4	190	11485	12 12 41

Schedule for TORUN (Code Tr) Page 40

e-EVN runs: EG082B, EG079B, and RR009

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

Start UT Stop UT	Source	Start / Stop LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 26 Mar 2014 Day 85 ---										
12 16 40	J2113+4012	01 46 23	43.5	282.8	4.5		50.1	10	11485	12 16 40
12 17 40	=2111+400	01 47 24	43.3	282.9	4.6		50.1	60	11493	12 16 41
12 17 40	V1396CYG	01 47 24	41.3	285.0	4.8		49.3	-22	11493	No stop
12 21 10	---	01 50 54	40.8	285.6	4.8		49.1	188	11520	12 17 41
12 21 10	J2113+4012	01 50 54	42.8	283.5	4.6		49.9	-21	11520	No stop
12 22 40	=2111+400	01 52 24	42.6	283.8	4.6		49.8	69	11531	12 21 11
12 22 40	V1396CYG	01 52 24	40.5	285.9	4.9		49.1	-22	11531	No stop
12 26 10	---	01 55 55	40.0	286.4	4.9		48.9	188	11558	12 22 41
12 26 40	J2113+4012	01 56 25	42.0	284.5	4.7		49.7	9	11558	12 26 40
12 27 40	=2111+400	01 57 25	41.9	284.6	4.7		49.6	60	11566	12 26 41
12 27 40	V1396CYG	01 57 25	39.8	286.7	4.9		48.8	-22	11566	No stop
12 31 10	---	02 00 56	39.3	287.3	5.0		48.6	188	11593	12 27 41
12 31 10	J2113+4012	02 00 56	41.3	285.2	4.8		49.4	-21	11593	No stop
12 32 40	=2111+400	02 02 26	41.1	285.4	4.8		49.3	69	11604	12 31 11
12 32 40	V1396CYG	02 02 26	39.1	287.5	5.0		48.5	-22	11604	No stop
12 36 10	---	02 05 57	38.6	288.1	5.1		48.3	188	11631	12 32 41
12 36 40	J2113+4012	02 06 27	40.5	286.1	4.9		49.1	9	11631	12 36 40
12 37 40	=2111+400	02 07 27	40.4	286.3	4.9		49.1	60	11639	12 36 41
12 37 40	V1396CYG	02 07 27	38.4	288.3	5.1		48.2	-22	11639	No stop
12 41 10	---	02 10 57	37.9	288.9	5.2		48.0	188	11666	12 37 41
12 41 10	J2113+4012	02 10 57	39.9	286.8	4.9		48.9	-21	11666	No stop
12 42 40	=2111+400	02 12 28	39.7	287.1	5.0		48.8	69	11677	12 41 11
12 42 40	J2115+3742	02 12 28	38.2	284.5	5.0		47.3	-19	11677	No stop
12 46 10	---	02 15 58	37.7	285.1	5.0		47.2	191	11704	12 42 41
12 46 40	J2113+4012	02 16 28	39.1	287.7	5.0		48.6	11	11704	12 46 40
12 47 40	=2111+400	02 17 29	39.0	287.9	5.1		48.5	60	11712	12 46 41
12 47 40	V1396CYG	02 17 29	37.0	289.9	5.3		47.6	-21	11712	No stop
12 51 10	---	02 20 59	36.5	290.5	5.3		47.4	189	11739	12 47 41
12 51 10	J2113+4012	02 20 59	38.5	288.5	5.1		48.3	-21	11739	No stop
12 52 40	=2111+400	02 22 29	38.2	288.7	5.1		48.2	69	11750	12 51 11
---------- fringe finder ----------										
12 53 50	J2202+4216	02 23 40	46.5	283.1	4.3		52.3	25	11750	12 53 50
12 59 50	=BLLAC	02 29 41	45.6	284.0	4.4		52.0	360	11796	12 53 51

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


 ======== Setup file: sess313.C1024
   Matching groups in /aps3/opt/share/sched_11.0/catalogs/freq.dat:
     tr6cm           E-mail Borkowski 23Apr03 (CR 1May03)

   Setup group:    2         Station: TORUN            Total bit rate:  1024
   Format: MKIV1:2           Bits per sample: 2        Sample rate: 32.000
   Number of channels: 16    DBE type:                 Speedup factor:   0.50

   Disk used to record data.

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

  The following frequency sets based on these setups were used.

   Frequency Set:   6  Setup file default.  Used pcal sets:   1
   LO sum=   4942.49  4942.49  4942.49  4942.49  4974.49  4974.49  4974.49  4974.49
             5006.49  5006.49  5006.49  5006.49  5038.49  5038.49  5038.49  5038.49
   BBC fr=    742.49   742.49   742.49   742.49   774.49   774.49   774.49   774.49
              806.49   806.49   806.49   806.49   838.49   838.49   838.49   838.49
   Bandwd=     16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
               16.00    16.00    16.00    16.00    16.00    16.00    16.00    16.00
    Matching frequency sets:   6

  The following pulse cal sets were used with this setup:

   Pulse cal detection set:   1  PCAL = OFF
    PCALXB1=   S1    S2    S3    S4    S5    S6    S7    S8
    PCALXB2=   M1    M2    M3    M4    M5    M6    M7    M8
    PCALFR1=     0     0     0     0     0     0     0     0
    PCALFR2=     0     0     0     0     0     0     0     0

   Track assignments are:
    track1=   2, 10, 18, 26,  3, 11, 19, 27, 66, 74, 82, 90, 67, 75, 83, 91
    barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* V998ORI	05 29 29.292618	* 05 32 14.485550	05 33 01.860036	0.00
	09 47 04.72533	* 09 49 11.79110	09 49 33.84861	0.00
* J0530+0900	05 27 39.008754	* 05 30 23.227500	05 31 10.311883	0.00
	08 58 22.85271	* 09 00 37.92300	09 01 02.02730	0.00
* V1396CYG	20 58 12.067718	* 21 00 06.111930	21 00 38.182447	0.00
	39 52 23.55356	* 40 04 09.44190	40 07 23.80860	0.00
* J2115+3742	21 12 44.469033	* 21 14 44.117900	21 15 17.762293	0.00
	37 29 56.03237	* 37 42 25.72400	37 45 53.08557	0.00
* V596CAS	01 55 57.007317	* 01 59 24.099080	02 00 22.659699	0.00
	58 16 40.64129	* 58 31 13.28990	58 35 22.42324	0.00
* J0151+5454	01 48 18.839204	* 01 51 36.288800	01 52 32.098513	0.00
	54 39 48.95530	* 54 54 37.68900	54 58 50.62817	0.00
* RYSEX	10 33 24.592209	* 10 36 00.577480	10 36 46.586028	0.00
	05 22 48.10863	* 05 07 14.63130	05 02 34.85578	0.00
* J1035+0522	10 32 21.484250	* 10 34 57.605900	10 35 43.648961	0.00
	05 38 04.61084	* 05 22 32.81500	05 17 53.52742	0.00
* 1927+654	19 27 01.925718	* 19 27 19.540100	19 27 23.967633	0.00
	65 27 42.30038	* 65 33 54.33500	65 35 28.98263	0.00
* XTEJ1908	19 06 29.804976	* 19 08 53.076000	19 09 34.058728	0.00
	09 18 13.11538	* 09 23 04.84000	09 24 26.83653	0.00
J0137+3309	01 34 49.826374	* 01 37 41.299440	01 38 29.711177	0.52
* 3C48	32 54 20.25881	* 33 09 35.13299	33 13 51.46680	0.50
* J0147+5840	01 44 24.000042	* 01 47 46.541223	01 48 43.751211	2.66
0144+584	58 25 48.56646	* 58 40 44.97262	58 45 00.72569	1.74
J0237+2848	02 34 55.589591	* 02 37 52.405678	02 38 42.495153	0.11
* 0234+285	28 35 11.40773	* 28 48 08.98998	28 51 44.88240	0.10
* J0519+0848	05 16 26.910741	* 05 19 10.811125	05 19 57.750540	0.14
0516+087	08 45 53.30185	* 08 48 56.73468	08 49 34.75120	0.27
J0530+1331	05 28 06.759218	* 05 30 56.416749	05 31 45.073883	0.10
* 0528+134	13 29 42.28877	* 13 31 55.14944	13 32 20.10320	0.10
* J1038+0512	10 36 10.827228	* 10 38 46.779881	10 39 32.784828	0.12
1036+054	05 28 06.89952	* 05 12 29.08645	05 07 48.16524	0.17
* J1847+0810	18 44 48.246328	* 18 47 12.660418	18 47 54.084291	0.24
1844+081	08 07 15.53478	* 08 10 35.38871	08 11 31.47032	0.43
* J1905+0952	19 03 17.231805	* 19 05 39.898867	19 06 20.725471	1.72
1903+097	09 47 30.15838	* 09 52 08.40772	09 53 26.40186	1.97
1905+090	19 05 18.406173	* 19 07 41.963333	19 08 23.034033	0.20
* J1907+0907	09 02 25.64166	* 09 07 12.39478	09 08 33.05129	0.38

```
* J1922+0841        19 19 54.380458   * 19 22 18.633671     19 22 59.828259       1.26
  1919+086          08 36 10.05269    * 08 41 57.37333      08 43 35.46192        2.92

* J1927+6117        19 26 49.662223   * 19 27 30.442613     19 27 41.646327       0.44
  1926+611          61 11 20.88806    * 61 17 32.87924      61 19 07.86184        0.27

* J1933+6540        19 33 38.733746   * 19 33 57.337259     19 34 01.987299       0.41
  1933+655          65 33 38.07667    * 65 40 16.82823      65 41 59.25976        0.18

* J2113+4012        21 11 33.260021   * 21 13 29.486338     21 14 02.136333       0.79
  2111+400          40 00 25.23968    * 40 12 51.38819      40 16 17.46036        0.69

* J2202+4216        22 00 39.362504   * 22 02 43.291371     22 03 17.999641       0.14
  BLLAC             42 02 08.59073    * 42 16 39.97987      42 20 42.54460        0.10
```

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)	Source	Sun distance (deg)
V998ORI	78.3	0234+285	42.7
J0530+0900	77.8	J0519+0848	75.1
V1396CYG	58.8	0528+134	78.0
J2115+3742	55.2	J1038+0512	154.1
V596CAS	59.9	J1847+0810	82.6
J0151+5454	56.2	J1905+0952	78.0
RYSEX	153.5	J1907+0907	77.5
J1035+0522	153.1	J1922+0841	73.9
1927+654	81.1	J1927+6117	80.0
XTEJ1908	77.2	J1933+6540	80.5
3C48	36.3	J2113+4012	56.6
J0147+5840	59.3	J2202+4216	50.4

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
that the Sun will cause amplitude reductions on the longest VLBA baselines
at a solar distance of 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
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
43.0 GHz	6. deg

rk01xctr

RadioAstron AGN survey

PI: *Yuri Kovalev*


```
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```


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

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

 --- Wed  26 Mar 2014   Day  85 ---

 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

16 00 00  0716+714     05 30 20  68.0  23.9 -1.9    -130.7     0         0   16 00 00
16 14 30  ---          05 44 53  68.8  21.7 -1.6    -136.1   870        28   16 00 01

16 15 00  0716+714     05 45 23  68.8  21.6 -1.6    -136.3    24        28   16 15 00
16 29 30  ---          05 59 55  69.6  19.1 -1.4    -142.1   870        56   16 15 01

16 30 00  0716+714     06 00 25  69.6  19.0 -1.4    -142.3    24        56   16 30 00
16 44 30  ---          06 14 57  70.3  16.2 -1.1    -148.4   870        84   16 30 01

16 45 00  0716+714     06 15 28  70.3  16.1 -1.1    -148.6    24        84   16 45 00
17 00 00  ---          06 30 30  70.9  12.9 -0.9    -155.2   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: ra18cm2.set
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

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

   Disk used to record data.
```

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

The following frequency sets based on these setups were used.

 Frequency Set:   7  Setup file default.  Used with PCAL = 1MHz
 LO sum=   1668.00  1668.00  1668.00  1668.00
 BBC fr=    732.00   732.00   732.00   732.00
 Bandwd=     16.00    16.00    16.00    16.00
  Matching frequency sets:   7

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* 0716+714	07 16 13.029739	* 07 21 53.448474	07 23 31.561502	0.00
J0721+7120	71 26 15.17406	* 71 20 36.36340	71 19 02.04728	0.00

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)
3C147	82.1
0716+714	92.6

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
that the Sun will cause amplitude reductions on the longest VLBA baselines
at a solar distance of 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk01xdtr

RadioAstron AGN survey

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```
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```


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

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

 --- Wed  26 Mar 2014   Day  85 ---

  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

19 00 00  0919-260     08 30 50   9.7 168.4 -0.9      -7.8     0        0   19 00 00
19 19 30  ---          08 50 23  10.2 172.8 -0.5      -4.8  1170       37   19 00 01

19 20 00  0919-260     08 50 53  10.2 172.9 -0.5      -4.8    24       37   19 20 00
19 40 00  ---          09 10 56  10.5 177.4 -0.2      -1.7  1200       76   19 20 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 ./rk01xd_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:   4  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:   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)
* 0919-260	09 19 16.702133	* 09 21 29.353855	09 22 08.767632	0.00
J0921-2618	-26 05 54.56415	*-26 18 43.38632	-26 22 43.98406	0.00

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)
3C147	82.0
0919-260	130.6

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
that the Sun will cause amplitude reductions on the longest VLBA baselines
at a solar distance of 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk01xetr

RadioAstron AGN survey

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```
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Phone:    +7-495-3332512           EMAIL:    kirx@scan.sai.msu.ru
Fax:      +7-495-3332378           Phone during observation: +7-903-6614865
```


```
                UWAGA: zmiana pasma w czasie tego eksperymentu!!!

##########################################################################################
#######################  Observing mode: K&C-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  26 Mar 2014   Day  85 ---

 ---------- 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

21 20 00  1642+690     10 51 13  49.0  33.2 -5.8     -66.1     0         0   21 20 00
21 35 00  ---          11 06 15  50.2  34.0 -5.6     -69.0   900        29   21 20 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

21 40 00  1642+690     11 11 16  50.7  34.3 -5.5     -70.0   294        29   21 40 00
22 00 00  ---          11 31 19  52.4  35.2 -5.2     -74.0  1200        67   21 40 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 ./rk01xe_freq.dat:
     tr1cm

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

   Disk used to record data.

   1st LO=  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:   9  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:   9

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


 ======== Setup file: ra6cm2.set
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

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

   Disk used to record data.

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

```
 The following frequency sets based on these setups were used.

  Frequency Set:  10  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:  10

  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)
* 1642+690	16 42 18.064877	* 16 42 07.848507	16 42 06.096027	0.00
J1642+6856	69 02 13.21708	* 68 56 39.75636	68 54 51.68644	0.00

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)
  1642+690            96.5

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

rk01xftr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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


```
                UWAGA: zmiana pasma w czasie tego eksperymentu!!!

##########################################################################################
#######################  Observing mode: K&C-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  27 Mar 2014   Day  86 ---

 ---------- 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

00 00 00  0851+202     13 31 39  28.4 265.9  4.6      39.6     0         0   00 00 00
00 14 30  ---          13 46 11  26.3 268.8  4.8      39.7   870        28   00 00 01

00 15 00  0851+202     13 46 41  26.2 268.9  4.9      39.7    24        28   00 15 00
00 25 00  ---          13 56 43  24.7 270.9  5.0      39.7   600        47   00 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

00 30 00  0851+202     14 01 44  23.9 271.9  5.1      39.7   293        47   00 30 00
00 44 30  ---          14 16 16  21.8 274.8  5.3      39.6   870        75   00 30 01

00 45 00  0851+202     14 16 46  21.7 274.9  5.4      39.6    24        75   00 45 00
01 00 00  ---          14 31 49  19.4 277.8  5.6      39.3   900       104   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: ra1cm2.set
   Matching groups in ./rk01xf_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


 ======== Setup file: ra6cm2.set
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

   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:   8  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:   8

  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)
* 0851+202	08 51 57.250618	* 08 54 48.874930	08 55 38.954107	0.00
J0854+2006	20 17 58.41733	* 20 06 30.64078	20 03 02.84207	0.00

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           124.4

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

rk01xgtr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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


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



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

 --- Thu  27 Mar 2014   Day  86 ---

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

03 00 00  0716+714     16 32 09  38.1 -16.1  9.1      31.2     0        0   03 00 00
03 14 30  ---          16 46 41  37.5 -14.8  9.4      28.6   870       28   03 00 01

03 15 00  0716+714     16 47 11  37.5 -14.7  9.4      28.5    25       28   03 15 00
03 29 30  ---          17 01 43  36.9 -13.4  9.6      25.8   870       56   03 15 01

03 30 00  0716+714     17 02 14  36.9 -13.4  9.6      25.7    25       56   03 30 00
03 44 30  ---          17 16 46  36.4 -12.1  9.9      23.1   870       84   03 30 01

03 45 00  0716+714     17 17 16  36.4 -12.0  9.9      23.0    25       84   03 45 00
04 00 00  ---          17 32 18  36.0 -10.6 10.1      20.2   900      112   03 45 01



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


 ======== Setup file: ra1cm2.set
   Matching groups in ./rk01xg_freq.dat:
     tr1cm

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

   Disk used to record data.
```

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

 The following frequency sets based on these setups were used.

  Frequency Set:   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)
* 0716+714	07 16 13.029739	* 07 21 53.448474	07 23 31.534225	0.00
J0721+7120	71 26 15.17406	* 71 20 36.36340	71 19 02.10153	0.00

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            92.3

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

rk06atr

RadioAstron SVLBI observations of radio transients

PI: *Kirill Sokolovsky*


```
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```


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


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

 --- Thu  27 Mar 2014   Day  86 ---

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

05 20 00  SN2014J      18 52 32  37.2 -18.4  8.9      32.9     0         0   05 20 00
05 39 30  ---          19 12 05  36.3 -16.6  9.3      29.4  1170        37   05 20 01

05 40 00  SN2014J      19 12 35  36.3 -16.5  9.3      29.3    25        37   05 40 00
05 58 00  ---          19 30 38  35.6 -14.8  9.6      26.1  1080        72   05 40 01

05 59 00  1022+707     19 31 38  37.5 -17.0  9.1      31.8    39        72   05 59 00
06 00 00  ---          19 32 38  37.5 -16.9  9.1      31.6    60        74   05 59 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
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

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

   Disk used to record data.
```

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

 The following frequency sets based on these setups were used.

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

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* 1022+707	10 22 46.013632	* 10 26 36.692554	10 27 44.424187	2.01
J1026+7032	70 47 59.55354	* 70 32 43.10883	70 28 20.74492	1.14
* SN2014J	09 51 33.312784	* 09 55 42.121000	09 56 54.820201	0.00
	69 54 39.24841	* 69 40 25.88000	69 36 22.13549	0.00

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)
  1022+707           104.5
  SN2014J            103.7

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

rk01xhtr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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


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


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

 --- Fri  28 Mar 2014   Day  87 ---

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

20 00 00  0919-260     09 38 53  10.4 183.8  0.3       2.6     0         0   20 00 00
20 14 30  ---          09 53 25  10.2 187.1  0.5       4.8   870        28   20 00 01

20 15 00  0919-260     09 53 55  10.2 187.2  0.5       4.8    24        28   20 15 00
20 29 30  ---          10 08 28   9.9 190.5  0.8       7.0   870        56   20 15 01

20 30 00  0919-260     10 08 58   9.9 190.6  0.8       7.1    24        56   20 30 00
20 44 30  ---          10 23 30   9.4 193.9  1.0       9.3   870        84   20 30 01

20 45 00  0919-260     10 24 00   9.4 194.0  1.0       9.3    24        84   20 45 00
21 00 00  ---          10 39 03   8.8 197.4  1.3      11.5   900       112   20 45 01



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


 ======== Setup file: ra18cm2.set
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

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

   Disk used to record data.
```

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

The following frequency sets based on these setups were used.

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

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* 0919-260	09 19 16.702133	* 09 21 29.353855	09 22 08.731931	0.00
J0921-2618	-26 05 54.56415	*-26 18 43.38632	-26 22 44.17239	0.00

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)
0919-260	129.5

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
that the Sun will cause amplitude reductions on the longest VLBA baselines
at a solar distance of 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk01xitr

RadioAstron AGN survey

PI: *Yuri Kovalev*


```
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```


```
                UWAGA: zmiana pasma w czasie tego eksperymentu!!!

##########################################################################################
#######################  Observing mode: K&C-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  29 Mar 2014   Day  88 ---

 ---------- 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

17 00 00  0648-165     06 42 20  20.2 177.8 -0.1      -1.4     0        0   17 00 00
17 14 30  ---          06 56 52  20.2 181.5  0.1       0.9   870       28   17 00 01

17 15 00  0648-165     06 57 22  20.2 181.6  0.1       1.0    24       28   17 15 00
17 25 00  ---          07 07 24  20.2 184.2  0.3       2.6   600       47   17 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

17 30 00  0648-165     07 12 25  20.1 185.4  0.4       3.4   293       47   17 30 00
17 44 30  ---          07 26 57  19.8 189.1  0.6       5.7   870       75   17 30 01

17 45 00  0648-165     07 27 27  19.8 189.3  0.6       5.8    24       75   17 45 00
18 00 00  ---          07 42 30  19.4 193.1  0.9       8.1   900      104   17 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 ./rk01xi_freq.dat:
     tr1cm

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

   Disk used to record data.

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

  The following frequency sets based on these setups were used.

   Frequency Set:   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



 ======== Setup file: ra6cm2.set
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

   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:  10  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:  10

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



POSITIONS OF SOURCES USED IN RECORDING SCANS

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

* 0648-165          06 48 10.295571   * 06 50 24.581861     06 51 03.400093       0.00
  J0650-1637       -16 34 05.88130    *-16 37 39.72548     -16 39 03.49931        0.00



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)
  0648-165            95.4

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

rk01xjtr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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```


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


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

 --- Sat  29 Mar 2014   Day  88 ---

 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  0727-115     09 42 49  19.3 214.4  2.2      20.3     0         0   20 00 00
20 14 30  ---          09 57 22  18.0 217.9  2.4      22.1   870        28   20 00 01

20 15 00  0727-115     09 57 52  18.0 218.0  2.4      22.2    24        28   20 15 00
20 29 30  ---          10 12 24  16.6 221.4  2.7      23.9   870        56   20 15 01

20 30 00  0727-115     10 12 54  16.5 221.5  2.7      24.0    24        56   20 30 00
20 44 30  ---          10 27 27  15.1 224.9  2.9      25.6   870        84   20 30 01

20 45 00  0727-115     10 27 57  15.0 225.0  2.9      25.7    24        84   20 45 00
21 00 00  ---          10 42 59  13.4 228.4  3.2      27.3   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 ./rk01xj_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)
* 0727-115	07 27 58.097813	* 07 30 19.112473	07 31 00.085847	0.00
J0730-1141	-11 34 52.58107	*-11 41 12.60063	-11 43 22.34489	0.00

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)
 0727-115           104.8

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

rk01xltr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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```


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


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

 --- Sun  30 Mar 2014   Day  89 ---

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

14 00 00  1324+574     03 45 47  23.8  19.7 -9.7     -21.9     0         0   14 00 00
14 14 30  ---          04 00 19  24.6  21.7 -9.5     -24.1   870        28   14 00 01

14 15 00  1324+574     04 00 49  24.6  21.7 -9.4     -24.2    24        28   14 15 00
14 29 30  ---          04 15 22  25.4  23.7 -9.2     -26.4   870        56   14 15 01

14 30 00  1324+574     04 15 52  25.5  23.8 -9.2     -26.5    24        56   14 30 00
14 44 30  ---          04 30 24  26.4  25.7 -9.0     -28.7   870        84   14 30 01

14 45 00  1324+574     04 30 54  26.4  25.8 -8.9     -28.8    24        84   14 45 00
15 00 00  ---          04 45 57  27.4  27.8 -8.7     -31.0   900       112   14 45 01



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


 ======== Setup file: ra18cm2.set
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

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

   Disk used to record data.
```

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

The following frequency sets based on these setups were used.

 Frequency Set:   8  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:   8

 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)
* 1324+574	13 24 54.934679	* 13 26 50.572337	13 27 25.361676	0.00
J1326+5712	57 27 39.04145	* 57 12 06.74540	57 07 33.64477	0.00

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+574	118.1

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
that the Sun will cause amplitude reductions on the longest VLBA baselines
at a solar distance of 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk01xmtr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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```


```
                UWAGA: zmiana pasma w czasie tego eksperymentu!!!

##########################################################################################
#######################  Observing mode: K&C-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  30 Mar 2014   Day  89 ---

 ---------- 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

17 00 00  0727-115     06 46 16  24.5 168.0 -0.7      -7.4     0         0   17 00 00
17 14 30  ---          07 00 49  24.9 171.9 -0.5      -5.0   870        28   17 00 01

17 15 00  0727-115     07 01 19  24.9 172.0 -0.5      -4.9    24        28   17 15 00
17 25 00  ---          07 11 20  25.0 174.7 -0.3      -3.3   600        47   17 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

17 30 00  0727-115     07 16 21  25.1 176.0 -0.2      -2.4   293        47   17 30 00
17 44 30  ---          07 30 54  25.2 180.0 -0.0      -0.0   870        75   17 30 01

17 45 00  0727-115     07 31 24  25.2 180.1  0.0       0.1    24        75   17 45 00
18 00 00  ---          07 46 26  25.1 184.2  0.3       2.6   900       104   17 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 ./rk01xm_freq.dat:
     tr1cm

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

   Disk used to record data.

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

  The following frequency sets based on these setups were used.

   Frequency Set:   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



 ======== Setup file: ra6cm2.set
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

   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:  10  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:  10

  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)
* 0727-115	07 27 58.097813	* 07 30 19.112473	07 31 00.065062	0.00
J0730-1141	-11 34 52.58107	*-11 41 12.60063	-11 43 22.35574	0.00

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)
  0727-115           104.1

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

rk01xntr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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


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


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

 --- Sun  30 Mar 2014   Day  89 ---

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

20 00 00  0919-260     09 46 46  10.3 185.6  0.4       3.8     0         0   20 00 00
20 14 30  ---          10 01 18  10.1 188.9  0.7       6.0   870        28   20 00 01

20 15 00  0919-260     10 01 48  10.1 189.0  0.7       6.0    24        28   20 15 00
20 29 30  ---          10 16 21   9.7 192.3  0.9       8.2   870        56   20 15 01

20 30 00  0919-260     10 16 51   9.6 192.4  0.9       8.3    24        56   20 30 00
20 44 30  ---          10 31 23   9.1 195.7  1.2      10.4   870        84   20 30 01

20 45 00  0919-260     10 31 53   9.1 195.8  1.2      10.5    24        84   20 45 00
21 00 00  ---          10 46 56   8.4 199.1  1.4      12.7   900       112   20 45 01



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


 ======== Setup file: ra18cm2.set
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

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

   Disk used to record data.
```

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

The following frequency sets based on these setups were used.

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

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* 0919-260	09 19 16.702133	* 09 21 29.353855	09 22 08.692705	0.00
J0921-2618	-26 05 54.56415	*-26 18 43.38632	-26 22 44.35482	0.00

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)
0919-260	128.4

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
that the Sun will cause amplitude reductions on the longest VLBA baselines
at a solar distance of 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk01xotr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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


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


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

 --- Mon  31 Mar 2014   Day  90 ---

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

01 00 00  1005+066     14 47 35  17.1 257.3  4.6      36.1     0         0   01 00 00
01 14 30  ---          15 02 07  15.0 260.3  4.9      36.6   870        28   01 00 01

01 15 00  1005+066     15 02 38  14.9 260.4  4.9      36.6    24        28   01 15 00
01 29 30  ---          15 17 10  12.8 263.4  5.1      36.9   870        56   01 15 01

01 30 00  1005+066     15 17 40  12.7 263.5  5.1      36.9    24        56   01 30 00
01 44 30  ---          15 32 12  10.5 266.5  5.4      37.1   870        84   01 30 01

01 45 00  1005+066     15 32 42  10.4 266.6  5.4      37.1    24        84   01 45 00
02 00 00  ---          15 47 45   8.2 269.6  5.6      37.2   900       112   01 45 01



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


 ======== Setup file: ra18cm2.set
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

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

   Disk used to record data.
```

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

The following frequency sets based on these setups were used.

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

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* 1005+066	10 05 23.466064	* 10 08 00.816157	10 08 47.067663	0.00
J1008+0621	06 36 03.30797	* 06 21 21.21593	06 16 55.82281	0.00

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)
1005+066	141.4

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes
that the Sun will cause amplitude reductions on the longest VLBA baselines
at a solar distance of 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk01xptr

RadioAstron AGN survey

PI: *Yuri Kovalev*


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


```
                UWAGA: zmiana pasma w czasie tego eksperymentu!!!

##########################################################################################
#######################  Observing mode: K&C-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  31 Mar 2014   Day  90 ---

 ---------- 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

16 00 00  0727-115     05 50 03  21.7 153.3 -1.7     -16.0     0        0   16 00 00
16 14 30  ---          06 04 35  22.6 157.0 -1.4     -13.9   870       28   16 00 01

16 15 00  0727-115     06 05 05  22.6 157.1 -1.4     -13.8    24       28   16 15 00
16 25 00  ---          06 15 07  23.2 159.7 -1.3     -12.3   600       47   16 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

16 30 00  0727-115     06 20 08  23.4 161.0 -1.2     -11.5   293       47   16 30 00
16 44 30  ---          06 34 40  24.1 164.9 -0.9      -9.2   870       75   16 30 01

16 45 00  0727-115     06 35 10  24.1 165.0 -0.9      -9.1    24       75   16 45 00
17 00 00  ---          06 50 13  24.6 169.0 -0.7      -6.7   900      104   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: ra1cm2.set
   Matching groups in ./rk01xp_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:   4  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:   4

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



 ======== Setup file: ra6cm2.set
 --- WARNING ---  This group does not match an entry in the frequency catalog.
                  This might be ok because the catalog is not complete.
                  But be very careful to be sure that the setup is correct.

   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:   7  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:   7

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



POSITIONS OF SOURCES USED IN RECORDING SCANS

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

* 0727-115          07 27 58.097813   * 07 30 19.112473     07 31 00.043357       0.00
  J0730-1141       -11 34 52.58107    *-11 41 12.60063     -11 43 22.38195        0.00



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)
  0727-115           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 60deg F^(-0.6) where F is in GHz.
 For common VLBI bands, this is:
      1.6 GHz         45. deg
      2.3 GHz         36. deg
      5.0 GHz         23. deg
      8.4 GHz         17. deg
     15.0 GHz         12. deg
     22.0 GHz          9. deg
```

Informacje o skryptach kalibracyjnych `cl14*.snp`

Skrypty: `cl14l1tr`, `cl14l1rt`, `cl14c1tr`, `cl14m1tr`, `cl14m1rt` i `cl14kc` używają źródła 3c123

Skrypty: `cl14l1v`, `cl14c1v` i `cl14l1v` używają źródła Virgo A

Skrypty: `cl14c1c`, `cl14l1c` i `cl14k1a` używają źródła Cygnus A

Skrypt: `cl14l1b` używa źródła 3c218

Skrypt: `cl14m1a` używa źródła 3c348

Skrypt: `cl14k1tr` używa źródła DR21

Skrypt: `cl14k1j` używa źródła Jowisz (trzeba aktualizować współrzędne)

Można je zapuszczać (i w dowolnym momencie przerwać), gdy dane źródło znajduje się wyżej niż 10 stopni nad horyzontem — ten przedziaćzasu dla 3 marca zawiera poniższa tabelka (kolumny `Rise` i `Set`, tj. wschód i zachód UTC; wielokrotne gwiazdki znaczą, że źródło nie schodzi poniżej 10 stopni).

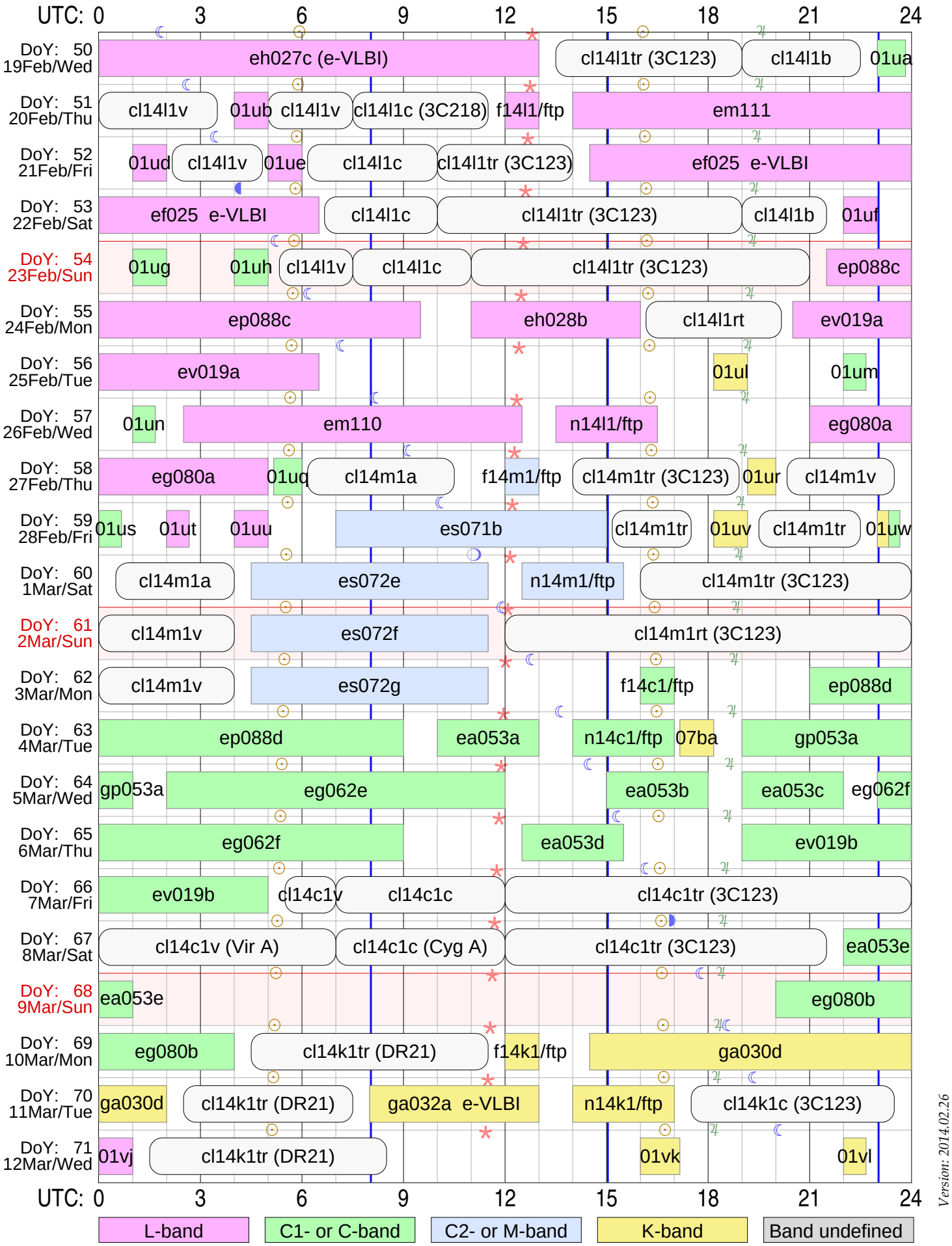
```
              Astronomical Observatory, Piwnice near Torun
Date: 2014.03.03 Monday    MJD = 56719.3770249   DJ =2456719.8770249  DoY =  62
  10:02:54.95CET =  9:02:54.95UTC        TST = 21:01:26.42  MST = 21:01:25.81
```

		UTC (above 10 deg) [h]			To Sun	Size	Flux density [Jy]			
Source		Rise	Transit	Set	[deg]	["]	18cm	6cm	5cm	1.3cm
3c48	*	5.62	13.7192	21.82	55.4	2	14.2	5.3	4.0	1.2
3c123	*	9.04	16.7022	0.43	89.3	23	42.1	15.8	11.7	3.3
TaurusA		10.80	17.6561	0.57	101.5	300	894.9	648.1	590.2	410.9
3c147	*	*****	17.7943	*****	102.7	1	19.6	7.5	5.6	1.7
3c161		14.23	18.5287	22.83	111.8	3	16.5	6.5	4.8	1.2?
3c218		17.76	21.3695	1.05	149.2	47	36.5	13.3	9.9	3.3?
VirgoA		18.54	0.5733	6.54	156.0	200	178.2	75.4	58.5	21.3?
3c286	*	17.76	1.5749	9.32	136.6	2	13.9	7.3	5.9	2.5
3c295	*	*****	2.2437	*****	119.6	5	19.8	6.4	4.4	1.0
3c309.1		*****	3.0274	*****	105.4	2	6.6	3.1	2.5	1.0
3c348		23.52	4.9001	10.22	91.8	170	39.5	12.2	8.5	1.9?
3c353		0.61	5.3886	10.16	83.8	210	49.8	21.3	16.4	5.5?
CygA		22.65	8.0268	17.34	62.4	115	1424.2	371.9	252.0	55.8
CasA'13		*****	11.4199	*****	65.9	240	1361.9	620.4	494.0	204.4
DR21		22.94	8.6843	18.37	58.2	20				17.0

`* - fluxes according to Perley&Butler (2012),  ? - unreliable flux at 22GHz`

Na następnej stronie znajduje się grafik z zaznaczeniem czasu, gdy można używać określonych skryptów, jednak ani proponowany czas, ani skrypt nie są krytyczne.

Plan kalibracji w sesji Feb/Mar 2014



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: 413.4 hours in 62 experiments scheduled

Version: 2014.02.26

Plan użycia disk-packów na Mark5A w sesji EVN 1/2014

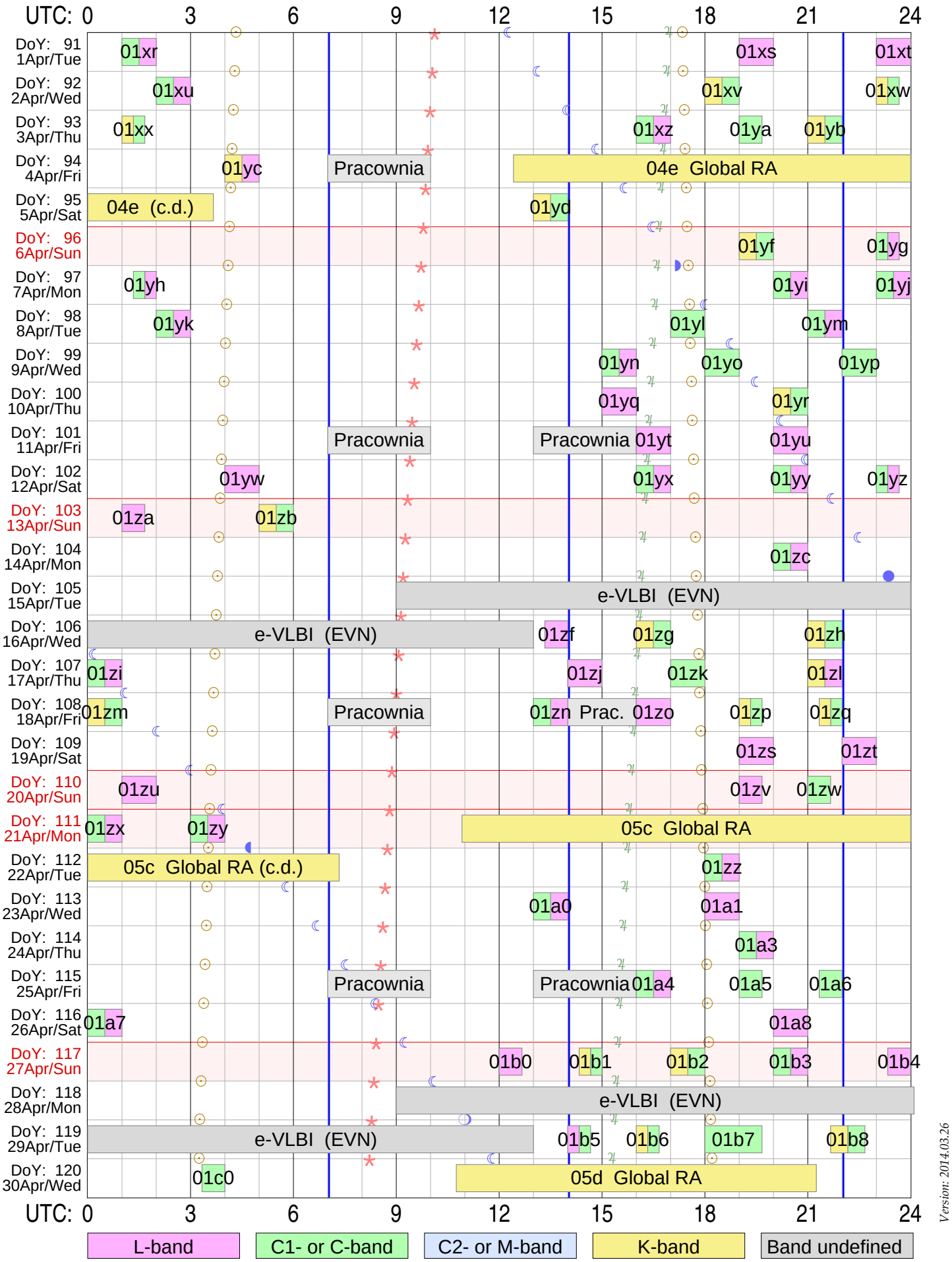
(*wersja 3.0*, 2014.03.10)

```
            Zapotrze- =========== Packi ============
Projekt      bowanie     Bank A           Bank B       Uwagi
      Corr. ----GB--- -----VSN/GB--    -----VSN/GB--
   **L-band**
f14l1  EVN      205   HART+507/8000                  ftp, tez Mark5B
em111  EVN     4255   HART+507/8000
ef025  eEVN       0    ------------------------------   e-VLBI
ep088c EVN     5079   HART+507/8000    H0B+0019/6000  ~1440
eh028b EVN      245                    H0B+0019/6000
ev019a EVN     4132                    H0B+0019/[~170] (zostaje ~170 GB)
em110  EVN     4104   J0D-0046/6000
n14l1  EVN      559   J0D-0046/6000[1337]            ftp, tez Mark5B
eg080a EVN     2955   MPI-0530/4000
   **M-band**
f14m1  EVN      182   MPI-0530/4000                  ftp, tez Mark5B
es071b EVN     ~460   MPI-0530/4000
es072e EVN       80   MPI-0530/4000
n14m1  EVN      133   MPI-0530/4000                  ftp, tez Mark5B
es072f EVN       81   MPI-0530/4000
es072g EVN       81   MPI-0530/4000[~028]
   **C-band**
f14c1  EVN      174   IAAE-020/8000                  ftp, tez Mark5B
ep088d EVN     5079   IAAE-020/8000
ea053a EVN     1236   J0D-0046/6000[101]
n14c1  EVN      523   NRA0+261/6000                  ftp, tez Mark5B
gp053a EVN     2586   IAAE-020/8000[161]
eg062e EVN     4282   NRA0+261/6000
ea053b EVN     1229   NRA0+261/6000
ea053c EVN     1213                    HART-041/3200 <- wymazany po eg062f
eg062f EVN     4225                    HART-041/3200/MED-0051/4000
ea053d EVN     1240                    MED-0051/4000
ev019b EVN     3825   TR+00041/8000
fr017  EVN     ~450                    MED-0051/4000  ekstra JIVE test
ea053e EVN     1248   TR+00041/8000
eg080b EVN     2890   TR+00041/8000[1085]
   **K-band**
f14k1  EVN      408                    MED-0051/4000 ftp, tez Mark5B
ga030d Bonn     662   JIVE-055/2000*                 <--- * = e-shiping to Bonn !
ga032a eEVN       0    ------------------------------   e-VLBI
n14k1  EVN      813   TR+00041/8000                  ftp, tez Mark5B
```

`XA0-1005/4000`	— **sesja EVN na Mark5B** (bank A); potrzeba 2977 GB
`0S0D-066/2000`	— **dedykowany do testow Mark5B + DBBC**
`TR-00002/1600`	— **dedykowany do RadioAstronu** (Mark5A, bank A)

Rezerwa: `J0D-0050/6000[4500]`, `SHA0-032/4000`, `HART-041/3200`, `UA0-0016/2000`, TR-00008/2000, USN-0203/2000 i `JIVE-055/2000*`

Tr VLBI plan for Apr 2014



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: 179.3 hours in 77 experiments scheduled

Two initial characters (rk) are omitted from RA experiment names!

Version: 2014.03.26

Contents