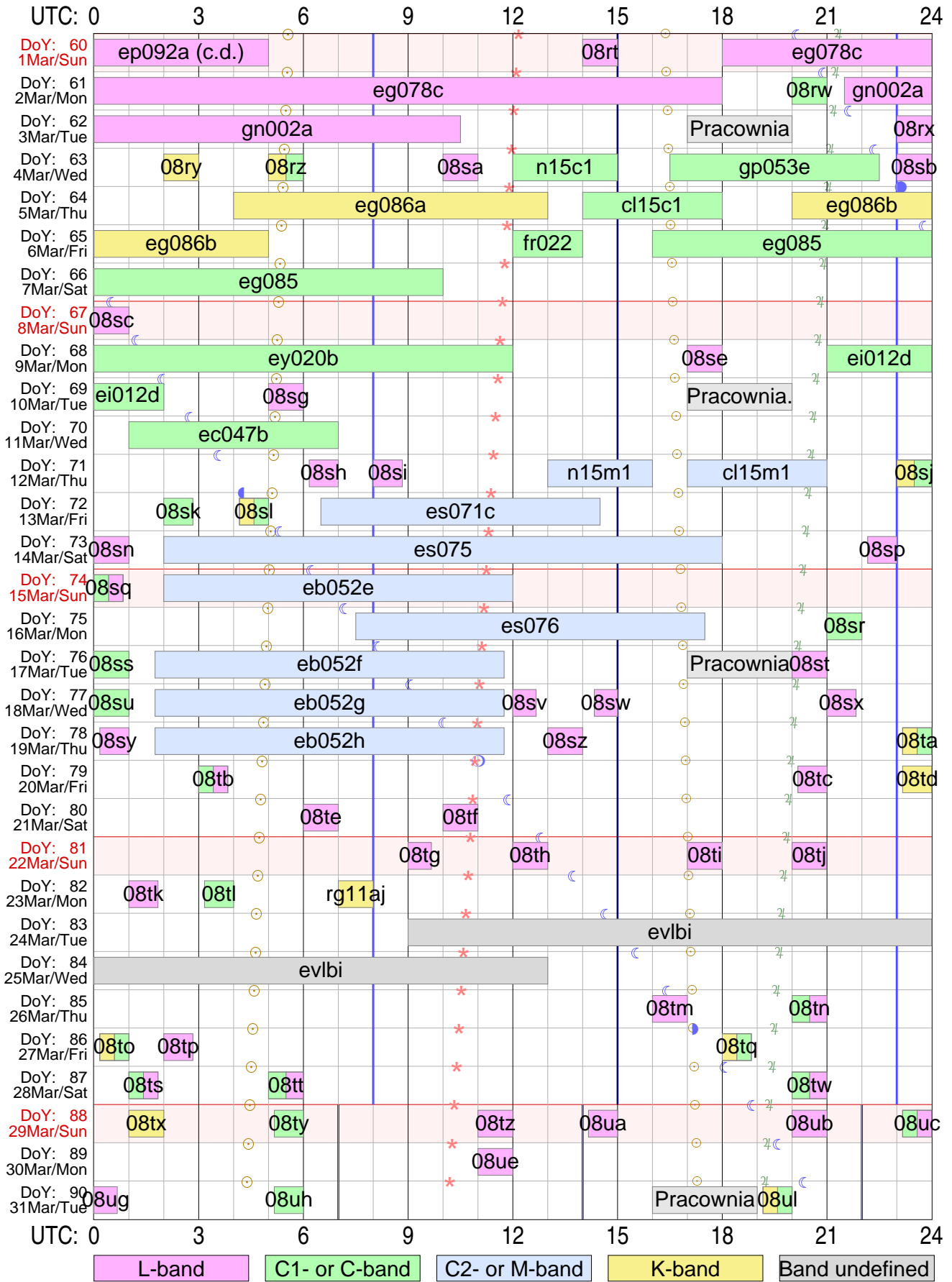


Tr VLBI plan for Mar 2015



Version: 2015.03.04

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: 277.8 hours in 81 experiments scheduled

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

Strona zostawiona celowo pusta

RadioAstron & EVN Experiments

March 2015

Uytownik i halo ftp dla logw i schedulw RA: grt K0&th%
ftp://webinet.asc.rssi.ru
Przykad dla log files: cd GRT_log_files/2014_09/2014_09_01_raks08ak
Przykad dla sched files: cd schedule/grtsched/RAKS/rk08ak

DoY	D	M	WD	UT_Start	UT_Stop	Experiment	Band	Correlator
				h m	h m	name		
60	1	03	Nie	0 00	5 00	ep092a L	EVN	
60	1	03	Nie	14 00	15 00	rk08rt L		
60	1	03	Nie	18 00	24 00	eg078c L		
61	2	03	Pon	0 00	18 00	eg078c L	EVN	
61	2	03	Pon	20 00	21 00	rk08rw C		
61	2	03	Pon	21 30	24 00	gn002a L		
62	3	03	Wto	0 00	10 30	gn002a L	EVN	
62	3	03	Wto	23 00	24 00	rk08rx L		
63	4	03	Sro	2 00	3 00	rk08ry K		
63	4	03	Sro	5 00	6 00	rk08rz K>C		
63	4	03	Sro	10 00	11 00	rk08sa L		
63	4	03	Sro	12 00	15 00	n15c1 C	EVN	
63	4	03	Sro	16 30	22 30	gp053e C	EVN	
63	4	03	Sro	23 00	24 00	rk08sb L		
64	5	03	Czw	4 00	13 00	eg086a K	Bonn	
64	5	03	Czw	14 00	18 00	cl15c1 C	----	
64	5	03	Czw	20 00	24 00	eg086b K		
65	6	03	Pia	0 00	5 00	eg086b K	Bonn	
65	6	03	Pia	12 00	14 00	fr022 C	EVN	
65	6	03	Pia	16 00	24 00	eg085 C		
66	7	03	Sob	0 00	10 00	eg085 C	EVN	
67	8	03	Nie	0 00	1 00	rk08sc L		
68	9	03	Pon	0 00	12 00	ey020b C	EVN	
68	9	03	Pon	17 00	18 00	rk08se L		
68	9	03	Pon	21 00	24 00	ei012d C		
69	10	03	Wto	0 00	2 00	ei012d C	EVN	
69	10	03	Wto	5 00	6 00	rk08sg L		
70	11	03	Sro	1 00	7 00	ec047b C	EVN	
71	12	03	Czw	6 10	7 00	rk08sh L		
71	12	03	Czw	8 00	8 50	rk08si L		
71	12	03	Czw	13 00	16 00	n15m1 M	EVN	
71	12	03	Czw	17 00	21 00	cl15m1 M	----	
71	12	03	Czw	23 00	24 00	rk08sj K>C		
72	13	03	Pia	2 00	2 50	rk08sk C		
72	13	03	Pia	4 10	5 00	rk08sl K>C		
72	13	03	Pia	6 30	14 30	es071c M	EVN	
73	14	03	Sob	0 00	1 00	rk08sn L		
73	14	03	Sob	2 00	18 00	es075 M	EVN	
73	14	03	Sob	22 10	23 00	rk08sp L		
74	15	03	Nie	0 00	0 50	rk08sq C>L		

74	15	03	Nie	2	00	12	00	eb052e	M	EVN
75	16	03	Pon	7	30	17	30	es076	M	EVN
75	16	03	Pon	21	00	22	00	rk08sr	C	
76	17	03	Wto	0	00	1	00	rk08ss	C	
76	17	03	Wto	1	45	11	45	eb052f	M	EVN
76	17	03	Wto	20	00	21	00	rk08st	L	
77	18	03	Sro	0	00	1	00	rk08su	C	
77	18	03	Sro	1	45	11	45	eb052g	M	EVN
77	18	03	Sro	12	00	12	40	rk08sv	L	
77	18	03	Sro	14	20	15	00	rk08sw	L	
77	18	03	Sro	21	00	21	50	rk08sx	L	
78	19	03	Czw	0	10	1	00	rk08sy	L	
78	19	03	Czw	1	45	11	45	eb052h	M	EVN
78	19	03	Czw	13	00	14	00	rk08sz	L	
78	19	03	Czw	23	10	24	00	rk08ta	K>C	
79	20	03	Pia	3	00	3	50	rk08tb	C>L	
79	20	03	Pia	20	10	21	00	rk08tc	L	
79	20	03	Pia	23	10	24	00	rk08td	K	
80	21	03	Sob	6	00	7	00	rk08te	L	
80	21	03	Sob	10	00	11	00	rk08tf	L	
81	22	03	Nie	9	00	9	40	rk08tg	L	
81	22	03	Nie	12	00	13	00	rk08th	L	
81	22	03	Nie	17	00	18	00	rk08ti	L	
81	22	03	Nie	20	00	20	59	rk08tj	L	
82	23	03	Pon	1	00	1	50	rk08tk	L	
82	23	03	Pon	3	10	4	00	rk08tl	C	
82	23	03	Pon	7	00	8	00	rg11aj	K	
85	26	03	Czw	16	00	17	00	rk08tm	L	
85	26	03	Czw	20	00	21	00	rk08tn	C>L	
86	27	03	Pia	0	10	1	00	rk08to	K>C	
86	27	03	Pia	2	00	2	50	rk08tp	L	
86	27	03	Pia	18	00	18	50	rk08tq	K>C	
87	28	03	Sob	1	00	1	50	rk08ts	C>L	
87	28	03	Sob	5	00	6	00	rk08tt	C>L	
87	28	03	Sob	20	00	21	00	rk08tw	C>L	
88	29	03	Nie	1	00	2	00	rk08tx	K	
88	29	03	Nie	5	10	6	00	rk08ty	C	
88	29	03	Nie	11	00	12	00	rk08tz	L	
88	29	03	Nie	14	10	15	00	rk08ua	L	
88	29	03	Nie	20	00	21	00	rk08ub	L	
88	29	03	Nie	23	10	24	00	rk08uc	C>L	
89	30	03	Pon	11	00	12	00	rk08ue	L	
90	31	03	Wto	0	00	0	40	rk08ug	L	
90	31	03	Wto	5	10	6	00	rk08uh	C	
90	31	03	Wto	19	10	20	00	rk08ul	K>C	

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

<http://paulo.astro.uni.torun.pl/~pw/VLBI/schedules/mar15.pdf>


```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 53.383788	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 46.45061	0.00
	fake circumpolar target for a TS to look at			
* 0749+426	07 49 35.292496	* 07 53 03.337499	07 54 07.763139	0.00
J0753+4231	42 39 18.53136	* 42 31 30.76523	42 29 00.30769	0.00
	./rk08rt_sources.radioastron HIGHz, rfc_2013d Petrov, 2013, unpublished 80 observations, RA-A02-03			

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)
0749+426	128.2

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

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

ULTRA DEEP EVN OBSERVATIONS OF HDF NORTH

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Schedule for TORUN (Code Tr) Page 2

Ultra Deep EVN Observations of HDF North

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Sun 1 Mar 2015 Day 60 ---										
Next scan frequencies: 1610.49 1610.49 1610.49 1610.49 1642.49 1642.49 1642.49 1642.49										
1674.49 1674.49 1674.49 1674.49 1706.49 1706.49 1706.49 1706.49										
Next BBC frequencies: 689.51 689.51 689.51 689.51 657.51 657.51 657.51 657.51										
625.51 625.51 625.51 625.51 593.51 593.51 593.51 593.51										
Next scan bandwidths: 16.00 16.00 16.00 16.00 16.00 16.00 16.00 16.00										
16.00 16.00 16.00 16.00 16.00 16.00 16.00 16.00										
18 00 00	J1241+602	05 51 09	38.9	38.5	-6.9	-48.8	0	0	18 00 00	
18 04 00	---	05 55 09	39.3	38.9	-6.8	-49.5	240	31	18 00 01	
18 04 30	J1241+602	05 55 39	39.4	38.9	-6.8	-49.5	24	31	18 04 30	
18 06 00	---	05 57 10	39.5	39.1	-6.8	-49.8	90	42	18 04 31	
18 06 15	J1234+619	05 57 25	41.2	38.2	-6.6	-52.0	-5	42	18 06 15	
18 07 45	---	05 58 55	41.4	38.3	-6.6	-52.2	85	54	18 06 16	
18 07 45	EFJB-P1	05 58 55	41.3	37.8	-6.6	-52.0	-11	54	No stop	
18 15 10	---	06 06 21	42.0	38.5	-6.5	-53.2	434	111	18 07 46	
18 15 30	J1234+619	06 06 41	42.1	39.1	-6.5	-53.4	9	111	18 15 30	
18 17 00	---	06 08 11	42.3	39.2	-6.4	-53.7	90	122	18 15 31	
18 17 00	EFJB-P1	06 08 11	42.1	38.7	-6.5	-53.4	-11	122	No stop	
18 24 30	---	06 15 43	42.9	39.4	-6.4	-54.6	439	180	18 17 01	
18 24 30	J1234+619	06 15 43	43.0	39.9	-6.3	-54.9	-11	180	No stop	
18 26 00	---	06 17 13	43.1	40.1	-6.3	-55.1	79	192	18 24 31	
18 26 00	EFJB-P1	06 17 13	43.0	39.5	-6.3	-54.9	-11	192	No stop	
18 33 30	---	06 24 44	43.7	40.2	-6.2	-56.1	439	249	18 26 01	
18 34 00	J1241+602	06 25 14	42.2	41.9	-6.3	-54.0	11	249	18 34 00	
18 35 30	---	06 26 45	42.4	42.1	-6.3	-54.2	90	261	18 34 01	
18 35 45	J1234+619	06 27 00	44.1	41.0	-6.1	-56.6	-5	261	18 35 45	
18 37 15	---	06 28 30	44.2	41.1	-6.1	-56.9	85	272	18 35 46	
18 37 15	EFJB-P2	06 28 30	44.1	40.6	-6.2	-56.7	-11	272	No stop	
18 44 40	---	06 35 56	44.8	41.2	-6.0	-57.8	434	329	18 37 16	
18 45 00	J1234+619	06 36 16	45.0	41.8	-6.0	-58.1	8	329	18 45 00	
18 46 30	---	06 37 46	45.1	41.9	-6.0	-58.3	90	341	18 45 01	

Schedule for TORUN (Code Tr)

Page 3

Ultra Deep EVN Observations of HDF North

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Sun 1 Mar 2015	Day	60	---						
18 46 30	EFJB-P2	06 37 46	45.0	41.4	-6.0		-58.1	-11	341	No stop
18 54 00	---	06 45 18	45.8	42.0	-5.9		-59.3	439	399	18 46 31
18 54 00	J1234+619	06 45 18	45.9	42.6	-5.8		-59.5	-12	399	No stop
18 55 30	---	06 46 48	46.1	42.7	-5.8		-59.8	78	410	18 54 01
18 55 30	EFJB-P2	06 46 48	45.9	42.2	-5.8		-59.6	-11	410	No stop
19 03 00	---	06 54 19	46.7	42.8	-5.7		-60.8	439	468	18 55 31
19 03 30	J1241+602	06 54 49	45.3	44.8	-5.8		-58.5	11	468	19 03 30
19 05 00	---	06 56 19	45.5	44.9	-5.8		-58.7	90	479	19 03 31
19 05 15	J1234+619	06 56 34	47.1	43.5	-5.6		-61.3	-5	479	19 05 15
19 06 45	---	06 58 05	47.2	43.6	-5.6		-61.6	85	491	19 05 16
19 06 45	EFJB-P3	06 58 05	47.1	43.1	-5.7		-61.4	-11	491	No stop
19 14 10	---	07 05 31	47.8	43.7	-5.5		-62.6	434	548	19 06 46
19 14 30	J1234+619	07 05 51	48.0	44.3	-5.5		-62.8	8	548	19 14 30
19 16 00	---	07 07 21	48.2	44.4	-5.5		-63.1	90	560	19 14 31
19 16 00	EFJB-P3	07 07 21	48.0	43.9	-5.5		-62.9	-11	560	No stop
19 23 30	---	07 14 52	48.8	44.5	-5.4		-64.1	439	617	19 16 01
19 23 30	J1234+619	07 14 52	49.0	45.0	-5.3		-64.3	-12	617	No stop
19 25 00	---	07 16 23	49.1	45.1	-5.3		-64.5	78	629	19 23 31
19 25 00	EFJB-P3	07 16 23	49.0	44.6	-5.4		-64.3	-11	629	No stop
19 32 30	---	07 23 54	49.8	45.1	-5.2		-65.6	439	687	19 25 01
19 33 00	J1241+602	07 24 24	48.5	47.4	-5.3		-63.0	12	687	19 33 00
19 34 30	---	07 25 54	48.7	47.5	-5.3		-63.2	90	698	19 33 01
19 34 45	J1234+619	07 26 09	50.2	45.8	-5.1		-66.1	-4	698	19 34 45
19 36 15	---	07 27 40	50.3	46.0	-5.1		-66.4	86	710	19 34 46
19 36 15	EFJB-P4	07 27 40	50.2	45.4	-5.2		-66.2	-12	710	No stop
19 43 40	---	07 35 06	51.0	46.0	-5.0		-67.4	433	767	19 36 16
19 44 00	J1234+619	07 35 26	51.2	46.5	-5.0		-67.6	8	767	19 44 00
19 45 30	---	07 36 56	51.3	46.6	-5.0		-67.9	90	778	19 44 01
19 45 30	EFJB-P4	07 36 56	51.2	46.1	-5.0		-67.7	-12	778	No stop
19 53 00	---	07 44 27	52.0	46.6	-4.9		-69.0	438	836	19 45 31
19 53 00	J1234+619	07 44 27	52.2	47.2	-4.8		-69.1	-12	836	No stop
19 54 30	---	07 45 58	52.3	47.3	-4.8		-69.4	78	847	19 53 01

Schedule for TORUN (Code Tr)

Page 4

Ultra Deep EVN Observations of HDF North

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Sun	1 Mar 2015	Day	60	---					
19 54 30	EFJB-P4	07 45 58	52.1	46.7	-4.9		-69.2	-12	847	No stop
20 02 00	---	07 53 29	53.0	47.2	-4.7		-70.5	438	905	19 54 31
20 02 30	J1241+602	07 53 59	51.8	49.8	-4.8		-67.6	11	905	20 02 30
20 04 00	---	07 55 29	52.0	49.9	-4.8		-67.8	90	917	20 02 31
20 04 15	J1234+619	07 55 44	53.4	47.9	-4.7		-71.0	-4	917	20 04 15
20 05 45	---	07 57 14	53.6	48.0	-4.6		-71.3	86	928	20 04 16
20 05 45	HDF-N	07 57 14	53.4	47.4	-4.7		-71.1	-12	928	No stop
20 13 10	---	08 04 41	54.2	47.9	-4.5		-72.4	433	985	20 05 46
20 13 30	J1234+619	08 05 01	54.5	48.5	-4.5		-72.6	8	985	20 13 30
20 15 00	---	08 06 31	54.6	48.6	-4.5		-72.9	90	997	20 13 31
20 15 00	HDF-N	08 06 31	54.4	48.0	-4.5		-72.7	-12	997	No stop
20 22 30	---	08 14 02	55.2	48.5	-4.4		-74.0	438	1054	20 15 01
20 22 30	J1234+619	08 14 02	55.5	49.0	-4.3		-74.2	-12	1054	No stop
20 24 00	---	08 15 32	55.6	49.1	-4.3		-74.4	78	1066	20 22 31
20 24 00	HDF-N	08 15 32	55.4	48.5	-4.4		-74.3	-12	1066	No stop
20 31 30	---	08 23 04	56.3	48.9	-4.2		-75.6	438	1124	20 24 01
20 32 00	J1241+602	08 23 34	55.3	51.9	-4.3		-72.3	10	1124	20 32 00
20 33 30	---	08 25 04	55.4	52.0	-4.3		-72.5	90	1135	20 32 01
20 33 45	J1234+619	08 25 19	56.8	49.6	-4.2		-76.1	-4	1135	20 33 45
20 35 15	---	08 26 49	56.9	49.7	-4.1		-76.4	86	1147	20 33 46
20 35 15	EFJB-P1	08 26 49	56.7	49.1	-4.2		-76.3	-12	1147	No stop
20 42 40	---	08 34 15	57.5	49.5	-4.1		-77.6	433	1204	20 35 16
20 43 00	J1234+619	08 34 35	57.8	50.1	-4.0		-77.8	8	1204	20 43 00
20 44 30	---	08 36 06	58.0	50.1	-4.0		-78.1	90	1215	20 43 01
20 44 30	EFJB-P1	08 36 06	57.7	49.6	-4.0		-78.0	-12	1215	No stop
20 52 00	---	08 43 37	58.6	49.9	-3.9		-79.3	438	1273	20 44 31
20 52 00	J1234+619	08 43 37	58.9	50.5	-3.9		-79.4	-12	1273	No stop
20 53 30	---	08 45 07	59.0	50.5	-3.8		-79.7	78	1285	20 52 01
20 53 30	EFJB-P1	08 45 07	58.8	50.0	-3.9		-79.6	-12	1285	No stop
21 01 00	---	08 52 38	59.6	50.3	-3.7		-81.0	438	1342	20 53 31

Schedule for TORUN (Code Tr)

Page 5

Ultra Deep EVN Observations of HDF North

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Sun	1 Mar 2015	Day	60	---					
21 01 30	J1241+602	08 53 09	58.8	53.7	-3.8		-77.2	9	1342	21 01 30
21 03 00	---	08 54 39	59.0	53.8	-3.8		-77.5	90	1354	21 01 31
21 03 15	J1234+619	08 54 54	60.2	50.9	-3.7		-81.6	-5	1354	21 03 15
21 04 45	---	08 56 24	60.4	51.0	-3.6		-81.8	85	1365	21 03 16
21 04 45	EFJB-P2	08 56 24	60.1	50.4	-3.7		-81.8	-12	1365	No stop
21 12 10	---	09 03 50	60.9	50.6	-3.6		-83.2	433	1422	21 04 46
21 12 30	J1234+619	09 04 10	61.3	51.2	-3.5		-83.3	8	1422	21 12 30
21 14 00	---	09 05 41	61.4	51.2	-3.5		-83.6	90	1434	21 12 31
21 14 00	EFJB-P2	09 05 41	61.2	50.7	-3.5		-83.6	-12	1434	No stop
21 21 30	---	09 13 12	62.0	50.9	-3.4		-85.1	438	1492	21 14 01
21 21 30	J1234+619	09 13 12	62.3	51.4	-3.4		-85.1	-12	1492	No stop
21 23 00	---	09 14 42	62.5	51.5	-3.3		-85.4	78	1503	21 21 31
21 23 00	EFJB-P2	09 14 42	62.2	50.9	-3.4		-85.4	-12	1503	No stop
21 30 30	---	09 22 13	63.1	51.0	-3.3		-86.9	438	1561	21 23 01
21 31 00	J1241+602	09 22 43	62.4	55.0	-3.3		-82.5	7	1561	21 31 00
21 32 30	---	09 24 14	62.6	55.0	-3.3		-82.8	90	1572	21 31 01
21 32 45	J1234+619	09 24 29	63.6	51.6	-3.2		-87.5	-7	1572	21 32 45
21 34 15	---	09 25 59	63.8	51.6	-3.1		-87.8	83	1584	21 32 46
21 34 15	EFJB-P3	09 25 59	63.5	51.1	-3.2		-87.7	-12	1584	No stop
21 41 40	---	09 33 25	64.4	51.1	-3.1		-89.3	433	1641	21 34 16
21 42 00	J1234+619	09 33 45	64.7	51.7	-3.0		-89.4	8	1641	21 42 00
21 43 30	---	09 35 15	64.9	51.7	-3.0		-89.8	90	1653	21 42 01
21 43 30	EFJB-P3	09 35 15	64.6	51.1	-3.0		-89.7	-12	1653	No stop
21 51 00	---	09 42 47	65.5	51.1	-2.9		-91.4	438	1710	21 43 31
21 51 00	J1234+619	09 42 47	65.8	51.7	-2.9		-91.5	-12	1710	No stop
21 52 30	---	09 44 17	66.0	51.7	-2.8		-91.8	78	1722	21 51 01
21 52 30	EFJB-P3	09 44 17	65.7	51.1	-2.9		-91.7	-12	1722	No stop
22 00 00	---	09 51 48	66.5	51.0	-2.8		-93.5	438	1779	21 52 31
22 00 30	J1241+602	09 52 18	66.1	55.7	-2.8		-88.3	6	1779	22 00 30
22 02 00	---	09 53 48	66.3	55.7	-2.8		-88.6	90	1791	22 00 31

Schedule for TORUN (Code Tr)

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Ultra Deep EVN Observations of HDF North

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Sun	1 Mar 2015	Day	60	---					
22 02 15	J1234+619	09 54 03	67.1	51.5	-2.7		-94.1	-8	1791	22 02 15
22 03 45	---	09 55 34	67.3	51.5	-2.7		-94.4	82	1803	22 02 16
22 03 45	EFJB-P4	09 55 34	67.0	50.9	-2.7		-94.4	-12	1803	No stop
22 11 10	---	10 03 00	67.8	50.7	-2.6		-96.2	433	1860	22 03 46
22 11 30	J1234+619	10 03 20	68.2	51.2	-2.5		-96.4	8	1860	22 11 30
22 13 00	---	10 04 50	68.4	51.2	-2.5		-96.8	90	1871	22 11 31
22 13 00	EFJB-P4	10 04 50	68.1	50.6	-2.5		-96.7	-12	1871	No stop
22 20 30	---	10 12 21	68.9	50.3	-2.4		-98.6	438	1929	22 13 01
22 20 30	J1234+619	10 12 21	69.3	50.9	-2.4		-98.7	-12	1929	No stop
22 22 00	---	10 13 52	69.4	50.8	-2.4		-99.1	78	1940	22 20 31
22 22 00	EFJB-P4	10 13 52	69.1	50.2	-2.4		-99.0	-12	1940	No stop
22 29 30	---	10 21 23	70.0	49.8	-2.3		-101.1	438	1998	22 22 01
22 30 00	J1241+602	10 21 53	69.7	55.4	-2.3		-95.0	4	1998	22 30 00
22 31 30	---	10 23 23	69.9	55.3	-2.3		-95.3	90	2010	22 30 01
22 31 45	J1234+619	10 23 38	70.6	50.2	-2.2		-101.9	-10	2010	22 31 45
22 33 15	---	10 25 09	70.8	50.1	-2.2		-102.3	80	2021	22 31 46
22 33 15	HDF-N	10 25 09	70.4	49.5	-2.2		-102.2	-12	2021	No stop
22 40 40	---	10 32 35	71.2	48.9	-2.1		-104.4	433	2078	22 33 16
22 41 00	J1234+619	10 32 55	71.6	49.4	-2.0		-104.6	8	2078	22 41 00
22 42 30	---	10 34 25	71.8	49.2	-2.0		-105.1	90	2090	22 41 01
22 42 30	HDF-N	10 34 25	71.5	48.8	-2.1		-105.0	-12	2090	No stop
22 50 00	---	10 41 56	72.3	48.0	-1.9		-107.4	438	2147	22 42 31
22 50 00	J1234+619	10 41 56	72.7	48.4	-1.9		-107.5	-12	2147	No stop
22 51 30	---	10 43 27	72.8	48.3	-1.9		-108.0	78	2159	22 50 01
22 51 30	HDF-N	10 43 27	72.5	47.8	-1.9		-107.9	-12	2159	No stop
22 59 00	---	10 50 58	73.3	46.8	-1.8		-110.5	438	2217	22 51 31
22 59 30	J1241+602	10 51 28	73.4	53.6	-1.8		-103.1	1	2217	22 59 30
23 01 00	---	10 52 58	73.5	53.4	-1.8		-103.6	90	2228	22 59 31
23 01 15	J1234+619	10 53 13	73.9	46.9	-1.7		-111.5	-13	2228	23 01 15
23 02 45	---	10 54 43	74.1	46.7	-1.7		-112.1	77	2240	23 01 16

Schedule for TORUN (Code Tr)

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Ultra Deep EVN Observations of HDF North

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Sun	1 Mar 2015	Day	60	---					
23 02 45	EFJB-P1	10 54 43	73.7	46.3	-1.7		-111.9	-12	2240	No stop
23 10 10	---	11 02 10	74.5	45.0	-1.6		-114.7	433	2297	23 02 46
23 10 30	J1234+619	11 02 30	74.9	45.3	-1.5		-115.1	8	2297	23 10 30
23 12 00	---	11 04 00	75.1	45.0	-1.5		-115.7	90	2308	23 10 31
23 12 00	EFJB-P1	11 04 00	74.7	44.7	-1.6		-115.5	-12	2308	No stop
23 19 30	---	11 11 31	75.5	43.1	-1.4		-118.6	438	2366	23 12 01
23 19 30	J1234+619	11 11 31	75.9	43.4	-1.4		-118.9	-12	2366	No stop
23 21 00	---	11 13 01	76.0	43.0	-1.4		-119.6	78	2378	23 19 31
23 21 00	EFJB-P1	11 13 01	75.6	42.8	-1.4		-119.3	-12	2378	No stop
23 28 30	---	11 20 33	76.4	40.9	-1.3		-122.8	438	2435	23 21 01
23 29 00	J1241+602	11 21 03	76.8	49.0	-1.4		-113.9	-1	2435	23 29 00
23 30 30	---	11 22 33	77.0	48.7	-1.3		-114.6	89	2447	23 29 01
23 30 45	J1234+619	11 22 48	77.0	40.4	-1.2		-124.3	-17	2447	23 30 45
23 32 15	---	11 24 18	77.1	39.9	-1.2		-125.1	73	2458	23 30 46
23 32 15	EFJB-P2	11 24 18	76.8	39.8	-1.2		-124.6	-12	2458	No stop
23 39 40	---	11 31 44	77.5	37.5	-1.1		-128.5	433	2515	23 32 16
23 40 00	J1234+619	11 32 05	77.9	37.4	-1.0		-129.3	8	2515	23 40 00
23 41 30	---	11 33 35	78.0	36.8	-1.0		-130.2	90	2527	23 40 01
23 41 30	EFJB-P2	11 33 35	77.6	36.9	-1.1		-129.5	-12	2527	No stop
23 49 00	---	11 41 06	78.3	34.1	-0.9		-133.9	438	2585	23 41 31
23 49 00	J1234+619	11 41 06	78.7	33.9	-0.9		-134.7	-12	2585	No stop
23 50 30	---	11 42 36	78.8	33.2	-0.9		-135.7	78	2596	23 49 01
23 50 30	EFJB-P2	11 42 36	78.4	33.5	-0.9		-134.9	-12	2596	No stop
23 58 00	---	11 50 08	79.0	30.2	-0.8		-139.8	438	2654	23 50 31

---	Mon	2 Mar 2015	Day	61	---					
00 00 00	3C345	11 52 08	40.4	74.6	-4.9		-48.9	-38	2654	00 00 00
00 05 00	---	11 57 09	41.1	75.4	-4.8		-49.1	262	2692	00 00 01
00 07 00	J1241+602	11 59 09	80.7	35.1	-0.7		-135.9	-43	2692	00 07 00
00 08 00	---	12 00 09	80.8	34.6	-0.7		-136.6	17	2700	00 07 01

Schedule for TORUN (Code Tr)

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Ultra Deep EVN Observations of HDF North

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	2 Mar 2015	Day	61	---					
00 08 30	J1241+602	12 00 39	80.9	34.3	-0.7		-137.0	23	2700	00 08 30
00 10 00	---	12 02 09	81.0	33.4	-0.7		-138.2	90	2712	00 08 31
00 10 15	J1234+619	12 02 25	80.2	23.0	-0.5		-150.1	-21	2712	00 10 15
00 11 45	---	12 03 55	80.3	22.1	-0.5		-151.3	69	2723	00 10 16
00 11 45	EFJB-P3	12 03 55	79.9	23.0	-0.6		-149.9	-13	2723	No stop
00 19 10	---	12 11 21	80.3	18.5	-0.4		-156.0	432	2780	00 11 46
00 19 30	J1234+619	12 11 41	80.7	17.1	-0.4		-158.0	5	2780	00 19 30
00 21 00	---	12 13 11	80.7	16.1	-0.4		-159.3	90	2792	00 19 31
00 21 00	EFJB-P3	12 13 11	80.4	17.3	-0.4		-157.5	-14	2792	No stop
00 28 30	---	12 20 43	80.7	12.2	-0.3		-164.2	436	2849	00 21 01
00 28 30	J1234+619	12 20 43	81.0	10.8	-0.2		-166.2	-16	2849	No stop
00 30 00	---	12 22 13	81.0	9.6	-0.2		-167.7	74	2861	00 28 31
00 30 00	EFJB-P3	12 22 13	80.7	11.2	-0.3		-165.6	-16	2861	No stop
00 37 30	---	12 29 44	80.9	5.8	-0.1		-172.6	434	2919	00 30 01
00 38 00	J1241+602	12 30 14	82.7	11.7	-0.2		-165.8	3	2919	00 38 00
00 39 30	---	12 31 44	82.7	10.2	-0.2		-167.6	90	2930	00 38 01
00 39 45	J1234+619	12 31 59	81.2	2.2	-0.0		-177.1	-16	2930	00 39 45
00 41 15	---	12 33 30	81.2	1.1	-0.0		-178.6	74	2942	00 39 46
00 41 15	EFJB-P4	12 33 30	81.0	3.0	-0.1		-176.1	-17	2942	No stop
00 48 40	---	12 40 56	81.0	-2.5	0.1		176.8	428	2999	00 41 16
00 49 00	J1234+619	12 41 16	81.2	-4.9	0.1		173.8	1	2999	00 49 00
00 50 30	---	12 42 46	81.1	-6.0	0.1		172.3	90	3010	00 49 01
00 50 30	EFJB-P4	12 42 46	80.9	-3.9	0.1		175.0	-18	3010	No stop
00 58 00	---	12 50 17	80.8	-9.4	0.2		167.9	432	3068	00 50 31
00 58 00	J1234+619	12 50 17	81.0	-11.6	0.3		165.1	-19	3068	No stop
00 59 30	---	12 51 48	80.9	-12.7	0.3		163.7	71	3079	00 58 01
00 59 30	EFJB-P4	12 51 48	80.8	-10.4	0.2		166.5	-18	3079	No stop
01 07 00	---	12 59 19	80.5	-15.6	0.4		159.8	432	3137	00 59 31
01 07 30	J1241+602	12 59 49	82.4	-16.9	0.3		159.5	9	3137	01 07 30
01 09 00	---	13 01 19	82.4	-18.2	0.3		157.8	90	3149	01 07 31

Schedule for TORUN (Code Tr)

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Ultra Deep EVN Observations of HDF North

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	2 Mar 2015	Day	61	---					
01 09 15	J1234+619	13 01 34	80.5	-19.4	0.4		155.0	-6	3149	01 09 15
01 10 45	---	13 03 04	80.4	-20.4	0.5		153.7	84	3160	01 09 16
01 10 45	HDF-N	13 03 04	80.4	-18.1	0.4		156.5	-18	3160	No stop
01 18 10	---	13 10 31	80.0	-22.6	0.5		150.4	427	3217	01 10 46
01 18 30	J1234+619	13 10 51	80.0	-25.0	0.6		147.4	1	3217	01 18 30
01 20 00	---	13 12 21	79.9	-25.9	0.6		146.2	90	3229	01 18 31
01 20 00	HDF-N	13 12 21	79.9	-23.7	0.6		148.9	-18	3229	No stop
01 27 30	---	13 19 52	79.4	-27.7	0.7		143.3	432	3287	01 20 01
01 27 30	J1234+619	13 19 52	79.4	-29.8	0.7		140.6	-18	3287	No stop
01 29 00	---	13 21 22	79.2	-30.6	0.8		139.6	72	3298	01 27 31
01 29 00	HDF-N	13 21 22	79.3	-28.5	0.7		142.2	-18	3298	No stop
01 36 30	---	13 28 54	78.7	-32.0	0.9		137.1	432	3356	01 29 01
01 37 00	J1241+602	13 29 24	80.4	-37.3	0.8		132.8	4	3356	01 37 00
01 38 30	---	13 30 54	80.2	-38.1	0.8		131.7	90	3367	01 37 01
01 38 45	J1234+619	13 31 09	78.5	-34.9	0.9		133.2	-6	3367	01 38 45
01 40 15	---	13 32 39	78.3	-35.5	1.0		132.3	84	3379	01 38 46
01 40 15	EFJB-P1	13 32 39	78.4	-33.6	0.9		134.7	-17	3379	No stop
01 47 40	---	13 40 06	77.7	-36.4	1.0		130.3	428	3436	01 40 16
01 48 00	J1234+619	13 40 26	77.6	-38.3	1.1		127.8	3	3436	01 48 00
01 49 30	---	13 41 56	77.5	-38.8	1.1		127.0	90	3447	01 48 01
01 49 30	EFJB-P1	13 41 56	77.6	-37.1	1.1		129.3	-17	3447	No stop
01 57 00	---	13 49 27	76.9	-39.5	1.2		125.3	433	3505	01 49 31
01 57 00	J1234+619	13 49 27	76.8	-41.1	1.2		123.1	-17	3505	No stop
01 58 30	---	13 50 57	76.6	-41.5	1.3		122.4	73	3517	01 57 01
01 58 30	EFJB-P1	13 50 57	76.7	-39.9	1.2		124.5	-16	3517	No stop
02 06 00	---	13 58 29	76.0	-41.9	1.3		120.9	434	3574	01 58 31
02 06 30	J1241+602	13 58 59	77.3	-48.0	1.3		115.9	3	3574	02 06 30
02 08 00	---	14 00 29	77.2	-48.4	1.3		115.2	90	3586	02 06 31
02 08 15	J1234+619	14 00 44	75.6	-43.9	1.4		117.9	-9	3586	02 08 15
02 09 45	---	14 02 14	75.5	-44.2	1.5		117.2	81	3597	02 08 16

Schedule for TORUN (Code Tr)

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Ultra Deep EVN Observations of HDF North

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	2 Mar 2015	Day	61	---					
02 09 45	EFJB-P2	14 02 14	75.6	-42.8	1.4		119.2	-16	3597	No stop
02 17 10	---	14 09 40	74.8	-44.4	1.5		116.0	429	3654	02 09 46
02 17 30	J1234+619	14 10 00	74.6	-45.8	1.6		114.0	5	3654	02 17 30
02 19 00	---	14 11 31	74.5	-46.0	1.6		113.4	90	3666	02 17 31
02 19 00	EFJB-P2	14 11 31	74.6	-44.7	1.6		115.3	-15	3666	No stop
02 26 30	---	14 19 02	73.8	-46.1	1.7		112.4	435	3724	02 19 01
02 26 30	J1234+619	14 19 02	73.6	-47.3	1.7		110.6	-15	3724	No stop
02 28 00	---	14 20 32	73.5	-47.5	1.8		110.1	75	3735	02 26 31
02 28 00	EFJB-P2	14 20 32	73.7	-46.3	1.7		111.8	-15	3735	No stop
02 35 30	---	14 28 03	72.9	-47.4	1.8		109.1	435	3793	02 28 01
02 36 00	J1241+602	14 28 33	73.9	-53.1	1.8		104.5	4	3793	02 36 00
02 37 30	---	14 30 04	73.7	-53.3	1.8		104.0	90	3804	02 36 01
02 37 45	J1234+619	14 30 19	72.4	-48.7	1.9		106.7	-9	3804	02 37 45
02 39 15	---	14 31 49	72.2	-48.9	1.9		106.2	81	3816	02 37 46
02 39 15	EFJB-P3	14 31 49	72.4	-47.8	1.9		107.8	-14	3816	No stop
02 46 40	---	14 39 15	71.6	-48.6	2.0		105.4	431	3873	02 39 16
02 47 00	J1234+619	14 39 35	71.3	-49.6	2.1		103.8	6	3873	02 47 00
02 48 30	---	14 41 06	71.2	-49.8	2.1		103.4	90	3885	02 47 01
02 48 30	EFJB-P3	14 41 06	71.4	-48.8	2.1		104.8	-14	3885	No stop
02 56 00	---	14 48 37	70.5	-49.4	2.2		102.6	436	3942	02 48 31
02 56 00	J1234+619	14 48 37	70.3	-50.3	2.2		101.2	-13	3942	No stop
02 57 30	---	14 50 07	70.1	-50.4	2.3		100.7	77	3954	02 56 01
02 57 30	EFJB-P3	14 50 07	70.4	-49.6	2.2		102.1	-13	3954	No stop
03 05 00	---	14 57 38	69.5	-50.1	2.3		100.0	437	4012	02 57 31
03 05 30	J1241+602	14 58 08	70.3	-55.2	2.3		96.1	5	4012	03 05 30
03 07 00	---	14 59 39	70.1	-55.3	2.3		95.7	90	4023	03 05 31
03 07 15	J1234+619	14 59 54	69.0	-51.0	2.4		98.1	-9	4023	03 07 15
03 08 45	---	15 01 24	68.8	-51.0	2.4		97.7	81	4035	03 07 16
03 08 45	EFJB-P4	15 01 24	69.1	-50.3	2.4		99.0	-13	4035	No stop
03 16 10	---	15 08 50	68.2	-50.6	2.5		97.0	432	4092	03 08 46

Schedule for TORUN (Code Tr)

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Ultra Deep EVN Observations of HDF North

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	2 Mar 2015	Day	61	---					
03 16 30	J1234+619	15 09 10	67.9	-51.3	2.6		95.7	7	4092	03 16 30
03 18 00	---	15 10 40	67.7	-51.4	2.6		95.3	90	4103	03 16 31
03 18 00	EFJB-P4	15 10 40	68.0	-50.7	2.6		96.6	-13	4103	No stop
03 25 30	---	15 18 12	67.1	-50.9	2.7		94.7	437	4161	03 18 01
03 25 30	J1234+619	15 18 12	66.8	-51.6	2.7		93.5	-12	4161	No stop
03 27 00	---	15 19 42	66.7	-51.6	2.7		93.1	78	4172	03 25 31
03 27 00	EFJB-P4	15 19 42	67.0	-50.9	2.7		94.3	-12	4172	No stop
03 34 30	---	15 27 13	66.1	-51.1	2.8		92.6	438	4230	03 27 01
03 35 00	J1241+602	15 27 43	66.6	-55.7	2.8		89.2	6	4230	03 35 00
03 36 30	---	15 29 13	66.4	-55.7	2.8		88.9	90	4242	03 35 01
03 36 45	J1234+619	15 29 28	65.5	-51.7	2.9		90.9	-8	4242	03 36 45
03 38 15	---	15 30 59	65.3	-51.7	2.9		90.6	82	4253	03 36 46
03 38 15	HDF-N	15 30 59	65.6	-51.1	2.9		91.7	-12	4253	No stop
03 45 40	---	15 38 25	64.8	-51.1	3.0		90.0	433	4310	03 38 16
03 46 00	J1234+619	15 38 45	64.4	-51.7	3.1		88.9	8	4310	03 46 00
03 47 30	---	15 40 15	64.2	-51.7	3.1		88.5	90	4322	03 46 01
03 47 30	HDF-N	15 40 15	64.6	-51.1	3.0		89.6	-12	4322	No stop
03 55 00	---	15 47 46	63.7	-51.1	3.2		88.0	438	4379	03 47 31
03 55 00	J1234+619	15 47 46	63.4	-51.6	3.2		86.9	-12	4379	No stop
03 56 30	---	15 49 17	63.2	-51.6	3.2		86.6	78	4391	03 55 01
03 56 30	HDF-N	15 49 17	63.5	-51.1	3.2		87.7	-11	4391	No stop
04 04 00	---	15 56 48	62.6	-51.0	3.3		86.1	439	4449	03 56 31
04 04 30	J1241+602	15 57 18	62.9	-55.1	3.3		83.3	7	4449	04 04 30
04 06 00	---	15 58 48	62.8	-55.1	3.3		83.0	90	4460	04 04 31
04 06 15	J1234+619	15 59 03	62.0	-51.4	3.4		84.6	-7	4460	04 06 15
04 07 45	---	16 00 34	61.9	-51.3	3.4		84.3	83	4472	04 06 16
04 07 45	EFJB-P1	16 00 34	62.2	-50.9	3.4		85.3	-11	4472	No stop
04 15 10	---	16 08 00	61.3	-50.7	3.5		83.8	434	4529	04 07 46
04 15 30	J1234+619	16 08 20	60.9	-51.1	3.6		82.8	8	4529	04 15 30
04 17 00	---	16 09 50	60.8	-51.1	3.6		82.5	90	4540	04 15 31

Schedule for TORUN (Code Tr)

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Ultra Deep EVN Observations of HDF North

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	2 Mar 2015	Day	61	---					
04 17 00	EFJB-P1	16 09 50	61.1	-50.7	3.5		83.5	-12	4540	No stop
04 24 30	---	16 17 21	60.2	-50.4	3.7		82.0	438	4598	04 17 01
04 24 30	J1234+619	16 17 21	59.9	-50.8	3.7		81.1	-12	4598	No stop
04 26 00	---	16 18 52	59.7	-50.8	3.7		80.8	78	4610	04 24 31
04 26 00	EFJB-P1	16 18 52	60.1	-50.4	3.7		81.7	-12	4610	No stop
04 33 30	---	16 26 23	59.2	-50.1	3.8		80.3	438	4667	04 26 01
04 34 00	J1241+602	16 26 53	59.3	-53.9	3.7		78.0	8	4667	04 34 00
04 35 30	---	16 28 23	59.1	-53.8	3.8		77.7	90	4679	04 34 01
04 35 45	J1234+619	16 28 38	58.6	-50.4	3.9		79.0	-7	4679	04 35 45
04 37 15	---	16 30 08	58.4	-50.3	3.9		78.7	83	4690	04 35 46
04 37 15	EFJB-P2	16 30 08	58.8	-50.0	3.9		79.6	-12	4690	No stop
04 44 40	---	16 37 35	57.9	-49.6	4.0		78.2	433	4747	04 37 16
04 45 00	J1234+619	16 37 55	57.5	-50.0	4.1		77.3	8	4747	04 45 00
04 46 30	---	16 39 25	57.3	-49.9	4.1		77.0	90	4759	04 45 01
04 46 30	EFJB-P2	16 39 25	57.7	-49.6	4.0		77.9	-12	4759	No stop
04 54 00	---	16 46 56	56.8	-49.2	4.2		76.5	438	4817	04 46 31
04 54 00	J1234+619	16 46 56	56.5	-49.5	4.2		75.7	-12	4817	No stop
04 55 30	---	16 48 26	56.3	-49.4	4.2		75.4	78	4828	04 54 01
04 55 30	EFJB-P2	16 48 26	56.7	-49.1	4.2		76.3	-12	4828	No stop
05 03 00	---	16 55 58	55.8	-48.7	4.3		74.9	438	4886	04 55 31
05 03 30	J1241+602	16 56 28	55.8	-52.2	4.2		73.0	8	4886	05 03 30
05 05 00	---	16 57 58	55.6	-52.1	4.3		72.7	90	4897	05 03 31
05 05 15	J1234+619	16 58 13	55.2	-48.9	4.4		73.7	-6	4897	05 05 15
05 06 45	---	16 59 43	55.0	-48.8	4.4		73.5	84	4909	05 05 16
05 06 45	EFJB-P3	16 59 43	55.4	-48.5	4.4		74.3	-12	4909	No stop
05 14 10	---	17 07 09	54.6	-48.1	4.5		73.0	433	4966	05 06 46
05 14 30	J1234+619	17 07 29	54.2	-48.3	4.5		72.1	8	4966	05 14 30
05 16 00	---	17 09 00	54.0	-48.2	4.6		71.9	90	4978	05 14 31
05 16 00	EFJB-P3	17 09 00	54.4	-48.0	4.5		72.6	-12	4978	No stop
05 23 30	---	17 16 31	53.5	-47.5	4.6		71.4	438	5035	05 16 01

Schedule for TORUN (Code Tr)

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Ultra Deep EVN Observations of HDF North

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	2 Mar 2015	Day	61	---					
05 23 30	J1234+619	17 16 31	53.1	-47.7	4.7		70.6	-12	5035	No stop
05 25 00	---	17 18 01	53.0	-47.6	4.7		70.4	78	5047	05 23 31
05 25 00	EFJB-P3	17 18 01	53.4	-47.4	4.7		71.1	-12	5047	No stop
05 32 30	---	17 25 32	52.5	-46.9	4.8		69.8	438	5104	05 25 01
05 33 00	J1241+602	17 26 03	52.3	-50.1	4.7		68.2	9	5104	05 33 00
05 34 30	---	17 27 33	52.1	-50.0	4.8		68.0	90	5116	05 33 01
05 34 45	J1234+619	17 27 48	51.9	-47.0	4.9		68.7	-6	5116	05 34 45
05 36 15	---	17 29 18	51.7	-46.9	4.9		68.5	84	5128	05 34 46
05 36 15	EFJB-P4	17 29 18	52.1	-46.7	4.9		69.2	-12	5128	No stop
05 43 40	---	17 36 44	51.3	-46.2	5.0		68.0	433	5185	05 36 16
05 44 00	J1234+619	17 37 04	50.9	-46.3	5.0		67.2	8	5185	05 44 00
05 45 30	---	17 38 35	50.7	-46.2	5.1		66.9	90	5196	05 44 01
05 45 30	EFJB-P4	17 38 35	51.1	-46.1	5.0		67.7	-12	5196	No stop
05 53 00	---	17 46 06	50.3	-45.5	5.1		66.4	438	5254	05 45 31
05 53 00	J1234+619	17 46 06	49.9	-45.7	5.2		65.7	-12	5254	No stop
05 54 30	---	17 47 36	49.8	-45.5	5.2		65.5	78	5265	05 53 01
05 54 30	EFJB-P4	17 47 36	50.1	-45.4	5.2		66.2	-12	5265	No stop
06 02 00	---	17 55 07	49.3	-44.8	5.3		64.9	438	5323	05 54 31
06 02 30	J1241+602	17 55 37	49.0	-47.8	5.2		63.6	10	5323	06 02 30
06 04 00	---	17 57 08	48.8	-47.6	5.2		63.4	90	5335	06 02 31
06 04 15	J1234+619	17 57 23	48.7	-44.8	5.4		63.9	-5	5335	06 04 15
06 05 45	---	17 58 53	48.6	-44.7	5.4		63.6	85	5346	06 04 16
06 05 45	EFJB-P3	17 58 53	48.9	-44.6	5.4		64.3	-12	5346	No stop
06 13 10	---	18 06 19	48.2	-44.0	5.5		63.1	433	5403	06 05 46
06 13 30	J1234+619	18 06 39	47.7	-44.1	5.5		62.4	8	5403	06 13 30
06 15 00	---	18 08 09	47.6	-43.9	5.6		62.2	90	5415	06 13 31
06 15 00	EFJB-P3	18 08 09	48.0	-43.8	5.5		62.8	-12	5415	No stop
06 22 30	---	18 15 41	47.2	-43.2	5.6		61.6	438	5472	06 15 01
06 22 30	J1234+619	18 15 41	46.8	-43.3	5.7		60.9	-12	5472	No stop
06 24 00	---	18 17 11	46.6	-43.2	5.7		60.7	78	5484	06 22 31

Schedule for TORUN (Code Tr)

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Ultra Deep EVN Observations of HDF North

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	2 Mar 2015	Day	61	---					
06 24 00	EFJB-P3	18 17 11	47.0	-43.1	5.7		61.4	-12	5484	No stop
06 31 30	---	18 24 42	46.3	-42.5	5.8		60.1	438	5542	06 24 01
06 32 00	J1241+602	18 25 12	45.8	-45.2	5.7		59.1	10	5542	06 32 00
06 33 30	---	18 26 42	45.6	-45.0	5.7		58.9	90	5553	06 32 01
06 33 45	J1234+619	18 26 58	45.7	-42.4	5.9		59.2	-5	5553	06 33 45
06 35 15	---	18 28 28	45.5	-42.2	5.9		58.9	85	5565	06 33 46
06 35 15	EFJB-P4	18 28 28	45.9	-42.2	5.8		59.5	-12	5565	No stop
06 42 40	---	18 35 54	45.1	-41.5	6.0		58.4	433	5622	06 35 16
06 43 00	J1234+619	18 36 14	44.7	-41.5	6.0		57.7	8	5622	06 43 00
06 44 30	---	18 37 44	44.6	-41.4	6.0		57.4	90	5633	06 43 01
06 44 30	EFJB-P4	18 37 44	45.0	-41.4	6.0		58.1	-12	5633	No stop
06 52 00	---	18 45 16	44.2	-40.7	6.1		56.9	438	5691	06 44 31
06 52 00	J1234+619	18 45 16	43.8	-40.7	6.2		56.3	-12	5691	No stop
06 53 30	---	18 46 46	43.7	-40.6	6.2		56.0	78	5703	06 52 01
06 53 30	EFJB-P4	18 46 46	44.1	-40.6	6.2		56.6	-12	5703	No stop
07 01 00	---	18 54 17	43.3	-39.9	6.3		55.4	438	5760	06 53 31
07 01 30	J1241+602	18 54 47	42.7	-42.4	6.2		54.6	11	5760	07 01 30
07 03 00	---	18 56 17	42.5	-42.2	6.2		54.4	90	5772	07 01 31
07 03 15	J1234+619	18 56 32	42.7	-39.7	6.4		54.5	-4	5772	07 03 15
07 04 45	---	18 58 03	42.6	-39.6	6.4		54.2	86	5783	07 03 16
07 04 45	EFJB-P1	18 58 03	43.0	-39.5	6.3		54.8	-12	5783	No stop
07 12 10	---	19 05 29	42.3	-38.8	6.5		53.7	433	5840	07 04 46
07 12 30	J1234+619	19 05 49	41.9	-38.8	6.5		53.0	8	5840	07 12 30
07 14 00	---	19 07 19	41.7	-38.7	6.5		52.8	90	5852	07 12 31
07 14 00	EFJB-P1	19 07 19	42.1	-38.7	6.5		53.4	-12	5852	No stop
07 21 30	---	19 14 50	41.4	-38.0	6.6		52.2	438	5910	07 14 01
07 21 30	J1234+619	19 14 50	41.0	-38.0	6.7		51.6	-12	5910	No stop
07 23 00	---	19 16 21	40.9	-37.8	6.7		51.4	78	5921	07 21 31
07 23 00	EFJB-P1	19 16 21	41.3	-37.8	6.6		51.9	-12	5921	No stop
07 30 30	---	19 23 52	40.6	-37.1	6.8		50.8	438	5979	07 23 01

Schedule for TORUN (Code Tr)

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Ultra Deep EVN Observations of HDF North

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	2 Mar 2015	Day	61	---					
07 31 00	J1241+602	19 24 22	39.8	-39.4	6.7		50.2	11	5979	07 31 00
07 32 30	---	19 25 52	39.6	-39.2	6.7		50.0	90	5990	07 31 01
07 32 45	J1234+619	19 26 07	40.0	-36.8	6.9		49.8	-4	5990	07 32 45
07 34 15	---	19 27 37	39.9	-36.7	6.9		49.6	86	6002	07 32 46
07 34 15	EFJB-P2	19 27 37	40.2	-36.7	6.8		50.2	-12	6002	No stop
07 41 40	---	19 35 04	39.6	-36.0	7.0		49.0	433	6059	07 34 16
07 42 00	J1234+619	19 35 24	39.2	-35.9	7.0		48.4	8	6059	07 42 00
07 43 30	---	19 36 54	39.0	-35.8	7.0		48.1	90	6071	07 42 01
07 43 30	EFJB-P2	19 36 54	39.4	-35.8	7.0		48.7	-12	6071	No stop
07 51 00	---	19 44 25	38.8	-35.0	7.1		47.5	438	6128	07 43 31
07 51 00	J1234+619	19 44 25	38.4	-35.0	7.2		47.0	-12	6128	No stop
07 52 30	---	19 45 55	38.2	-34.8	7.2		46.7	78	6140	07 51 01
07 52 30	EFJB-P2	19 45 55	38.6	-34.9	7.1		47.3	-12	6140	No stop
08 00 00	---	19 53 27	38.0	-34.1	7.3		46.1	438	6197	07 52 31
08 00 30	J1241+602	19 53 57	37.1	-36.3	7.2		45.7	12	6197	08 00 30
08 02 00	---	19 55 27	36.9	-36.1	7.2		45.5	90	6209	08 00 31
08 02 15	J1234+619	19 55 42	37.4	-33.8	7.3		45.2	-3	6209	08 02 15
08 03 45	---	19 57 12	37.3	-33.7	7.4		45.0	87	6221	08 02 16
08 03 45	EFJB-P3	19 57 12	37.7	-33.7	7.3		45.5	-12	6221	No stop
08 11 10	---	20 04 39	37.1	-33.0	7.5		44.3	433	6278	08 03 46
08 11 30	J1234+619	20 04 59	36.7	-32.9	7.5		43.7	8	6278	08 11 30
08 13 00	---	20 06 29	36.5	-32.7	7.5		43.5	90	6289	08 11 31
08 13 00	EFJB-P3	20 06 29	36.9	-32.8	7.5		44.0	-12	6289	No stop
08 20 30	---	20 14 00	36.3	-32.0	7.6		42.9	438	6347	08 13 01
08 20 30	J1234+619	20 14 00	35.9	-31.9	7.7		42.3	-12	6347	No stop
08 22 00	---	20 15 30	35.8	-31.7	7.7		42.1	78	6358	08 20 31
08 22 00	EFJB-P3	20 15 30	36.2	-31.8	7.6		42.6	-12	6358	No stop
08 29 30	---	20 23 02	35.6	-31.0	7.8		41.4	438	6416	08 22 01
08 30 00	J1241+602	20 23 32	34.5	-33.0	7.7		41.2	12	6416	08 30 00
08 31 30	---	20 25 02	34.4	-32.8	7.7		41.0	90	6428	08 30 01

Schedule for TORUN (Code Tr)

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Ultra Deep EVN Observations of HDF North

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	2 Mar 2015	Day	61	---					
08 31 45	J1234+619	20 25 17	35.0	-30.7	7.8		40.5	-3	6428	08 31 45
08 33 15	---	20 26 47	34.9	-30.5	7.9		40.3	87	6439	08 31 46
08 33 15	EFJB-P4	20 26 47	35.3	-30.6	7.8		40.8	-12	6439	No stop
08 40 40	---	20 34 13	34.8	-29.8	7.9		39.7	433	6496	08 33 16
08 41 00	J1234+619	20 34 33	34.3	-29.6	8.0		39.1	8	6496	08 41 00
08 42 30	---	20 36 04	34.2	-29.5	8.0		38.8	90	6508	08 41 01
08 42 30	EFJB-P4	20 36 04	34.6	-29.6	8.0		39.4	-12	6508	No stop
08 50 00	---	20 43 35	34.1	-28.8	8.1		38.2	438	6565	08 42 31
08 50 00	J1234+619	20 43 35	33.7	-28.6	8.1		37.7	-12	6565	No stop
08 51 30	---	20 45 05	33.6	-28.5	8.2		37.4	78	6577	08 50 01
08 51 30	EFJB-P4	20 45 05	34.0	-28.6	8.1		37.9	-12	6577	No stop
08 59 00	---	20 52 36	33.4	-27.8	8.3		36.7	438	6635	08 51 31
08 59 30	J1241+602	20 53 06	32.2	-29.6	8.2		36.7	12	6635	08 59 30
09 01 00	---	20 54 37	32.1	-29.4	8.2		36.4	90	6646	08 59 31
09 01 15	J1234+619	20 54 52	32.9	-27.4	8.3		35.9	-3	6646	09 01 15
09 02 45	---	20 56 22	32.8	-27.2	8.4		35.6	87	6658	09 01 16
09 02 45	EFJB-P1	20 56 22	33.2	-27.3	8.3		36.1	-12	6658	No stop
09 10 10	---	21 03 48	32.7	-26.5	8.4		34.9	433	6715	09 02 46
09 10 30	J1234+619	21 04 08	32.3	-26.3	8.5		34.4	8	6715	09 10 30
09 12 00	---	21 05 39	32.2	-26.1	8.5		34.2	90	6726	09 10 31
09 12 00	EFJB-P1	21 05 39	32.5	-26.3	8.5		34.7	-12	6726	No stop
09 19 30	---	21 13 10	32.0	-25.4	8.6		33.5	438	6784	09 12 01
09 19 30	J1234+619	21 13 10	31.7	-25.3	8.6		33.0	-12	6784	No stop
09 21 00	---	21 14 40	31.6	-25.1	8.7		32.7	78	6796	09 19 31
09 21 00	EFJB-P1	21 14 40	31.9	-25.2	8.6		33.2	-12	6796	No stop
09 28 30	---	21 22 11	31.5	-24.4	8.7		32.0	438	6853	09 21 01
09 29 00	J1241+602	21 22 41	30.2	-26.0	8.7		32.1	12	6853	09 29 00
09 30 30	---	21 24 12	30.1	-25.8	8.7		31.8	90	6865	09 29 01
09 30 45	J1234+619	21 24 27	31.0	-23.9	8.8		31.1	-2	6865	09 30 45
09 32 15	---	21 25 57	30.9	-23.8	8.9		30.9	88	6876	09 30 46

Schedule for TORUN (Code Tr)

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Ultra Deep EVN Observations of HDF North

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	2 Mar 2015	Day	61	---					
09 32 15	EFJB-P2	21 25 57	31.2	-23.9	8.8		31.4	-12	6876	No stop
09 39 40	---	21 33 23	30.8	-23.1	8.9		30.2	433	6933	09 32 16
09 40 00	J1234+619	21 33 43	30.4	-22.9	9.0		29.7	8	6933	09 40 00
09 41 30	---	21 35 13	30.3	-22.7	9.0		29.4	90	6945	09 40 01
09 41 30	EFJB-P2	21 35 13	30.7	-22.8	9.0		29.9	-12	6945	No stop
09 49 00	---	21 42 45	30.3	-22.0	9.1		28.7	438	7003	09 41 31
09 49 00	J1234+619	21 42 45	29.9	-21.8	9.1		28.2	-12	7003	No stop
09 50 30	---	21 44 15	29.8	-21.6	9.2		28.0	78	7014	09 49 01
09 50 30	EFJB-P2	21 44 15	30.2	-21.8	9.1		28.5	-12	7014	No stop
09 58 00	---	21 51 46	29.8	-20.9	9.2		27.2	438	7072	09 50 31
09 58 30	J1241+602	21 52 16	28.3	-22.4	9.2		27.4	11	7072	09 58 30
10 00 00	---	21 53 46	28.2	-22.2	9.2		27.2	90	7083	09 58 31
10 00 15	J1234+619	21 54 01	29.3	-20.4	9.3		26.4	-2	7083	10 00 15
10 01 45	---	21 55 32	29.2	-20.2	9.3		26.2	88	7095	10 00 16
10 01 45	EFJB-P3	21 55 32	29.6	-20.4	9.3		26.6	-12	7095	No stop
10 09 10	---	22 02 58	29.2	-19.5	9.4		25.4	433	7152	10 01 46
10 09 30	J1234+619	22 03 18	28.8	-19.3	9.5		24.9	8	7152	10 09 30
10 11 00	---	22 04 48	28.7	-19.1	9.5		24.7	90	7163	10 09 31
10 11 00	EFJB-P3	22 04 48	29.1	-19.3	9.5		25.1	-12	7163	No stop
10 18 30	---	22 12 19	28.7	-18.4	9.6		23.9	438	7221	10 11 01
10 18 30	J1234+619	22 12 19	28.4	-18.2	9.6		23.4	-12	7221	No stop
10 20 00	---	22 13 50	28.3	-18.0	9.6		23.2	78	7233	10 18 31
10 20 00	EFJB-P3	22 13 50	28.7	-18.2	9.6		23.7	-12	7233	No stop
10 27 30	---	22 21 21	28.3	-17.3	9.7		22.4	438	7290	10 20 01
10 28 00	J1241+602	22 21 51	26.8	-18.6	9.7		22.7	11	7290	10 28 00
10 29 30	---	22 23 21	26.7	-18.4	9.7		22.5	90	7302	10 28 01
10 29 45	J1234+619	22 23 36	27.9	-16.8	9.8		21.6	-2	7302	10 29 45
10 31 15	---	22 25 07	27.8	-16.6	9.8		21.4	88	7313	10 29 46
10 31 15	EFJB-P4	22 25 07	28.1	-16.8	9.8		21.8	-12	7313	No stop
10 38 40	---	22 32 33	27.8	-15.9	9.9		20.6	433	7371	10 31 16

Schedule for TORUN (Code Tr)

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Ultra Deep EVN Observations of HDF North

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	2 Mar 2015	Day	61	---					
10 39 00	J1234+619	22 32 53	27.5	-15.6	10.0		20.1	8	7371	10 39 00
10 40 30	---	22 34 23	27.4	-15.5	10.0		19.9	90	7382	10 39 01
10 40 30	EFJB-P4	22 34 23	27.8	-15.7	9.9		20.3	-12	7382	No stop
10 48 00	---	22 41 54	27.5	-14.8	10.1		19.1	438	7440	10 40 31
10 48 00	J1234+619	22 41 54	27.1	-14.5	10.1		18.6	-12	7440	No stop
10 49 30	---	22 43 25	27.1	-14.3	10.1		18.4	78	7451	10 48 01
10 49 30	EFJB-P4	22 43 25	27.4	-14.6	10.1		18.8	-12	7451	No stop
10 57 00	---	22 50 56	27.1	-13.6	10.2		17.6	438	7509	10 49 31
10 57 30	J1241+602	22 51 26	25.5	-14.8	10.2		18.0	10	7509	10 57 30
10 59 00	---	22 52 56	25.4	-14.6	10.2		17.8	90	7521	10 57 31
10 59 15	J1234+619	22 53 11	26.7	-13.1	10.3		16.8	-3	7521	10 59 15
11 00 45	---	22 54 41	26.7	-12.9	10.3		16.5	87	7532	10 59 16
11 00 45	EFJB-P1	22 54 41	27.0	-13.2	10.3		17.0	-11	7532	No stop
11 08 10	---	23 02 08	26.8	-12.2	10.4		15.8	434	7589	11 00 46
11 08 30	J1234+619	23 02 28	26.4	-11.9	10.5		15.3	8	7589	11 08 30
11 10 00	---	23 03 58	26.4	-11.7	10.5		15.0	90	7601	11 08 31
11 10 00	EFJB-P1	23 03 58	26.7	-12.0	10.4		15.5	-11	7601	No stop
11 17 30	---	23 11 29	26.5	-11.0	10.6		14.2	439	7658	11 10 01
11 17 30	J1234+619	23 11 29	26.2	-10.8	10.6		13.8	-11	7658	No stop
11 19 00	---	23 12 59	26.1	-10.6	10.6		13.5	79	7670	11 17 31
11 19 00	EFJB-P1	23 12 59	26.4	-10.8	10.6		14.0	-11	7670	No stop
11 26 30	---	23 20 31	26.2	-9.9	10.7		12.8	439	7728	11 19 01
11 27 00	J1241+602	23 21 01	24.5	-10.9	10.6		13.2	10	7728	11 27 00
11 28 30	---	23 22 31	24.5	-10.7	10.7		13.0	90	7739	11 27 01
11 28 45	J1234+619	23 22 46	25.9	-9.3	10.8		11.9	-4	7739	11 28 45
11 30 15	---	23 24 16	25.8	-9.1	10.8		11.7	86	7751	11 28 46
11 30 15	EFJB-P2	23 24 16	26.1	-9.4	10.8		12.1	-11	7751	No stop
11 37 40	---	23 31 42	26.0	-8.5	10.9		10.9	434	7808	11 30 16
11 38 00	J1234+619	23 32 02	25.7	-8.1	11.0		10.4	9	7808	11 38 00
11 39 30	---	23 33 33	25.6	-7.9	11.0		10.1	90	7819	11 38 01

Schedule for TORUN (Code Tr)

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Ultra Deep EVN Observations of HDF North

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	2 Mar 2015	Day	61	---					
11 39 30	EFJB-P2	23 33 33	25.9	-8.2	10.9		10.6	-11	7819	No stop
11 47 00	---	23 41 04	25.8	-7.3	11.1		9.4	439	7877	11 39 31
11 47 00	J1234+619	23 41 04	25.5	-7.0	11.1		8.9	-11	7877	No stop
11 48 30	---	23 42 34	25.4	-6.8	11.1		8.7	79	7888	11 47 01
11 48 30	EFJB-P2	23 42 34	25.7	-7.1	11.1		9.1	-11	7888	No stop
11 56 00	---	23 50 05	25.6	-6.1	11.2		7.9	439	7946	11 48 31
11 56 30	J1241+602	23 50 36	23.8	-7.0	11.1		8.4	10	7946	11 56 30
11 58 00	---	23 52 06	23.8	-6.8	11.2		8.2	90	7958	11 56 31
11 58 15	J1234+619	23 52 21	25.3	-5.5	11.3		7.0	-4	7958	11 58 15
11 59 45	---	23 53 51	25.3	-5.3	11.3		6.8	86	7969	11 58 16
11 59 45	EFJB-P3	23 53 51	25.5	-5.6	11.3		7.2	-11	7969	No stop
12 07 10	---	00 01 17	25.4	-4.7	11.4		6.0	434	8026	11 59 46
12 07 30	J1234+619	00 01 37	25.2	-4.3	11.4		5.5	9	8026	12 07 30
12 09 00	---	00 03 08	25.2	-4.1	11.5		5.3	90	8038	12 07 31
12 09 00	EFJB-P3	00 03 08	25.4	-4.4	11.4		5.7	-11	8038	No stop
12 16 30	---	00 10 39	25.3	-3.5	11.6		4.5	439	8096	12 09 01
12 16 30	J1234+619	00 10 39	25.1	-3.2	11.6		4.0	-11	8096	No stop
12 18 00	---	00 12 09	25.1	-3.0	11.6		3.8	79	8107	12 16 31
12 18 00	EFJB-P3	00 12 09	25.3	-3.3	11.6		4.2	-11	8107	No stop
12 25 30	---	00 19 40	25.3	-2.3	11.7		3.0	439	8165	12 18 01
12 26 00	J1241+602	00 20 10	23.4	-3.0	11.6		3.6	9	8165	12 26 00
12 27 30	---	00 21 41	23.4	-2.8	11.7		3.4	90	8176	12 26 01
12 27 45	J1234+619	00 21 56	25.0	-1.7	11.8		2.1	-5	8176	12 27 45
12 29 15	---	00 23 26	25.0	-1.5	11.8		1.9	85	8188	12 27 46
12 29 15	EFJB-P4	00 23 26	25.3	-1.8	11.8		2.3	-11	8188	No stop
12 36 40	---	00 30 52	25.2	-0.9	11.9		1.1	434	8245	12 29 16
12 37 00	J1234+619	00 31 12	25.0	-0.5	11.9		0.6	9	8245	12 37 00
12 38 30	---	00 32 42	25.0	-0.3	12.0		0.4	90	8256	12 37 01
12 38 30	EFJB-P4	00 32 42	25.2	-0.6	11.9		0.8	-11	8256	No stop
12 46 00	---	00 40 14	25.2	0.3-12.0			-0.4	439	8314	12 38 31

Schedule for TORUN (Code Tr)

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Ultra Deep EVN Observations of HDF North

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	2 Mar 2015	Day	61	---					
12 46 00	J1234+619	00 40 14	25.0	0.7-11.9		-0.9	-11	8314	No stop	
12 47 30	---	00 41 44	25.0	0.9-11.9		-1.1	79	8326	12 46 01	
12 47 30	EFJB-P4	00 41 44	25.2	0.5-11.9		-0.7	-11	8326	No stop	
12 55 00	---	00 49 15	25.2	1.5-11.8		-1.9	439	8383	12 47 31	
12 55 30	J1241+602	00 49 45	23.4	1.0-11.9		-1.2	9	8383	12 55 30	
12 57 00	---	00 51 15	23.4	1.2-11.8		-1.5	90	8395	12 55 31	
12 57 15	J1234+619	00 51 31	25.0	2.2-11.7		-2.7	-5	8395	12 57 15	
12 58 45	---	00 53 01	25.0	2.4-11.7		-3.0	85	8406	12 57 16	
12 58 45	EFJB-P1	00 53 01	25.3	2.0-11.7		-2.6	-10	8406	No stop	
13 06 10	---	01 00 27	25.3	3.0-11.6		-3.8	435	8463	12 58 46	
13 06 30	J1234+619	01 00 47	25.1	3.4-11.6		-4.3	10	8463	13 06 30	
13 08 00	---	01 02 17	25.1	3.6-11.5		-4.5	90	8475	13 06 31	
13 08 00	EFJB-P1	01 02 17	25.3	3.2-11.6		-4.1	-10	8475	No stop	
13 15 30	---	01 09 49	25.4	4.2-11.5		-5.4	440	8533	13 08 01	
13 15 30	J1234+619	01 09 49	25.2	4.5-11.4		-5.8	-10	8533	No stop	
13 17 00	---	01 11 19	25.2	4.7-11.4		-6.0	80	8544	13 15 31	
13 17 00	EFJB-P1	01 11 19	25.4	4.4-11.4		-5.6	-10	8544	No stop	
13 24 30	---	01 18 50	25.5	5.3-11.3		-6.8	440	8602	13 17 01	
13 25 00	J1241+602	01 19 20	23.6	5.0-11.4		-6.1	9	8602	13 25 00	
13 26 30	---	01 20 50	23.6	5.2-11.4		-6.3	90	8613	13 25 01	
13 26 45	J1234+619	01 21 05	25.3	6.0-11.2		-7.6	-5	8613	13 26 45	
13 28 15	---	01 22 36	25.4	6.2-11.2		-7.9	85	8625	13 26 46	
13 28 15	EFJB-P2	01 22 36	25.6	5.8-11.2		-7.5	-10	8625	No stop	
13 35 40	---	01 30 02	25.7	6.8-11.1		-8.7	435	8682	13 28 16	
13 36 00	J1234+619	01 30 22	25.5	7.2-11.1		-9.2	9	8682	13 36 00	
13 37 30	---	01 31 52	25.5	7.4-11.1		-9.4	90	8694	13 36 01	
13 37 30	EFJB-P2	01 31 52	25.7	7.0-11.1		-9.0	-10	8694	No stop	
13 45 00	---	01 39 23	25.9	8.0-11.0		-10.2	440	8751	13 37 31	
13 45 00	J1234+619	01 39 23	25.7	8.3-10.9		-10.7	-11	8751	No stop	
13 46 30	---	01 40 54	25.7	8.5-10.9		-10.9	79	8763	13 45 01	

Schedule for TORUN (Code Tr)

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Ultra Deep EVN Observations of HDF North

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	2 Mar 2015	Day	61	---					
13 46 30	EFJB-P2	01 40 54	25.9	8.2-10.9	-10.5	-10	8763	No stop		
13 54 00	---	01 48 25	26.1	9.1-10.8	-11.7	440	8821	13 46 31		
13 54 30	J1241+602	01 48 55	24.1	9.0-10.9	-10.9	9	8821	13 54 30		
13 56 00	---	01 50 25	24.2	9.2-10.9	-11.1	90	8832	13 54 31		
13 56 15	J1234+619	01 50 40	26.0	9.8-10.7	-12.5	-5	8832	13 56 15		
13 57 45	---	01 52 10	26.0	10.0-10.7	-12.8	85	8844	13 56 16		
13 57 45	EFJB-P3	01 52 10	26.2	9.6-10.8	-12.4	-11	8844	No stop		
14 05 10	---	01 59 37	26.4	10.5-10.6	-13.6	434	8901	13 57 46		
14 05 30	J1234+619	01 59 57	26.2	11.0-10.6	-14.0	9	8901	14 05 30		
14 07 00	---	02 01 27	26.3	11.2-10.6	-14.3	90	8912	14 05 31		
14 07 00	EFJB-P3	02 01 27	26.4	10.8-10.6	-13.9	-11	8912	No stop		
14 14 30	---	02 08 58	26.6	11.7-10.5	-15.1	439	8970	14 07 01		
14 14 30	J1234+619	02 08 58	26.5	12.1-10.4	-15.5	-11	8970	No stop		
14 16 00	---	02 10 28	26.5	12.3-10.4	-15.8	79	8981	14 14 31		
14 16 00	EFJB-P3	02 10 28	26.7	11.9-10.5	-15.4	-11	8981	No stop		
14 23 30	---	02 18 00	26.9	12.9-10.3	-16.6	439	9039	14 16 01		
14 24 00	J1241+602	02 18 30	25.0	12.9-10.4	-15.7	9	9039	14 24 00		
14 25 30	---	02 20 00	25.0	13.1-10.4	-15.9	90	9051	14 24 01		
14 25 45	J1234+619	02 20 15	26.9	13.6-10.2	-17.4	-6	9051	14 25 45		
14 27 15	---	02 21 45	26.9	13.7-10.2	-17.6	84	9062	14 25 46		
14 27 15	EFJB-P4	02 21 45	27.0	13.3-10.3	-17.2	-11	9062	No stop		
14 34 40	---	02 29 12	27.3	14.3-10.1	-18.4	434	9119	14 27 16		
14 35 00	J1234+619	02 29 32	27.2	14.7-10.1	-18.9	9	9119	14 35 00		
14 36 30	---	02 31 02	27.3	14.9-10.1	-19.1	90	9131	14 35 01		
14 36 30	EFJB-P4	02 31 02	27.4	14.5-10.1	-18.7	-11	9131	No stop		
14 44 00	---	02 38 33	27.7	15.4-10.0	-20.0	439	9188	14 36 31		
14 44 00	J1234+619	02 38 33	27.6	15.8 -9.9	-20.4	-11	9188	No stop		
14 45 30	---	02 40 03	27.6	16.0 -9.9	-20.6	79	9200	14 44 01		
14 45 30	EFJB-P4	02 40 03	27.7	15.6-10.0	-20.2	-11	9200	No stop		
14 53 00	---	02 47 35	28.0	16.5 -9.8	-21.4	439	9258	14 45 31		

Schedule for TORUN (Code Tr)

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Ultra Deep EVN Observations of HDF North

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	2 Mar 2015	Day	61	---					
14 53 30	J1241+602	02 48 05	26.1	16.8	-9.9		-20.4	9	9258	14 53 30
14 55 00	---	02 49 35	26.2	17.0	-9.9		-20.7	90	9269	14 53 31
14 55 15	J1234+619	02 49 50	28.0	17.2	-9.8		-22.2	-6	9269	14 55 15
14 56 45	---	02 51 20	28.1	17.4	-9.7		-22.4	84	9281	14 55 16
14 56 45	EFJB-P1	02 51 20	28.2	17.0	-9.8		-22.1	-11	9281	No stop
15 04 10	---	02 58 46	28.5	17.9	-9.6		-23.3	434	9338	14 56 46
15 04 30	J1234+619	02 59 06	28.5	18.4	-9.6		-23.7	9	9338	15 04 30
15 06 00	---	03 00 37	28.5	18.6	-9.6		-23.9	90	9349	15 04 31
15 06 00	EFJB-P1	03 00 37	28.6	18.1	-9.6		-23.6	-11	9349	No stop
15 13 30	---	03 08 08	29.0	19.1	-9.5		-24.8	439	9407	15 06 01
15 13 30	J1234+619	03 08 08	28.9	19.5	-9.4		-25.2	-11	9407	No stop
15 15 00	---	03 09 38	29.0	19.7	-9.4		-25.4	79	9419	15 13 31
15 15 00	EFJB-P1	03 09 38	29.1	19.2	-9.5		-25.0	-11	9419	No stop
15 22 30	---	03 17 09	29.4	20.1	-9.3		-26.3	439	9476	15 15 01
15 23 00	J1241+602	03 17 39	27.5	20.6	-9.4		-25.1	9	9476	15 23 00
15 24 30	---	03 19 10	27.6	20.7	-9.4		-25.4	90	9488	15 23 01
15 24 45	J1234+619	03 19 25	29.5	20.9	-9.3		-27.0	-6	9488	15 24 45
15 26 15	---	03 20 55	29.6	21.0	-9.2		-27.2	84	9499	15 24 46
15 26 15	EFJB-P2	03 20 55	29.6	20.6	-9.3		-26.9	-11	9499	No stop
15 33 40	---	03 28 21	30.0	21.5	-9.2		-28.1	434	9556	15 26 16
15 34 00	J1234+619	03 28 41	30.0	22.0	-9.1		-28.5	9	9556	15 34 00
15 35 30	---	03 30 12	30.1	22.1	-9.1		-28.7	90	9568	15 34 01
15 35 30	EFJB-P2	03 30 12	30.1	21.7	-9.1		-28.4	-11	9568	No stop
15 43 00	---	03 37 43	30.6	22.6	-9.0		-29.6	439	9626	15 35 31
15 43 00	J1234+619	03 37 43	30.5	23.0	-9.0		-29.9	-11	9626	No stop
15 44 30	---	03 39 13	30.6	23.2	-8.9		-30.2	79	9637	15 43 01
15 44 30	EFJB-P2	03 39 13	30.7	22.8	-9.0		-29.8	-11	9637	No stop
15 52 00	---	03 46 44	31.1	23.7	-8.8		-31.0	439	9695	15 44 31
15 52 30	J1241+602	03 47 14	29.2	24.3	-8.9		-29.8	9	9695	15 52 30
15 54 00	---	03 48 45	29.3	24.4	-8.9		-30.0	90	9706	15 52 31

Schedule for TORUN (Code Tr)

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Ultra Deep EVN Observations of HDF North

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	2 Mar 2015	Day	61	---					
15 54 15	J1234+619	03 49 00	31.2	24.4	-8.8		-31.7	-6	9706	15 54 15
15 55 45	---	03 50 30	31.3	24.5	-8.7		-32.0	84	9718	15 54 16
15 55 45	EFJB-P3	03 50 30	31.3	24.1	-8.8		-31.6	-11	9718	No stop
16 03 10	---	03 57 56	31.8	25.0	-8.7		-32.8	434	9775	15 55 46
16 03 30	J1234+619	03 58 16	31.8	25.5	-8.6		-33.2	9	9775	16 03 30
16 05 00	---	03 59 46	31.9	25.6	-8.6		-33.5	90	9787	16 03 31
16 05 00	EFJB-P3	03 59 46	31.9	25.2	-8.6		-33.1	-11	9787	No stop
16 12 30	---	04 07 18	32.4	26.0	-8.5		-34.3	439	9844	16 05 01
16 12 30	J1234+619	04 07 18	32.4	26.5	-8.5		-34.6	-11	9844	No stop
16 14 00	---	04 08 48	32.5	26.7	-8.4		-34.9	79	9856	16 12 31
16 14 00	EFJB-P3	04 08 48	32.5	26.2	-8.5		-34.6	-11	9856	No stop
16 21 30	---	04 16 19	33.0	27.1	-8.4		-35.8	439	9913	16 14 01
16 22 00	J1241+602	04 16 49	31.2	27.8	-8.4		-34.4	9	9913	16 22 00
16 23 30	---	04 18 19	31.3	28.0	-8.4		-34.7	90	9925	16 22 01
16 23 45	J1234+619	04 18 34	33.1	27.8	-8.3		-36.4	-6	9925	16 23 45
16 25 15	---	04 20 05	33.3	28.0	-8.2		-36.7	84	9937	16 23 46
16 25 15	EFJB-P4	04 20 05	33.3	27.5	-8.3		-36.4	-11	9937	No stop
16 32 40	---	04 27 31	33.8	28.3	-8.2		-37.5	434	9994	16 25 16
16 33 00	J1234+619	04 27 51	33.8	28.8	-8.1		-37.9	9	9994	16 33 00
16 34 30	---	04 29 21	33.9	29.0	-8.1		-38.1	90	10005	16 33 01
16 34 30	EFJB-P4	04 29 21	33.9	28.5	-8.1		-37.8	-11	10005	No stop
16 42 00	---	04 36 52	34.5	29.4	-8.0		-39.0	439	10063	16 34 31
16 42 00	J1234+619	04 36 52	34.5	29.8	-8.0		-39.3	-11	10063	No stop
16 43 30	---	04 38 23	34.6	30.0	-7.9		-39.6	79	10074	16 42 01
16 43 30	EFJB-P4	04 38 23	34.6	29.5	-8.0		-39.3	-11	10074	No stop
16 51 00	---	04 45 54	35.1	30.3	-7.9		-40.5	439	10132	16 43 31
16 51 30	J1241+602	04 46 24	33.4	31.3	-7.9		-39.0	10	10132	16 51 30
16 53 00	---	04 47 54	33.5	31.5	-7.9		-39.2	90	10144	16 51 31
16 53 15	J1234+619	04 48 09	35.3	31.1	-7.8		-41.1	-6	10144	16 53 15
16 54 45	---	04 49 40	35.4	31.2	-7.8		-41.4	84	10155	16 53 16

Schedule for TORUN (Code Tr)

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Ultra Deep EVN Observations of HDF North

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	2 Mar 2015	Day	61	---					
16 54 45	EFJB-P1	04 49 40	35.4	30.7	-7.8		-41.1	-11	10155	No stop
17 02 10	---	04 57 06	36.0	31.5	-7.7		-42.2	434	10212	16 54 46
17 02 30	J1234+619	04 57 26	36.1	32.1	-7.6		-42.6	9	10212	17 02 30
17 04 00	---	04 58 56	36.2	32.2	-7.6		-42.8	90	10224	17 02 31
17 04 00	EFJB-P1	04 58 56	36.1	31.7	-7.6		-42.5	-11	10224	No stop
17 11 30	---	05 06 27	36.7	32.5	-7.5		-43.7	439	10281	17 04 01
17 11 30	J1234+619	05 06 27	36.8	33.0	-7.5		-44.0	-11	10281	No stop
17 13 00	---	05 07 58	36.9	33.2	-7.4		-44.2	79	10293	17 11 31
17 13 00	EFJB-P1	05 07 58	36.9	32.7	-7.5		-43.9	-11	10293	No stop
17 20 30	---	05 15 29	37.5	33.5	-7.4		-45.1	439	10351	17 13 01
17 21 00	J1241+602	05 15 59	35.8	34.7	-7.4		-43.5	10	10351	17 21 00
17 22 30	---	05 17 29	35.9	34.8	-7.4		-43.7	90	10362	17 21 01
17 22 45	J1234+619	05 17 44	37.7	34.2	-7.3		-45.8	-5	10362	17 22 45
17 24 15	---	05 19 14	37.8	34.4	-7.3		-46.0	85	10374	17 22 46
17 24 15	EFJB-P2	05 19 14	37.8	33.9	-7.3		-45.7	-11	10374	No stop
17 31 40	---	05 26 41	38.4	34.6	-7.2		-46.9	434	10431	17 24 16
17 32 00	J1234+619	05 27 01	38.5	35.2	-7.1		-47.2	9	10431	17 32 00
17 33 30	---	05 28 31	38.6	35.3	-7.1		-47.5	90	10442	17 32 01
17 33 30	EFJB-P2	05 28 31	38.6	34.8	-7.2		-47.2	-11	10442	No stop
17 41 00	---	05 36 02	39.2	35.6	-7.0		-48.4	439	10500	17 33 31
17 41 00	J1234+619	05 36 02	39.3	36.1	-7.0		-48.6	-11	10500	No stop
17 42 30	---	05 37 32	39.4	36.2	-7.0		-48.9	79	10512	17 41 01
17 42 30	EFJB-P2	05 37 32	39.4	35.7	-7.0		-48.6	-11	10512	No stop
17 50 00	---	05 45 04	40.0	36.5	-6.9		-49.8	439	10569	17 42 31
17 50 20	J1234+619	05 45 24	40.1	37.0	-6.8		-50.1	9	10569	17 50 20
17 51 50	---	05 46 54	40.3	37.2	-6.8		-50.3	90	10581	17 50 21
17 53 50	4C39.25	05 48 54	50.5	88.3	-3.7		-50.5	3	10581	17 53 50
17 59 50	---	05 54 55	51.5	89.5	-3.6		-50.6	360	10627	17 53 51

SETUP FILE INFORMATION:

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

==== Setup file: sess115.L1024

```

Setup group:   11           Station: TORUN           Total bit rate: 1024
Format: MARK5B           Bits per sample: 2       Sample rate: 32.000
Number of channels: 16    DBE type: DBBC_DDC     Speedup factor:  1.00

```

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec)		(Date)	Error (mas)
	(B1950)	(J2000)		
* J1241+602	12 39 16.511005	* 12 41 29.590564	12 42 11.201782	0.00
	60 37 07.62444	* 60 20 41.32233	60 15 29.54388	0.00
* J1234+619	12 31 56.132262	* 12 34 11.743000	12 34 54.186833	0.00
	62 15 03.88430	* 61 58 32.48000	61 53 19.32795	0.00
* HDF-N	12 34 36.033130	* 12 36 50.000000	12 37 31.940651	0.00
	62 29 27.67047	* 62 12 58.00000	62 07 45.33607	0.00
* EFJB-P1	12 34 36.033130	* 12 36 50.000000	12 37 31.940651	0.00
	62 29 27.67047	* 62 12 58.00000	62 07 45.33607	0.00

* EFJB-P2	12 34 36.033130	* 12 36 50.000000	12 37 31.940651	0.00
	62 29 27.67047	* 62 12 58.00000	62 07 45.33607	0.00
* EFJB-P3	12 34 36.033130	* 12 36 50.000000	12 37 31.940651	0.00
	62 29 27.67047	* 62 12 58.00000	62 07 45.33607	0.00
* EFJB-P4	12 34 36.033130	* 12 36 50.000000	12 37 31.940651	0.00
	62 29 27.67047	* 62 12 58.00000	62 07 45.33607	0.00
J0927+3902	09 23 55.319217	* 09 27 03.013938	09 28 01.326350	0.13
* 4C39.25	39 15 23.56637	* 39 02 20.85177	38 58 12.35160	0.10
J1642+3948	16 41 17.606228	* 16 42 58.809965	16 43 29.456230	0.77
* 3C345	39 54 10.81496	* 39 48 36.99402	39 46 46.49927	0.52

rk08rwtr

RADIOASTRON AGN SURVEY

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

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

--- Mon 2 Mar 2015 Day 61 ---

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

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

Table with 12 columns: Start UT, Stop UT, Source, LST, EL, AZ, HA, UP, ParA, Dwell, GBytes, SYNC. It lists observation times and parameters for source 0917+449.

SETUP FILE INFORMATION:

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

==== Setup file: ra6cm2.set

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

Disk used to record data.


```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(Date)	Error (mas)	
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 53.526059	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 46.81210	0.00
	fake circumpolar target for a TS to look at			
* 0917+449	09 17 41.919222	* 09 20 58.458485	09 21 59.487433	0.00
J0920+4441	44 54 39.62449	* 44 41 53.98501	44 37 51.82886	0.00
	./rk08rw_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 2520 observations, RA-A02-12			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
3C147	103.5
0917+449	137.5

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

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

TRACING THE EVOLUTION OF FAST JET-DRIVEN OUTFLOWS

PI: *Kristina Nyland*

Address: ASTRON, Phone: 0521-595-766, EMAIL: nyland@astron.nl, Phone during obs.: 0521-595-766

Observing mode: 21cm spectral line

Schedule for TORUN (Code Tr)

Page 2

Tracing the Evolution of Fast Jet-Driven Outflows

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	2 Mar 2015	Day	61	---					

Next scan frequencies: 1364.50 1364.50 1379.75 1379.75 1395.00 1395.00 1410.25 1410.25										
Next BBC frequencies: 935.50 935.50 920.25 920.25 905.00 905.00 889.75 889.75										
Next scan bandwidths: 16.00 16.00 16.00 16.00 16.00 16.00 16.00 16.00										
21 30 00	J1350+3034	09 25 40	37.8	87.8	-4.4		-44.1	0	0	21 30 00
21 34 00	=1348+308	09 29 40	38.4	88.6	-4.4		-44.2	240	15	21 30 01
21 34 00	3C293	09 29 40	38.8	87.6	-4.4		-44.6	-14	15	No stop
21 37 35	---	09 33 16	39.3	88.3	-4.3		-44.7	201	29	21 34 01
21 38 05	J1350+3034	09 33 46	39.0	89.4	-4.3		-44.2	16	29	21 38 05
21 39 50	=1348+308	09 35 31	39.2	89.8	-4.3		-44.2	105	36	21 38 06
21 39 50	3C293	09 35 31	39.6	88.7	-4.3		-44.7	-14	36	No stop
21 43 25	---	09 39 07	40.2	89.4	-4.2		-44.7	201	50	21 39 51
21 43 25	J1350+3034	09 39 07	39.8	90.5	-4.2		-44.2	-14	50	No stop
21 45 25	=1348+308	09 41 07	40.1	90.9	-4.2		-44.2	106	57	21 43 26
21 45 25	3C293	09 41 07	40.5	89.8	-4.2		-44.7	-14	57	No stop
21 49 00	---	09 44 43	41.0	90.5	-4.1		-44.7	201	71	21 45 26
21 49 30	J1350+3034	09 45 13	40.7	91.7	-4.1		-44.2	16	71	21 49 30
21 51 15	=1348+308	09 46 58	41.0	92.1	-4.1		-44.1	105	78	21 49 31
21 51 15	3C293	09 46 58	41.4	91.0	-4.1		-44.7	-14	78	No stop
21 54 50	---	09 50 34	41.9	91.7	-4.0		-44.7	201	92	21 51 16
21 54 50	J1350+3034	09 50 34	41.5	92.8	-4.0		-44.1	-15	92	No stop
21 56 50	=1348+308	09 52 34	41.8	93.2	-4.0		-44.1	105	99	21 54 51
21 56 50	3C293	09 52 34	42.2	92.1	-4.0		-44.7	-14	99	No stop
22 00 25	---	09 56 10	42.7	92.9	-3.9		-44.6	201	113	21 56 51
22 00 55	J1350+3034	09 56 40	42.4	94.1	-3.9		-44.0	15	113	22 00 55
22 02 40	=1348+308	09 58 25	42.7	94.5	-3.9		-44.0	105	120	22 00 56
22 02 40	3C293	09 58 25	43.1	93.4	-3.9		-44.6	-14	120	No stop
22 06 15	---	10 02 01	43.6	94.1	-3.8		-44.5	201	134	22 02 41
22 06 15	J1350+3034	10 02 01	43.2	95.2	-3.8		-44.0	-15	134	No stop
22 08 15	=1348+308	10 04 01	43.5	95.7	-3.8		-43.9	105	141	22 06 16

Schedule for TORUN (Code Tr)

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Tracing the Evolution of Fast Jet-Driven Outflows

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon 2 Mar 2015	Day	61	---						
22 08 15	3C293	10 04 01	43.9	94.5	-3.8		-44.5	-14	141	No stop
22 11 50	---	10 07 37	44.5	95.3	-3.8		-44.4	201	155	22 08 16
22 12 20	J1350+3034	10 08 07	44.1	96.5	-3.7		-43.8	15	155	22 12 20
22 14 05	=1348+308	10 09 52	44.4	96.9	-3.7		-43.8	105	162	22 12 21
22 14 05	3C293	10 09 52	44.8	95.8	-3.7		-44.4	-14	162	No stop
22 17 40	---	10 13 28	45.3	96.5	-3.7		-44.3	201	176	22 14 06
22 17 40	J1350+3034	10 13 28	44.9	97.7	-3.6		-43.7	-15	176	No stop
22 19 40	=1348+308	10 15 28	45.2	98.2	-3.6		-43.6	105	183	22 17 41
22 19 40	3C293	10 15 28	45.6	97.0	-3.6		-44.3	-15	183	No stop
22 23 15	---	10 19 03	46.2	97.8	-3.6		-44.2	200	197	22 19 41
22 23 45	J1350+3034	10 19 34	45.8	99.1	-3.5		-43.5	15	197	22 23 45
22 25 30	=1348+308	10 21 19	46.1	99.5	-3.5		-43.4	105	204	22 23 46
22 25 30	3C293	10 21 19	46.5	98.3	-3.5		-44.1	-15	204	No stop
22 29 05	---	10 24 54	47.0	99.1	-3.5		-44.0	200	218	22 25 31
22 29 05	J1350+3034	10 24 54	46.6	100.3	-3.4		-43.3	-15	218	No stop
22 31 05	=1348+308	10 26 55	46.9	100.7	-3.4		-43.2	105	225	22 29 06
22 31 05	3C293	10 26 55	47.3	99.5	-3.4		-43.9	-15	225	No stop
22 34 40	---	10 30 30	47.9	100.4	-3.4		-43.8	200	239	22 31 06
22 35 10	J1350+3034	10 31 00	47.5	101.7	-3.3		-43.0	15	239	22 35 10
22 36 55	=1348+308	10 32 46	47.8	102.1	-3.3		-43.0	105	246	22 35 11
22 36 55	3C293	10 32 46	48.2	100.9	-3.3		-43.7	-15	246	No stop
22 40 30	---	10 36 21	48.7	101.7	-3.3		-43.5	200	260	22 36 56
22 40 30	J1350+3034	10 36 21	48.3	102.9	-3.3		-42.8	-15	260	No stop
22 42 30	=1348+308	10 38 22	48.6	103.4	-3.2		-42.7	105	267	22 40 31
22 42 30	3C293	10 38 22	49.0	102.2	-3.2		-43.4	-15	267	No stop
22 46 05	---	10 41 57	49.5	103.0	-3.2		-43.2	200	281	22 42 31
22 46 35	J1350+3034	10 42 27	49.2	104.4	-3.2		-42.5	15	281	22 46 35
22 48 20	=1348+308	10 44 13	49.4	104.8	-3.1		-42.4	105	288	22 46 36
22 48 20	3C293	10 44 13	49.9	103.6	-3.1		-43.1	-15	288	No stop
22 51 55	---	10 47 48	50.4	104.5	-3.1		-42.9	200	302	22 48 21
22 51 55	J1350+3034	10 47 48	50.0	105.7	-3.1		-42.1	-15	302	No stop
22 53 55	=1348+308	10 49 49	50.3	106.2	-3.0		-42.0	105	309	22 51 56

Schedule for TORUN (Code Tr)

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Tracing the Evolution of Fast Jet-Driven Outflows

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	2 Mar 2015	Day	61	---					
22 53 55	3C293	10 49 49	50.7	105.0	-3.1		-42.8	-15	309	No stop
22 57 15	---	10 53 09	51.2	105.8	-3.0		-42.6	185	322	22 53 56
22 57 45	J1350+3034	10 53 39	50.8	107.2	-3.0		-41.7	15	322	22 57 45
22 59 30	=1348+308	10 55 24	51.1	107.6	-2.9		-41.6	105	329	22 57 46
22 59 45	J1407+2827	10 55 39	47.2	105.8	-3.2		-41.0	-13	329	22 59 45
23 05 15	=1404+286	11 01 10	48.0	107.2	-3.1		-40.7	317	350	22 59 46
23 05 30	J1350+3034	11 01 25	51.9	109.2	-2.8		-41.2	-14	350	23 05 30
23 07 30	=1348+308	11 03 26	52.2	109.7	-2.8		-41.0	106	358	23 05 31
23 07 30	3C293	11 03 26	52.6	108.4	-2.8		-41.9	-15	358	No stop
23 11 05	---	11 07 01	53.2	109.4	-2.8		-41.6	200	371	23 07 31
23 11 35	J1350+3034	11 07 31	52.8	110.8	-2.7		-40.6	15	371	23 11 35
23 13 20	=1348+308	11 09 17	53.0	111.3	-2.7		-40.5	105	378	23 11 36
23 13 20	3C293	11 09 17	53.5	110.0	-2.7		-41.4	-15	378	No stop
23 16 55	---	11 12 52	54.0	110.9	-2.7		-41.1	200	392	23 13 21
23 16 55	J1350+3034	11 12 52	53.5	112.3	-2.6		-40.2	-16	392	No stop
23 18 55	=1348+308	11 14 53	53.8	112.8	-2.6		-40.0	104	400	23 16 56
23 18 55	3C293	11 14 53	54.3	111.5	-2.6		-40.9	-15	400	No stop
23 22 30	---	11 18 28	54.8	112.5	-2.6		-40.5	200	413	23 18 56
23 23 00	J1350+3034	11 18 58	54.4	114.0	-2.5		-39.5	14	413	23 23 00
23 24 45	=1348+308	11 20 44	54.6	114.5	-2.5		-39.4	105	420	23 23 01
23 24 45	3C293	11 20 44	55.1	113.1	-2.5		-40.3	-15	420	No stop
23 28 20	---	11 24 19	55.6	114.2	-2.5		-39.9	200	434	23 24 46
23 28 20	J1350+3034	11 24 19	55.1	115.5	-2.5		-39.0	-16	434	No stop
23 30 20	=1348+308	11 26 20	55.4	116.1	-2.4		-38.7	104	442	23 28 21
23 30 20	3C293	11 26 20	55.8	114.8	-2.4		-39.7	-15	442	No stop
23 33 55	---	11 29 55	56.3	115.8	-2.4		-39.3	200	455	23 30 21
23 34 25	J1350+3034	11 30 25	55.9	117.4	-2.4		-38.2	14	455	23 34 25
23 36 10	=1348+308	11 32 10	56.1	117.9	-2.3		-38.0	105	462	23 34 26
23 36 10	3C293	11 32 10	56.6	116.5	-2.3		-39.0	-15	462	No stop
23 39 45	---	11 35 46	57.1	117.6	-2.3		-38.6	200	476	23 36 11

Schedule for TORUN (Code Tr)

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Tracing the Evolution of Fast Jet-Driven Outflows

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Mon 2 Mar 2015 Day 61 ---										
23 39 45	J1350+3034	11 35 46	56.6	119.0	-2.3		-37.6	-16	476	No stop
23 41 45	=1348+308	11 37 46	56.9	119.6	-2.2		-37.3	104	484	23 39 46
23 41 45	3C293	11 37 46	57.4	118.2	-2.3		-38.3	-15	484	No stop
23 45 20	---	11 41 22	57.9	119.3	-2.2		-37.8	200	497	23 41 46
23 45 50	J1350+3034	11 41 52	57.4	120.9	-2.2		-36.7	14	497	23 45 50
23 47 35	=1348+308	11 43 37	57.6	121.5	-2.1		-36.5	105	504	23 45 51
23 47 35	3C293	11 43 37	58.1	120.1	-2.2		-37.5	-15	504	No stop
23 51 10	---	11 47 13	58.6	121.2	-2.1		-37.0	200	518	23 47 36
23 51 10	J1350+3034	11 47 13	58.1	122.7	-2.1		-35.9	-16	518	No stop
23 53 10	=1348+308	11 49 13	58.3	123.3	-2.0		-35.6	104	526	23 51 11
23 53 10	3C293	11 49 13	58.9	121.9	-2.1		-36.7	-16	526	No stop
23 56 45	---	11 52 49	59.3	123.1	-2.0		-36.1	199	539	23 53 11
23 57 15	J1350+3034	11 53 19	58.9	124.7	-2.0		-35.0	14	539	23 57 15
23 59 00	=1348+308	11 55 04	59.1	125.3	-1.9		-34.7	105	546	23 57 16
--- Start: Mon 2 Mar 2015 Day 61 -- Stop: Tue 3 Mar 2015 Day 62 ---										
23 59 00	3C293	11 55 04	59.6	123.8	-2.0		-35.7	-16	546	No stop
00 02 35	---	11 58 40	60.1	125.1	-1.9		-35.1	199	560	23 59 01
00 02 35	J1350+3034	11 58 40	59.5	126.6	-1.9		-34.0	-16	560	No stop
00 04 35	=1348+308	12 00 40	59.8	127.3	-1.8		-33.7	104	568	00 02 36
00 04 35	3C293	12 00 40	60.3	125.8	-1.9		-34.8	-16	568	No stop
00 08 10	---	12 04 16	60.7	127.1	-1.8		-34.1	199	581	00 04 36
00 08 40	J1350+3034	12 04 46	60.2	128.7	-1.8		-32.9	14	581	00 08 40
00 10 25	=1348+308	12 06 31	60.4	129.4	-1.8		-32.6	105	588	00 08 41
00 10 25	3C293	12 06 31	61.0	127.9	-1.8		-33.7	-16	588	No stop
00 14 00	---	12 10 07	61.4	129.2	-1.7		-33.0	199	602	00 10 26
00 14 00	J1350+3034	12 10 07	60.9	130.7	-1.7		-31.9	-16	602	No stop
00 16 00	=1348+308	12 12 07	61.1	131.5	-1.7		-31.5	104	610	00 14 01
00 16 00	3C293	12 12 07	61.7	130.0	-1.7		-32.6	-16	610	No stop
00 19 35	---	12 15 43	62.1	131.4	-1.6		-31.9	199	623	00 16 01

Schedule for TORUN (Code Tr)

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Tracing the Evolution of Fast Jet-Driven Outflows

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Tue	3 Mar 2015	Day	62	---					
00 20 05	J1350+3034	12 16 13	61.5	133.1	-1.6		-30.6	14	623	00 20 05
00 21 50	=1348+308	12 17 58	61.7	133.7	-1.6		-30.2	105	630	00 20 06
00 21 50	3C293	12 17 58	62.3	132.2	-1.6		-31.4	-16	630	No stop
00 25 25	---	12 21 34	62.7	133.7	-1.5		-30.6	199	644	00 21 51
00 25 25	J1350+3034	12 21 34	62.1	135.2	-1.5		-29.4	-16	644	No stop
00 27 25	=1348+308	12 23 34	62.3	136.0	-1.5		-29.0	104	652	00 25 26
00 27 25	3C293	12 23 34	62.9	134.5	-1.5		-30.1	-16	652	No stop
00 31 00	---	12 27 09	63.3	135.9	-1.4		-29.3	199	665	00 27 26
00 31 30	J1350+3034	12 27 40	62.7	137.7	-1.4		-28.0	14	665	00 31 30
00 33 15	=1348+308	12 29 25	62.9	138.4	-1.4		-27.6	105	672	00 31 31
00 33 30	J1407+2827	12 29 40	59.4	134.2	-1.6		-29.3	-12	672	00 33 30
00 39 00	=1404+286	12 35 11	60.0	136.3	-1.5		-28.1	318	693	00 33 31
00 39 15	J1350+3034	12 35 26	63.5	141.0	-1.3		-26.0	-12	693	00 39 15
00 41 15	=1348+308	12 37 26	63.7	141.8	-1.2		-25.5	108	701	00 39 16
00 41 15	3C293	12 37 26	64.3	140.3	-1.3		-26.7	-16	701	No stop
00 44 50	---	12 41 02	64.7	141.9	-1.2		-25.7	199	715	00 41 16
00 45 20	J1350+3034	12 41 32	64.1	143.6	-1.2		-24.4	14	715	00 45 20
00 47 05	=1348+308	12 43 17	64.2	144.4	-1.1		-23.9	105	721	00 45 21
00 47 05	3C293	12 43 17	64.9	143.0	-1.2		-25.1	-16	721	No stop
00 50 40	---	12 46 53	65.2	144.6	-1.1		-24.0	199	735	00 47 06
00 50 40	J1350+3034	12 46 53	64.5	146.1	-1.1		-22.9	-16	735	No stop
00 52 40	=1348+308	12 48 53	64.7	147.0	-1.0		-22.3	104	743	00 50 41
00 52 40	3C293	12 48 53	65.4	145.6	-1.1		-23.4	-15	743	No stop
00 56 15	---	12 52 29	65.7	147.3	-1.0		-22.4	200	757	00 52 41
00 56 45	J1350+3034	12 52 59	65.0	148.9	-1.0		-21.1	14	757	00 56 45
00 58 30	=1348+308	12 54 44	65.2	149.8	-0.9		-20.5	105	763	00 56 46
00 58 30	3C293	12 54 44	65.9	148.3	-1.0		-21.7	-15	763	No stop
01 02 05	---	12 58 20	66.1	150.1	-0.9		-20.5	200	777	00 58 31
01 02 05	J1350+3034	12 58 20	65.4	151.5	-0.9		-19.4	-16	777	No stop
01 04 05	=1348+308	13 00 20	65.6	152.5	-0.9		-18.8	104	785	01 02 06

Schedule for TORUN (Code Tr)

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Tracing the Evolution of Fast Jet-Driven Outflows

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Tue	3 Mar 2015	Day	62	---					
01 04 05	3C293	13 00 20	66.3	151.1	-0.9		-19.9	-15	785	No stop
01 07 40	---	13 03 56	66.5	152.9	-0.8		-18.7	200	799	01 04 06
01 08 10	J1350+3034	13 04 26	65.8	154.5	-0.8		-17.4	14	799	01 08 10
01 09 55	=1348+308	13 06 11	65.9	155.4	-0.8		-16.9	105	805	01 08 11
01 09 55	3C293	13 06 11	66.7	154.1	-0.8		-17.9	-15	805	No stop
01 13 30	---	13 09 46	66.9	155.9	-0.7		-16.7	200	819	01 09 56
01 13 30	J1350+3034	13 09 46	66.2	157.3	-0.7		-15.6	-16	819	No stop
01 15 30	=1348+308	13 11 47	66.3	158.3	-0.7		-14.9	104	827	01 13 31
01 15 30	3C293	13 11 47	67.0	157.0	-0.7		-16.0	-15	827	No stop
01 19 05	---	13 15 22	67.2	158.9	-0.6		-14.7	200	841	01 15 31
01 19 35	J1350+3034	13 15 52	66.5	160.4	-0.6		-13.5	14	841	01 19 35
01 21 20	=1348+308	13 17 38	66.6	161.3	-0.6		-12.9	105	847	01 19 36
01 21 20	3C293	13 17 38	67.3	160.1	-0.6		-13.9	-15	847	No stop
01 24 55	---	13 21 13	67.5	162.0	-0.5		-12.5	200	861	01 21 21
01 24 55	J1350+3034	13 21 13	66.7	163.3	-0.5		-11.6	-15	861	No stop
01 26 55	=1348+308	13 23 14	66.8	164.3	-0.5		-10.9	105	869	01 24 56
01 26 55	3C293	13 23 14	67.6	163.1	-0.5		-11.8	-15	869	No stop
01 30 30	---	13 26 49	67.8	165.1	-0.4		-10.4	200	883	01 26 56
01 31 00	J1350+3034	13 27 19	67.0	166.5	-0.4		-9.3	15	883	01 31 00
01 32 45	=1348+308	13 29 05	67.0	167.5	-0.4		-8.7	105	889	01 31 01
01 32 45	3C293	13 29 05	67.8	166.4	-0.4		-9.5	-15	889	No stop
01 36 20	---	13 32 40	68.0	168.4	-0.3		-8.1	200	903	01 32 46
01 36 20	J1350+3034	13 32 40	67.1	169.5	-0.3		-7.3	-15	903	No stop
01 38 20	=1348+308	13 34 41	67.2	170.6	-0.3		-6.6	105	911	01 36 21
01 38 20	3C293	13 34 41	68.0	169.5	-0.3		-7.4	-15	911	No stop
01 41 55	---	13 38 16	68.1	171.5	-0.2		-5.9	200	925	01 38 21
01 42 25	J1350+3034	13 38 46	67.3	172.8	-0.2		-5.0	14	925	01 42 25
01 44 10	=1348+308	13 40 31	67.3	173.8	-0.2		-4.3	105	931	01 42 26
01 44 10	3C293	13 40 31	68.2	172.8	-0.2		-5.0	-16	931	No stop
01 47 45	---	13 44 07	68.2	174.9	-0.1		-3.6	199	945	01 44 11

Schedule for TORUN (Code Tr)

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Tracing the Evolution of Fast Jet-Driven Outflows

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Tue 3 Mar 2015 Day 62 ---										
01 47 45	J1350+3034	13 44 07	67.4	175.8	-0.1		-2.9	-16	945	No stop
01 49 45	=1348+308	13 46 07	67.4	176.9	-0.1		-2.1	104	953	01 47 46
01 49 45	3C293	13 46 07	68.2	176.0	-0.1		-2.8	-16	953	No stop
01 53 20	---	13 49 43	68.3	178.1	-0.1		-1.3	199	967	01 49 46
01 53 50	J1350+3034	13 50 13	67.4	179.2	-0.0		-0.5	14	967	01 53 50
01 55 35	=1348+308	13 51 58	67.4	180.2	0.0		0.2	105	973	01 53 51
01 55 35	3C293	13 51 58	68.3	179.4	-0.0		-0.4	-16	973	No stop
01 59 10	---	13 55 34	68.3	181.5	0.0		1.0	199	987	01 55 36
01 59 10	J1350+3034	13 55 34	67.4	182.2	0.1		1.6	-16	987	No stop
02 01 10	=1348+308	13 57 34	67.4	183.4	0.1		2.3	104	995	01 59 11
02 01 10	3C293	13 57 34	68.3	182.6	0.1		1.9	-16	995	No stop
02 04 45	---	14 01 10	68.2	184.7	0.1		3.3	199	1009	02 01 11
02 05 15	J1350+3034	14 01 40	67.3	185.6	0.2		3.9	14	1009	02 05 15
02 07 00	=1348+308	14 03 25	67.3	186.6	0.2		4.6	105	1015	02 05 16
02 07 15	J1407+2827	14 03 40	65.3	177.9	-0.1		-1.4	-17	1015	02 07 15
02 12 45	=1404+286	14 09 11	65.3	180.8	0.0		0.5	313	1037	02 07 16
02 13 00	J1350+3034	14 09 26	67.2	190.0	0.3		6.9	-19	1037	02 13 00
02 15 00	=1348+308	14 11 27	67.1	191.1	0.3		7.7	101	1044	02 13 01
02 15 00	3C293	14 11 27	68.0	190.6	0.3		7.4	-16	1044	No stop
02 18 37	---	14 15 04	67.9	192.6	0.4		8.8	201	1058	02 15 01
02 19 07	J1350+3034	14 15 34	67.0	193.3	0.4		9.2	14	1058	02 19 07
02 20 52	=1348+308	14 17 20	66.9	194.3	0.4		9.9	105	1065	02 19 08
02 20 52	3C293	14 17 20	67.8	193.9	0.4		9.7	-16	1065	No stop
02 24 29	---	14 20 57	67.7	195.9	0.5		11.1	201	1079	02 20 53
02 24 29	J1350+3034	14 20 57	66.8	196.2	0.5		11.2	-16	1079	No stop
02 26 29	=1348+308	14 22 57	66.7	197.3	0.5		12.0	104	1086	02 24 30
02 26 29	3C293	14 22 57	67.6	197.0	0.5		11.9	-16	1086	No stop
02 30 06	---	14 26 35	67.4	199.0	0.6		13.2	201	1100	02 26 30
02 30 36	J1350+3034	14 27 05	66.5	199.5	0.6		13.4	14	1100	02 30 36
02 32 21	=1348+308	14 28 50	66.4	200.4	0.6		14.1	105	1107	02 30 37

Schedule for TORUN (Code Tr)

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Tracing the Evolution of Fast Jet-Driven Outflows

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Tue	3 Mar 2015	Day	62	---					
02 32 21	3C293	14 28 50	67.3	200.2	0.6		14.0	-16	1107	No stop
02 35 58	---	14 32 28	67.1	202.1	0.7		15.4	201	1121	02 32 22
02 35 58	J1350+3034	14 32 28	66.2	202.3	0.7		15.3	-16	1121	No stop
02 37 58	=1348+308	14 34 28	66.1	203.3	0.7		16.0	104	1129	02 35 59
02 37 58	3C293	14 34 28	67.0	203.2	0.7		16.1	-16	1129	No stop
02 41 35	---	14 38 06	66.8	205.1	0.8		17.3	201	1143	02 37 59
02 42 05	J1350+3034	14 38 36	65.8	205.4	0.8		17.4	14	1143	02 42 05
02 43 50	=1348+308	14 40 21	65.7	206.3	0.8		18.0	105	1149	02 42 06
02 43 50	3C293	14 40 21	66.6	206.2	0.8		18.1	-16	1149	No stop
02 47 27	---	14 43 59	66.4	208.1	0.8		19.3	201	1163	02 43 51
02 47 27	J1350+3034	14 43 59	65.5	208.1	0.9		19.1	-16	1163	No stop
02 49 27	=1348+308	14 45 59	65.3	209.0	0.9		19.8	104	1171	02 47 28
02 49 27	3C293	14 45 59	66.3	209.1	0.9		20.0	-16	1171	No stop
02 53 04	---	14 49 37	66.0	210.9	0.9		21.1	201	1185	02 49 28
02 53 34	J1350+3034	14 50 07	65.0	211.0	1.0		21.1	14	1185	02 53 34
02 55 19	=1348+308	14 51 52	64.9	211.9	1.0		21.6	105	1192	02 53 35
02 55 19	3C293	14 51 52	65.8	212.0	1.0		21.9	-16	1192	No stop
02 58 56	---	14 55 30	65.5	213.7	1.0		23.0	201	1206	02 55 20
02 58 56	J1350+3034	14 55 30	64.6	213.6	1.1		22.7	-16	1206	No stop
03 00 56	=1348+308	14 57 30	64.4	214.5	1.1		23.2	104	1213	02 58 57
03 00 56	3C293	14 57 30	65.3	214.6	1.1		23.6	-16	1213	No stop
03 04 33	---	15 01 08	65.0	216.3	1.1		24.6	201	1227	03 00 57
03 05 03	J1350+3034	15 01 38	64.1	216.4	1.2		24.4	14	1227	03 05 03
03 06 48	=1348+308	15 03 23	63.9	217.1	1.2		24.9	105	1234	03 05 04
03 06 48	3C293	15 03 23	64.8	217.4	1.2		25.3	-16	1234	No stop
03 10 25	---	15 07 01	64.5	219.0	1.2		26.3	201	1248	03 06 49
03 10 25	J1350+3034	15 07 01	63.6	218.7	1.3		25.9	-16	1248	No stop
03 12 25	=1348+308	15 09 01	63.4	219.6	1.3		26.4	104	1255	03 10 26
03 12 25	3C293	15 09 01	64.3	219.9	1.3		26.8	-16	1255	No stop
03 16 02	---	15 12 39	63.9	221.4	1.3		27.7	201	1269	03 12 26

Schedule for TORUN (Code Tr)

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Tracing the Evolution of Fast Jet-Driven Outflows

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Tue	3 Mar 2015	Day	62	---					
03 16 32	J1350+3034	15 13 09	63.0	221.4	1.4		27.4	14	1269	03 16 32
03 18 17	=1348+308	15 14 54	62.8	222.1	1.4		27.9	105	1276	03 16 33
03 18 17	3C293	15 14 54	63.7	222.4	1.4		28.3	-16	1276	No stop
03 21 54	---	15 18 32	63.3	223.9	1.4		29.2	201	1290	03 18 18
03 21 54	J1350+3034	15 18 32	62.4	223.6	1.4		28.7	-16	1290	No stop
03 23 54	=1348+308	15 20 32	62.2	224.4	1.5		29.2	104	1298	03 21 55
03 23 54	3C293	15 20 32	63.1	224.8	1.5		29.7	-16	1298	No stop
03 27 30	---	15 24 08	62.7	226.2	1.5		30.5	200	1312	03 23 55
03 28 00	J1350+3034	15 24 39	61.8	226.0	1.6		30.1	14	1312	03 28 00
03 29 45	=1348+308	15 26 24	61.6	226.7	1.6		30.5	105	1318	03 28 01
03 30 00	J1407+2827	15 26 39	61.3	218.3	1.3		25.0	-17	1318	03 30 00
03 35 30	=1404+286	15 32 10	60.8	220.5	1.4		26.3	313	1339	03 30 01
03 35 45	J1350+3034	15 32 25	60.9	229.0	1.7		31.8	-17	1339	03 35 45
03 37 45	=1348+308	15 34 25	60.7	229.8	1.7		32.2	103	1347	03 35 46
03 37 45	3C293	15 34 25	61.6	230.2	1.7		32.7	-16	1347	No stop
03 41 30	---	15 38 11	61.2	231.6	1.8		33.5	209	1362	03 37 46
03 42 00	J1350+3034	15 38 41	60.2	231.4	1.8		33.0	14	1362	03 42 00
03 43 45	=1348+308	15 40 26	60.0	232.0	1.8		33.3	105	1368	03 42 01
03 43 45	3C293	15 40 26	60.9	232.5	1.8		33.9	-16	1368	No stop
03 47 30	---	15 44 12	60.4	233.8	1.9		34.6	209	1383	03 43 46
03 47 30	J1350+3034	15 44 12	59.5	233.3	1.9		34.0	-16	1383	No stop
03 49 30	=1348+308	15 46 12	59.3	234.0	1.9		34.3	104	1390	03 47 31
03 49 30	3C293	15 46 12	60.2	234.5	1.9		34.9	-16	1390	No stop
03 53 15	---	15 49 58	59.7	235.8	1.9		35.6	209	1405	03 49 31
03 53 45	J1350+3034	15 50 28	58.8	235.5	2.0		35.1	14	1405	03 53 45
03 55 30	=1348+308	15 52 13	58.6	236.1	2.0		35.3	105	1412	03 53 46
03 55 30	3C293	15 52 13	59.4	236.6	2.0		36.0	-16	1412	No stop
03 59 15	---	15 55 59	59.0	237.9	2.0		36.5	209	1426	03 55 31
03 59 15	J1350+3034	15 55 59	58.1	237.4	2.1		35.9	-16	1426	No stop
04 01 15	=1348+308	15 57 59	57.8	238.0	2.1		36.2	104	1434	03 59 16

Schedule for TORUN (Code Tr)

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Tracing the Evolution of Fast Jet-Driven Outflows

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Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Tue	3 Mar 2015	Day	62	---					
04 01 15	3C293	15 57 59	58.7	238.5	2.1		36.9	-16	1434	No stop
04 05 00	---	16 01 45	58.2	239.8	2.1		37.4	209	1448	04 01 16
04 05 30	J1350+3034	16 02 15	57.3	239.4	2.2		36.9	14	1448	04 05 30
04 07 15	=1348+308	16 04 00	57.1	239.9	2.2		37.1	105	1455	04 05 31
04 07 15	3C293	16 04 00	57.9	240.5	2.2		37.7	-16	1455	No stop
04 11 00	---	16 07 46	57.4	241.7	2.2		38.2	209	1469	04 07 16
04 11 00	J1350+3034	16 07 46	56.6	241.1	2.3		37.6	-16	1469	No stop
04 13 00	=1348+308	16 09 46	56.3	241.7	2.3		37.9	104	1477	04 11 01
04 13 00	3C293	16 09 46	57.2	242.3	2.3		38.5	-16	1477	No stop
04 16 45	---	16 13 32	56.7	243.4	2.3		39.0	209	1491	04 13 01
04 17 15	J1350+3034	16 14 02	55.7	243.0	2.4		38.4	14	1491	04 17 15
04 19 00	=1348+308	16 15 47	55.5	243.6	2.4		38.6	105	1498	04 17 16
04 19 00	3C293	16 15 47	56.4	244.1	2.4		39.2	-16	1498	No stop
04 22 45	---	16 19 33	55.9	245.2	2.4		39.7	209	1512	04 19 01
04 22 45	J1350+3034	16 19 33	55.0	244.7	2.5		39.0	-16	1512	No stop
04 24 45	=1348+308	16 21 33	54.7	245.2	2.5		39.3	104	1520	04 22 46
04 24 45	3C293	16 21 33	55.6	245.8	2.5		39.9	-16	1520	No stop
04 28 30	---	16 25 18	55.1	246.9	2.5		40.3	209	1535	04 24 46
04 29 00	J1350+3034	16 25 49	54.1	246.5	2.6		39.7	14	1535	04 29 00
04 30 45	=1348+308	16 27 34	53.9	247.0	2.6		39.9	105	1541	04 29 01
04 30 45	3C293	16 27 34	54.8	247.5	2.6		40.5	-16	1541	No stop
04 34 30	---	16 31 19	54.2	248.6	2.6		40.9	209	1556	04 30 46
04 34 30	J1350+3034	16 31 19	53.4	248.0	2.7		40.3	-16	1556	No stop
04 36 30	=1348+308	16 33 20	53.1	248.5	2.7		40.4	104	1563	04 34 31
04 36 30	3C293	16 33 20	54.0	249.1	2.7		41.1	-16	1563	No stop
04 40 15	---	16 37 05	53.4	250.1	2.7		41.4	209	1578	04 36 31
04 40 45	J1350+3034	16 37 36	52.5	249.7	2.8		40.8	14	1578	04 40 45
04 42 30	=1348+308	16 39 21	52.3	250.2	2.8		41.0	105	1585	04 40 46
04 42 30	3C293	16 39 21	53.1	250.7	2.8		41.6	-15	1585	No stop
04 46 15	---	16 43 06	52.6	251.7	2.8		41.9	210	1599	04 42 31

Schedule for TORUN (Code Tr)

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Tracing the Evolution of Fast Jet-Driven Outflows

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Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Tue 3 Mar 2015 Day 62 ---										
04 46 15	J1350+3034	16 43 06	51.7	251.2	2.9		41.3	-16	1599	No stop
04 48 15	=1348+308	16 45 07	51.4	251.7	2.9		41.4	104	1607	04 46 16
04 48 15	3C293	16 45 07	52.3	252.2	2.9		42.1	-15	1607	No stop
04 52 00	---	16 48 52	51.7	253.2	2.9		42.3	210	1621	04 48 16
04 52 30	J1350+3034	16 49 22	50.8	252.8	3.0		41.7	14	1621	04 52 30
04 54 15	=1348+308	16 51 08	50.6	253.2	3.0		41.9	105	1628	04 52 31
04 54 15	3C293	16 51 08	51.4	253.8	3.0		42.5	-15	1628	No stop
04 58 00	---	16 54 53	50.9	254.7	3.0		42.7	210	1642	04 54 16
04 58 00	J1350+3034	16 54 53	50.0	254.2	3.1		42.1	-16	1642	No stop
05 00 00	=1348+308	16 56 54	49.7	254.7	3.1		42.2	104	1650	04 58 01
05 00 00	3C293	16 56 54	50.6	255.2	3.1		42.8	-15	1650	No stop
05 03 25	---	17 00 19	50.1	256.1	3.1		43.0	190	1663	05 00 01
05 03 55	J1350+3034	17 00 49	49.2	255.6	3.2		42.5	14	1663	05 03 55
05 05 40	=1348+308	17 02 35	48.9	256.0	3.2		42.6	105	1670	05 03 56
05 05 55	J1407+2827	17 02 50	49.6	249.9	2.9		39.9	-12	1670	05 05 55
05 11 25	=1404+286	17 08 21	48.8	251.3	3.0		40.3	318	1691	05 05 56
05 11 40	J1350+3034	17 08 36	48.0	257.5	3.3		42.9	-12	1691	05 11 40
05 13 40	=1348+308	17 10 36	47.7	258.0	3.3		43.0	108	1699	05 11 41
05 13 40	3C293	17 10 36	48.6	258.5	3.3		43.6	-15	1699	No stop
05 17 25	---	17 14 22	48.0	259.4	3.4		43.7	210	1713	05 13 41
05 17 55	J1350+3034	17 14 52	47.1	258.9	3.4		43.2	14	1713	05 17 55
05 19 40	=1348+308	17 16 37	46.9	259.4	3.4		43.2	105	1720	05 17 56
05 19 40	3C293	17 16 37	47.7	259.9	3.4		43.8	-15	1720	No stop
05 23 25	---	17 20 23	47.1	260.8	3.5		44.0	210	1734	05 19 41
05 23 25	J1350+3034	17 20 23	46.3	260.2	3.5		43.4	-16	1734	No stop
05 25 25	=1348+308	17 22 23	46.0	260.7	3.5		43.4	104	1742	05 23 26
05 25 25	3C293	17 22 23	46.8	261.2	3.5		44.0	-15	1742	No stop
05 29 10	---	17 26 08	46.3	262.1	3.6		44.1	210	1756	05 25 26
05 29 40	J1350+3034	17 26 39	45.4	261.6	3.6		43.6	14	1756	05 29 40
05 31 25	=1348+308	17 28 24	45.1	262.0	3.6		43.6	105	1763	05 29 41

Schedule for TORUN (Code Tr)

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Tracing the Evolution of Fast Jet-Driven Outflows

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
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Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Tue	3 Mar 2015	Day	62	---					
05 31 25	3C293	17 28 24	45.9	262.5	3.6		44.2	-15	1763	No stop
05 35 10	---	17 32 09	45.4	263.4	3.7		44.3	210	1778	05 31 26
05 35 10	J1350+3034	17 32 09	44.6	262.8	3.7		43.7	-16	1778	No stop
05 37 10	=1348+308	17 34 10	44.3	263.3	3.7		43.8	104	1785	05 35 11
05 37 10	3C293	17 34 10	45.1	263.8	3.7		44.4	-15	1785	No stop
05 40 55	---	17 37 55	44.5	264.6	3.7		44.4	210	1800	05 37 11
05 41 25	J1350+3034	17 38 25	43.6	264.2	3.8		43.9	14	1800	05 41 25
05 43 10	=1348+308	17 40 11	43.4	264.6	3.8		43.9	105	1806	05 41 26
05 43 10	3C293	17 40 11	44.2	265.1	3.8		44.5	-15	1806	No stop
05 46 55	---	17 43 56	43.6	265.9	3.8		44.5	210	1821	05 43 11
05 46 55	J1350+3034	17 43 56	42.8	265.4	3.9		44.0	-16	1821	No stop
05 48 55	=1348+308	17 45 57	42.5	265.8	3.9		44.0	104	1829	05 46 56
05 48 55	3C293	17 45 57	43.3	266.3	3.9		44.6	-15	1829	No stop
05 52 40	---	17 49 42	42.8	267.1	3.9		44.6	210	1843	05 48 56
05 53 10	J1350+3034	17 50 12	41.9	266.7	4.0		44.1	14	1843	05 53 10
05 54 55	=1348+308	17 51 58	41.6	267.0	4.0		44.1	105	1850	05 53 11
05 54 55	3C293	17 51 58	42.4	267.6	4.0		44.6	-15	1850	No stop
05 58 40	---	17 55 43	41.9	268.3	4.0		44.7	210	1864	05 54 56
05 58 40	J1350+3034	17 55 43	41.0	267.8	4.1		44.1	-16	1864	No stop
06 00 40	=1348+308	17 57 44	40.7	268.2	4.1		44.2	104	1872	05 58 41
06 00 40	3C293	17 57 44	41.6	268.7	4.1		44.7	-15	1872	No stop
06 04 25	---	18 01 29	41.0	269.5	4.1		44.7	210	1886	06 00 41
06 04 55	J1350+3034	18 01 59	40.1	269.1	4.2		44.2	14	1886	06 04 55
06 06 40	=1348+308	18 03 45	39.8	269.4	4.2		44.2	105	1893	06 04 56
06 06 40	3C293	18 03 45	40.7	269.9	4.2		44.7	-15	1893	No stop
06 10 25	---	18 07 30	40.1	270.7	4.2		44.7	210	1907	06 06 41
06 10 25	J1350+3034	18 07 30	39.3	270.2	4.3		44.2	-16	1907	No stop
06 12 25	=1348+308	18 09 31	39.0	270.6	4.3		44.2	104	1915	06 10 26
06 12 25	3C293	18 09 31	39.8	271.1	4.3		44.7	-15	1915	No stop
06 16 10	---	18 13 16	39.2	271.8	4.3		44.7	210	1929	06 12 26

Schedule for TORUN (Code Tr)

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Tracing the Evolution of Fast Jet-Driven Outflows

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

SYNC: Time correlator is expected to sync up.

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

---	Tue	3 Mar 2015	Day	62	---					
06 16 40	J1350+3034	18 13 46	38.3	271.4	4.4		44.2	14	1929	06 16 40
06 18 25	=1348+308	18 15 32	38.1	271.8	4.4		44.2	105	1936	06 16 41
06 18 25	3C293	18 15 32	38.9	272.3	4.4		44.6	-15	1936	No stop
06 22 10	---	18 19 17	38.3	273.0	4.4		44.6	210	1951	06 18 26
06 22 10	J1350+3034	18 19 17	37.5	272.5	4.5		44.1	-16	1951	No stop
06 24 10	=1348+308	18 21 17	37.2	272.9	4.5		44.1	104	1958	06 22 11
06 24 10	3C293	18 21 17	38.0	273.4	4.5		44.6	-15	1958	No stop
06 27 40	---	18 24 48	37.5	274.1	4.5		44.5	195	1972	06 24 11
06 28 10	J1350+3034	18 25 18	36.6	273.7	4.6		44.1	14	1972	06 28 10
06 29 55	=1348+308	18 27 03	36.3	274.0	4.6		44.0	105	1979	06 28 11
06 30 00	3C293	18 27 08	37.1	274.5	4.6		44.5	-10	1979	No stop
06 33 22	---	18 30 31	36.6	275.2	4.6		44.5	192	1992	06 29 56
06 33 52	J1350+3034	18 31 01	35.7	274.8	4.7		44.0	14	1992	06 33 52
06 35 47	=1348+308	18 32 56	35.4	275.1	4.7		44.0	115	1999	06 33 53
06 35 52	3C293	18 33 01	36.3	275.6	4.7		44.4	-10	1999	No stop
06 39 14	---	18 36 24	35.8	276.3	4.7		44.4	192	2012	06 35 48
06 39 19	J1350+3034	18 36 29	34.9	275.8	4.7		43.9	-11	2012	No stop
06 41 15	=1348+308	18 38 25	34.6	276.2	4.8		43.9	105	2020	06 39 15
06 41 20	3C293	18 38 30	35.4	276.7	4.8		44.3	-10	2020	No stop
06 44 42	---	18 41 53	34.9	277.3	4.8		44.2	192	2033	06 41 16
06 45 12	J1350+3034	18 42 23	34.0	276.9	4.8		43.8	14	2033	06 45 12
06 47 07	=1348+308	18 44 18	33.8	277.3	4.9		43.7	115	2041	06 45 13
06 47 12	3C293	18 44 23	34.6	277.8	4.9		44.2	-10	2041	No stop
06 50 34	---	18 47 46	34.1	278.4	4.9		44.1	192	2054	06 47 08
06 50 39	J1350+3034	18 47 51	33.2	277.9	4.9		43.6	-11	2054	No stop
06 52 35	=1348+308	18 49 47	32.9	278.3	5.0		43.6	105	2062	06 50 35
06 52 40	3C293	18 49 52	33.8	278.8	4.9		44.0	-10	2062	No stop
06 56 02	---	18 53 15	33.3	279.4	5.0		43.9	192	2075	06 52 36
06 56 32	J1350+3034	18 53 45	32.3	279.0	5.0		43.5	14	2075	06 56 32
06 58 27	=1348+308	18 55 40	32.1	279.4	5.1		43.4	115	2082	06 56 33

Schedule for TORUN (Code Tr)

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Tracing the Evolution of Fast Jet-Driven Outflows

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Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Tue	3 Mar 2015	Day	62	---					
06 58 32	3C293	18 55 45	32.9	279.9	5.0		43.9	-10	2082	No stop
07 01 54	---	18 59 08	32.4	280.5	5.1		43.8	192	2096	06 58 28
07 01 59	J1350+3034	18 59 13	31.5	280.1	5.1		43.3	-11	2096	No stop
07 03 55	=1348+308	19 01 09	31.3	280.4	5.2		43.3	105	2104	07 01 55
07 04 00	3C293	19 01 14	32.1	280.9	5.1		43.7	-10	2104	No stop
07 07 22	---	19 04 37	31.6	281.5	5.2		43.6	192	2117	07 03 56
07 07 52	J1350+3034	19 05 07	30.7	281.1	5.2		43.1	14	2117	07 07 52
07 09 47	=1348+308	19 07 02	30.4	281.5	5.3		43.1	115	2124	07 07 53
07 09 52	3C293	19 07 07	31.2	281.9	5.2		43.5	-10	2124	No stop
07 13 14	---	19 10 30	30.7	282.5	5.3		43.4	192	2137	07 09 48
07 13 19	J1350+3034	19 10 35	29.9	282.1	5.3		43.0	-11	2137	No stop
07 15 15	=1348+308	19 12 31	29.6	282.5	5.3		42.9	105	2145	07 13 15
07 15 20	3C293	19 12 36	30.4	282.9	5.3		43.3	-10	2145	No stop
07 18 54	---	19 16 10	29.9	283.6	5.4		43.1	204	2159	07 15 16
07 19 24	J1350+3034	19 16 41	29.0	283.2	5.4		42.7	14	2159	07 19 24
07 21 19	=1348+308	19 18 36	28.7	283.6	5.5		42.6	115	2167	07 19 25
07 21 34	J1407+2827	19 18 51	29.5	279.0	5.2		42.4	-9	2167	07 21 34
07 27 04	=1404+286	19 24 22	28.6	280.1	5.3		42.2	321	2188	07 21 35
07 27 19	J1350+3034	19 24 37	27.8	284.7	5.6		42.4	-9	2188	07 27 19
07 29 59	=1348+308	19 27 17	27.4	285.1	5.6		42.3	151	2198	07 27 20
07 30 04	3C293	19 27 22	28.3	285.6	5.6		42.6	-10	2198	No stop
07 33 26	---	19 30 45	27.8	286.2	5.6		42.5	192	2211	07 30 00
07 33 56	J1350+3034	19 31 15	26.9	285.9	5.7		42.1	14	2211	07 33 56
07 35 51	=1348+308	19 33 10	26.6	286.2	5.7		42.0	115	2219	07 33 57
07 35 56	3C293	19 33 15	27.4	286.6	5.7		42.4	-10	2219	No stop
07 39 18	---	19 36 38	26.9	287.2	5.7		42.2	192	2232	07 35 52
07 39 23	J1350+3034	19 36 43	26.1	286.8	5.8		41.8	-11	2232	No stop
07 41 18	=1348+308	19 38 38	25.8	287.2	5.8		41.7	104	2240	07 39 19
07 41 23	3C293	19 38 43	26.6	287.6	5.8		42.1	-10	2240	No stop
07 44 45	---	19 42 06	26.1	288.2	5.8		41.9	192	2253	07 41 19

Schedule for TORUN (Code Tr)

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Tracing the Evolution of Fast Jet-Driven Outflows

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Tue	3 Mar 2015	Day	62	---					
07 45 15	J1350+3034	19 42 36	25.2	287.9	5.9		41.5	14	2253	07 45 15
07 47 10	=1348+308	19 44 31	24.9	288.2	5.9		41.5	115	2260	07 45 16
07 47 15	3C293	19 44 36	25.8	288.6	5.9		41.8	-10	2260	No stop
07 50 37	---	19 47 59	25.3	289.2	5.9		41.6	192	2274	07 47 11
07 50 42	J1350+3034	19 48 04	24.4	288.9	5.9		41.3	-11	2274	No stop
07 52 37	=1348+308	19 49 59	24.2	289.2	6.0		41.2	104	2281	07 50 38
07 52 42	3C293	19 50 04	25.0	289.6	6.0		41.5	-10	2281	No stop
07 56 04	---	19 53 27	24.5	290.2	6.0		41.3	192	2294	07 52 38
07 56 34	J1350+3034	19 53 57	23.6	289.9	6.0		40.9	14	2294	07 56 34
07 58 29	=1348+308	19 55 52	23.3	290.2	6.1		40.8	115	2302	07 56 35
07 58 34	3C293	19 55 57	24.2	290.6	6.0		41.2	-10	2302	No stop
08 01 56	---	19 59 20	23.7	291.2	6.1		41.0	192	2315	07 58 30
08 02 01	J1350+3034	19 59 25	22.8	290.9	6.1		40.6	-11	2315	No stop
08 03 56	=1348+308	20 01 20	22.6	291.2	6.2		40.5	104	2323	08 01 57
08 04 01	3C293	20 01 25	23.4	291.6	6.1		40.8	-11	2323	No stop
08 07 23	---	20 04 47	22.9	292.2	6.2		40.6	191	2336	08 03 57
08 07 53	J1350+3034	20 05 18	22.0	291.9	6.2		40.3	14	2336	08 07 53
08 09 48	=1348+308	20 07 13	21.8	292.3	6.3		40.2	115	2343	08 07 54
08 09 53	3C293	20 07 18	22.6	292.6	6.2		40.5	-11	2343	No stop
08 13 15	---	20 10 40	22.1	293.2	6.3		40.3	191	2357	08 09 49
08 13 20	J1350+3034	20 10 45	21.3	292.9	6.3		39.9	-11	2357	No stop
08 15 15	=1348+308	20 12 41	21.0	293.2	6.4		39.8	104	2364	08 13 16
08 15 20	3C293	20 12 46	21.8	293.6	6.3		40.1	-11	2364	No stop
08 18 54	---	20 16 20	21.4	294.2	6.4		39.9	203	2378	08 15 16
08 19 24	J1350+3034	20 16 50	20.4	294.0	6.4		39.6	14	2378	08 19 24
08 21 20	=1348+308	20 18 47	20.2	294.3	6.5		39.4	116	2386	08 19 25
08 21 35	J1407+2827	20 19 02	20.7	290.0	6.2		39.9	-8	2386	08 21 35
08 27 05	=1404+286	20 24 33	20.0	291.0	6.3		39.6	322	2407	08 21 36
08 27 20	J1350+3034	20 24 48	19.3	295.4	6.6		39.0	-9	2407	08 27 20
08 30 00	=1348+308	20 27 28	19.0	295.8	6.6		38.8	151	2417	08 27 21

Schedule for TORUN (Code Tr)

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Tracing the Evolution of Fast Jet-Driven Outflows

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Tue	3 Mar 2015	Day	62	---					
08 30 00	3C293	20 27 28	19.8	296.2	6.6		39.1	-16	2417	No stop
08 33 30	---	20 30 59	19.4	296.8	6.6		38.9	194	2431	08 30 01
08 34 00	J1350+3034	20 31 29	18.4	296.6	6.7		38.6	14	2431	08 34 00
08 35 45	=1348+308	20 33 14	18.2	296.9	6.7		38.4	105	2437	08 34 01
08 35 45	3C293	20 33 14	19.1	297.2	6.7		38.7	-16	2437	No stop
08 39 15	---	20 36 45	18.6	297.8	6.7		38.5	194	2451	08 35 46
08 39 15	J1350+3034	20 36 45	17.7	297.5	6.8		38.2	-16	2451	No stop
08 41 15	=1348+308	20 38 45	17.5	297.8	6.8		38.0	104	2459	08 39 16
08 41 15	3C293	20 38 45	18.3	298.2	6.8		38.3	-16	2459	No stop
08 44 45	---	20 42 16	17.9	298.8	6.8		38.1	194	2472	08 41 16
08 45 15	J1350+3034	20 42 46	16.9	298.6	6.9		37.7	14	2472	08 45 15
08 47 00	=1348+308	20 44 31	16.7	298.9	6.9		37.6	105	2479	08 45 16
08 47 00	3C293	20 44 31	17.6	299.2	6.9		37.9	-16	2479	No stop
08 50 30	---	20 48 02	17.1	299.8	6.9		37.6	194	2492	08 47 01
08 50 30	J1350+3034	20 48 02	16.2	299.5	6.9		37.3	-16	2492	No stop
08 52 30	=1348+308	20 50 02	16.0	299.9	7.0		37.2	104	2500	08 50 31
08 52 30	3C293	20 50 02	16.9	300.2	7.0		37.5	-16	2500	No stop
08 56 00	---	20 53 32	16.4	300.8	7.0		37.2	194	2513	08 52 31
08 56 30	J1350+3034	20 54 03	15.5	300.6	7.0		36.9	14	2513	08 56 30
08 58 15	=1348+308	20 55 48	15.2	300.9	7.1		36.7	105	2520	08 56 31
08 58 15	3C293	20 55 48	16.1	301.2	7.0		37.0	-16	2520	No stop
09 01 45	---	20 59 18	15.7	301.8	7.1		36.7	194	2534	08 58 16
09 01 45	J1350+3034	20 59 18	14.8	301.5	7.1		36.5	-16	2534	No stop
09 03 45	=1348+308	21 01 19	14.5	301.9	7.2		36.3	104	2541	09 01 46
09 03 45	3C293	21 01 19	15.4	302.2	7.1		36.5	-16	2541	No stop
09 07 15	---	21 04 49	15.0	302.8	7.2		36.2	194	2555	09 03 46
09 07 45	J1350+3034	21 05 19	14.0	302.6	7.2		36.0	14	2555	09 07 45
09 09 30	=1348+308	21 07 05	13.8	302.9	7.3		35.8	105	2562	09 07 46
09 09 30	3C293	21 07 05	14.7	303.2	7.2		36.1	-16	2562	No stop
09 13 00	---	21 10 35	14.2	303.8	7.3		35.8	194	2575	09 09 31

Schedule for TORUN (Code Tr)

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Tracing the Evolution of Fast Jet-Driven Outflows

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
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Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Tue 3 Mar 2015 Day 62 ---										
09 13 00	J1350+3034	21 10 35	13.4	303.5	7.3		35.5	-16	2575	No stop
09 15 00	=1348+308	21 12 36	13.1	303.9	7.4		35.3	104	2583	09 13 01
09 15 00	3C293	21 12 36	14.0	304.2	7.3		35.6	-16	2583	No stop
09 18 30	---	21 16 06	13.6	304.8	7.4		35.3	194	2596	09 15 01
09 19 00	J1350+3034	21 16 36	12.6	304.6	7.4		35.0	14	2596	09 19 00
09 20 45	=1348+308	21 18 22	12.4	304.9	7.4		34.8	105	2603	09 19 01
09 21 00	J1407+2827	21 18 37	12.7	300.8	7.2		35.9	-8	2603	09 21 00
09 26 30	=1404+286	21 24 07	12.0	301.8	7.3		35.4	322	2624	09 21 01
09 26 45	J1350+3034	21 24 22	11.7	306.0	7.5		34.3	-8	2624	09 26 45
09 28 45	=1348+308	21 26 23	11.4	306.4	7.6		34.1	112	2632	09 26 46
09 28 45	3C293	21 26 23	12.3	306.6	7.6		34.4	-16	2632	No stop
09 32 11	---	21 29 49	11.9	307.3	7.6		34.0	190	2645	09 28 46
09 32 41	J1350+3034	21 30 19	10.9	307.1	7.6		33.8	14	2645	09 32 41
09 34 26	=1348+308	21 32 05	10.7	307.4	7.7		33.6	105	2652	09 32 42
09 34 26	3C293	21 32 05	11.6	307.7	7.7		33.8	-16	2652	No stop
09 37 51	---	21 35 30	11.2	308.3	7.7		33.5	189	2665	09 34 27
09 37 51	J1350+3034	21 35 30	10.3	308.1	7.7		33.3	-16	2665	No stop
09 39 51	=1348+308	21 37 31	10.1	308.4	7.8		33.1	104	2672	09 37 52
09 39 51	3C293	21 37 31	11.0	308.7	7.7		33.3	-16	2672	No stop
09 43 17	---	21 40 57	10.6	309.3	7.8		33.0	190	2686	09 39 52
09 43 47	J1350+3034	21 41 27	9.6	309.2	7.8		32.7	14	2686	09 43 47
09 45 32	=1348+308	21 43 13	9.4	309.5	7.9		32.5	105	2692	09 43 48
09 45 32	3C293	21 43 13	10.3	309.7	7.8		32.8	-16	2692	No stop
09 48 57	---	21 46 38	9.9	310.3	7.9		32.4	189	2706	09 45 33
09 48 57	J1350+3034	21 46 38	9.0	310.1	7.9		32.2	-16	2706	No stop
09 50 57	=1348+308	21 48 38	8.8	310.5	8.0		32.0	104	2713	09 48 58
09 50 57	3C293	21 48 38	9.7	310.7	7.9		32.2	-16	2713	No stop
09 54 23	---	21 52 05	9.3	311.3	8.0		31.9	190	2726	09 50 58
09 54 53	J1350+3034	21 52 35	8.4	311.2	8.0		31.6	14	2726	09 54 53
09 56 38	=1348+308	21 54 20	8.2	311.5	8.0		31.4	105	2733	09 54 54

Schedule for TORUN (Code Tr)

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Tracing the Evolution of Fast Jet-Driven Outflows

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Tue 3 Mar 2015 Day 62 ---										
09 56 38	3C293	21 54 20	9.0	311.7	8.0		31.7	-16	2733	No stop
10 00 03	---	21 57 46	8.7	312.4	8.1		31.3	189	2746	09 56 39
10 00 03	J1350+3034	21 57 46	7.8	312.2	8.1		31.1	-16	2746	No stop
10 02 03	=1348+308	21 59 46	7.5	312.6	8.1		30.9	104	2754	10 00 04
10 02 03	3C293	21 59 46	8.4	312.7	8.1		31.1	-16	2754	No stop
10 05 29	---	22 03 13	8.1	313.4	8.2		30.7	190	2767	10 02 04
10 05 59	J1350+3034	22 03 43	7.1	313.3	8.2		30.5	14	2767	10 05 59
10 07 44	=1348+308	22 05 28	6.9	313.6	8.2		30.3	105	2774	10 06 00
10 07 44	3C293	22 05 28	7.8	313.8	8.2		30.5	-16	2774	No stop
10 11 09	---	22 08 54	7.5	314.4	8.3		30.1	189	2787	10 07 45
10 11 09	J1350+3034	22 08 54	6.6	314.3	8.3		29.9	-16	2787	No stop
10 13 09	=1348+308	22 10 54	6.3	314.6	8.3		29.7	104	2795	10 11 10
10 13 09	3C293	22 10 54	7.2	314.8	8.3		29.9	-16	2795	No stop
10 16 35	---	22 14 21	6.9	315.4	8.4		29.6	190	2808	10 13 10
10 17 05	J1350+3034	22 14 51	5.9	315.4	8.4		29.3	14	2808	10 17 05
10 18 50	=1348+308	22 16 36	5.7	315.7	8.4		29.1	105	2815	10 17 06
10 18 50	3C293	22 16 36	6.6	315.9	8.4		29.3	-16	2815	No stop
10 22 15	---	22 20 02	6.3	316.5	8.5		28.9	189	2828	10 18 51
10 22 15	J1350+3034	22 20 02	5.4	316.4	8.5		28.7	-16	2828	No stop
10 24 15	=1348+308	22 22 02	5.2	316.7	8.5		28.5	104	2836	10 22 16
10 24 15	3C293	22 22 02	6.1	316.9	8.5		28.7	-16	2836	No stop
10 27 45	---	22 25 33	5.7	317.6	8.5		28.3	194	2849	10 24 16
10 28 15	J1350+3034	22 26 03	4.8	317.5	8.6		28.1	14	2849	10 28 15
10 30 00	=1348+308	22 27 48	4.6	317.8	8.6		27.9	105	2856	10 28 16

SETUP FILE INFORMATION:

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

=====
 Setup file: 3C293globHI.set

Setup group: 16	Station: TORUN	Total bit rate: 512
Format: MARK5B	Bits per sample: 2	Sample rate: 32.000
Number of channels: 8	DBE type: DBBC_DDC	Speedup factor: 1.00

Disk used to record data.

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

The following frequency sets based on these setups were used.

Frequency Set:	6	Based on FREQ, BW, and/or DOPPLER in schedule. Used with PCAL = off						
LO sum=	1364.50	1364.50	1379.75	1379.75	1395.00	1395.00	1410.25	1410.25
BBC fr=	935.50	935.50	920.25	920.25	905.00	905.00	889.75	889.75
Bandwd=	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
Matching frequency sets:	6							

Track assignments are:

track1= 2, 10, 4, 12, 6, 14, 8, 16
 barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec)		(Date)	Error (mas)
	(B1950)	(J2000)		
* 3C293	13 50 03.134041	* 13 52 17.765000	13 52 59.488926	0.00
	31 41 32.42285	* 31 26 46.10000	31 22 06.46058	0.00
* J1350+3034	13 48 37.245632	* 13 50 52.736222	13 51 34.730633	0.13
1348+308	30 49 42.80390	* 30 34 53.59050	30 30 13.18355	0.11
* J1407+2827	14 04 45.615156	* 14 07 00.394414	14 07 42.118209	0.24
1404+286	28 41 29.23519	* 28 27 14.69022	28 22 45.41879	0.34

rk08rxtr

RADIOASTRON AGN SURVEY

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

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

--- Tue 3 Mar 2015 Day 62 ---

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

Table with columns: Start UT, Stop UT, Source, LST, EL, AZ, HA, UP, ParA, Early Dwell, Disk GBytes, TPStart SYNC. Contains scan data for 0925+504.

SETUP FILE INFORMATION:

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

==== Setup file: ra18cm2.set

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

Frequency Set: 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)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 53.649754	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 47.16404	0.00
	fake circumpolar target for a TS to look at			
* 0925+504	09 25 51.973728	* 09 29 15.440209	09 30 18.621789	0.00
J0929+5013	50 26 44.31059	* 50 13 35.98961	50 09 27.88504	0.00
	./rk08rx_sources.radioastron AGN, MASIV, rfc_2013d Petrov, 2013, unpublished 223 observations, RA-A02-12			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
0925+504	132.8

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

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk08rytr

RADIOASTRON AGN SURVEY

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

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

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

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

--- Wed 4 Mar 2015 Day 63 ---

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

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

02 00 00	0917+449	14 00 21	45.3	-71.5	4.6	53.1	0	0	02 00 00
02 14 30	---	14 14 53	43.2	-69.3	4.9	52.1	870	28	02 00 01
02 15 00	0917+449	14 15 23	43.2	-69.2	4.9	52.1	24	28	02 15 00
02 29 30	---	14 29 55	41.1	-67.0	5.1	51.0	870	56	02 15 01
02 30 00	0917+449	14 30 26	41.1	-67.0	5.1	50.9	24	56	02 30 00
02 44 30	---	14 44 58	39.1	-64.8	5.4	49.8	870	84	02 30 01
02 45 00	0917+449	14 45 28	39.0	-64.7	5.4	49.7	24	84	02 45 00
03 00 00	---	15 00 31	37.0	-62.5	5.6	48.5	900	112	02 45 01

SETUP FILE INFORMATION:

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

=====
Setup file: ra1cm2.set

Matching groups in ./rk08ry_freq.dat:
tr1cm

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 53.662684	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 47.20381	0.00
	fake circumpolar target for a TS to look at			
* 0917+449	09 17 41.919222	* 09 20 58.458485	09 21 59.479429	0.00
J0920+4441	44 54 39.62449	* 44 41 53.98501	44 37 52.08693	0.00
	./rk08ry_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 2520 observations, RA-A02-12			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
0917+449	136.6

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

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk08rztr

RADIOASTRON AGN SURVEY
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Observing mode: C/K-band, dual-pol

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

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

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

--- Wed 4 Mar 2015 Day 63 ---

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

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

05 00 00	0945+408	17 00 50	22.4 -51.5	7.2	38.2	0	0	05 00 00
05 14 30	---	17 15 23	20.7 -49.1	7.4	36.7	870	28	05 00 01
05 15 00	0945+408	17 15 53	20.7 -49.0	7.4	36.7	24	28	05 15 00
05 25 00	---	17 25 54	19.6 -47.4	7.6	35.6	600	47	05 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

05 30 00	0945+408	17 30 55	19.0 -46.6	7.7	35.1	294	47	05 30 00
05 44 30	---	17 45 28	17.5 -44.2	7.9	33.4	870	75	05 30 01
05 45 00	0945+408	17 45 58	17.4 -44.1	7.9	33.4	24	75	05 45 00
06 00 00	---	18 01 00	15.9 -41.6	8.2	31.7	900	104	05 45 01

SETUP FILE INFORMATION:

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

=====
Setup file: ra1cm2.set

Matching groups in ./rk08rz_freq.dat:
tr1cm

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  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

```

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

```

Track assignments are:

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec)			Error (mas)
	(B1950)	(J2000)	(Date)	
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 53.675458	0.00
	85 16 41.77889	* 85 00 00.00000	84 54 47.24379	0.00
* 0945+408	09 45 50.078219	* 09 48 55.338151	09 49 52.918164	0.00
J0948+4039	40 53 43.38094	* 40 39 44.58693	40 35 19.43137	0.00

rk08satr

RADIOASTRON AGN SURVEY

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

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

--- Wed 4 Mar 2015 Day 63 ---

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

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

Start UT	Source	LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
10 00 00	1617+229	22 01 40	20.7	-79.3	5.7		39.8	0	0	10 00 00
10 14 30	---	22 16 12	18.6	-76.6	5.9		39.3	870	28	10 00 01
10 15 00	1617+229	22 16 42	18.5	-76.5	5.9		39.3	24	28	10 15 00
10 29 30	---	22 31 14	16.4	-73.7	6.2		38.7	870	56	10 15 01
10 30 00	1617+229	22 31 44	16.3	-73.6	6.2		38.7	24	56	10 30 00
10 44 30	---	22 46 17	14.2	-70.9	6.4		38.0	870	84	10 30 01
10 45 00	1617+229	22 46 47	14.2	-70.8	6.4		38.0	24	84	10 45 00
11 00 00	---	23 01 49	12.0	-68.0	6.7		37.1	900	112	10 45 01

SETUP FILE INFORMATION:

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

===== Setup file: ra18cm2.set

Setup group: 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)	(Date)	Error (mas)	
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 53.694282	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 47.30401	0.00
	fake circumpolar target for a TS to look at			
* 1617+229	16 17 06.466940	* 16 19 14.824597	16 19 54.045725	0.00
J1619+2247	22 54 58.47369	* 22 47 47.85093	22 45 31.27660	0.00
	./rk08sa_sources.radioastron			
	AGN, MASIV, rfc_2013d Petrov, 2013, unpublished 8180 observations, RA-A02-12			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
3C48	54.8
1617+229	101.6

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

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

n15c1tr

NETWORK MONITORING EXPERIMENT
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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 L0 sum (band edge).
SYNC: Time correlator is expected to sync up.

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

--- Wed 4 Mar 2015 Day 63 ---

Next scan frequencies:	4966.49	4966.49	4966.49	4966.49	4982.49	4982.49	4982.49	4982.49	4982.49
	4998.49	4998.49	4998.49	4998.49	5014.49	5014.49	5014.49	5014.49	5014.49
Next BBC frequencies:	766.49	766.49	766.49	766.49	782.49	782.49	782.49	782.49	782.49
	798.49	798.49	798.49	798.49	814.49	814.49	814.49	814.49	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	8.00	8.00
12 00 00	3C84	00 01 59	55.2	88.8	-3.3	-53.4	0	0	12 00 00
12 04 00	---	00 06 00	55.8	89.6	-3.2	-53.4	240	15	12 00 01
12 06 00	3C84	00 08 00	56.1	90.0	-3.2	-53.4	114	15	12 06 00
12 10 00	---	00 12 01	56.7	90.8	-3.1	-53.4	240	31	12 06 01
12 12 00	3C84	00 14 01	57.0	91.3	-3.1	-53.4	114	31	12 12 00
12 13 00	---	00 15 01	57.2	91.5	-3.1	-53.4	60	35	12 12 01
12 15 00	0234+285	00 17 02	54.5	118.9	-2.4	-36.9	51	35	12 15 00
12 19 00	---	00 21 02	55.1	120.2	-2.3	-36.4	240	50	12 15 01
12 19 40	J0225+2955	00 21 42	57.7	123.2	-2.1	-35.5	17	50	12 19 40
12 23 40	=0222+296	00 25 43	58.2	124.5	-2.0	-34.8	240	65	12 19 41
12 24 20	0234+285	00 26 23	55.8	121.8	-2.2	-35.6	17	65	12 24 20
12 28 20	---	00 30 24	56.3	123.1	-2.1	-35.1	240	81	12 24 21
12 29 00	J0225+2955	00 31 04	58.8	126.3	-1.9	-33.9	17	81	12 29 00
12 33 00	=0222+296	00 35 05	59.3	127.8	-1.9	-33.2	240	96	12 29 01
12 33 40	0234+285	00 35 45	56.9	124.9	-2.1	-34.2	17	96	12 33 40
12 36 40	---	00 38 45	57.3	125.9	-2.0	-33.8	180	108	12 33 41
12 37 20	J0225+2955	00 39 25	59.8	129.3	-1.8	-32.4	17	108	12 37 20
12 40 20	=0222+296	00 42 26	60.2	130.4	-1.7	-31.9	180	119	12 37 21
12 41 00	0234+285	00 43 06	57.8	127.3	-1.9	-33.0	17	119	12 41 00
12 45 00	---	00 47 07	58.3	128.7	-1.9	-32.3	240	135	12 41 01
12 45 40	J0225+2955	00 47 47	60.8	132.4	-1.6	-30.8	17	135	12 45 40
12 49 40	=0222+296	00 51 47	61.2	134.0	-1.6	-29.9	240	150	12 45 41

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 L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

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

---	Wed 4 Mar 2015	Day 63	---							
12 50 20	0234+285	00 52 27	58.9	130.6	-1.8		-31.3	17	150	12 50 20
12 53 20	---	00 55 28	59.2	131.7	-1.7		-30.8	180	162	12 50 21
12 54 00	J0225+2955	00 56 08	61.7	135.7	-1.5		-29.0	17	162	12 54 00
12 57 00	=0222+296	00 59 09	62.0	136.9	-1.5		-28.3	180	173	12 54 01
12 57 40	0234+285	00 59 49	59.7	133.4	-1.6		-29.9	18	173	12 57 40
13 01 40	---	01 03 49	60.2	134.9	-1.6		-29.1	240	188	12 57 41
13 02 20	J0225+2955	01 04 29	62.5	139.1	-1.4		-27.0	17	188	13 02 20
13 06 20	=0222+296	01 08 30	62.9	140.8	-1.3		-26.0	240	204	13 02 21
13 07 00	0234+285	01 09 10	60.7	137.0	-1.5		-27.9	17	204	13 07 00
13 10 00	---	01 12 11	61.0	138.2	-1.4		-27.2	180	215	13 07 01
13 10 40	J0225+2955	01 12 51	63.3	142.7	-1.2		-24.9	16	215	13 10 40
13 13 40	=0222+296	01 15 51	63.6	144.0	-1.2		-24.1	180	227	13 10 41
13 17 40	0234+285	01 19 52	61.8	141.3	-1.3		-25.4	217	227	13 17 40
13 18 40	---	01 20 52	61.9	141.7	-1.3		-25.1	60	231	13 17 41
13 20 40	0234+285	01 22 52	62.0	142.6	-1.3		-24.6	113	231	13 20 40
13 24 40	---	01 26 53	62.4	144.3	-1.2		-23.6	240	246	13 20 41
13 26 40	0234+285	01 28 53	62.6	145.2	-1.2		-23.0	113	246	13 26 40
13 27 40	---	01 29 54	62.7	145.6	-1.1		-22.8	60	250	13 26 41
13 28 20	0234+285	01 30 34	62.7	145.9	-1.1		-22.6	33	250	13 28 20
13 32 20	---	01 34 34	63.1	147.7	-1.1		-21.5	240	265	13 28 21
13 33 00	J0225+2955	01 35 14	65.1	153.0	-0.8		-18.3	15	265	13 33 00
13 37 00	=0222+296	01 39 15	65.4	155.0	-0.8		-17.0	240	281	13 33 01
13 37 40	0234+285	01 39 55	63.5	150.1	-1.0		-20.0	15	281	13 37 40
13 41 40	---	01 43 56	63.8	152.0	-0.9		-18.8	240	296	13 37 41
13 42 20	J0225+2955	01 44 36	65.7	157.7	-0.7		-15.3	14	296	13 42 20
13 46 20	=0222+296	01 48 37	65.9	159.7	-0.6		-13.9	240	312	13 42 21
13 47 00	0234+285	01 49 17	64.1	154.5	-0.8		-17.1	14	312	13 47 00
13 51 00	---	01 53 17	64.4	156.5	-0.8		-15.9	240	327	13 47 01
13 51 40	J0225+2955	01 53 58	66.2	162.5	-0.5		-12.0	13	327	13 51 40
13 55 40	=0222+296	01 57 58	66.3	164.6	-0.5		-10.6	240	342	13 51 41
13 56 20	0234+285	01 58 38	64.7	159.1	-0.7		-14.2	14	342	13 56 20
14 00 20	---	02 02 39	64.9	161.1	-0.6		-12.8	240	358	13 56 21
14 01 00	J0225+2955	02 03 19	66.5	167.5	-0.4		-8.6	13	358	14 01 00
14 05 00	=0222+296	02 07 20	66.6	169.6	-0.3		-7.2	240	373	14 01 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 L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

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

--- Wed 4 Mar 2015 Day 63 ---										
14 05 40	0234+285	02 08 00	65.1	163.8	-0.5		-11.0	13	373	14 05 40
14 09 40	---	02 12 01	65.3	165.9	-0.4		-9.6	240	388	14 05 41
14 10 20	J0225+2955	02 12 41	66.8	172.6	-0.2		-5.2	12	388	14 10 20
14 14 20	=0222+296	02 16 41	66.8	174.8	-0.2		-3.6	240	404	14 10 21
14 15 00	0234+285	02 17 21	65.5	168.7	-0.4		-7.7	12	404	14 15 00
14 19 00	---	02 21 22	65.6	170.8	-0.3		-6.3	240	419	14 15 01
14 19 40	J0225+2955	02 22 02	66.9	177.7	-0.1		-1.6	11	419	14 19 40
14 23 40	=0222+296	02 26 03	66.9	179.9	-0.0		-0.1	240	435	14 19 41
14 28 40	DA193	02 31 04	53.1	89.9	-3.4		-51.4	104	435	14 28 40
14 29 40	---	02 32 04	53.3	90.1	-3.4		-51.4	60	438	14 28 41
14 31 00	DA193	02 33 24	53.5	90.4	-3.4		-51.4	74	438	14 31 00
14 35 00	---	02 37 25	54.1	91.2	-3.3		-51.4	240	454	14 31 01
14 37 00	DA193	02 39 25	54.4	91.6	-3.3		-51.4	114	454	14 37 00
14 43 00	---	02 45 26	55.3	92.8	-3.2		-51.3	360	477	14 37 01
14 45 00	DA193	02 47 26	55.6	93.3	-3.2		-51.3	114	477	14 45 00
14 51 00	---	02 53 27	56.5	94.6	-3.1		-51.2	360	500	14 45 01
14 53 00	DA193	02 55 28	56.8	95.0	-3.0		-51.1	114	500	14 53 00
15 00 00	---	03 02 29	57.8	96.6	-2.9		-51.0	420	527	14 53 01

SETUP FILE INFORMATION:

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

==== Setup file: sess115.C512

Setup group: 12	Station: TORUN	Total bit rate: 512
Format: MARK5B	Bits per sample: 2	Sample rate: 16.000
Number of channels: 16	DBE type: DBBC_DDC	Speedup factor: 1.00

Disk used to record data.

1st L0=	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	4200.00	4200.00
Net SB=	L	L	U	U	L	L	U	U	U
	L	L	U	U	L	L	U	U	U
IF SB =	U	U	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	LCP
	RCP	LCP	RCP	LCP	RCP	LCP	RCP	LCP	LCP
BBC =	1	5	1	5	2	6	2	6	6

	3	7	3	7	4	8	4	8
BBC SB=	L	L	U	U	L	L	U	U
	L	L	U	U	L	L	U	U
IF =	A1	B1	A1	B1	A1	B1	A1	B1
	A1	B1	A1	B1	A1	B1	A1	B1

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec)		(Date)	Error (mas)
	(B1950)	(J2000)		
* J0225+2955	02 22 22.964495	* 02 25 19.195270	02 26 12.527381	0.27
0222+296	29 41 41.13357	* 29 55 12.12891	29 59 14.10740	0.46
J0237+2848	02 34 55.589591	* 02 37 52.405678	02 38 45.963962	0.11
* 0234+285	28 35 11.40773	* 28 48 08.98998	28 52 00.21617	0.10
J0319+4130	03 16 29.567260	* 03 19 48.160090	03 20 48.650361	1.30
* 3C84	41 19 51.91699	* 41 30 42.10412	41 33 57.74455	2.72
J0555+3948	05 52 01.407174	* 05 55 30.805616	05 56 35.239806	0.13
* DA193	39 48 21.94578	* 39 48 49.16493	39 48 51.48539	0.10

gp053etr

ARP 299-A AT 1 GB/S

PI: Miguel Perez-Torres

Address: IAA - CSIC hone:+34-665252538 EMAIL: torres@iaa.es Phone during obs: +34-665252538

Observing mode: 1024 Mbps

Schedule for TORUN (Code Tr)

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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 L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Wed 4 Mar 2015 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										
16 30 00	J1128+5925	04 32 44	37.8	38.8	-6.9	-47.5	0	0	16 30 00	
16 31 30	---	04 34 14	38.0	38.9	-6.9	-47.7	90	12	16 30 01	
16 31 30	ARP299	04 34 14	37.4	39.7	-6.9	-47.2	-14	12	No stop	
16 35 20	---	04 38 04	37.7	40.1	-6.9	-47.7	216	41	16 31 31	
16 35 20	J1128+5925	04 38 04	38.3	39.4	-6.9	-48.3	-14	41	No stop	
16 36 20	---	04 39 05	38.4	39.5	-6.8	-48.4	46	49	16 35 21	
16 36 20	ARP299	04 39 05	37.8	40.2	-6.8	-47.9	-14	49	No stop	
16 40 20	---	04 43 05	38.2	40.7	-6.8	-48.5	226	79	16 36 21	
16 41 00	J1128+5925	04 43 45	38.9	40.0	-6.8	-49.1	26	79	16 41 00	
16 41 30	---	04 44 15	38.9	40.0	-6.7	-49.2	30	83	16 41 01	
16 41 30	ARP299	04 44 15	38.3	40.8	-6.8	-48.6	-14	83	No stop	
16 45 30	---	04 48 16	38.7	41.3	-6.7	-49.2	226	114	16 41 31	
16 45 30	J1128+5925	04 48 16	39.3	40.4	-6.7	-49.8	-14	114	No stop	
16 46 30	---	04 49 16	39.4	40.6	-6.7	-49.9	46	122	16 45 31	
16 46 30	ARP299	04 49 16	38.8	41.4	-6.7	-49.4	-14	122	No stop	
16 50 30	---	04 53 17	39.2	41.8	-6.6	-49.9	226	153	16 46 31	
16 50 30	J1128+5925	04 53 17	39.8	41.0	-6.6	-50.5	-14	153	No stop	
16 51 30	---	04 54 17	39.9	41.1	-6.6	-50.7	46	160	16 50 31	
16 51 30	ARP299	04 54 17	39.3	41.9	-6.6	-50.1	-14	160	No stop	
16 55 30	---	04 58 18	39.7	42.3	-6.5	-50.7	226	191	16 51 31	
16 56 10	J1128+5925	04 58 58	40.4	41.6	-6.5	-51.4	26	191	16 56 10	
16 56 40	---	04 59 28	40.4	41.6	-6.5	-51.5	30	195	16 56 11	
16 56 40	ARP299	04 59 28	39.8	42.5	-6.5	-50.8	-14	195	No stop	
17 00 40	---	05 03 29	40.3	42.9	-6.4	-51.4	226	226	16 56 41	

Schedule for TORUN (Code Tr)

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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 L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

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

---	Wed	4 Mar 2015	Day	63	---					
17 00 40	J1128+5925	05 03 29	40.8	42.0	-6.4		-52.0	-14	226	No stop
17 01 40	---	05 04 29	40.9	42.1	-6.4		-52.2	46	233	17 00 41
17 01 40	ARP299	05 04 29	40.4	43.0	-6.4		-51.6	-14	233	No stop
17 05 40	---	05 08 29	40.8	43.4	-6.3		-52.1	226	264	17 01 41
17 05 40	J1128+5925	05 08 29	41.3	42.6	-6.3		-52.8	-14	264	No stop
17 06 40	---	05 09 30	41.4	42.7	-6.3		-52.9	46	272	17 05 41
17 06 40	ARP299	05 09 30	40.9	43.5	-6.3		-52.3	-13	272	No stop
17 10 40	---	05 13 30	41.3	44.0	-6.3		-52.9	227	303	17 06 41
17 11 20	J1128+5925	05 14 10	41.9	43.1	-6.2		-53.6	26	303	17 11 20
17 11 50	---	05 14 40	42.0	43.2	-6.2		-53.7	30	306	17 11 21
17 11 50	ARP299	05 14 40	41.4	44.1	-6.2		-53.0	-13	306	No stop
17 15 50	---	05 18 41	41.8	44.5	-6.2		-53.6	227	337	17 11 51
17 15 50	J1128+5925	05 18 41	42.4	43.6	-6.2		-54.3	-14	337	No stop
17 16 50	---	05 19 41	42.5	43.7	-6.2		-54.4	46	345	17 15 51
17 16 50	ARP299	05 19 41	41.9	44.6	-6.2		-53.8	-14	345	No stop
17 20 50	---	05 23 42	42.4	45.0	-6.1		-54.3	226	376	17 16 51
17 20 50	J1128+5925	05 23 42	42.9	44.1	-6.1		-55.0	-14	376	No stop
17 21 50	---	05 24 42	43.0	44.2	-6.1		-55.2	46	383	17 20 51
17 21 50	ARP299	05 24 42	42.5	45.1	-6.1		-54.5	-14	383	No stop
17 25 50	---	05 28 43	42.9	45.5	-6.0		-55.0	226	414	17 21 51
17 26 30	J1128+5925	05 29 23	43.5	44.7	-6.0		-55.9	26	414	17 26 30
17 27 00	---	05 29 53	43.5	44.7	-6.0		-55.9	30	418	17 26 31
17 27 00	ARP299	05 29 53	43.0	45.7	-6.0		-55.2	-14	418	No stop
17 31 00	---	05 33 54	43.5	46.1	-5.9		-55.8	226	449	17 27 01
17 31 00	J1128+5925	05 33 54	44.0	45.1	-5.9		-56.5	-14	449	No stop
17 32 00	---	05 34 54	44.1	45.2	-5.9		-56.7	46	456	17 31 01
17 32 00	ARP299	05 34 54	43.6	46.2	-5.9		-55.9	-14	456	No stop
17 36 00	---	05 38 54	44.0	46.6	-5.8		-56.5	226	487	17 32 01
17 36 00	J1128+5925	05 38 54	44.5	45.6	-5.8		-57.3	-14	487	No stop
17 37 00	---	05 39 55	44.6	45.7	-5.8		-57.4	46	495	17 36 01
17 37 00	ARP299	05 39 55	44.1	46.7	-5.8		-56.7	-14	495	No stop
17 41 00	---	05 43 55	44.5	47.1	-5.8		-57.2	226	526	17 37 01

Schedule for TORUN (Code Tr)

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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 L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

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

---	Wed	4 Mar 2015	Day	63	---					
17 41 40	J1128+5925	05 44 35	45.1	46.1	-5.7		-58.1	26	526	17 41 40
17 42 10	---	05 45 05	45.2	46.2	-5.7		-58.2	30	529	17 41 41
17 42 10	ARP299	05 45 05	44.7	47.2	-5.7		-57.4	-14	529	No stop
17 46 10	---	05 49 06	45.1	47.6	-5.7		-58.0	226	560	17 42 11
17 46 10	J1128+5925	05 49 06	45.6	46.6	-5.7		-58.8	-14	560	No stop
17 47 10	---	05 50 06	45.7	46.7	-5.7		-58.9	46	568	17 46 11
17 47 10	ARP299	05 50 06	45.2	47.7	-5.7		-58.1	-14	568	No stop
17 51 10	---	05 54 07	45.7	48.1	-5.6		-58.7	226	599	17 47 11
17 51 10	J1128+5925	05 54 07	46.2	47.0	-5.6		-59.5	-14	599	No stop
17 52 10	---	05 55 07	46.3	47.1	-5.6		-59.6	46	606	17 51 11
17 52 10	ARP299	05 55 07	45.8	48.2	-5.6		-58.8	-14	606	No stop
17 56 10	---	05 59 08	46.2	48.6	-5.5		-59.4	226	637	17 52 11
17 56 50	J1128+5925	05 59 48	46.8	47.6	-5.5		-60.3	26	637	17 56 50
17 57 20	---	06 00 18	46.8	47.6	-5.5		-60.4	30	641	17 56 51
17 57 20	ARP299	06 00 18	46.4	48.7	-5.5		-59.6	-14	641	No stop
18 01 20	---	06 04 19	46.8	49.0	-5.4		-60.2	226	672	17 57 21
18 01 20	J1128+5925	06 04 19	47.3	48.0	-5.4		-61.0	-14	672	No stop
18 02 20	---	06 05 19	47.4	48.1	-5.4		-61.2	46	679	18 01 21
18 02 20	ARP299	06 05 19	46.9	49.1	-5.4		-60.3	-14	679	No stop
18 06 20	---	06 09 19	47.4	49.5	-5.3		-60.9	226	710	18 02 21
18 06 20	J1128+5925	06 09 19	47.8	48.4	-5.3		-61.8	-14	710	No stop
18 07 20	---	06 10 20	48.0	48.5	-5.3		-61.9	46	718	18 06 21
18 07 20	ARP299	06 10 20	47.5	49.6	-5.3		-61.0	-14	718	No stop
18 11 20	---	06 14 20	48.0	50.0	-5.3		-61.6	226	749	18 07 21
18 12 00	J1128+5925	06 15 00	48.5	48.9	-5.2		-62.6	26	749	18 12 00
18 12 30	---	06 15 30	48.5	49.0	-5.2		-62.7	30	753	18 12 01
18 12 30	ARP299	06 15 30	48.1	50.1	-5.2		-61.8	-14	753	No stop
18 16 30	---	06 19 31	48.6	50.5	-5.2		-62.3	226	783	18 12 31
18 16 30	J1128+5925	06 19 31	49.0	49.3	-5.2		-63.3	-14	783	No stop
18 17 30	---	06 20 31	49.1	49.4	-5.1		-63.4	46	791	18 16 31

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 L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

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

---	Wed	4 Mar 2015	Day	63	---					
18 17 30	ARP299	06 20 31	48.7	50.6	-5.1		-62.5	-15	791	No stop
18 21 30	---	06 24 32	49.1	50.9	-5.1		-63.1	225	822	18 17 31
18 21 30	J1128+5925	06 24 32	49.6	49.8	-5.1		-64.0	-15	822	No stop
18 22 30	---	06 25 32	49.7	49.9	-5.1		-64.2	45	829	18 21 31
18 22 30	ARP299	06 25 32	49.3	51.0	-5.1		-63.2	-15	829	No stop
18 26 30	---	06 29 33	49.7	51.4	-5.0		-63.8	225	860	18 22 31
18 27 10	J1128+5925	06 30 13	50.2	50.3	-5.0		-64.9	25	860	18 27 10
18 27 40	---	06 30 43	50.3	50.3	-5.0		-64.9	30	864	18 27 11
18 27 40	ARP299	06 30 43	49.9	51.5	-5.0		-64.0	-15	864	No stop
18 31 40	---	06 34 44	50.3	51.8	-4.9		-64.6	225	895	18 27 41
18 31 40	J1128+5925	06 34 44	50.7	50.6	-4.9		-65.5	-15	895	No stop
18 32 40	---	06 35 44	50.9	50.7	-4.9		-65.7	45	903	18 31 41
18 32 40	ARP299	06 35 44	50.5	51.9	-4.9		-64.7	-15	903	No stop
18 36 40	---	06 39 44	50.9	52.3	-4.8		-65.3	225	933	18 32 41
18 36 40	J1128+5925	06 39 44	51.3	51.1	-4.8		-66.3	-15	933	No stop
18 37 40	---	06 40 45	51.4	51.1	-4.8		-66.5	45	941	18 36 41
18 37 40	ARP299	06 40 45	51.1	52.4	-4.8		-65.4	-15	941	No stop
18 41 40	---	06 44 45	51.5	52.7	-4.7		-66.0	225	972	18 37 41
18 42 20	J1128+5925	06 45 25	52.0	51.5	-4.7		-67.2	25	972	18 42 20
18 42 50	---	06 45 55	52.1	51.6	-4.7		-67.2	30	976	18 42 21
18 42 50	ARP299	06 45 55	51.7	52.8	-4.7		-66.2	-15	976	No stop
18 46 50	---	06 49 56	52.2	53.1	-4.7		-66.8	225	1006	18 42 51
18 46 50	J1128+5925	06 49 56	52.5	51.9	-4.7		-67.8	-15	1006	No stop
18 47 50	---	06 50 56	52.6	52.0	-4.6		-68.0	45	1014	18 46 51
18 47 50	ARP299	06 50 56	52.3	53.2	-4.6		-66.9	-15	1014	No stop
18 51 50	---	06 54 57	52.8	53.6	-4.6		-67.5	225	1045	18 47 51
18 51 50	J1128+5925	06 54 57	53.1	52.3	-4.6		-68.6	-15	1045	No stop
18 52 50	---	06 55 57	53.2	52.3	-4.6		-68.8	45	1053	18 51 51
18 52 50	ARP299	06 55 57	52.9	53.6	-4.6		-67.7	-15	1053	No stop
18 56 50	---	06 59 58	53.4	54.0	-4.5		-68.2	225	1083	18 52 51

Schedule for TORUN (Code Tr)

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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 L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

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

---	Wed	4 Mar 2015	Day	63	---					
18 57 30	J1128+5925	07 00 38	53.8	52.7	-4.5		-69.5	25	1083	18 57 30
18 58 00	---	07 01 08	53.9	52.7	-4.5		-69.6	30	1087	18 57 31
18 58 00	ARP299	07 01 08	53.5	54.1	-4.5		-68.4	-15	1087	No stop
19 02 00	---	07 05 09	54.0	54.4	-4.4		-69.0	225	1118	18 58 01
19 02 00	J1128+5925	07 05 09	54.3	53.0	-4.4		-70.2	-15	1118	No stop
19 03 00	---	07 06 09	54.5	53.1	-4.4		-70.3	45	1126	19 02 01
19 03 00	ARP299	07 06 09	54.1	54.5	-4.4		-69.2	-15	1126	No stop
19 07 00	---	07 10 09	54.6	54.8	-4.3		-69.8	225	1156	19 03 01
19 07 00	J1128+5925	07 10 09	54.9	53.4	-4.3		-71.0	-15	1156	No stop
19 08 00	---	07 11 10	55.1	53.5	-4.3		-71.1	45	1164	19 07 01
19 08 00	ARP299	07 11 10	54.7	54.9	-4.3		-69.9	-16	1164	No stop
19 12 00	---	07 15 10	55.2	55.2	-4.2		-70.5	224	1195	19 08 01
19 12 40	J1128+5925	07 15 50	55.6	53.8	-4.2		-71.8	24	1195	19 12 40
19 13 10	---	07 16 20	55.7	53.8	-4.2		-71.9	30	1199	19 12 41
19 13 10	ARP299	07 16 20	55.4	55.3	-4.2		-70.7	-16	1199	No stop
19 17 10	---	07 20 21	55.9	55.6	-4.2		-71.3	224	1229	19 13 11
19 17 10	J1128+5925	07 20 21	56.2	54.1	-4.1		-72.6	-16	1229	No stop
19 18 10	---	07 21 21	56.3	54.2	-4.1		-72.7	44	1237	19 17 11
19 18 10	ARP299	07 21 21	56.0	55.6	-4.1		-71.4	-16	1237	No stop
19 22 10	---	07 25 22	56.5	55.9	-4.1		-72.1	224	1268	19 18 11
19 22 10	J1128+5925	07 25 22	56.8	54.5	-4.1		-73.4	-16	1268	No stop
19 23 10	---	07 26 22	56.9	54.5	-4.0		-73.5	44	1276	19 22 11
19 23 10	ARP299	07 26 22	56.6	56.0	-4.1		-72.2	-16	1276	No stop
19 27 10	---	07 30 23	57.1	56.3	-4.0		-72.8	224	1306	19 23 11
19 27 50	J1128+5925	07 31 03	57.5	54.8	-4.0		-74.3	24	1306	19 27 50
19 28 20	---	07 31 33	57.5	54.9	-4.0		-74.3	30	1310	19 27 51
19 28 20	ARP299	07 31 33	57.3	56.4	-4.0		-73.0	-16	1310	No stop
19 32 20	---	07 35 34	57.8	56.7	-3.9		-73.6	224	1341	19 28 21
19 32 20	J1128+5925	07 35 34	58.0	55.1	-3.9		-75.0	-16	1341	No stop
19 33 20	---	07 36 34	58.2	55.2	-3.9		-75.2	44	1349	19 32 21

Schedule for TORUN (Code Tr)

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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 L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

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

--- Wed 4 Mar 2015 Day 63 ---										
19 33 20	ARP299	07 36 34	57.9	56.7	-3.9		-73.8	-16	1349	No stop
19 37 20	---	07 40 34	58.4	57.0	-3.8		-74.4	224	1379	19 33 21
19 37 20	J1128+5925	07 40 34	58.7	55.4	-3.8		-75.8	-16	1379	No stop
19 38 20	---	07 41 35	58.8	55.5	-3.8		-76.0	44	1387	19 37 21
19 38 20	ARP299	07 41 35	58.5	57.1	-3.8		-74.6	-16	1387	No stop
19 42 20	---	07 45 35	59.0	57.3	-3.7		-75.2	224	1418	19 38 21
19 43 00	J1128+5925	07 46 15	59.4	55.8	-3.7		-76.7	24	1418	19 43 00
19 43 30	---	07 46 45	59.4	55.8	-3.7		-76.8	30	1422	19 43 01
19 43 30	ARP299	07 46 45	59.2	57.4	-3.7		-75.4	-16	1422	No stop
19 47 30	---	07 50 46	59.7	57.7	-3.6		-76.0	224	1453	19 43 31
19 47 30	J1128+5925	07 50 46	59.9	56.0	-3.6		-77.5	-16	1453	No stop
19 48 30	---	07 51 46	60.0	56.1	-3.6		-77.7	44	1460	19 47 31
19 48 30	ARP299	07 51 46	59.8	57.7	-3.6		-76.2	-17	1460	No stop
19 52 30	---	07 55 47	60.3	58.0	-3.6		-76.8	223	1491	19 48 31
19 52 30	J1128+5925	07 55 47	60.5	56.3	-3.6		-78.3	-17	1491	No stop
19 53 30	---	07 56 47	60.7	56.3	-3.5		-78.5	43	1499	19 52 31
19 53 30	ARP299	07 56 47	60.4	58.0	-3.5		-77.0	-17	1499	No stop
19 57 30	---	08 00 48	61.0	58.3	-3.5		-77.6	223	1529	19 53 31
19 58 10	J1128+5925	08 01 28	61.3	56.6	-3.5		-79.3	23	1529	19 58 10
19 58 40	---	08 01 58	61.3	56.6	-3.5		-79.4	30	1533	19 58 11
19 58 40	ARP299	08 01 58	61.1	58.3	-3.5		-77.8	-17	1533	No stop
20 02 40	---	08 05 59	61.6	58.6	-3.4		-78.5	223	1564	19 58 41
20 02 40	J1128+5925	08 05 59	61.8	56.8	-3.4		-80.1	-17	1564	No stop
20 03 40	---	08 06 59	61.9	56.8	-3.4		-80.3	43	1572	20 02 41
20 03 40	ARP299	08 06 59	61.7	58.6	-3.4		-78.6	-17	1572	No stop
20 07 40	---	08 10 59	62.3	58.8	-3.3		-79.3	223	1603	20 03 41
20 07 40	J1128+5925	08 10 59	62.4	57.0	-3.3		-81.0	-17	1603	No stop
20 08 40	---	08 11 59	62.6	57.1	-3.3		-81.1	43	1610	20 07 41
20 08 40	ARP299	08 11 59	62.4	58.9	-3.3		-79.5	-17	1610	No stop
20 12 40	---	08 16 00	62.9	59.1	-3.2		-80.1	223	1641	20 08 41

Schedule for TORUN (Code Tr)

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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 L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

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

---	Wed	4 Mar 2015	Day	63	---					
20 13 20	J1128+5925	08 16 40	63.2	57.3	-3.2		-82.0	23	1641	20 13 20
20 13 50	---	08 17 10	63.2	57.3	-3.2		-82.1	30	1645	20 13 21
20 13 50	ARP299	08 17 10	63.1	59.1	-3.2		-80.3	-17	1645	No stop
20 17 50	---	08 21 11	63.6	59.3	-3.1		-81.0	223	1676	20 13 51
20 17 50	J1128+5925	08 21 11	63.7	57.4	-3.1		-82.8	-17	1676	No stop
20 18 50	---	08 22 11	63.9	57.5	-3.1		-83.0	43	1683	20 17 51
20 18 50	ARP299	08 22 11	63.7	59.4	-3.1		-81.2	-17	1683	No stop
20 22 50	---	08 26 12	64.2	59.5	-3.1		-81.9	223	1714	20 18 51
20 22 50	J1128+5925	08 26 12	64.4	57.6	-3.0		-83.7	-17	1714	No stop
20 23 50	---	08 27 12	64.5	57.6	-3.0		-83.9	43	1722	20 22 51
20 23 50	ARP299	08 27 12	64.3	59.6	-3.0		-82.1	-18	1722	No stop
20 27 50	---	08 31 13	64.9	59.7	-3.0		-82.8	222	1753	20 23 51
20 28 30	J1128+5925	08 31 53	65.1	57.8	-3.0		-84.8	22	1753	20 28 30
20 29 00	---	08 32 23	65.2	57.8	-2.9		-84.9	30	1756	20 28 31
20 29 00	ARP299	08 32 23	65.0	59.8	-3.0		-83.0	-18	1756	No stop
20 33 00	---	08 36 23	65.5	59.9	-2.9		-83.7	222	1787	20 29 01
20 33 00	J1128+5925	08 36 23	65.7	57.9	-2.9		-85.7	-18	1787	No stop
20 34 00	---	08 37 24	65.8	57.9	-2.9		-85.9	42	1795	20 33 01
20 34 00	ARP299	08 37 24	65.7	60.0	-2.9		-83.9	-18	1795	No stop
20 38 00	---	08 41 24	66.2	60.1	-2.8		-84.6	222	1826	20 34 01
20 38 00	J1128+5925	08 41 24	66.3	58.0	-2.8		-86.6	-18	1826	No stop
20 39 00	---	08 42 24	66.4	58.0	-2.8		-86.8	42	1833	20 38 01
20 39 00	ARP299	08 42 24	66.3	60.1	-2.8		-84.8	-18	1833	No stop
20 43 00	---	08 46 25	66.8	60.2	-2.7		-85.6	222	1864	20 39 01
20 43 40	J1128+5925	08 47 05	67.0	58.1	-2.7		-87.8	22	1864	20 43 40
20 44 10	---	08 47 35	67.1	58.1	-2.7		-87.9	30	1868	20 43 41
20 44 10	ARP299	08 47 35	67.0	60.3	-2.7		-85.8	-18	1868	No stop
20 48 10	---	08 51 36	67.5	60.4	-2.6		-86.6	222	1899	20 44 11
20 48 10	J1128+5925	08 51 36	67.6	58.1	-2.6		-88.7	-18	1899	No stop
20 49 10	---	08 52 36	67.7	58.1	-2.6		-88.9	42	1906	20 48 11

Schedule for TORUN (Code Tr)

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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 L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

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

--- Wed 4 Mar 2015 Day 63 ---										
20 49 10	ARP299	08 52 36	67.7	60.4	-2.6		-86.8	-18	1906	No stop
20 53 10	---	08 56 37	68.2	60.4	-2.5		-87.6	222	1937	20 49 11
20 53 10	J1128+5925	08 56 37	68.2	58.1	-2.5		-89.8	-19	1937	No stop
20 54 10	---	08 57 37	68.4	58.1	-2.5		-90.0	41	1945	20 53 11
20 54 10	ARP299	08 57 37	68.3	60.5	-2.5		-87.8	-19	1945	No stop
20 58 10	---	09 01 38	68.8	60.5	-2.5		-88.6	221	1976	20 54 11
20 58 50	J1128+5925	09 02 18	69.0	58.1	-2.4		-91.0	21	1976	20 58 50
20 59 20	---	09 02 48	69.0	58.1	-2.4		-91.1	30	1979	20 58 51
20 59 20	ARP299	09 02 48	69.0	60.5	-2.4		-88.8	-19	1979	No stop
21 03 20	---	09 06 48	69.5	60.5	-2.4		-89.6	221	2010	20 59 21
21 03 20	J1128+5925	09 06 48	69.5	58.1	-2.4		-92.0	-19	2010	No stop
21 04 20	---	09 07 49	69.7	58.1	-2.4		-92.2	41	2018	21 03 21
21 04 20	ARP299	09 07 49	69.6	60.5	-2.4		-89.9	-19	2018	No stop
21 08 20	---	09 11 49	70.2	60.5	-2.3		-90.7	221	2049	21 04 21
21 08 20	J1128+5925	09 11 49	70.2	58.0	-2.3		-93.2	-19	2049	No stop
21 09 20	---	09 12 49	70.3	58.0	-2.3		-93.4	41	2056	21 08 21
21 09 20	ARP299	09 12 49	70.3	60.5	-2.3		-90.9	-19	2056	No stop
21 13 20	---	09 16 50	70.8	60.5	-2.2		-91.8	221	2087	21 09 21
21 14 00	J1128+5925	09 17 30	70.9	57.9	-2.2		-94.5	21	2087	21 14 00
21 14 30	---	09 18 00	71.0	57.8	-2.2		-94.7	30	2091	21 14 01
21 14 30	ARP299	09 18 00	71.0	60.5	-2.2		-92.1	-20	2091	No stop
21 18 30	---	09 22 01	71.5	60.4	-2.1		-93.0	220	2122	21 14 31
21 18 30	J1128+5925	09 22 01	71.5	57.7	-2.1		-95.6	-20	2122	No stop
21 19 30	---	09 23 01	71.6	57.7	-2.1		-95.9	40	2129	21 18 31
21 19 30	ARP299	09 23 01	71.6	60.4	-2.1		-93.2	-20	2129	No stop
21 23 30	---	09 27 02	72.2	60.3	-2.0		-94.2	220	2160	21 19 31
21 23 30	J1128+5925	09 27 02	72.1	57.5	-2.0		-96.9	-20	2160	No stop
21 24 30	---	09 28 02	72.2	57.4	-2.0		-97.2	40	2168	21 23 31
21 24 30	ARP299	09 28 02	72.3	60.2	-2.0		-94.5	-20	2168	No stop
21 28 30	---	09 32 03	72.8	60.1	-2.0		-95.4	220	2199	21 24 31

Schedule for TORUN (Code Tr)

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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 L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

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

--- Wed 4 Mar 2015 Day 63 ---										
21 29 10	J1128+5925	09 32 43	72.8	57.2	-1.9		-98.5	20	2199	21 29 10
21 29 40	---	09 33 13	72.9	57.1	-1.9		-98.6	30	2203	21 29 11
21 29 40	ARP299	09 33 13	73.0	60.0	-1.9		-95.7	-20	2203	No stop
21 33 40	---	09 37 13	73.5	59.8	-1.9		-96.8	220	2233	21 29 41
21 33 40	J1128+5925	09 37 13	73.4	56.8	-1.9		-99.7	-21	2233	No stop
21 34 40	---	09 38 14	73.5	56.8	-1.8		-100.0	39	2241	21 33 41
21 34 40	ARP299	09 38 14	73.6	59.8	-1.9		-97.1	-21	2241	No stop
21 38 40	---	09 42 14	74.1	59.5	-1.8		-98.2	219	2272	21 34 41
21 38 40	J1128+5925	09 42 14	74.0	56.4	-1.8		-101.2	-21	2272	No stop
21 39 40	---	09 43 14	74.1	56.3	-1.8		-101.5	39	2279	21 38 41
21 39 40	ARP299	09 43 14	74.3	59.5	-1.8		-98.4	-21	2279	No stop
21 43 40	---	09 47 15	74.8	59.2	-1.7		-99.6	219	2310	21 39 41
21 44 20	J1128+5925	09 47 55	74.7	55.9	-1.7		-103.0	19	2310	21 44 20
21 44 50	---	09 48 25	74.8	55.8	-1.7		-103.1	30	2314	21 44 21
21 44 50	ARP299	09 48 25	74.9	59.1	-1.7		-99.9	-21	2314	No stop
21 48 50	---	09 52 26	75.4	58.7	-1.6		-101.1	219	2345	21 44 51
21 48 50	J1128+5925	09 52 26	75.3	55.3	-1.6		-104.5	-21	2345	No stop
21 49 50	---	09 53 26	75.4	55.2	-1.6		-104.8	39	2353	21 48 51
21 49 50	ARP299	09 53 26	75.6	58.6	-1.6		-101.5	-21	2353	No stop
21 53 50	---	09 57 27	76.1	58.1	-1.5		-102.8	219	2383	21 49 51
21 53 50	J1128+5925	09 57 27	75.9	54.7	-1.5		-106.2	-22	2383	No stop
21 54 50	---	09 58 27	76.0	54.5	-1.5		-106.6	38	2391	21 53 51
21 54 50	ARP299	09 58 27	76.2	58.0	-1.5		-103.1	-22	2391	No stop
21 58 50	---	10 02 28	76.7	57.5	-1.4		-104.5	218	2422	21 54 51
21 59 30	J1128+5925	10 03 08	76.6	53.7	-1.4		-108.3	18	2422	21 59 30
22 00 00	---	10 03 38	76.7	53.7	-1.4		-108.5	30	2426	21 59 31
22 00 00	ARP299	10 03 38	76.9	57.3	-1.4		-104.9	-22	2426	No stop
22 04 00	---	10 07 38	77.4	56.7	-1.4		-106.3	218	2456	22 00 01
22 04 00	J1128+5925	10 07 38	77.1	52.9	-1.4		-110.1	-22	2456	No stop
22 05 00	---	10 08 39	77.3	52.7	-1.3		-110.5	38	2464	22 04 01

Schedule for TORUN (Code Tr)

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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 L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

```

-----
Start UT  Source          Start / Stop          Early  Disk  TPStart
Stop UT          LST      EL  AZ  HA  UP  ParA  Dwell  GBytes  SYNC
-----
--- Wed   4 Mar 2015   Day  63 ---

22 05 00  ARP299          10 08 39  77.5 56.5 -1.3  -106.7  -22   2464  No stop
22 09 00  ---              10 12 39  78.0 55.8 -1.3  -108.3   218   2495  22 05 01

22 09 00  J1128+5925      10 12 39  77.7 51.9 -1.3  -112.2  -23   2495  No stop
22 10 00  ---              10 13 39  77.9 51.6 -1.3  -112.6   37   2503  22 09 01

22 10 00  ARP299          10 13 39  78.1 55.6 -1.3  -108.7  -23   2503  No stop
22 13 40  ---              10 17 20  78.6 54.8 -1.2  -110.3  197   2531  22 10 01

22 14 20  J1128+5925      10 18 00  78.4 50.5 -1.2  -114.6   17   2531  22 14 20
22 14 50  ---              10 18 30  78.4 50.4 -1.2  -114.9   30   2535  22 14 21

22 14 50  ARP299          10 18 30  78.7 54.5 -1.2  -110.8  -23   2535  No stop
22 18 20  ---              10 22 01  79.1 53.6 -1.1  -112.4  187   2562  22 14 51

22 18 20  J1128+5925      10 22 01  78.8 49.4 -1.1  -116.6  -23   2562  No stop
22 19 20  ---              10 23 01  78.9 49.1 -1.1  -117.1   37   2569  22 18 21

22 19 20  ARP299          10 23 01  79.3 53.3 -1.1  -112.9  -23   2569  No stop
22 22 50  ---              10 26 32  79.7 52.3 -1.0  -114.6  187   2596  22 19 21

22 23 30  J1128+5925      10 27 12  79.4 47.8 -1.0  -119.3   16   2596  22 23 30
22 24 00  ---              10 27 42  79.5 47.6 -1.0  -119.6   30   2600  22 23 31

22 26 00  1150+812        10 29 42  61.4  6.8 -1.4  -153.1   24   2600  22 26 00
22 30 00  ---              10 33 43  61.5  6.6 -1.3  -154.4  240   2631  22 26 01

```

SETUP FILE INFORMATION:

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

==== Setup file: sess115.C1024

```

Setup group:   11          Station: TORUN          Total bit rate: 1024
Format: MARK5B          Bits per sample: 2      Sample rate: 32.000
Number of channels: 16   DBE type: DBBC_DDC    Speedup factor: 1.00

```

Disk used to record data.

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

The following frequency sets based on these setups were used.

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

Track assignments are:

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

barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec)		(Date)	Error (mas)
	(B1950)	(J2000)		
* ARP299	11 25 44.174219	* 11 28 33.622010	11 29 26.508889	0.00
	58 50 18.17319	* 58 33 46.61000	58 28 35.25604	0.00
* J1128+5925	11 25 23.181652	* 11 28 13.340676	11 29 06.461670	0.00
	59 41 46.14397	* 59 25 14.79866	59 20 03.58963	0.00
J1153+8058	11 50 23.482384	* 11 53 12.499223	11 54 07.104858	0.64
* 1150+812	81 15 10.31174	* 80 58 29.15457	80 53 16.45053	0.10

rk08sbtr

RADIOASTRON AGN SURVEY

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

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

--- Wed 4 Mar 2015 Day 63 ---

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

Table with columns: Time, Source, LST, EL, AZ, HA, UP, ParA, Dwell, Disk, GBytes, SYNC. Rows include scan frequencies and detailed scan data for 1442+101.

SETUP FILE INFORMATION:

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

==== Setup file: ra18cm2.set

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 53.748537	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 47.48770	0.00
	fake circumpolar target for a TS to look at			
* 1442+101	14 42 50.483804	* 14 45 16.465253	14 46 01.604352	0.00
J1445+0958	10 11 12.14439	* 09 58 36.07265	09 54 41.78297	0.00
QQ172	./rk08sb_sources.radioastron			
	AGN, HIGHz, rfc_2013d Petrov, 2013, unpublished 1336 observations, RA-A02-03, RA			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
1442+101	124.3

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

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

RADIOASTRON IMAGING OF MRK 501

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Observing mode: K-band, dual-pol

Schedule for TORUN (Code Tr) Page 2

RadioAstron imaging of Mrk 501

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

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

--- Thu 5 Mar 2015 Day 64 ---

----- Space segment 01: K-band VLBI scans. 3C345 -----

```
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 00 00 3C345          16 04 37  75.1 149.6 -0.6   -23.3   0       0   04 00 00
04 15 00 ---           16 19 39  76.1 160.6 -0.4   -15.0  900      29   04 00 01
```

----- Space segment 01: K-band VLBI scans. MRK501 -----

```
04 20 00 1652+398      16 24 40  75.7 156.3 -0.5   -18.3  269      29   04 20 00
04 40 00 ---           16 44 43  76.5 172.0 -0.2    -6.2 1200      67   04 20 01
```

----- Ground segment 01: K-band VLBI scans. MRK501 -----

```
04 40 30 1652+398      16 45 14  76.5 172.4 -0.2    -5.9   22      67   04 40 30
04 49 30 ---           16 54 15  76.6 179.9 -0.0    -0.1  540      85   04 40 31

04 50 00 1652+398      16 54 45  76.6 180.3  0.0     0.2   22      85   04 50 00
04 59 30 ---           17 04 17  76.5 188.2  0.2     6.4  570     103   04 50 01

05 00 00 1652+398      17 04 47  76.5 188.6  0.2     6.7   22     103   05 00 00
05 09 30 ---           17 14 18  76.2 196.3  0.3    12.6  570     121   05 00 01

05 10 00 1652+398      17 14 48  76.2 196.7  0.3    12.9   23     121   05 10 00
05 19 30 ---           17 24 20  75.7 203.9  0.5    18.5  570     139   05 10 01

05 20 00 1652+398      17 24 50  75.7 204.3  0.5    18.7   23     139   05 20 00
05 29 30 ---           17 34 22  75.0 211.0  0.7    23.7  570     158   05 20 01

05 30 00 1652+398      17 34 52  75.0 211.4  0.7    24.0   23     158   05 30 00
05 39 30 ---           17 44 23  74.1 217.6  0.8    28.4  570     176   05 30 01
```

Schedule for TORUN (Code Tr)

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RadioAstron imaging of Mrk 501

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Thu 5 Mar 2015	Day	64	---						
05 40 00	1652+398	17 44 53	74.1	217.9	0.8		28.6	23	176	05 40 00
05 49 30	---	17 54 25	73.2	223.5	1.0		32.5	570	194	05 40 01
05 50 00	1652+398	17 54 55	73.1	223.7	1.0		32.7	23	194	05 50 00
05 59 30	---	18 04 27	72.1	228.8	1.2		36.0	570	212	05 50 01

----- Space segment 02: K-band VLBI scans. -----										
06 00 00	1652+398	18 04 57	72.0	229.1	1.2		36.1	23	212	06 00 00
06 19 30	---	18 24 30	69.7	238.0	1.5		41.5	1170	250	06 00 01
06 20 00	1652+398	18 25 00	69.6	238.2	1.5		41.6	23	250	06 20 00
06 40 00	---	18 45 03	66.9	245.8	1.8		45.4	1200	288	06 20 01

----- Ground segment 02: K-band VLBI scans. MRK501 -----										
06 40 30	1652+398	18 45 33	66.9	245.9	1.9		45.5	24	288	06 40 30
06 49 30	---	18 54 35	65.6	248.9	2.0		46.8	540	306	06 40 31
06 50 00	1652+398	18 55 05	65.6	249.1	2.0		46.8	24	306	06 50 00
06 59 30	---	19 04 36	64.2	252.0	2.2		48.0	570	324	06 50 01
07 00 00	1652+398	19 05 06	64.1	252.1	2.2		48.0	24	324	07 00 00
07 09 30	---	19 14 38	62.8	254.9	2.3		48.9	570	342	07 00 01
07 10 00	1652+398	19 15 08	62.7	255.0	2.3		49.0	24	342	07 10 00
07 19 30	---	19 24 40	61.3	257.5	2.5		49.7	570	361	07 10 01
07 20 00	1652+398	19 25 10	61.2	257.7	2.5		49.7	24	361	07 20 00
07 29 30	---	19 34 41	59.8	260.1	2.7		50.3	570	379	07 20 01
07 30 00	1652+398	19 35 11	59.8	260.2	2.7		50.3	24	379	07 30 00
07 39 30	---	19 44 43	58.3	262.5	2.8		50.7	570	397	07 30 01
07 40 00	1652+398	19 45 13	58.3	262.6	2.8		50.7	24	397	07 40 00
07 49 30	---	19 54 45	56.8	264.7	3.0		51.0	570	415	07 40 01
07 50 00	1652+398	19 55 15	56.8	264.8	3.0		51.0	24	415	07 50 00
07 59 30	---	20 04 46	55.3	266.9	3.2		51.2	570	434	07 50 01
08 00 00	1652+398	20 05 16	55.3	267.0	3.2		51.2	24	434	08 00 00
08 04 30	---	20 09 47	54.6	267.9	3.3		51.3	270	442	08 00 01

----- Space segment 03: K-band VLBI scans. MRK501 -----										
08 05 00	1652+398	20 10 17	54.5	268.0	3.3		51.3	24	442	08 05 00
08 25 00	---	20 30 20	51.5	272.1	3.6		51.3	1200	481	08 05 01

----- Space segment 03: K-band VLBI scans. 3C345 -----										

Schedule for TORUN (Code Tr)

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RadioAstron imaging of Mrk 501

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Thu 5 Mar 2015 Day 64 ---

----- Ground segment 03: K-band VLBI scans. MRK501. -----

```
08 30 00 3C345      20 35 21 49.1 275.1 3.9      51.1  280    481  08 30 00
08 45 00 ---      20 50 24 46.9 277.8 4.1      50.7  900    510  08 30 01

08 45 30 1652+398  20 50 54 48.4 275.9 3.9      51.0   11    510  08 45 30
08 54 30 ---      20 59 55 47.1 277.5 4.1      50.7  540    527  08 45 31

08 55 00 1652+398  21 00 25 47.0 277.6 4.1      50.7   24    527  08 55 00
09 04 30 ---      21 09 57 45.6 279.3 4.3      50.4  570    545  08 55 01

09 05 00 1652+398  21 10 27 45.5 279.4 4.3      50.4   24    545  09 05 00
09 14 30 ---      21 19 59 44.1 281.1 4.4      50.0  570    563  09 05 01

09 15 00 1652+398  21 20 29 44.0 281.1 4.4      50.0   24    563  09 15 00
09 24 30 ---      21 30 00 42.6 282.8 4.6      49.6  570    582  09 15 01

09 25 00 1652+398  21 30 30 42.6 282.8 4.6      49.6   24    582  09 25 00
09 34 30 ---      21 40 02 41.2 284.4 4.8      49.1  570    600  09 25 01

09 35 00 1652+398  21 40 32 41.1 284.5 4.8      49.1   24    600  09 35 00
09 44 30 ---      21 50 04 39.7 286.1 4.9      48.6  570    618  09 35 01

09 45 00 1652+398  21 50 34 39.6 286.2 4.9      48.6   24    618  09 45 00
09 54 30 ---      22 00 05 38.3 287.8 5.1      48.0  570    637  09 45 01

09 55 00 1652+398  22 00 35 38.2 287.8 5.1      48.0   24    637  09 55 00
10 04 30 ---      22 10 07 36.9 289.4 5.3      47.4  570    655  09 55 01

10 05 00 1652+398  22 10 37 36.8 289.5 5.3      47.4   24    655  10 05 00
10 09 30 ---      22 15 08 36.1 290.2 5.3      47.1  270    663  10 05 01
```

----- Space segment 04: K-band VLBI scans. -----

```
10 10 00 1652+398  22 15 38 36.1 290.3 5.4      47.1   24    663  10 10 00
10 29 30 ---      22 35 11 33.4 293.4 5.7      45.8 1170    701  10 10 01

10 30 00 1652+398  22 35 41 33.3 293.5 5.7      45.7   24    701  10 30 00
10 50 00 ---      22 55 44 30.6 296.7 6.0      44.2 1200    739  10 30 01
```

----- Ground segment 04: K-band VLBI scans. MRK501. -----

```
10 50 30 1652+398  22 56 14 30.5 296.8 6.0      44.2   24    739  10 50 30
10 59 30 ---      23 05 16 29.3 298.3 6.2      43.5  540    757  10 50 31

11 00 00 1652+398  23 05 46 29.2 298.3 6.2      43.4   24    757  11 00 00
11 09 30 ---      23 15 17 28.0 299.9 6.3      42.6  570    775  11 00 01
```


Schedule for TORUN (Code Tr)

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RadioAstron imaging of Mrk 501

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

```

-----
Start UT  Source          Start / Stop          Early  Disk  TPStart
Stop UT          LST      EL  AZ  HA  UP  ParA  Dwell  GBytes  SYNC
-----
--- Thu   5 Mar 2015   Day 64 ---

11 10 00 1652+398      23 15 48 27.9 300.0 6.4      42.6   24    775  11 10 00
11 19 30 ---                23 25 19 26.7 301.5 6.5      41.8  570    793  11 10 01

11 20 00 1652+398      23 25 49 26.6 301.6 6.5      41.7   24    793  11 20 00
11 29 30 ---                23 35 21 25.4 303.1 6.7      40.9  570    812  11 20 01

11 30 00 1652+398      23 35 51 25.3 303.2 6.7      40.8   24    812  11 30 00
11 39 30 ---                23 45 22 24.2 304.7 6.8      39.9  570    830  11 30 01

11 40 00 1652+398      23 45 52 24.1 304.8 6.9      39.9   24    830  11 40 00
11 49 30 ---                23 55 24 22.9 306.3 7.0      39.0  570    848  11 40 01

11 50 00 1652+398      23 55 54 22.9 306.4 7.0      38.9   24    848  11 50 00
11 59 30 ---                00 05 26 21.7 308.0 7.2      38.0  570    866  11 50 01

12 00 00 1652+398      00 05 56 21.7 308.0 7.2      37.9   24    866  12 00 00
12 09 30 ---                00 15 27 20.6 309.6 7.4      37.0  570    885  12 00 01

12 10 00 1652+398      00 15 57 20.5 309.7 7.4      36.9   24    885  12 10 00
12 14 30 ---                00 20 28 20.0 310.4 7.4      36.5  270    893  12 10 01

```

----- Space segment 05: K-band VLBI scans. -----

```

12 15 00 1652+398      00 20 58 19.9 310.5 7.4      36.4   24    893  12 15 00
12 34 30 ---                00 40 31 17.7 313.7 7.8      34.3 1170    931  12 15 01

12 35 00 1652+398      00 41 02 17.7 313.8 7.8      34.3   24    931  12 35 00
12 55 00 ---                01 01 05 15.6 317.2 8.1      32.0 1200    969  12 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

```

Setup group:   1          Station: TORUN          Total bit rate:  256
Format: MARK5B          Bits per sample: 2          Sample rate: 32.000
Number of channels:  4    DBE type: DBBC_DDC          Speedup factor:  1.00

```

Disk used to record data.

```

1st LO= 21500.00 21500.00 21500.00 21500.00
Net SB=      U      U      L      L
IF SB =      U      U      U      U
Pol.  =      RCP     LCP     RCP     LCP
BBC   =      1      5      1      5
BBC SB=      U      U      L      L
IF    =      A1     B1     A1     B1

```

The following frequency sets based on these setups were used.

```

Frequency Set:  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, 4, 6, 8
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	Source position (RA/Dec) (J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 53.767689	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 47.55670	0.00
* 1652+398	16 52 11.729418	* 16 53 52.216683	16 54 22.703114	0.00
J1653+3945	39 50 25.15723	* 39 45 36.60881	39 43 59.85838	0.00
1641+399	16 41 17.606226	* 16 42 58.809963	16 43 29.572555	0.00
* 3C345	39 54 10.81479	* 39 48 36.99385	39 46 46.27832	0.00

RADIOASTRON IMAGING OF MRK 501

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Observing mode: K-band, dual-pol

Schedule for TORUN (Code Tr)

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RadioAstron imaging of Mrk 501

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Thu 5 Mar 2015 Day 64 ---

----- Space segment 01: K-band VLBI scans. MRK501 -----

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	1652+398	08 07 15	11.7	35.9	-8.8		-27.2	0	0	20 00 00
20 19 30	---	08 26 48	13.5	39.2	-8.5		-29.6	1170	37	20 00 01
20 20 00	1652+398	08 27 18	13.6	39.3	-8.5		-29.7	24	37	20 20 00
20 40 00	---	08 47 21	15.6	42.7	-8.1		-32.0	1200	76	20 20 01

----- Ground segment 01: K-band VLBI scans. MRK501 -----

20 40 30	1652+398	08 47 51	15.6	42.8	-8.1		-32.1	24	76	20 40 30
20 49 30	---	08 56 53	16.5	44.4	-8.0		-33.1	540	93	20 40 31
20 50 00	1652+398	08 57 23	16.6	44.4	-7.9		-33.1	24	93	20 50 00
20 59 30	---	09 06 54	17.6	46.0	-7.8		-34.2	570	112	20 50 01
21 00 00	1652+398	09 07 24	17.7	46.1	-7.8		-34.2	24	112	21 00 00
21 09 30	---	09 16 56	18.7	47.7	-7.6		-35.3	570	130	21 00 01
21 10 00	1652+398	09 17 26	18.8	47.8	-7.6		-35.3	24	130	21 10 00
21 19 30	---	09 26 58	19.8	49.4	-7.5		-36.3	570	148	21 10 01
21 20 00	1652+398	09 27 28	19.9	49.4	-7.4		-36.4	24	148	21 20 00
21 29 30	---	09 36 59	21.0	51.0	-7.3		-37.4	570	166	21 20 01
21 30 00	1652+398	09 37 29	21.0	51.1	-7.3		-37.4	24	166	21 30 00
21 39 30	---	09 47 01	22.2	52.6	-7.1		-38.4	570	185	21 30 01
21 40 00	1652+398	09 47 31	22.2	52.7	-7.1		-38.4	24	185	21 40 00
21 49 30	---	09 57 03	23.4	54.3	-7.0		-39.3	570	203	21 40 01
21 50 00	1652+398	09 57 33	23.4	54.3	-6.9		-39.4	24	203	21 50 00
21 59 30	---	10 07 04	24.6	55.9	-6.8		-40.3	570	221	21 50 01

----- Space segment 02: K-band VLBI scans. MRK501 -----

22 00 00	1652+398	10 07 34	24.7	56.0	-6.8		-40.3	24	221	22 00 00
22 20 00	---	10 27 38	27.2	59.2	-6.4		-42.1	1200	260	22 00 01

Schedule for TORUN (Code Tr)

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RadioAstron imaging of Mrk 501

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Thu 5 Mar 2015 Day 64 ---

----- Space segment 02: K-band VLBI scans. 3C345 -----

```
22 25 00 3C345          10 32 38 29.3 61.7 -6.2    -43.5  281    260  22 25 00
22 40 00 ---          10 47 41 31.3 64.1 -5.9    -44.7  900    288  22 25 01
```

----- Ground segment 02: K-band VLBI scans. MRK501 -----

```
22 40 30 1652+398      10 48 11 29.9 62.5 -6.1    -43.8   11    288  22 40 30
22 49 30 ---          10 57 12 31.1 63.9 -6.0    -44.5  540    306  22 40 31

22 50 00 1652+398      10 57 43 31.2 64.0 -5.9    -44.6   24    306  22 50 00
22 59 30 ---          11 07 14 32.5 65.5 -5.8    -45.3  570    324  22 50 01

23 00 00 1652+398      11 07 44 32.6 65.6 -5.8    -45.3   24    324  23 00 00
23 09 30 ---          11 17 16 33.9 67.1 -5.6    -46.0  570    342  23 00 01

23 10 00 1652+398      11 17 46 33.9 67.2 -5.6    -46.1   24    342  23 10 00
23 19 30 ---          11 27 17 35.3 68.8 -5.5    -46.7  570    361  23 10 01

23 20 00 1652+398      11 27 47 35.3 68.8 -5.4    -46.7   24    361  23 20 00
23 29 30 ---          11 37 19 36.7 70.4 -5.3    -47.4  570    379  23 20 01

23 30 00 1652+398      11 37 49 36.7 70.5 -5.3    -47.4   24    379  23 30 00
23 39 30 ---          11 47 21 38.1 72.0 -5.1    -48.0  570    397  23 30 01

23 40 00 1652+398      11 47 51 38.2 72.1 -5.1    -48.0   24    397  23 40 00
23 49 30 ---          11 57 22 39.5 73.7 -5.0    -48.5  570    415  23 40 01
```

--- Start: Thu 5 Mar 2015 Day 64 -- Stop: Fri 6 Mar 2015 Day 65 ---

```
23 50 00 1652+398      11 57 52 39.6 73.7 -4.9    -48.6   24    415  23 50 00
00 04 30 ---          12 12 25 41.7 76.2 -4.7    -49.3  870    443  23 50 01
```

----- Space segment 03: K-band VLBI scans. MRK501 -----

```
00 05 00 1652+398      12 12 55 41.8 76.3 -4.7    -49.3   24    443  00 05 00
00 24 30 ---          12 32 28 44.7 79.6 -4.4    -50.2 1170    481  00 05 01

00 25 00 1652+398      12 32 58 44.7 79.7 -4.4    -50.2   24    481  00 25 00
00 45 00 ---          12 53 01 47.7 83.2 -4.0    -50.8 1200    519  00 25 01
```

----- Ground segment 03: K-band VLBI scans. MRK501 -----

```
00 45 30 1652+398      12 53 32 47.8 83.3 -4.0    -50.9   24    519  00 45 30
00 54 30 ---          13 02 33 49.1 85.0 -3.9    -51.1  540    537  00 45 31
```

Schedule for TORUN (Code Tr)

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RadioAstron imaging of Mrk 501

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Fri 6 Mar 2015 Day 65 ---										
00 55 00	1652+398	13 03 03	49.2	85.0	-3.9		-51.1	24	537	00 55 00
01 04 30	---	13 12 35	50.6	86.8	-3.7		-51.2	570	555	00 55 01
01 05 00	1652+398	13 13 05	50.7	86.9	-3.7		-51.2	24	555	01 05 00
01 14 30	---	13 22 36	52.1	88.8	-3.5		-51.3	570	573	01 05 01
01 15 00	1652+398	13 23 06	52.2	88.9	-3.5		-51.3	24	573	01 15 00
01 24 30	---	13 32 38	53.6	90.8	-3.4		-51.3	570	591	01 15 01
01 25 00	1652+398	13 33 08	53.7	90.9	-3.4		-51.3	24	591	01 25 00
01 34 30	---	13 42 40	55.1	92.8	-3.2		-51.2	570	610	01 25 01
01 35 00	1652+398	13 43 10	55.2	92.9	-3.2		-51.2	24	610	01 35 00
01 44 30	---	13 52 41	56.6	95.0	-3.0		-51.1	570	628	01 35 01
01 45 00	1652+398	13 53 11	56.7	95.1	-3.0		-51.1	24	628	01 45 00
01 54 30	---	14 02 43	58.1	97.2	-2.9		-50.8	570	646	01 45 01
01 55 00	1652+398	14 03 13	58.2	97.4	-2.9		-50.8	24	646	01 55 00
02 09 30	---	14 17 45	60.4	100.8	-2.6		-50.1	870	674	01 55 01
----- Space segment 04: K-band VLBI scans. MRK501 -----										
02 10 00	1652+398	14 18 15	60.4	101.0	-2.6		-50.0	24	674	02 10 00
02 30 00	---	14 38 19	63.4	106.3	-2.3		-48.5	1200	712	02 10 01
----- Space segment 04: K-band VLBI scans. 3C345 -----										
02 35 00	3C345	14 43 20	65.7	111.0	-2.0		-46.8	279	712	02 35 00
02 50 00	---	14 58 22	67.7	116.1	-1.8		-44.6	900	741	02 35 01
----- Ground segment 04: K-band VLBI scans. MRK501 -----										
02 50 30	1652+398	14 58 52	66.3	112.6	-1.9		-46.1	8	741	02 50 30
02 59 30	---	15 07 54	67.5	115.7	-1.8		-44.7	540	759	02 50 31
03 00 00	1652+398	15 08 24	67.6	115.9	-1.8		-44.6	24	759	03 00 00
03 09 30	---	15 17 55	68.8	119.5	-1.6		-42.8	570	777	03 00 01
03 10 00	1652+398	15 18 25	68.9	119.7	-1.6		-42.7	24	777	03 10 00
03 19 30	---	15 27 57	70.1	123.6	-1.4		-40.6	570	795	03 10 01
03 20 00	1652+398	15 28 27	70.2	123.8	-1.4		-40.5	23	795	03 20 00
03 29 30	---	15 37 58	71.4	128.1	-1.3		-37.9	570	813	03 20 01

Schedule for TORUN (Code Tr) Page 5

RadioAstron imaging of Mrk 501

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Fri 6 Mar 2015 Day 65 ---

03 30 00	1652+398	15 38 29	71.4	128.3	-1.3	-37.8	23	813	03 30 00
03 39 30	---	15 48 00	72.5	133.1	-1.1	-34.8	570	832	03 30 01
03 40 00	1652+398	15 48 30	72.6	133.4	-1.1	-34.6	23	832	03 40 00
03 49 30	---	15 58 02	73.5	138.6	-0.9	-31.1	570	850	03 40 01
03 50 00	1652+398	15 58 32	73.6	138.9	-0.9	-30.9	23	850	03 50 00
03 59 30	---	16 08 03	74.5	144.8	-0.8	-26.8	570	868	03 50 01
04 00 00	1652+398	16 08 33	74.5	145.1	-0.8	-26.5	23	868	04 00 00
04 09 30	---	16 18 05	75.3	151.5	-0.6	-21.9	570	887	04 00 01

----- Space segment 05: K-band VLBI scans. MRK501 -----

04 10 00	1652+398	16 18 35	75.3	151.9	-0.6	-21.6	23	887	04 10 00
04 29 30	---	16 38 08	76.4	166.7	-0.3	-10.4	1170	924	04 10 01
04 30 00	1652+398	16 38 38	76.4	167.1	-0.3	-10.1	23	924	04 30 00
04 49 30	---	16 58 12	76.6	183.2	0.1	2.5	1170	962	04 30 01
04 50 00	1652+398	16 58 42	76.6	183.6	0.1	2.8	22	962	04 50 00
05 00 00	---	17 08 43	76.4	191.8	0.2	9.2	600	981	04 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

Setup group: 1	Station: TORUN	Total bit rate: 256
Format: MARK5B	Bits per sample: 2	Sample rate: 32.000
Number of channels: 4	DBE type: DBBC_DDC	Speedup factor: 1.00

Disk used to record data.

```

1st LO= 21500.00 21500.00 21500.00 21500.00
Net SB=      U      U      L      L
IF SB =      U      U      U      U
Pol.  =      RCP     LCP     RCP     LCP
BBC   =      1      5      1      5
BBC SB=      U      U      L      L
IF    =      A1     B1     A1     B1

```

The following frequency sets based on these setups were used.

```

Frequency Set:  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, 4, 6, 8
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	Source position (RA/Dec) (J2000)	(Date)	Error (mas)
* 1652+398	16 52 11.729418	* 16 53 52.216683	16 54 22.724212	0.00
J1653+3945	39 50 25.15723	* 39 45 36.60881	39 43 59.82763	0.00
1641+399	16 41 17.606226	* 16 42 58.809963	16 43 29.593651	0.00
* 3C345	39 54 10.81479	* 39 48 36.99385	39 46 46.25492	0.00

fr022tr

2 GBPS DDC TEST USING THE V105E FIRMWARE
 PI: *Bob Campbell*

Address: JIVE Phone:+31-(0)521-596-534 EMAIL: campbell@jive.nl Phone during obs:+31-(0)521-596-534
 Observing mode:

Schedule for TORUN (Code Tr) Page 2

2 Gbps DDC test using the v105E firmware

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Fri	6 Mar 2015	Day	65	---					
Next scan frequencies: 4820.00 4820.00 4820.00 4820.00 4884.00 4884.00 4884.00 4884.00										
Next BBC frequencies: 620.00 620.00 620.00 620.00 684.00 684.00 684.00 684.00										
Next scan bandwidths: 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00										
12 00 00	0234+285	00 09 52	53.6	116.8	-2.5	-37.7	0	0	12 00 00	
12 07 00	---	00 16 53	54.5	118.9	-2.4	-36.9	420	54	12 00 01	
12 08 00	0234+285	00 17 54	54.7	119.2	-2.3	-36.8	54	54	12 08 00	
12 15 00	---	00 24 55	55.6	121.4	-2.2	-35.8	420	108	12 08 01	
12 23 00	0234+285	00 32 56	56.6	123.9	-2.1	-34.7	473	108	12 23 00	
12 30 00	---	00 39 57	57.4	126.3	-2.0	-33.6	420	162	12 23 01	
12 31 00	0234+285	00 40 57	57.6	126.6	-2.0	-33.4	53	162	12 31 00	
12 38 00	---	00 47 59	58.4	129.0	-1.8	-32.2	420	215	12 31 01	
12 39 00	0234+285	00 48 59	58.5	129.4	-1.8	-32.0	53	215	12 39 00	
12 45 00	---	00 55 00	59.2	131.6	-1.7	-30.9	360	262	12 39 01	
12 53 00	0234+285	01 03 01	60.1	134.6	-1.6	-29.2	472	262	12 53 00	
13 00 00	---	01 10 02	60.8	137.3	-1.5	-27.7	420	315	12 53 01	
13 01 00	0234+285	01 11 02	60.9	137.7	-1.5	-27.5	53	315	13 01 00	
13 08 00	---	01 18 03	61.6	140.6	-1.3	-25.8	420	369	13 01 01	
13 09 00	0234+285	01 19 04	61.7	141.0	-1.3	-25.6	53	369	13 09 00	
13 15 00	---	01 25 05	62.2	143.5	-1.2	-24.0	360	415	13 09 01	
13 23 00	0234+285	01 33 06	62.9	147.0	-1.1	-21.9	472	415	13 23 00	
13 28 00	---	01 38 07	63.3	149.3	-1.0	-20.5	300	454	13 23 01	
Next scan frequencies: 4836.00 4836.00 4836.00 4836.00 4868.00 4868.00 4868.00 4868.00										
Next BBC frequencies: 636.00 636.00 636.00 636.00 668.00 668.00 668.00 668.00										
Next scan bandwidths: 16.00 16.00 16.00 16.00 16.00 16.00 16.00 16.00										
13 31 00	0234+285	01 41 07	63.6	150.7	-1.0	-19.6	172	454	13 31 00	
13 38 00	---	01 48 08	64.0	154.0	-0.8	-17.5	420	481	13 31 25	
13 39 00	0234+285	01 49 09	64.1	154.5	-0.8	-17.2	53	481	13 39 00	
13 45 00	---	01 55 10	64.5	157.4	-0.7	-15.3	360	504	13 39 01	
13 53 00	0234+285	02 03 11	64.9	161.4	-0.6	-12.6	472	504	13 53 00	
14 00 00	---	02 10 12	65.2	165.0	-0.5	-10.3	420	531	13 53 01	

SETUP FILE INFORMATION:

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

=====
Setup file: sess115.C2048

Setup group: 12	Station: TORUN	Total bit rate: 1024
Format: MARK5B	Bits per sample: 2	Sample rate: 64.000
Number of channels: 8	DBE type: DBBC_DDC	Speedup factor: 1.00

Disk used to record data.

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

The following frequency sets based on these setups were used.

Frequency Set: 5 Setup file default. Used with PCAL = off

LO sum=	4820.00	4820.00	4820.00	4820.00	4884.00	4884.00	4884.00	4884.00
BBC fr=	620.00	620.00	620.00	620.00	684.00	684.00	684.00	684.00
Bandwd=	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00

Matching frequency sets: 5

Track assignments are:

track1= 10, 14, 2, 6, 12, 16, 4, 8
barrel=roll_off

=====
Setup file: sess115.C1024

Setup group: 28	Station: TORUN	Total bit rate: 512
Format: MARK5B	Bits per sample: 2	Sample rate: 32.000
Number of channels: 8	DBE type: DBBC_DDC	Speedup factor: 1.00

Disk used to record data.

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

The following frequency sets based on these setups were used.

Frequency Set: 19 Setup file default. Used with PCAL = off

LO sum=	4836.00	4836.00	4836.00	4836.00	4868.00	4868.00	4868.00	4868.00
BBC fr=	636.00	636.00	636.00	636.00	668.00	668.00	668.00	668.00
Bandwd=	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00

Matching frequency sets: 19

Track assignments are:

track1= 10, 14, 2, 6, 12, 16, 4, 8
barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec)			Error
	(B1950)	(J2000)	(Date)	(mas)
J0237+2848	02 34 55.589591	* 02 37 52.405678	02 38 45.920484	0.11
* 0234+285	28 35 11.40773	* 28 48 08.98998	28 51 59.98750	0.10

Address: INAF-IRA Phone:+39 0516399383 EMAIL: d.guidetti@ira.inaf.it Phone during obs:+39 0516399383

Observing mode: 1024 Mbps

Schedule for TORUN (Code Tr)

Page 2

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Fri 6 Mar 2015	Day	65	---							
Next scan frequencies:		4942.49	4942.49	4942.49	4942.49	4974.49	4974.49	4974.49	4974.49	4974.49	
		5006.49	5006.49	5006.49	5006.49	5038.49	5038.49	5038.49	5038.49	5038.49	
Next BBC frequencies:		742.49	742.49	742.49	742.49	774.49	774.49	774.49	774.49	774.49	
		806.49	806.49	806.49	806.49	838.49	838.49	838.49	838.49	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	16.00	16.00	
16 00 00	J1241+6020	04 10 32	32.4	25.8	-8.5	-34.1	0	0	16 00 00		
16 08 00	---	04 18 33	32.9	26.7	-8.4	-35.4	480	62	16 00 01		
16 08 20	J1234+6190	04 18 53	33.2	27.8	-8.3	-36.5	6	62	16 08 20		
16 09 25	---	04 19 58	33.2	27.9	-8.2	-36.7	65	70	16 08 21		
16 09 25	J1236+6207	04 19 58	33.2	27.5	-8.3	-36.3	-11	70	No stop		
16 14 15	---	04 24 49	33.5	28.1	-8.2	-37.1	279	107	16 09 26		
16 14 35	J1234+6190	04 25 09	33.6	28.5	-8.2	-37.5	9	107	16 14 35		
16 15 40	---	04 26 14	33.7	28.6	-8.1	-37.7	65	115	16 14 36		
16 15 40	J1236+6215	04 26 14	33.8	28.2	-8.2	-37.4	-11	115	No stop		
16 20 30	---	04 31 05	34.1	28.7	-8.1	-38.2	279	153	16 15 41		
16 20 50	J1234+6190	04 31 25	34.1	29.2	-8.1	-38.5	9	153	16 20 50		
16 21 55	---	04 32 30	34.1	29.3	-8.0	-38.6	65	161	16 20 51		
16 21 55	J1236+6218	04 32 30	34.2	28.8	-8.1	-38.3	-12	161	No stop		
16 24 20	---	04 34 56	34.4	29.1	-8.0	-38.7	133	179	16 21 56		
16 24 40	J1234+6190	04 35 16	34.3	29.6	-8.0	-39.1	8	179	16 24 40		
16 25 45	---	04 36 21	34.4	29.8	-8.0	-39.3	65	188	16 24 41		
16 25 45	J1237+6222	04 36 21	34.5	29.1	-8.0	-39.0	-12	188	No stop		
16 29 45	---	04 40 22	34.8	29.6	-8.0	-39.6	228	219	16 25 46		
16 30 05	J1234+6190	04 40 42	34.8	30.2	-7.9	-39.9	8	219	16 30 05		
16 31 10	---	04 41 47	34.8	30.4	-7.9	-40.1	65	227	16 30 06		
16 31 10	J1237+6217	04 41 47	34.8	29.7	-7.9	-39.7	-12	227	No stop		
16 35 10	---	04 45 48	35.1	30.2	-7.9	-40.3	228	258	16 31 11		
16 35 25	J1241+6020	04 46 03	34.9	29.7	-7.9	-39.8	4	258	16 35 25		
16 37 25	---	04 48 03	35.0	30.0	-7.9	-40.1	120	273	16 35 26		
16 37 45	J1234+6190	04 48 23	35.3	31.1	-7.8	-41.2	6	273	16 37 45		
16 38 50	---	04 49 28	35.4	31.2	-7.8	-41.3	65	281	16 37 46		

Schedule for TORUN (Code Tr)

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GOODS-N

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Fri	6 Mar 2015	Day	65	---					
16 38 50	J1236+6207	04 49 28	35.3	30.8	-7.8		-41.0	-11	281	No stop
16 43 40	---	04 54 19	35.7	31.3	-7.7		-41.7	279	319	16 38 51
16 44 00	J1234+6190	04 54 39	35.8	31.8	-7.7		-42.1	9	319	16 44 00
16 45 05	---	04 55 44	35.9	31.9	-7.7		-42.3	65	327	16 44 01
16 45 05	J1236+6215	04 55 44	36.0	31.4	-7.7		-42.1	-11	327	No stop
16 49 55	---	05 00 35	36.3	31.9	-7.6		-42.9	279	364	16 45 06
16 50 15	J1234+6190	05 00 55	36.3	32.4	-7.6		-43.1	9	364	16 50 15
16 51 20	---	05 02 00	36.4	32.6	-7.5		-43.3	65	372	16 50 16
16 51 20	J1236+6218	05 02 00	36.4	32.0	-7.6		-43.0	-12	372	No stop
16 53 45	---	05 04 26	36.6	32.2	-7.6		-43.4	133	391	16 51 21
16 54 05	J1234+6190	05 04 46	36.6	32.8	-7.5		-43.7	8	391	16 54 05
16 55 10	---	05 05 51	36.7	33.0	-7.5		-43.9	65	399	16 54 06
16 55 10	J1237+6222	05 05 51	36.8	32.3	-7.5		-43.6	-12	399	No stop
16 59 10	---	05 09 51	37.1	32.7	-7.5		-44.3	228	430	16 55 11
16 59 30	J1234+6190	05 10 12	37.1	33.4	-7.4		-44.6	8	430	16 59 30
17 00 35	---	05 11 17	37.2	33.5	-7.4		-44.8	65	438	16 59 31
17 00 35	J1237+6217	05 11 17	37.1	32.9	-7.5		-44.4	-12	438	No stop
17 04 35	---	05 15 17	37.4	33.3	-7.4		-45.0	228	469	17 00 36
17 04 50	J1241+6020	05 15 32	37.2	32.9	-7.4		-44.5	4	469	17 04 50
17 06 50	---	05 17 33	37.4	33.1	-7.4		-44.8	120	485	17 04 51
17 07 10	J1234+6190	05 17 53	37.7	34.2	-7.3		-45.8	6	485	17 07 10
17 08 15	---	05 18 58	37.8	34.3	-7.3		-46.0	65	493	17 07 11
17 08 15	J1236+6207	05 18 58	37.7	33.9	-7.3		-45.6	-11	493	No stop
17 13 05	---	05 23 49	38.1	34.4	-7.2		-46.4	279	530	17 08 16
17 13 25	J1234+6190	05 24 09	38.3	34.9	-7.2		-46.8	9	530	17 13 25
17 14 30	---	05 25 14	38.4	35.0	-7.2		-46.9	65	538	17 13 26
17 14 30	J1236+6215	05 25 14	38.4	34.5	-7.2		-46.8	-11	538	No stop
17 19 20	---	05 30 05	38.8	35.0	-7.1		-47.5	279	576	17 14 31
17 19 40	J1234+6190	05 30 25	38.8	35.5	-7.1		-47.8	9	576	17 19 40
17 20 45	---	05 31 30	38.9	35.6	-7.1		-47.9	65	584	17 19 41

Schedule for TORUN (Code Tr)

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GOODS-N

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Fri	6 Mar 2015	Day	65	---					
17 20 45	J1236+6218	05 31 30	38.9	35.0	-7.1		-47.7	-12	584	No stop
17 23 10	---	05 33 55	39.1	35.3	-7.1		-48.1	133	603	17 20 46
17 23 30	J1234+6190	05 34 15	39.1	35.9	-7.0		-48.4	8	603	17 23 30
17 24 35	---	05 35 21	39.2	36.0	-7.0		-48.5	65	611	17 23 31
17 24 35	J1237+6222	05 35 21	39.3	35.3	-7.0		-48.3	-12	611	No stop
17 28 35	---	05 39 21	39.6	35.7	-7.0		-48.9	228	642	17 24 36
17 28 55	J1234+6190	05 39 41	39.6	36.4	-6.9		-49.2	7	642	17 28 55
17 30 00	---	05 40 47	39.7	36.6	-6.9		-49.4	65	650	17 28 56
17 30 00	J1237+6217	05 40 47	39.6	35.9	-7.0		-49.0	-12	650	No stop
17 34 00	---	05 44 47	40.0	36.3	-6.9		-49.7	228	681	17 30 01
17 34 15	J1241+6020	05 45 02	39.7	35.9	-7.0		-49.1	4	681	17 34 15
17 36 15	---	05 47 03	39.9	36.1	-6.9		-49.5	120	696	17 34 16
17 36 35	J1234+6190	05 47 23	40.3	37.2	-6.8		-50.4	6	696	17 36 35
17 37 40	---	05 48 28	40.4	37.3	-6.8		-50.6	65	704	17 36 36
17 37 40	J1236+6207	05 48 28	40.3	36.9	-6.8		-50.3	-11	704	No stop
17 42 30	---	05 53 19	40.7	37.4	-6.7		-51.0	279	742	17 37 41
17 42 50	J1234+6190	05 53 39	40.9	37.8	-6.7		-51.4	9	742	17 42 50
17 43 55	---	05 54 44	41.0	37.9	-6.7		-51.6	65	750	17 42 51
17 43 55	J1236+6215	05 54 44	41.0	37.4	-6.7		-51.4	-11	750	No stop
17 48 45	---	05 59 35	41.4	37.9	-6.6		-52.2	279	787	17 43 56
17 49 05	J1234+6190	05 59 55	41.5	38.4	-6.6		-52.4	9	787	17 49 05
17 50 10	---	06 01 00	41.6	38.5	-6.6		-52.6	65	796	17 49 06
17 50 10	J1236+6218	06 01 00	41.5	37.9	-6.6		-52.3	-12	796	No stop
17 52 35	---	06 03 25	41.7	38.1	-6.6		-52.7	133	814	17 50 11
17 52 55	J1234+6190	06 03 45	41.8	38.8	-6.5		-53.0	8	814	17 52 55
17 54 00	---	06 04 50	41.9	38.9	-6.5		-53.2	65	822	17 52 56
17 54 00	J1237+6222	06 04 50	41.9	38.2	-6.6		-53.0	-13	822	No stop
17 58 00	---	06 08 51	42.3	38.6	-6.5		-53.6	227	853	17 54 01
17 58 20	J1234+6190	06 09 11	42.3	39.3	-6.4		-53.8	7	853	17 58 20
17 59 25	---	06 10 16	42.5	39.4	-6.4		-54.0	65	862	17 58 21

Schedule for TORUN (Code Tr)

Page 5

GOODS-N

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Fri	6 Mar 2015	Day	65	---					
17 59 25	J1237+6217	06 10 16	42.3	38.7	-6.5		-53.7	-12	862	No stop
18 03 25	---	06 14 17	42.7	39.1	-6.4		-54.3	228	892	17 59 26
18 03 40	J1241+6020	06 14 32	42.4	38.7	-6.5		-53.8	4	892	18 03 40
18 05 40	---	06 16 32	42.6	38.9	-6.4		-54.1	120	908	18 03 41
18 06 00	J1234+6190	06 16 52	43.1	40.0	-6.3		-55.0	6	908	18 06 00
18 07 05	---	06 17 58	43.2	40.1	-6.3		-55.2	65	916	18 06 01
18 07 05	J1236+6207	06 17 58	43.0	39.7	-6.3		-54.9	-11	916	No stop
18 11 55	---	06 22 48	43.5	40.2	-6.2		-55.7	279	953	18 07 06
18 12 15	J1234+6190	06 23 08	43.7	40.6	-6.2		-56.0	9	953	18 12 15
18 13 20	---	06 24 14	43.8	40.7	-6.2		-56.2	65	962	18 12 16
18 13 20	J1236+6215	06 24 14	43.8	40.2	-6.2		-56.1	-11	962	No stop
18 18 10	---	06 29 04	44.2	40.6	-6.1		-56.9	279	999	18 13 21
18 18 30	J1234+6190	06 29 25	44.3	41.2	-6.1		-57.0	8	999	18 18 30
18 19 35	---	06 30 30	44.4	41.3	-6.1		-57.2	65	1007	18 18 31
18 19 35	J1236+6218	06 30 30	44.3	40.6	-6.1		-57.0	-12	1007	No stop
18 22 00	---	06 32 55	44.6	40.8	-6.1		-57.4	133	1026	18 19 36
18 22 20	J1234+6190	06 33 15	44.7	41.5	-6.0		-57.6	8	1026	18 22 20
18 23 25	---	06 34 20	44.8	41.6	-6.0		-57.8	65	1034	18 22 21
18 23 25	J1237+6222	06 34 20	44.7	40.9	-6.1		-57.7	-13	1034	No stop
18 27 25	---	06 38 21	45.1	41.2	-6.0		-58.3	227	1065	18 23 26
18 27 45	J1234+6190	06 38 41	45.2	42.0	-5.9		-58.5	7	1065	18 27 45
18 28 50	---	06 39 46	45.3	42.1	-5.9		-58.7	65	1073	18 27 46
18 28 50	J1237+6217	06 39 46	45.2	41.4	-6.0		-58.4	-12	1073	No stop
18 32 50	---	06 43 47	45.6	41.7	-5.9		-59.0	228	1104	18 28 51
18 33 05	J1241+6020	06 44 02	45.2	41.4	-6.0		-58.5	3	1104	18 33 05
18 35 05	---	06 46 02	45.4	41.5	-5.9		-58.8	120	1119	18 33 06
18 35 25	J1234+6190	06 46 22	46.0	42.7	-5.8		-59.7	6	1119	18 35 25
18 36 30	---	06 47 27	46.1	42.7	-5.8		-59.9	65	1128	18 35 26
18 36 30	J1236+6207	06 47 27	45.9	42.3	-5.8		-59.6	-11	1128	No stop
18 41 20	---	06 52 18	46.4	42.7	-5.8		-60.4	279	1165	18 36 31

Schedule for TORUN (Code Tr)

Page 6

GOODS-N

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Fri	6 Mar 2015	Day	65	---					
18 41 40	J1234+6190	06 52 38	46.7	43.2	-5.7		-60.7	9	1165	18 41 40
18 42 45	---	06 53 43	46.8	43.3	-5.7		-60.9	65	1173	18 41 41
18 42 45	J1236+6215	06 53 43	46.7	42.7	-5.7		-60.8	-12	1173	No stop
18 47 35	---	06 58 34	47.2	43.1	-5.6		-61.6	278	1210	18 42 46
18 47 55	J1234+6190	06 58 54	47.3	43.7	-5.6		-61.7	8	1210	18 47 55
18 49 00	---	07 00 00	47.4	43.8	-5.6		-61.9	65	1219	18 47 56
18 49 00	J1236+6218	07 00 00	47.3	43.1	-5.6		-61.8	-12	1219	No stop
18 51 25	---	07 02 25	47.5	43.3	-5.6		-62.1	133	1237	18 49 01
18 51 45	J1234+6190	07 02 45	47.7	44.0	-5.5		-62.3	8	1237	18 51 45
18 52 50	---	07 03 50	47.8	44.1	-5.5		-62.5	65	1246	18 51 46
18 52 50	J1237+6222	07 03 50	47.7	43.3	-5.6		-62.4	-13	1246	No stop
18 56 50	---	07 07 51	48.1	43.7	-5.5		-63.1	227	1276	18 52 51
18 57 10	J1234+6190	07 08 11	48.3	44.5	-5.4		-63.2	7	1276	18 57 10
18 58 15	---	07 09 16	48.4	44.5	-5.4		-63.4	65	1285	18 57 11
18 58 15	J1237+6217	07 09 16	48.2	43.8	-5.5		-63.1	-12	1285	No stop
19 02 15	---	07 13 17	48.6	44.1	-5.4		-63.8	228	1315	18 58 16
19 02 30	J1241+6020	07 13 32	48.2	43.8	-5.5		-63.3	3	1315	19 02 30
19 04 30	---	07 15 32	48.4	44.0	-5.4		-63.6	120	1331	19 02 31
19 04 50	J1234+6190	07 15 52	49.1	45.1	-5.3		-64.4	6	1331	19 04 50
19 05 55	---	07 16 57	49.2	45.1	-5.3		-64.6	65	1339	19 04 51
19 05 55	J1236+6207	07 16 57	49.0	44.7	-5.3		-64.3	-11	1339	No stop
19 10 45	---	07 21 48	49.5	45.1	-5.3		-65.1	279	1376	19 05 56
19 11 05	J1234+6190	07 22 08	49.7	45.5	-5.2		-65.5	9	1376	19 11 05
19 12 10	---	07 23 13	49.9	45.6	-5.2		-65.6	65	1385	19 11 06
19 12 10	J1236+6215	07 23 13	49.8	45.1	-5.2		-65.6	-12	1385	No stop
19 17 00	---	07 28 04	50.3	45.4	-5.1		-66.4	278	1422	19 12 11
19 17 20	J1234+6190	07 28 24	50.4	46.0	-5.1		-66.5	8	1422	19 17 20
19 18 25	---	07 29 29	50.5	46.1	-5.1		-66.7	65	1430	19 17 21
19 18 25	J1236+6218	07 29 29	50.4	45.4	-5.1		-66.6	-12	1430	No stop
19 20 50	---	07 31 55	50.6	45.6	-5.1		-67.0	133	1449	19 18 26

Schedule for TORUN (Code Tr)

Page 7

GOODS-N

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Fri	6 Mar 2015	Day	65	---					
19 21 10	J1234+6190	07 32 15	50.8	46.3	-5.0		-67.1	8	1449	19 21 10
19 22 15	---	07 33 20	51.0	46.4	-5.0		-67.3	65	1457	19 21 11
19 22 15	J1237+6222	07 33 20	50.8	45.6	-5.1		-67.3	-13	1457	No stop
19 26 15	---	07 37 21	51.2	45.8	-5.0		-67.9	227	1488	19 22 16
19 26 35	J1234+6190	07 37 41	51.4	46.7	-5.0		-68.0	7	1488	19 26 35
19 27 40	---	07 38 46	51.5	46.8	-4.9		-68.2	65	1496	19 26 36
19 27 40	J1237+6217	07 38 46	51.3	46.0	-5.0		-68.0	-13	1496	No stop
19 31 40	---	07 42 47	51.7	46.3	-4.9		-68.6	227	1527	19 27 41
19 31 55	J1241+6020	07 43 02	51.4	46.0	-5.0		-68.1	3	1527	19 31 55
19 33 55	---	07 45 02	51.6	46.1	-5.0		-68.4	120	1542	19 31 56
19 34 15	J1234+6190	07 45 22	52.3	47.2	-4.8		-69.3	5	1542	19 34 15
19 35 20	---	07 46 27	52.4	47.3	-4.8		-69.5	65	1551	19 34 16
19 35 20	J1236+6207	07 46 27	52.2	46.9	-4.9		-69.2	-11	1551	No stop
19 40 10	---	07 51 18	52.7	47.2	-4.8		-70.0	279	1588	19 35 21
19 40 30	J1234+6190	07 51 38	53.0	47.6	-4.7		-70.3	9	1588	19 40 30
19 41 35	---	07 52 43	53.1	47.7	-4.7		-70.5	65	1596	19 40 31
19 41 35	J1236+6215	07 52 43	53.0	47.1	-4.7		-70.5	-12	1596	No stop
19 46 25	---	07 57 34	53.5	47.4	-4.7		-71.3	278	1633	19 41 36
19 46 45	J1234+6190	07 57 54	53.7	48.0	-4.6		-71.4	8	1633	19 46 45
19 47 50	---	07 58 59	53.8	48.1	-4.6		-71.6	65	1642	19 46 46
19 47 50	J1236+6218	07 58 59	53.6	47.4	-4.6		-71.5	-12	1642	No stop
19 50 15	---	08 01 25	53.8	47.6	-4.6		-71.9	133	1660	19 47 51
19 50 35	J1234+6190	08 01 45	54.1	48.3	-4.6		-72.0	7	1660	19 50 35
19 51 40	---	08 02 50	54.2	48.3	-4.5		-72.2	65	1669	19 50 36
19 51 40	J1237+6222	08 02 50	54.0	47.5	-4.6		-72.3	-13	1669	No stop
19 55 40	---	08 06 50	54.5	47.7	-4.5		-72.9	227	1699	19 51 41
19 56 00	J1234+6190	08 07 11	54.7	48.6	-4.5		-73.0	7	1699	19 56 00
19 57 05	---	08 08 16	54.8	48.7	-4.4		-73.2	65	1708	19 56 01
19 57 05	J1237+6217	08 08 16	54.5	47.9	-4.5		-73.0	-13	1708	No stop
20 01 05	---	08 12 16	55.0	48.2	-4.4		-73.7	227	1738	19 57 06

Schedule for TORUN (Code Tr)

Page 8

GOODS-N

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Fri	6 Mar 2015	Day	65	---					
20 01 20	J1241+6020	08 12 31	54.6	47.9	-4.5		-73.1	3	1738	20 01 20
20 03 20	---	08 14 32	54.8	48.0	-4.5		-73.5	120	1754	20 01 21
20 03 40	J1234+6190	08 14 52	55.6	49.1	-4.3		-74.3	5	1754	20 03 40
20 04 45	---	08 15 57	55.7	49.1	-4.3		-74.5	65	1762	20 03 41
20 04 45	J1236+6207	08 15 57	55.4	48.7	-4.4		-74.2	-11	1762	No stop
20 09 35	---	08 20 48	56.0	49.0	-4.3		-75.1	279	1799	20 04 46
20 09 55	J1234+6190	08 21 08	56.3	49.4	-4.2		-75.4	9	1799	20 09 55
20 11 00	---	08 22 13	56.4	49.5	-4.2		-75.6	65	1808	20 09 56
20 11 00	J1236+6215	08 22 13	56.2	48.9	-4.2		-75.6	-12	1808	No stop
20 15 50	---	08 27 04	56.8	49.1	-4.2		-76.5	278	1845	20 11 01
20 16 10	J1234+6190	08 27 24	57.0	49.7	-4.1		-76.5	8	1845	20 16 10
20 17 15	---	08 28 29	57.1	49.8	-4.1		-76.7	65	1853	20 16 11
20 17 15	J1236+6218	08 28 29	56.9	49.0	-4.2		-76.7	-13	1853	No stop
20 19 40	---	08 30 54	57.2	49.2	-4.1		-77.1	132	1872	20 17 16
20 20 00	J1234+6190	08 31 14	57.4	49.9	-4.1		-77.2	7	1872	20 20 00
20 21 05	---	08 32 20	57.6	50.0	-4.0		-77.4	65	1880	20 20 01
20 21 05	J1237+6222	08 32 20	57.3	49.1	-4.1		-77.5	-13	1880	No stop
20 25 05	---	08 36 20	57.8	49.3	-4.0		-78.2	227	1911	20 21 06
20 25 25	J1234+6190	08 36 40	58.1	50.2	-4.0		-78.2	7	1911	20 25 25
20 26 30	---	08 37 46	58.2	50.2	-4.0		-78.4	65	1919	20 25 26
20 26 30	J1237+6217	08 37 46	57.8	49.5	-4.0		-78.2	-13	1919	No stop
20 30 30	---	08 41 46	58.3	49.7	-3.9		-79.0	227	1950	20 26 31
20 30 45	J1241+6020	08 42 01	57.9	49.4	-4.0		-78.4	3	1950	20 30 45
20 32 45	---	08 44 02	58.1	49.5	-4.0		-78.8	120	1965	20 30 46
20 33 05	J1234+6190	08 44 22	59.0	50.5	-3.8		-79.6	5	1965	20 33 05
20 34 10	---	08 45 27	59.1	50.6	-3.8		-79.8	65	1974	20 33 06
20 34 10	J1236+6207	08 45 27	58.8	50.2	-3.9		-79.5	-11	1974	No stop
20 39 00	---	08 50 18	59.4	50.3	-3.8		-80.4	279	2011	20 34 11
20 39 20	J1234+6190	08 50 38	59.7	50.8	-3.7		-80.8	9	2011	20 39 20
20 40 25	---	08 51 43	59.8	50.8	-3.7		-81.0	65	2019	20 39 21

Schedule for TORUN (Code Tr)

Page 9

GOODS-N

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Fri	6 Mar 2015	Day	65	---					
20 40 25	J1236+6215	08 51 43	59.6	50.2	-3.8		-81.0	-12	2019	No stop
20 45 15	---	08 56 34	60.2	50.3	-3.7		-82.0	278	2056	20 40 26
20 45 35	J1234+6190	08 56 54	60.4	51.0	-3.6		-81.9	8	2056	20 45 35
20 46 40	---	08 57 59	60.5	51.0	-3.6		-82.1	65	2065	20 45 36
20 46 40	J1236+6218	08 57 59	60.3	50.3	-3.7		-82.2	-13	2065	No stop
20 49 05	---	09 00 24	60.5	50.3	-3.6		-82.7	132	2083	20 46 41
20 49 25	J1234+6190	09 00 44	60.9	51.1	-3.6		-82.7	7	2083	20 49 25
20 50 30	---	09 01 49	61.0	51.1	-3.6		-82.9	65	2092	20 49 26
20 50 30	J1237+6222	09 01 49	60.7	50.2	-3.6		-83.0	-14	2092	No stop
20 54 30	---	09 05 50	61.2	50.3	-3.5		-83.8	226	2122	20 50 31
20 54 50	J1234+6190	09 06 10	61.5	51.3	-3.5		-83.7	6	2122	20 54 50
20 55 55	---	09 07 15	61.6	51.3	-3.5		-84.0	65	2131	20 54 51
20 55 55	J1237+6217	09 07 15	61.2	50.5	-3.5		-83.8	-13	2131	No stop
20 59 55	---	09 11 16	61.7	50.6	-3.5		-84.6	227	2162	20 55 56
21 00 10	J1241+6020	09 11 31	61.3	50.4	-3.5		-84.0	3	2162	21 00 10
21 02 10	---	09 13 31	61.5	50.5	-3.5		-84.4	120	2177	21 00 11
21 02 30	J1234+6190	09 13 51	62.4	51.4	-3.4		-85.3	4	2177	21 02 30
21 03 35	---	09 14 57	62.5	51.5	-3.3		-85.5	65	2185	21 02 31
21 03 35	J1236+6207	09 14 57	62.2	51.1	-3.4		-85.3	-11	2185	No stop
21 08 25	---	09 19 47	62.8	51.2	-3.3		-86.2	279	2222	21 03 36
21 08 45	J1234+6190	09 20 07	63.1	51.6	-3.2		-86.6	9	2222	21 08 45
21 09 50	---	09 21 13	63.3	51.6	-3.2		-86.8	65	2231	21 08 46
21 09 50	J1236+6215	09 21 13	63.0	50.9	-3.3		-86.9	-12	2231	No stop
21 14 40	---	09 26 03	63.6	51.0	-3.2		-87.9	278	2268	21 09 51
21 15 00	J1234+6190	09 26 24	63.9	51.6	-3.1		-87.9	8	2268	21 15 00
21 16 05	---	09 27 29	64.0	51.6	-3.1		-88.1	65	2276	21 15 01
21 16 05	J1236+6218	09 27 29	63.7	50.9	-3.2		-88.2	-13	2276	No stop
21 18 30	---	09 29 54	64.0	50.9	-3.1		-88.7	132	2295	21 16 06
21 18 50	J1234+6190	09 30 14	64.3	51.7	-3.1		-88.7	7	2295	21 18 50
21 19 55	---	09 31 19	64.5	51.7	-3.1		-88.9	65	2303	21 18 51

Schedule for TORUN (Code Tr)

Page 10

GOODS-N

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Fri	6 Mar 2015	Day	65	---					
21 19 55	J1237+6222	09 31 19	64.1	50.7	-3.1		-89.1	-14	2303	No stop
21 23 55	---	09 35 20	64.6	50.7	-3.0		-90.0	226	2334	21 19 56
21 24 15	J1234+6190	09 35 40	65.0	51.7	-3.0		-89.9	6	2334	21 24 15
21 25 20	---	09 36 45	65.1	51.7	-3.0		-90.1	65	2342	21 24 16
21 25 20	J1237+6217	09 36 45	64.7	50.9	-3.0		-90.0	-13	2342	No stop
21 29 20	---	09 40 46	65.1	50.9	-3.0		-90.9	227	2373	21 25 21
21 29 35	J1241+6020	09 41 01	64.7	50.8	-3.0		-90.2	3	2373	21 29 35
21 31 35	---	09 43 01	65.0	50.8	-3.0		-90.7	120	2388	21 29 36
21 31 55	J1234+6190	09 43 21	65.9	51.7	-2.9		-91.6	4	2388	21 31 55
21 33 00	---	09 44 26	66.0	51.7	-2.8		-91.8	65	2397	21 31 56
21 33 00	J1236+6207	09 44 26	65.7	51.3	-2.9		-91.6	-11	2397	No stop
21 37 50	---	09 49 17	66.3	51.3	-2.8		-92.7	279	2434	21 33 01
21 38 10	J1234+6190	09 49 37	66.6	51.6	-2.8		-93.0	8	2434	21 38 10
21 39 15	---	09 50 42	66.7	51.6	-2.7		-93.3	65	2442	21 38 11
21 39 15	J1236+6215	09 50 42	66.5	50.9	-2.8		-93.5	-12	2442	No stop
21 44 05	---	09 55 33	67.0	50.8	-2.7		-94.6	278	2479	21 39 16
21 44 25	J1234+6190	09 55 53	67.3	51.5	-2.7		-94.5	8	2479	21 44 25
21 45 30	---	09 56 59	67.5	51.4	-2.6		-94.8	65	2488	21 44 26
21 45 30	J1236+6218	09 56 59	67.1	50.6	-2.7		-94.9	-13	2488	No stop
21 47 55	---	09 59 24	67.4	50.6	-2.6		-95.5	132	2506	21 45 31
21 48 15	J1234+6190	09 59 44	67.8	51.4	-2.6		-95.5	7	2506	21 48 15
21 49 20	---	10 00 49	67.9	51.3	-2.6		-95.7	65	2515	21 48 16
21 49 20	J1237+6222	10 00 49	67.5	50.4	-2.6		-96.0	-14	2515	No stop
21 53 20	---	10 04 50	68.0	50.2	-2.6		-97.0	226	2546	21 49 21
21 53 40	J1234+6190	10 05 10	68.4	51.2	-2.5		-96.8	6	2546	21 53 40
21 54 45	---	10 06 15	68.6	51.1	-2.5		-97.1	65	2554	21 53 41
21 54 45	J1237+6217	10 06 15	68.1	50.4	-2.5		-97.0	-13	2554	No stop
21 58 45	---	10 10 16	68.6	50.3	-2.5		-98.0	227	2585	21 54 46
21 59 00	J1241+6020	10 10 31	68.2	50.3	-2.5		-97.3	3	2585	21 59 00
22 01 00	---	10 12 31	68.4	50.2	-2.5		-97.8	120	2600	21 59 01

Schedule for TORUN (Code Tr)

Page 11

GOODS-N

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Fri	6 Mar 2015	Day	65	---					
22 01 20	J1234+6190	10 12 51	69.3	50.8	-2.4		-98.9	4	2600	22 01 20
22 02 25	---	10 13 56	69.5	50.8	-2.3		-99.1	65	2608	22 01 21
22 02 25	J1236+6207	10 13 56	69.1	50.5	-2.4		-98.8	-11	2608	No stop
22 07 15	---	10 18 47	69.7	50.2	-2.3		-100.2	279	2646	22 02 26
22 07 35	J1234+6190	10 19 07	70.1	50.5	-2.3		-100.6	8	2646	22 07 35
22 08 40	---	10 20 12	70.2	50.4	-2.2		-100.9	65	2654	22 07 36
22 08 40	J1236+6215	10 20 12	69.9	49.7	-2.3		-101.1	-12	2654	No stop
22 13 30	---	10 25 03	70.4	49.4	-2.2		-102.5	278	2691	22 08 41
22 13 50	J1234+6190	10 25 23	70.8	50.0	-2.2		-102.4	8	2691	22 13 50
22 14 55	---	10 26 28	70.9	50.0	-2.1		-102.7	65	2699	22 13 51
22 14 55	J1236+6218	10 26 28	70.5	49.2	-2.2		-102.8	-13	2699	No stop
22 17 20	---	10 28 54	70.8	49.0	-2.1		-103.5	132	2718	22 14 56
22 17 40	J1234+6190	10 29 14	71.2	49.7	-2.1		-103.5	7	2718	22 17 40
22 18 45	---	10 30 19	71.3	49.6	-2.1		-103.8	65	2726	22 17 41
22 18 45	J1237+6222	10 30 19	70.9	48.7	-2.1		-104.1	-14	2726	No stop
22 22 45	---	10 34 20	71.4	48.3	-2.1		-105.3	226	2757	22 18 46
22 23 05	J1234+6190	10 34 40	71.8	49.2	-2.0		-105.2	6	2757	22 23 05
22 24 10	---	10 35 45	72.0	49.1	-2.0		-105.5	65	2765	22 23 06
22 24 10	J1237+6217	10 35 45	71.5	48.5	-2.0		-105.3	-13	2765	No stop
22 28 10	---	10 39 46	71.9	48.1	-2.0		-106.6	227	2796	22 24 11
22 28 25	J1241+6020	10 40 01	71.5	48.3	-2.0		-105.7	3	2796	22 28 25
22 30 25	---	10 42 01	71.7	48.1	-2.0		-106.3	120	2812	22 28 26
22 30 45	J1234+6190	10 42 21	72.7	48.4	-1.9		-107.7	4	2812	22 30 45
22 31 50	---	10 43 26	72.8	48.3	-1.9		-108.0	65	2820	22 30 46
22 31 50	J1236+6207	10 43 26	72.5	48.1	-1.9		-107.6	-12	2820	No stop
22 36 40	---	10 48 17	73.0	47.5	-1.8		-109.3	278	2857	22 31 51
22 37 00	J1234+6190	10 48 37	73.4	47.6	-1.8		-109.8	8	2857	22 37 00
22 38 05	---	10 49 42	73.5	47.4	-1.8		-110.2	65	2865	22 37 01
22 38 05	J1236+6215	10 49 42	73.2	46.8	-1.8		-110.4	-12	2865	No stop
22 42 55	---	10 54 33	73.7	46.1	-1.7		-112.1	278	2903	22 38 06

Schedule for TORUN (Code Tr)

Page 12

GOODS-N

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Fri	6 Mar 2015	Day	65	---					
22 43 15	J1234+6190	10 54 53	74.1	46.6	-1.7		-112.1	8	2903	22 43 15
22 44 20	---	10 55 58	74.2	46.4	-1.6		-112.5	65	2911	22 43 16
22 44 20	J1236+6218	10 55 58	73.8	45.8	-1.7		-112.6	-12	2911	No stop
22 46 45	---	10 58 24	74.0	45.4	-1.7		-113.5	133	2929	22 44 21
22 47 05	J1234+6190	10 58 44	74.5	46.0	-1.6		-113.6	7	2929	22 47 05
22 48 10	---	10 59 49	74.6	45.8	-1.6		-114.0	65	2938	22 47 06
22 48 10	J1237+6222	10 59 49	74.1	44.9	-1.6		-114.2	-13	2938	No stop
22 52 10	---	11 03 49	74.6	44.2	-1.6		-115.8	227	2969	22 48 11
22 52 30	J1234+6190	11 04 10	75.1	45.0	-1.5		-115.8	7	2969	22 52 30
22 53 35	---	11 05 15	75.2	44.7	-1.5		-116.2	65	2977	22 52 31
22 53 35	J1237+6217	11 05 15	74.7	44.3	-1.6		-115.8	-13	2977	No stop
22 57 35	---	11 09 15	75.1	43.5	-1.5		-117.5	227	3008	22 53 36
22 57 50	J1241+6020	11 09 30	74.7	44.1	-1.5		-116.2	3	3008	22 57 50
22 59 50	---	11 11 31	74.9	43.7	-1.5		-117.1	120	3023	22 57 51
23 00 10	J1234+6190	11 11 51	75.9	43.3	-1.4		-119.1	4	3023	23 00 10
23 01 15	---	11 12 56	76.0	43.0	-1.4		-119.6	65	3031	23 00 11
23 01 15	J1236+6207	11 12 56	75.7	43.1	-1.4		-118.9	-12	3031	No stop
23 06 05	---	11 17 47	76.2	41.9	-1.3		-121.1	278	3069	23 01 16
23 06 25	J1234+6190	11 18 07	76.5	41.7	-1.3		-122.0	8	3069	23 06 25
23 07 30	---	11 19 12	76.6	41.4	-1.3		-122.5	65	3077	23 06 26
23 07 30	J1236+6215	11 19 12	76.3	41.0	-1.3		-122.5	-12	3077	No stop
23 12 20	---	11 24 03	76.8	39.6	-1.2		-124.9	278	3114	23 07 31
23 12 40	J1234+6190	11 24 23	77.1	39.9	-1.2		-125.1	8	3114	23 12 40
23 13 45	---	11 25 28	77.3	39.6	-1.2		-125.7	65	3122	23 12 41
23 13 45	J1236+6218	11 25 28	76.8	39.2	-1.2		-125.4	-13	3122	No stop
23 16 10	---	11 27 53	77.0	38.5	-1.2		-126.7	132	3141	23 13 46
23 16 30	J1234+6190	11 28 13	77.5	38.7	-1.1		-127.2	7	3141	23 16 30
23 17 35	---	11 29 19	77.6	38.3	-1.1		-127.8	65	3149	23 16 31
23 17 35	J1237+6222	11 29 19	77.1	37.8	-1.1		-127.6	-13	3149	No stop
23 21 35	---	11 33 19	77.5	36.5	-1.1		-129.8	227	3180	23 17 36

Schedule for TORUN (Code Tr)

Page 13

GOODS-N

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Fri 6 Mar 2015 Day 65 ---										
23 21 55	J1234+6190	11 33 39	78.0	36.8	-1.0		-130.2	7	3180	23 21 55
23 23 00	---	11 34 45	78.1	36.4	-1.0		-130.8	65	3188	23 21 56
23 23 00	J1237+6217	11 34 45	77.6	36.5	-1.1		-129.9	-13	3188	No stop
23 27 00	---	11 38 45	77.9	35.1	-1.0		-132.2	227	3219	23 23 01
23 27 15	J1241+6020	11 39 00	77.6	36.2	-1.1		-130.4	1	3219	23 27 15
23 29 15	---	11 41 01	77.8	35.5	-1.0		-131.6	120	3235	23 27 16
23 32 55	3C345	11 44 41	39.3	73.3	-5.0		-48.5	61	3235	23 32 55
23 37 15	---	11 49 02	39.9	74.0	-4.9		-48.7	260	3268	23 32 56
23 39 55	J1234+6190	11 51 42	79.5	29.0	-0.7		-141.9	-2	3268	23 39 55
23 40 25	---	11 52 12	79.5	28.7	-0.7		-142.3	28	3272	23 39 56
23 40 45	J1234+6190	11 52 32	79.6	28.5	-0.7		-142.5	13	3272	23 40 45
23 41 50	---	11 53 38	79.6	28.0	-0.7		-143.3	65	3280	23 40 46
23 41 50	J1236+6207	11 53 38	79.3	28.8	-0.7		-141.9	-13	3280	No stop
23 46 40	---	11 58 28	79.7	26.3	-0.7		-145.4	277	3317	23 41 51
23 47 00	J1234+6190	11 58 48	80.0	25.1	-0.6		-147.2	6	3317	23 47 00
23 48 05	---	11 59 54	80.0	24.5	-0.6		-148.1	65	3326	23 47 01
23 48 05	J1236+6215	11 59 54	79.7	24.8	-0.6		-147.3	-12	3326	No stop
23 52 55	---	12 04 44	80.0	22.1	-0.5		-151.1	278	3363	23 48 06
23 53 15	J1234+6190	12 05 04	80.4	21.4	-0.5		-152.3	8	3363	23 53 15
23 54 20	---	12 06 10	80.4	20.7	-0.5		-153.2	65	3371	23 53 16
23 54 20	J1236+6218	12 06 10	80.0	21.5	-0.5		-151.8	-13	3371	No stop
23 56 50	---	12 08 40	80.1	20.0	-0.5		-153.8	137	3390	23 54 21
23 57 10	J1234+6190	12 09 00	80.6	18.9	-0.4		-155.6	6	3390	23 57 10
23 58 15	---	12 10 05	80.6	18.2	-0.4		-156.6	65	3399	23 57 11
--- Start: Fri 6 Mar 2015 Day 65 -- Stop: Sat 7 Mar 2015 Day 66 ---										
23 58 15	J1237+6222	12 10 05	80.1	19.1	-0.5		-155.0	-13	3399	No stop
00 02 15	---	12 14 06	80.3	16.6	-0.4		-158.4	227	3429	23 58 16
00 02 35	J1234+6190	12 14 26	80.8	15.2	-0.3		-160.4	5	3429	00 02 35
00 03 40	---	12 15 31	80.8	14.5	-0.3		-161.4	65	3438	00 02 36

Schedule for TORUN (Code Tr)

Page 14

GOODS-N

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Sat	7 Mar 2015	Day	66	---					
00 03 40	J1237+6217	12 15 31	80.4	16.2	-0.4		-158.9	-16	3438	No stop
00 07 40	---	12 19 32	80.5	13.6	-0.3		-162.4	224	3469	00 03 41
00 07 55	J1241+6020	12 19 47	80.4	15.8	-0.4		-159.5	-3	3469	00 07 55
00 09 55	---	12 21 47	80.4	14.4	-0.3		-161.2	117	3484	00 07 56
00 10 15	J1234+6190	12 22 07	81.0	9.7	-0.2		-167.6	-4	3484	00 10 15
00 11 20	---	12 23 12	81.1	8.9	-0.2		-168.6	61	3492	00 10 16
00 11 20	J1236+6207	12 23 12	80.9	10.6	-0.2		-166.4	-16	3492	No stop
00 16 10	---	12 28 03	81.0	7.1	-0.2		-170.9	274	3529	00 11 21
00 16 30	J1234+6190	12 28 23	81.2	5.0	-0.1		-173.6	2	3529	00 16 30
00 17 35	---	12 29 28	81.2	4.2	-0.1		-174.7	65	3538	00 16 31
00 17 35	J1236+6215	12 29 28	80.9	5.5	-0.1		-172.9	-15	3538	No stop
00 22 25	---	12 34 19	80.9	2.0	-0.0		-177.5	275	3575	00 17 36
00 22 45	J1234+6190	12 34 39	81.2	0.2	-0.0		-179.8	3	3575	00 22 45
00 23 50	---	12 35 45	81.2	-0.6	0.0		179.2	65	3583	00 22 46
00 23 50	J1236+6218	12 35 45	80.9	1.4	-0.0		-178.2	-17	3583	No stop
00 26 20	---	12 38 15	80.9	-0.4	0.0		179.5	133	3603	00 23 51
00 26 40	J1234+6190	12 38 35	81.2	-2.8	0.1		176.4	1	3603	00 26 40
00 27 45	---	12 39 40	81.2	-3.7	0.1		175.3	65	3611	00 26 41
00 27 45	J1237+6222	12 39 40	80.8	-1.3	0.0		178.3	-18	3611	No stop
00 31 45	---	12 43 41	80.8	-4.2	0.1		174.6	222	3642	00 27 46
00 32 05	J1234+6190	12 44 01	81.1	-7.0	0.2		171.1	0	3642	00 32 05
00 33 10	---	12 45 06	81.1	-7.8	0.2		170.1	65	3650	00 32 06
00 33 10	J1237+6217	12 45 06	80.8	-4.9	0.1		173.7	-20	3650	No stop
00 37 10	---	12 49 07	80.8	-7.8	0.2		170.0	220	3681	00 33 11
00 37 25	J1241+6020	12 49 22	80.8	-5.2	0.1		173.3	-4	3681	00 37 25
00 39 25	---	12 51 22	80.8	-6.7	0.2		171.4	116	3696	00 37 26
00 39 45	J1234+6190	12 51 42	80.9	-12.6	0.3		163.8	-7	3696	00 39 45
00 40 50	---	12 52 47	80.9	-13.4	0.3		162.8	58	3704	00 39 46
00 40 50	J1236+6207	12 52 47	80.8	-11.3	0.3		165.5	-18	3704	No stop
00 45 40	---	12 57 38	80.7	-14.7	0.3		161.1	272	3742	00 40 51

Schedule for TORUN (Code Tr)

Page 15

GOODS-N

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Sat	7 Mar 2015	Day	66	---					
00 46 00	J1234+6190	12 57 58	80.7	-17.0	0.4		158.1	2	3742	00 46 00
00 47 05	---	12 59 03	80.6	-17.7	0.4		157.2	65	3750	00 46 01
00 47 05	J1236+6215	12 59 03	80.5	-15.7	0.4		159.6	-17	3750	No stop
00 51 55	---	13 03 54	80.2	-18.8	0.4		155.5	273	3787	00 47 06
00 52 15	J1234+6190	13 04 14	80.4	-21.1	0.5		152.7	2	3787	00 52 15
00 53 20	---	13 05 19	80.3	-21.8	0.5		151.8	65	3795	00 52 16
00 53 20	J1236+6218	13 05 19	80.2	-19.2	0.5		155.0	-19	3795	No stop
00 55 50	---	13 07 50	80.0	-20.7	0.5		152.9	131	3815	00 53 21
00 56 10	J1234+6190	13 08 10	80.2	-23.5	0.6		149.5	0	3815	00 56 10
00 57 15	---	13 09 15	80.1	-24.1	0.6		148.6	65	3823	00 56 11
00 57 15	J1237+6222	13 09 15	79.9	-21.2	0.5		152.1	-20	3823	No stop
01 01 15	---	13 13 16	79.7	-23.5	0.6		149.0	220	3854	00 57 16
01 01 35	J1234+6190	13 13 36	79.8	-26.6	0.6		145.2	-1	3854	01 01 35
01 02 40	---	13 14 41	79.7	-27.2	0.7		144.4	64	3862	01 01 36
01 02 40	J1237+6217	13 14 41	79.7	-24.2	0.6		148.1	-20	3862	No stop
01 06 40	---	13 18 42	79.4	-26.4	0.7		145.1	220	3893	01 02 41
01 06 55	J1241+6020	13 18 57	79.6	-24.4	0.6		147.8	-3	3893	01 06 55
01 08 55	---	13 20 57	79.5	-25.5	0.6		146.3	117	3908	01 06 56
01 09 15	J1234+6190	13 21 17	79.3	-30.5	0.8		139.7	-5	3908	01 09 15
01 10 20	---	13 22 22	79.2	-31.1	0.8		138.9	60	3917	01 09 16
01 10 20	J1236+6207	13 22 22	79.3	-29.3	0.7		141.2	-17	3917	No stop
01 15 10	---	13 27 13	78.9	-31.5	0.8		137.9	273	3954	01 10 21
01 15 30	J1234+6190	13 27 33	78.8	-33.4	0.9		135.5	3	3954	01 15 30
01 16 35	---	13 28 38	78.7	-33.9	0.9		134.8	65	3962	01 15 31
01 16 35	J1236+6215	13 28 38	78.6	-31.9	0.9		137.1	-17	3962	No stop
01 21 25	---	13 33 29	78.2	-34.0	0.9		134.1	273	3999	01 16 36
01 21 45	J1234+6190	13 33 49	78.2	-35.9	1.0		131.6	3	3999	01 21 45
01 22 50	---	13 34 54	78.1	-36.3	1.0		130.9	65	4008	01 21 46
01 22 50	J1236+6218	13 34 54	78.1	-34.1	1.0		133.8	-18	4008	No stop
01 25 20	---	13 37 25	77.9	-35.0	1.0		132.3	132	4027	01 22 51

Schedule for TORUN (Code Tr)

Page 16

GOODS-N

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Sat	7 Mar 2015	Day	66	---					
01 25 40	J1234+6190	13 37 45	77.9	-37.4	1.0		129.3	1	4027	01 25 40
01 26 45	---	13 38 50	77.8	-37.8	1.1		128.7	65	4035	01 25 41
01 26 45	J1237+6222	13 38 50	77.8	-35.2	1.0		131.8	-19	4035	No stop
01 30 45	---	13 42 51	77.4	-36.7	1.1		129.5	221	4066	01 26 46
01 31 05	J1234+6190	13 43 11	77.4	-39.2	1.1		126.3	1	4066	01 31 05
01 32 10	---	13 44 16	77.3	-39.6	1.2		125.7	65	4074	01 31 06
01 32 10	J1237+6217	13 44 16	77.4	-37.2	1.1		128.8	-18	4074	No stop
01 36 10	---	13 48 16	77.0	-38.5	1.2		126.6	222	4105	01 32 11
01 36 25	J1241+6020	13 48 31	77.3	-37.3	1.1		128.7	0	4105	01 36 25
01 38 25	---	13 50 32	77.1	-37.9	1.1		127.6	120	4120	01 36 26
01 38 45	J1234+6190	13 50 52	76.6	-41.5	1.3		122.4	-2	4120	01 38 45
01 39 50	---	13 51 57	76.5	-41.8	1.3		121.9	63	4129	01 38 46
01 39 50	J1236+6207	13 51 57	76.7	-40.5	1.2		123.7	-15	4129	No stop
01 44 40	---	13 56 48	76.2	-41.8	1.3		121.4	275	4166	01 39 51
01 45 00	J1234+6190	13 57 08	76.0	-43.1	1.4		119.5	5	4166	01 45 00
01 46 05	---	13 58 13	75.9	-43.3	1.4		119.0	65	4174	01 45 01
01 46 05	J1236+6215	13 58 13	75.9	-41.8	1.4		120.9	-16	4174	No stop
01 50 55	---	14 03 04	75.5	-43.0	1.4		118.7	274	4212	01 46 06
01 51 15	J1234+6190	14 03 24	75.3	-44.5	1.5		116.7	4	4212	01 51 15
01 52 20	---	14 04 29	75.2	-44.7	1.5		116.3	65	4220	01 51 16
01 52 20	J1236+6218	14 04 29	75.4	-43.0	1.4		118.6	-17	4220	No stop
01 54 50	---	14 06 59	75.1	-43.5	1.5		117.5	133	4239	01 52 21
01 55 10	J1234+6190	14 07 20	74.9	-45.3	1.5		115.1	3	4239	01 55 10
01 56 15	---	14 08 25	74.8	-45.5	1.6		114.7	65	4247	01 55 11
01 56 15	J1237+6222	14 08 25	74.9	-43.5	1.5		117.2	-17	4247	No stop
02 00 15	---	14 12 25	74.5	-44.3	1.6		115.6	223	4278	01 56 16
02 00 35	J1234+6190	14 12 45	74.3	-46.3	1.6		113.0	3	4278	02 00 35
02 01 40	---	14 13 51	74.2	-46.4	1.6		112.5	65	4287	02 00 36
02 01 40	J1237+6217	14 13 51	74.5	-44.7	1.6		115.0	-17	4287	No stop
02 05 40	---	14 17 51	74.0	-45.4	1.7		113.4	223	4317	02 01 41

Schedule for TORUN (Code Tr)

Page 17

GOODS-N

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Sat	7 Mar 2015	Day	66	---					
02 05 55	J1241+6020	14 18 06	74.4	-44.7	1.6		114.9	2	4317	02 05 55
02 07 55	---	14 20 07	74.2	-45.0	1.6		114.1	120	4333	02 05 56
02 08 15	J1234+6190	14 20 27	73.5	-47.5	1.8		110.1	1	4333	02 08 15
02 09 20	---	14 21 32	73.4	-47.6	1.8		109.7	65	4341	02 08 16
02 09 20	J1236+6207	14 21 32	73.6	-46.7	1.7		111.1	-13	4341	No stop
02 14 10	---	14 26 23	73.1	-47.4	1.8		109.4	277	4378	02 09 21
02 14 30	J1234+6190	14 26 43	72.8	-48.3	1.9		107.9	7	4378	02 14 30
02 15 35	---	14 27 48	72.7	-48.4	1.9		107.6	65	4387	02 14 31
02 15 35	J1236+6215	14 27 48	72.8	-47.2	1.8		109.2	-15	4387	No stop
02 20 25	---	14 32 39	72.3	-47.8	1.9		107.5	275	4424	02 15 36
02 20 45	J1234+6190	14 32 59	72.1	-49.0	2.0		105.9	5	4424	02 20 45
02 21 50	---	14 34 04	72.0	-49.1	2.0		105.5	65	4432	02 20 46
02 21 50	J1236+6218	14 34 04	72.2	-47.8	1.9		107.4	-15	4432	No stop
02 24 20	---	14 36 34	71.9	-48.1	2.0		106.6	135	4451	02 21 51
02 24 40	J1234+6190	14 36 54	71.6	-49.4	2.0		104.6	5	4451	02 24 40
02 25 45	---	14 38 00	71.5	-49.5	2.1		104.3	65	4460	02 24 41
02 25 45	J1237+6222	14 38 00	71.7	-48.0	2.0		106.4	-16	4460	No stop
02 29 45	---	14 42 00	71.3	-48.4	2.1		105.1	224	4490	02 25 46
02 30 05	J1234+6190	14 42 20	71.0	-49.9	2.1		103.0	4	4490	02 30 05
02 31 10	---	14 43 25	70.9	-50.0	2.1		102.7	65	4499	02 30 06
02 31 10	J1237+6217	14 43 25	71.2	-48.7	2.1		104.6	-15	4499	No stop
02 35 10	---	14 47 26	70.8	-49.0	2.1		103.4	225	4529	02 31 11
02 35 25	J1241+6020	14 47 41	71.1	-48.6	2.1		104.6	3	4529	02 35 25
02 37 25	---	14 49 41	70.9	-48.8	2.1		104.0	120	4545	02 35 26
02 37 45	J1234+6190	14 50 02	70.1	-50.4	2.3		100.8	4	4545	02 37 45
02 38 50	---	14 51 07	70.0	-50.5	2.3		100.5	65	4553	02 37 46
02 38 50	J1236+6207	14 51 07	70.3	-49.9	2.2		101.6	-12	4553	No stop
02 43 40	---	14 55 57	69.7	-50.2	2.3		100.2	278	4590	02 38 51
02 44 00	J1234+6190	14 56 18	69.4	-50.8	2.4		99.0	8	4590	02 44 00
02 45 05	---	14 57 23	69.3	-50.9	2.4		98.7	65	4599	02 44 01

Schedule for TORUN (Code Tr)

Page 18

GOODS-N

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Sat	7 Mar 2015	Day	66	---					
02 45 05	J1236+6215	14 57 23	69.5	-49.9	2.3		100.1	-14	4599	No stop
02 49 55	---	15 02 14	68.9	-50.2	2.4		98.7	276	4636	02 45 06
02 50 15	J1234+6190	15 02 34	68.7	-51.1	2.5		97.4	7	4636	02 50 15
02 51 20	---	15 03 39	68.5	-51.1	2.5		97.1	65	4644	02 50 16
02 51 20	J1236+6218	15 03 39	68.8	-50.1	2.4		98.7	-14	4644	No stop
02 53 50	---	15 06 09	68.5	-50.2	2.5		98.0	136	4663	02 51 21
02 54 10	J1234+6190	15 06 29	68.2	-51.2	2.5		96.4	6	4663	02 54 10
02 55 15	---	15 07 34	68.1	-51.3	2.5		96.1	65	4672	02 54 11
02 55 15	J1237+6222	15 07 34	68.4	-50.1	2.5		97.9	-15	4672	No stop
02 59 15	---	15 11 35	67.9	-50.2	2.6		96.8	225	4703	02 55 16
02 59 35	J1234+6190	15 11 55	67.6	-51.4	2.6		95.0	5	4703	02 59 35
03 00 40	---	15 13 00	67.5	-51.4	2.6		94.8	65	4711	02 59 36
03 00 40	J1237+6217	15 13 00	67.8	-50.5	2.6		96.4	-14	4711	No stop
03 04 40	---	15 17 01	67.4	-50.6	2.6		95.4	226	4742	03 00 41
03 04 55	J1241+6020	15 17 16	67.8	-50.4	2.6		96.4	3	4742	03 04 55
03 06 55	---	15 19 16	67.5	-50.5	2.6		95.9	120	4757	03 04 56
03 07 15	J1234+6190	15 19 36	66.7	-51.6	2.7		93.2	4	4757	03 07 15
03 08 20	---	15 20 42	66.5	-51.6	2.8		92.9	65	4765	03 07 16
03 08 20	J1236+6207	15 20 42	66.8	-51.2	2.7		93.9	-11	4765	No stop
03 13 10	---	15 25 32	66.3	-51.2	2.8		92.7	279	4803	03 08 21
03 13 30	J1234+6190	15 25 52	65.9	-51.7	2.8		91.7	9	4803	03 13 30
03 14 35	---	15 26 58	65.8	-51.7	2.9		91.5	65	4811	03 13 31
03 14 35	J1236+6215	15 26 58	66.0	-50.9	2.8		92.6	-13	4811	No stop
03 19 25	---	15 31 48	65.5	-51.0	2.9		91.5	277	4848	03 14 36
03 19 45	J1234+6190	15 32 08	65.2	-51.7	3.0		90.3	8	4848	03 19 45
03 20 50	---	15 33 14	65.1	-51.7	3.0		90.1	65	4856	03 19 46
03 20 50	J1236+6218	15 33 14	65.4	-50.9	2.9		91.4	-13	4856	No stop
03 23 20	---	15 35 44	65.1	-50.9	3.0		90.8	137	4876	03 20 51
03 23 40	J1234+6190	15 36 04	64.7	-51.7	3.0		89.4	7	4876	03 23 40
03 24 45	---	15 37 09	64.6	-51.7	3.0		89.2	65	4884	03 23 41

Schedule for TORUN (Code Tr)

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GOODS-N

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Sat	7 Mar 2015	Day	66	---					
03 24 45	J1237+6222	15 37 09	65.0	-50.7	3.0		90.7	-14	4884	No stop
03 28 45	---	15 41 10	64.5	-50.7	3.1		89.8	226	4915	03 24 46
03 29 05	J1234+6190	15 41 30	64.1	-51.7	3.1		88.3	6	4915	03 29 05
03 30 10	---	15 42 35	64.0	-51.6	3.1		88.0	65	4923	03 29 06
03 30 10	J1237+6217	15 42 35	64.4	-50.9	3.1		89.5	-13	4923	No stop
03 34 10	---	15 46 36	63.9	-50.9	3.1		88.6	227	4954	03 30 11
03 34 25	J1241+6020	15 46 51	64.3	-50.8	3.1		89.5	3	4954	03 34 25
03 36 25	---	15 48 51	64.1	-50.8	3.1		89.0	120	4969	03 34 26
03 36 45	J1234+6190	15 49 11	63.2	-51.6	3.2		86.7	4	4969	03 36 45
03 37 50	---	15 50 16	63.1	-51.5	3.3		86.4	65	4978	03 36 46
03 37 50	J1236+6207	15 50 16	63.4	-51.3	3.2		87.3	-11	4978	No stop
03 42 40	---	15 55 07	62.8	-51.2	3.3		86.3	279	5015	03 37 51
03 43 00	J1234+6190	15 55 27	62.5	-51.5	3.3		85.4	8	5015	03 43 00
03 44 05	---	15 56 32	62.3	-51.4	3.4		85.2	65	5023	03 43 01
03 44 05	J1236+6215	15 56 32	62.6	-50.9	3.3		86.1	-12	5023	No stop
03 48 55	---	16 01 23	62.0	-50.8	3.4		85.1	278	5060	03 44 06
03 49 15	J1234+6190	16 01 43	61.7	-51.3	3.4		84.1	8	5060	03 49 15
03 50 20	---	16 02 48	61.6	-51.3	3.5		83.9	65	5069	03 49 16
03 50 20	J1236+6218	16 02 48	62.0	-50.6	3.4		85.1	-12	5069	No stop
03 52 50	---	16 05 19	61.7	-50.6	3.5		84.6	138	5088	03 50 21
03 53 10	J1234+6190	16 05 39	61.3	-51.2	3.5		83.3	8	5088	03 53 10
03 54 15	---	16 06 44	61.1	-51.2	3.5		83.1	65	5096	03 53 11
03 54 15	J1237+6222	16 06 44	61.5	-50.4	3.5		84.5	-13	5096	No stop
03 58 15	---	16 10 45	61.1	-50.3	3.5		83.7	227	5127	03 54 16
03 58 35	J1234+6190	16 11 05	60.6	-51.0	3.6		82.3	7	5127	03 58 35
03 59 40	---	16 12 10	60.5	-51.0	3.6		82.1	65	5135	03 58 36
03 59 40	J1237+6217	16 12 10	61.0	-50.5	3.6		83.3	-13	5135	No stop
04 03 40	---	16 16 11	60.5	-50.3	3.6		82.6	227	5166	03 59 41
04 03 55	J1241+6020	16 16 26	60.9	-50.3	3.6		83.3	3	5166	04 03 55
04 05 55	---	16 18 26	60.7	-50.3	3.6		82.9	120	5181	04 03 56

Schedule for TORUN (Code Tr)

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GOODS-N

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Sat	7 Mar 2015	Day	66	---					
04 06 15	J1234+6190	16 18 46	59.7	-50.8	3.7		80.8	4	5181	04 06 15
04 07 20	---	16 19 51	59.6	-50.7	3.7		80.6	65	5190	04 06 16
04 07 20	J1236+6207	16 19 51	59.9	-50.5	3.7		81.4	-11	5190	No stop
04 12 10	---	16 24 42	59.4	-50.4	3.8		80.5	279	5227	04 07 21
04 12 30	J1234+6190	16 25 02	59.0	-50.5	3.8		79.7	8	5227	04 12 30
04 13 35	---	16 26 07	58.9	-50.5	3.9		79.5	65	5235	04 12 31
04 13 35	J1236+6215	16 26 07	59.2	-50.0	3.8		80.3	-11	5235	No stop
04 18 25	---	16 30 58	58.6	-49.8	3.9		79.4	279	5272	04 13 36
04 18 45	J1234+6190	16 31 18	58.3	-50.3	3.9		78.5	9	5272	04 18 45
04 19 50	---	16 32 23	58.2	-50.2	4.0		78.3	65	5281	04 18 46
04 19 50	J1236+6218	16 32 23	58.5	-49.7	3.9		79.4	-12	5281	No stop
04 22 20	---	16 34 54	58.3	-49.6	4.0		78.9	138	5300	04 19 51
04 22 40	J1234+6190	16 35 14	57.8	-50.1	4.0		77.8	8	5300	04 22 40
04 23 45	---	16 36 19	57.7	-50.0	4.0		77.6	65	5308	04 22 41
04 23 45	J1237+6222	16 36 19	58.1	-49.4	4.0		78.8	-12	5308	No stop
04 27 45	---	16 40 20	57.7	-49.2	4.0		78.0	228	5339	04 23 46
04 28 05	J1234+6190	16 40 40	57.2	-49.8	4.1		76.8	7	5339	04 28 05
04 29 10	---	16 41 45	57.1	-49.8	4.1		76.6	65	5347	04 28 06
04 29 10	J1237+6217	16 41 45	57.6	-49.4	4.1		77.7	-13	5347	No stop
04 33 10	---	16 45 45	57.1	-49.2	4.1		77.0	227	5378	04 29 11
04 33 25	J1241+6020	16 46 01	57.5	-49.2	4.1		77.7	3	5378	04 33 25
04 35 25	---	16 48 01	57.3	-49.1	4.1		77.4	120	5394	04 33 26
04 35 45	J1234+6190	16 48 21	56.3	-49.4	4.2		75.5	4	5394	04 35 45
04 36 50	---	16 49 26	56.2	-49.4	4.2		75.3	65	5402	04 35 46
04 36 50	J1236+6207	16 49 26	56.5	-49.2	4.2		75.9	-12	5402	No stop
04 41 40	---	16 54 17	56.0	-49.0	4.3		75.1	278	5439	04 36 51
04 42 00	J1234+6190	16 54 37	55.6	-49.1	4.3		74.4	8	5439	04 42 00
04 43 05	---	16 55 42	55.5	-49.0	4.3		74.2	65	5447	04 42 01
04 43 05	J1236+6215	16 55 42	55.8	-48.6	4.3		74.9	-11	5447	No stop
04 47 55	---	17 00 33	55.3	-48.4	4.4		74.1	279	5485	04 43 06

Schedule for TORUN (Code Tr)

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GOODS-N

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Sat	7 Mar 2015	Day	66	---					
04 48 15	J1234+6190	17 00 53	54.9	-48.7	4.4		73.3	8	5485	04 48 15
04 49 20	---	17 01 58	54.8	-48.7	4.5		73.1	65	5493	04 48 16
04 49 20	J1236+6218	17 01 58	55.2	-48.3	4.4		74.0	-12	5493	No stop
04 51 50	---	17 04 29	54.9	-48.1	4.4		73.6	138	5512	04 49 21
04 52 10	J1234+6190	17 04 49	54.5	-48.5	4.5		72.6	7	5512	04 52 10
04 53 15	---	17 05 54	54.3	-48.4	4.5		72.4	65	5520	04 52 11
04 53 15	J1237+6222	17 05 54	54.8	-47.9	4.5		73.5	-13	5520	No stop
04 57 15	---	17 09 54	54.3	-47.7	4.5		72.8	227	5551	04 53 16
04 57 35	J1234+6190	17 10 14	53.8	-48.1	4.6		71.7	7	5551	04 57 35
04 58 40	---	17 11 20	53.7	-48.1	4.6		71.5	65	5560	04 57 36
04 58 40	J1237+6217	17 11 20	54.2	-47.8	4.5		72.5	-13	5560	No stop
05 02 40	---	17 15 20	53.8	-47.5	4.6		71.8	227	5590	04 58 41
05 02 55	J1241+6020	17 15 35	54.2	-47.7	4.6		72.5	3	5590	05 02 55
05 04 55	---	17 17 36	54.0	-47.5	4.6		72.1	120	5606	05 02 56
05 05 15	J1234+6190	17 17 56	53.0	-47.7	4.7		70.4	4	5606	05 05 15
05 06 20	---	17 19 01	52.9	-47.6	4.7		70.2	65	5614	05 05 16
05 06 20	J1236+6207	17 19 01	53.2	-47.5	4.7		70.8	-12	5614	No stop
05 11 10	---	17 23 52	52.7	-47.2	4.8		70.0	278	5651	05 06 21
05 11 30	J1234+6190	17 24 12	52.3	-47.2	4.8		69.3	8	5651	05 11 30
05 12 35	---	17 25 17	52.2	-47.2	4.8		69.1	65	5660	05 11 31
05 12 35	J1236+6215	17 25 17	52.5	-46.9	4.8		69.8	-12	5660	No stop
05 17 25	---	17 30 08	52.0	-46.5	4.9		69.0	278	5697	05 12 36
05 17 45	J1234+6190	17 30 28	51.6	-46.8	4.9		68.3	8	5697	05 17 45
05 18 50	---	17 31 33	51.5	-46.7	4.9		68.1	65	5705	05 17 46
05 18 50	J1236+6218	17 31 33	51.9	-46.4	4.9		69.0	-12	5705	No stop
05 21 20	---	17 34 03	51.6	-46.2	4.9		68.5	138	5724	05 18 51
05 21 40	J1234+6190	17 34 23	51.2	-46.5	5.0		67.6	7	5724	05 21 40
05 22 45	---	17 35 29	51.1	-46.4	5.0		67.5	65	5733	05 21 41
05 22 45	J1237+6222	17 35 29	51.5	-46.0	5.0		68.4	-13	5733	No stop
05 26 45	---	17 39 29	51.1	-45.8	5.0		67.7	227	5763	05 22 46

Schedule for TORUN (Code Tr)

Page 22

GOODS-N

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Sat	7 Mar 2015	Day	66	---					
05 27 05	J1234+6190	17 39 49	50.6	-46.1	5.1		66.7	7	5763	05 27 05
05 28 10	---	17 40 55	50.5	-46.0	5.1		66.6	65	5772	05 27 06
05 28 10	J1237+6217	17 40 55	51.0	-45.8	5.0		67.5	-13	5772	No stop
05 32 10	---	17 44 55	50.6	-45.6	5.1		66.8	227	5803	05 28 11
05 32 25	J1241+6020	17 45 10	50.9	-45.7	5.0		67.5	3	5803	05 32 25
05 34 25	---	17 47 11	50.7	-45.6	5.1		67.1	120	5818	05 32 26
05 34 45	J1234+6190	17 47 31	49.8	-45.6	5.2		65.5	4	5818	05 34 45
05 35 50	---	17 48 36	49.6	-45.5	5.2		65.3	65	5826	05 34 46
05 35 50	J1236+6207	17 48 36	50.0	-45.5	5.2		65.9	-12	5826	No stop
05 40 40	---	17 53 27	49.5	-45.1	5.3		65.1	278	5863	05 35 51
05 41 00	J1234+6190	17 53 47	49.1	-45.1	5.3		64.5	8	5863	05 41 00
05 42 05	---	17 54 52	49.0	-45.0	5.3		64.3	65	5872	05 41 01
05 42 05	J1236+6215	17 54 52	49.3	-44.8	5.3		64.9	-12	5872	No stop
05 46 55	---	17 59 43	48.8	-44.4	5.4		64.1	278	5909	05 42 06
05 47 15	J1234+6190	18 00 03	48.4	-44.6	5.4		63.5	8	5909	05 47 15
05 48 20	---	18 01 08	48.3	-44.5	5.4		63.3	65	5917	05 47 16
05 48 20	J1236+6218	18 01 08	48.8	-44.3	5.4		64.1	-13	5917	No stop
05 50 50	---	18 03 38	48.5	-44.1	5.4		63.7	137	5937	05 48 21
05 51 10	J1234+6190	18 03 58	48.0	-44.3	5.5		62.8	7	5937	05 51 10
05 52 15	---	18 05 03	47.9	-44.2	5.5		62.6	65	5945	05 51 11
05 52 15	J1237+6222	18 05 03	48.4	-43.9	5.5		63.5	-13	5945	No stop
05 56 15	---	18 09 04	48.0	-43.6	5.5		62.9	227	5976	05 52 16
05 56 35	J1234+6190	18 09 24	47.5	-43.8	5.6		62.0	7	5976	05 56 35
05 57 40	---	18 10 29	47.3	-43.7	5.6		61.8	65	5984	05 56 36
05 57 40	J1237+6217	18 10 29	47.9	-43.6	5.5		62.7	-13	5984	No stop
06 01 40	---	18 14 30	47.4	-43.3	5.6		62.0	227	6015	05 57 41
06 01 55	J1241+6020	18 14 45	47.8	-43.5	5.5		62.6	3	6015	06 01 55
06 03 55	---	18 16 45	47.6	-43.3	5.6		62.3	120	6030	06 01 56
06 04 15	J1234+6190	18 17 05	46.7	-43.2	5.7		60.7	4	6030	06 04 15
06 05 20	---	18 18 11	46.5	-43.1	5.7		60.5	65	6038	06 04 16

Schedule for TORUN (Code Tr)

Page 23

GOODS-N

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Sat	7 Mar 2015	Day	66	---					
06 05 20	J1236+6207	18 18 11	46.9	-43.1	5.7		61.1	-12	6038	No stop
06 10 10	---	18 23 01	46.4	-42.7	5.8		60.3	278	6076	06 05 21
06 10 30	J1234+6190	18 23 21	46.0	-42.7	5.8		59.7	8	6076	06 10 30
06 11 35	---	18 24 27	45.9	-42.6	5.8		59.6	65	6084	06 10 31
06 11 35	J1236+6215	18 24 27	46.3	-42.4	5.8		60.1	-12	6084	No stop
06 16 25	---	18 29 17	45.8	-42.0	5.9		59.4	278	6121	06 11 36
06 16 45	J1234+6190	18 29 37	45.4	-42.1	5.9		58.7	8	6121	06 16 45
06 17 50	---	18 30 43	45.3	-42.0	5.9		58.6	65	6129	06 16 46
06 17 50	J1236+6218	18 30 43	45.7	-41.9	5.9		59.3	-13	6129	No stop
06 20 20	---	18 33 13	45.5	-41.6	5.9		58.9	137	6149	06 17 51
06 20 40	J1234+6190	18 33 33	45.0	-41.8	6.0		58.1	7	6149	06 20 40
06 21 45	---	18 34 38	44.9	-41.7	6.0		57.9	65	6157	06 20 41
06 21 45	J1237+6222	18 34 38	45.4	-41.4	5.9		58.8	-13	6157	No stop
06 25 45	---	18 38 39	45.0	-41.1	6.0		58.1	227	6188	06 21 46
06 26 05	J1234+6190	18 38 59	44.4	-41.3	6.1		57.2	7	6188	06 26 05
06 27 10	---	18 40 04	44.3	-41.2	6.1		57.1	65	6196	06 26 06
06 27 10	J1237+6217	18 40 04	44.9	-41.1	6.0		57.9	-13	6196	No stop
06 31 10	---	18 44 05	44.5	-40.8	6.1		57.3	227	6227	06 27 11
06 31 25	J1241+6020	18 44 20	44.8	-41.0	6.0		57.9	3	6227	06 31 25
06 33 25	---	18 46 20	44.6	-40.9	6.1		57.5	120	6242	06 31 26
06 33 45	J1234+6190	18 46 40	43.7	-40.6	6.2		56.0	4	6242	06 33 45
06 34 50	---	18 47 45	43.6	-40.5	6.2		55.9	65	6251	06 33 46
06 34 50	J1236+6207	18 47 45	43.9	-40.6	6.2		56.4	-12	6251	No stop
06 39 40	---	18 52 36	43.5	-40.1	6.3		55.6	278	6288	06 34 51
06 40 00	J1234+6190	18 52 56	43.1	-40.0	6.3		55.0	8	6288	06 40 00
06 41 05	---	18 54 01	43.0	-39.9	6.3		54.9	65	6296	06 40 01
06 41 05	J1236+6215	18 54 01	43.3	-39.8	6.3		55.4	-12	6296	No stop
06 45 55	---	18 58 52	42.9	-39.4	6.4		54.7	278	6333	06 41 06
06 46 15	J1234+6190	18 59 12	42.5	-39.4	6.4		54.1	8	6333	06 46 15
06 47 20	---	19 00 18	42.4	-39.3	6.4		53.9	65	6342	06 46 16

Schedule for TORUN (Code Tr)

Page 24

GOODS-N

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Sat	7 Mar 2015	Day	66	---					
06 47 20	J1236+6218	19 00 18	42.8	-39.2	6.4		54.6	-13	6342	No stop
06 49 50	---	19 02 48	42.6	-39.0	6.4		54.2	137	6361	06 47 21
06 50 10	J1234+6190	19 03 08	42.1	-39.1	6.5		53.4	7	6361	06 50 10
06 51 15	---	19 04 13	42.0	-39.0	6.5		53.3	65	6369	06 50 11
06 51 15	J1237+6222	19 04 13	42.5	-38.8	6.4		54.0	-13	6369	No stop
06 55 15	---	19 08 14	42.2	-38.4	6.5		53.4	227	6400	06 51 16
06 55 35	J1234+6190	19 08 34	41.6	-38.6	6.6		52.6	7	6400	06 55 35
06 56 40	---	19 09 39	41.5	-38.5	6.6		52.4	65	6408	06 55 36
06 56 40	J1237+6217	19 09 39	42.0	-38.5	6.5		53.2	-13	6408	No stop
07 00 40	---	19 13 40	41.6	-38.1	6.6		52.6	227	6439	06 56 41
07 00 55	J1241+6020	19 13 55	42.0	-38.3	6.5		53.2	3	6439	07 00 55
07 02 55	---	19 15 55	41.8	-38.2	6.6		52.8	120	6454	07 00 56
07 03 15	J1234+6190	19 16 15	40.9	-37.8	6.7		51.4	4	6454	07 03 15
07 04 20	---	19 17 20	40.8	-37.7	6.7		51.2	65	6463	07 03 16
07 04 20	J1236+6207	19 17 20	41.1	-37.8	6.7		51.7	-12	6463	No stop
07 09 10	---	19 22 11	40.7	-37.3	6.7		51.0	278	6500	07 04 21
07 09 30	J1234+6190	19 22 31	40.3	-37.2	6.8		50.4	8	6500	07 09 30
07 10 35	---	19 23 36	40.2	-37.1	6.8		50.2	65	6508	07 09 31
07 10 35	J1236+6215	19 23 36	40.6	-37.0	6.8		50.7	-12	6508	No stop
07 15 25	---	19 28 27	40.1	-36.5	6.9		50.0	278	6545	07 10 36
07 15 45	J1234+6190	19 28 47	39.7	-36.6	6.9		49.4	8	6545	07 15 45
07 16 50	---	19 29 52	39.7	-36.5	6.9		49.3	65	6554	07 15 46
07 16 50	J1236+6218	19 29 52	40.1	-36.4	6.9		49.9	-13	6554	No stop
07 19 20	---	19 32 23	39.9	-36.2	6.9		49.5	137	6573	07 16 51
07 19 40	J1234+6190	19 32 43	39.4	-36.2	7.0		48.8	7	6573	07 19 40
07 20 45	---	19 33 48	39.3	-36.1	7.0		48.6	65	6581	07 19 41
07 20 45	J1237+6222	19 33 48	39.8	-36.0	6.9		49.4	-13	6581	No stop
07 24 45	---	19 37 49	39.5	-35.6	7.0		48.7	227	6612	07 20 46
07 25 05	J1234+6190	19 38 09	38.9	-35.6	7.1		48.0	6	6612	07 25 05
07 26 10	---	19 39 14	38.8	-35.5	7.1		47.8	65	6620	07 25 06

Schedule for TORUN (Code Tr)

Page 25

GOODS-N

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Sat	7 Mar 2015	Day	66	---					
07 26 10	J1237+6217	19 39 14	39.3	-35.6	7.0		48.5	-13	6620	No stop
07 30 10	---	19 43 15	39.0	-35.2	7.1		47.9	227	6651	07 26 11
07 30 25	J1241+6020	19 43 30	39.3	-35.5	7.0		48.5	3	6651	07 30 25
07 32 25	---	19 45 30	39.2	-35.3	7.1		48.2	120	6667	07 30 26
07 32 45	J1234+6190	19 45 50	38.3	-34.9	7.2		46.7	4	6667	07 32 45
07 33 50	---	19 46 55	38.2	-34.7	7.2		46.6	65	6675	07 32 46
07 33 50	J1236+6207	19 46 55	38.5	-34.9	7.2		47.1	-12	6675	No stop
07 38 40	---	19 51 46	38.1	-34.4	7.2		46.3	278	6712	07 33 51
07 39 00	J1234+6190	19 52 06	37.7	-34.2	7.3		45.8	8	6712	07 39 00
07 40 05	---	19 53 11	37.6	-34.1	7.3		45.6	65	6720	07 39 01
07 40 05	J1236+6215	19 53 11	38.0	-34.1	7.3		46.1	-12	6720	No stop
07 44 55	---	19 58 02	37.6	-33.6	7.4		45.3	278	6758	07 40 06
07 45 15	J1234+6190	19 58 22	37.2	-33.6	7.4		44.8	8	6758	07 45 15
07 46 20	---	19 59 27	37.1	-33.4	7.4		44.6	65	6766	07 45 16
07 46 20	J1236+6218	19 59 27	37.6	-33.4	7.4		45.2	-13	6766	No stop
07 48 50	---	20 01 58	37.4	-33.2	7.4		44.8	137	6785	07 46 21
07 49 10	J1234+6190	20 02 18	36.9	-33.1	7.5		44.2	7	6785	07 49 10
07 50 15	---	20 03 23	36.8	-33.0	7.5		44.0	65	6794	07 49 11
07 50 15	J1237+6222	20 03 23	37.3	-33.0	7.4		44.7	-13	6794	No stop
07 54 15	---	20 07 24	37.0	-32.6	7.5		44.0	227	6824	07 50 16
07 54 35	J1234+6190	20 07 44	36.4	-32.6	7.5		43.3	6	6824	07 54 35
07 55 40	---	20 08 49	36.3	-32.4	7.6		43.1	65	6833	07 54 36
07 55 40	J1237+6217	20 08 49	36.9	-32.6	7.5		43.9	-13	6833	No stop
07 59 40	---	20 12 49	36.5	-32.1	7.6		43.2	227	6863	07 55 41
07 59 55	J1241+6020	20 13 04	36.9	-32.5	7.5		43.8	3	6863	07 59 55
08 01 55	---	20 15 05	36.7	-32.2	7.5		43.5	120	6879	07 59 56
08 02 15	J1234+6190	20 15 25	35.8	-31.7	7.7		42.1	4	6879	08 02 15
08 03 20	---	20 16 30	35.7	-31.6	7.7		41.9	65	6887	08 02 16
08 03 20	J1236+6207	20 16 30	36.0	-31.8	7.6		42.4	-11	6887	No stop
08 08 10	---	20 21 21	35.7	-31.3	7.7		41.7	279	6924	08 03 21

Schedule for TORUN (Code Tr)

Page 26

GOODS-N

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Sat	7 Mar 2015	Day	66	---					
08 08 30	J1234+6190	20 21 41	35.3	-31.1	7.8		41.1	8	6924	08 08 30
08 09 35	---	20 22 46	35.2	-30.9	7.8		40.9	65	6933	08 08 31
08 09 35	J1236+6215	20 22 46	35.6	-30.9	7.8		41.4	-12	6933	No stop
08 14 25	---	20 27 37	35.2	-30.4	7.8		40.6	278	6970	08 09 36
08 14 45	J1234+6190	20 27 57	34.8	-30.4	7.9		40.1	8	6970	08 14 45
08 15 50	---	20 29 02	34.8	-30.3	7.9		40.0	65	6978	08 14 46
08 15 50	J1236+6218	20 29 02	35.2	-30.3	7.9		40.5	-13	6978	No stop
08 18 20	---	20 31 32	35.0	-30.0	7.9		40.1	137	6997	08 15 51
08 18 40	J1234+6190	20 31 53	34.5	-29.9	7.9		39.5	7	6997	08 18 40
08 19 45	---	20 32 58	34.5	-29.8	8.0		39.3	65	7006	08 18 41
08 19 45	J1237+6222	20 32 58	35.0	-29.8	7.9		40.0	-13	7006	No stop
08 23 45	---	20 36 58	34.7	-29.4	8.0		39.3	227	7037	08 19 46
08 24 05	J1234+6190	20 37 18	34.1	-29.3	8.0		38.6	6	7037	08 24 05
08 25 10	---	20 38 24	34.1	-29.2	8.1		38.5	65	7045	08 24 06
08 25 10	J1237+6217	20 38 24	34.6	-29.4	8.0		39.2	-13	7045	No stop
08 29 10	---	20 42 24	34.3	-28.9	8.1		38.5	227	7076	08 25 11
08 29 25	J1241+6020	20 42 39	34.6	-29.3	8.0		39.1	4	7076	08 29 25
08 31 25	---	20 44 40	34.4	-29.1	8.0		38.8	120	7091	08 29 26
08 31 45	J1234+6190	20 45 00	33.6	-28.5	8.2		37.4	4	7091	08 31 45
08 32 50	---	20 46 05	33.5	-28.4	8.2		37.3	65	7099	08 31 46
08 32 50	J1236+6207	20 46 05	33.8	-28.5	8.1		37.7	-11	7099	No stop
08 37 40	---	20 50 56	33.5	-28.0	8.2		37.0	279	7137	08 32 51
08 38 00	J1234+6190	20 51 16	33.1	-27.8	8.3		36.4	9	7137	08 38 00
08 39 05	---	20 52 21	33.1	-27.7	8.3		36.3	65	7145	08 38 01
08 39 05	J1236+6215	20 52 21	33.4	-27.7	8.3		36.7	-12	7145	No stop
08 43 55	---	20 57 12	33.1	-27.1	8.3		35.9	278	7182	08 39 06
08 44 15	J1234+6190	20 57 32	32.7	-27.1	8.4		35.4	8	7182	08 44 15
08 45 20	---	20 58 37	32.6	-26.9	8.4		35.3	65	7190	08 44 16
08 45 20	J1236+6218	20 58 37	33.1	-27.0	8.3		35.8	-13	7190	No stop
08 47 50	---	21 01 07	32.9	-26.7	8.4		35.4	137	7210	08 45 21

Schedule for TORUN (Code Tr)

Page 27

GOODS-N

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Sat	7 Mar 2015	Day	66	---					
08 48 10	J1234+6190	21 01 27	32.4	-26.6	8.4		34.8	7	7210	08 48 10
08 49 15	---	21 02 33	32.4	-26.5	8.5		34.6	65	7218	08 48 11
08 49 15	J1237+6222	21 02 33	32.9	-26.6	8.4		35.3	-13	7218	No stop
08 53 15	---	21 06 33	32.6	-26.1	8.5		34.6	227	7249	08 49 16
08 53 35	J1234+6190	21 06 53	32.1	-26.0	8.5		34.0	7	7249	08 53 35
08 54 40	---	21 07 58	32.0	-25.9	8.6		33.8	65	7257	08 53 36
08 54 40	J1237+6217	21 07 58	32.5	-26.1	8.5		34.5	-13	7257	No stop
08 58 40	---	21 11 59	32.2	-25.6	8.6		33.8	227	7288	08 54 41
08 58 55	J1241+6020	21 12 14	32.5	-26.0	8.5		34.4	4	7288	08 58 55
09 00 55	---	21 14 14	32.4	-25.7	8.5		34.1	120	7303	08 58 56
09 01 15	J1234+6190	21 14 35	31.6	-25.1	8.7		32.7	5	7303	09 01 15
09 02 20	---	21 15 40	31.5	-25.0	8.7		32.6	65	7312	09 01 16
09 02 20	J1236+6207	21 15 40	31.8	-25.2	8.6		33.0	-11	7312	No stop
09 07 10	---	21 20 30	31.5	-24.6	8.7		32.2	279	7349	09 02 21
09 07 30	J1234+6190	21 20 51	31.2	-24.4	8.8		31.7	9	7349	09 07 30
09 08 35	---	21 21 56	31.1	-24.2	8.8		31.6	65	7357	09 07 31
09 08 35	J1236+6215	21 21 56	31.5	-24.3	8.7		32.0	-12	7357	No stop
09 13 25	---	21 26 47	31.2	-23.7	8.8		31.2	278	7394	09 08 36
09 13 45	J1234+6190	21 27 07	30.8	-23.6	8.9		30.7	8	7394	09 13 45
09 14 50	---	21 28 12	30.7	-23.5	8.9		30.5	65	7403	09 13 46
09 14 50	J1236+6218	21 28 12	31.2	-23.6	8.8		31.1	-13	7403	No stop
09 17 20	---	21 30 42	31.0	-23.3	8.9		30.7	137	7422	09 14 51
09 17 40	J1234+6190	21 31 02	30.6	-23.2	8.9		30.1	7	7422	09 17 40
09 18 45	---	21 32 07	30.5	-23.0	9.0		29.9	65	7430	09 17 41
09 18 45	J1237+6222	21 32 07	31.0	-23.2	8.9		30.5	-13	7430	No stop
09 22 45	---	21 36 08	30.8	-22.7	9.0		29.9	227	7461	09 18 46
09 23 05	J1234+6190	21 36 28	30.3	-22.5	9.0		29.2	7	7461	09 23 05
09 24 10	---	21 37 33	30.2	-22.4	9.0		29.0	65	7469	09 23 06
09 24 10	J1237+6217	21 37 33	30.7	-22.6	9.0		29.7	-13	7469	No stop
09 28 10	---	21 41 34	30.4	-22.2	9.1		29.1	227	7500	09 24 11

Schedule for TORUN (Code Tr)

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GOODS-N

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Sat	7 Mar 2015	Day	66	---					
09 28 25	J1241+6020	21 41 49	30.7	-22.5	9.0		29.6	4	7500	09 28 25
09 30 25	---	21 43 49	30.6	-22.3	9.0		29.3	120	7515	09 28 26
09 30 45	J1234+6190	21 44 09	29.8	-21.6	9.2		28.0	5	7515	09 30 45
09 31 50	---	21 45 15	29.8	-21.5	9.2		27.8	65	7524	09 30 46
09 31 50	J1236+6207	21 45 15	30.0	-21.7	9.1		28.3	-11	7524	No stop
09 36 40	---	21 50 05	29.8	-21.1	9.2		27.5	279	7561	09 31 51
09 37 00	J1234+6190	21 50 25	29.5	-20.9	9.3		27.0	9	7561	09 37 00
09 38 05	---	21 51 31	29.4	-20.7	9.3		26.8	65	7569	09 37 01
09 38 05	J1236+6215	21 51 31	29.8	-20.8	9.2		27.2	-12	7569	No stop
09 42 55	---	21 56 21	29.5	-20.2	9.3		26.4	278	7606	09 38 06
09 43 15	J1234+6190	21 56 41	29.2	-20.1	9.4		26.0	8	7606	09 43 15
09 44 20	---	21 57 47	29.1	-20.0	9.4		25.8	65	7615	09 43 16
09 44 20	J1236+6218	21 57 47	29.5	-20.1	9.3		26.3	-13	7615	No stop
09 46 50	---	22 00 17	29.4	-19.8	9.4		25.9	137	7634	09 44 21
09 47 10	J1234+6190	22 00 37	29.0	-19.6	9.4		25.3	7	7634	09 47 10
09 48 15	---	22 01 42	28.9	-19.5	9.4		25.2	65	7642	09 47 11
09 48 15	J1237+6222	22 01 42	29.4	-19.6	9.4		25.7	-13	7642	No stop
09 52 15	---	22 05 43	29.2	-19.2	9.5		25.1	227	7673	09 48 16
09 52 35	J1234+6190	22 06 03	28.7	-19.0	9.5		24.5	7	7673	09 52 35
09 53 40	---	22 07 08	28.6	-18.8	9.5		24.3	65	7681	09 52 36
09 53 40	J1237+6217	22 07 08	29.1	-19.1	9.5		24.9	-13	7681	No stop
09 57 40	---	22 11 09	28.9	-18.6	9.5		24.3	227	7712	09 53 41
09 57 55	J1241+6020	22 11 24	29.1	-19.0	9.5		24.9	4	7712	09 57 55
09 59 55	---	22 13 24	29.0	-18.8	9.5		24.5	120	7728	09 57 56

SETUP FILE INFORMATION:

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

==== Setup file: sess115.C1024

Setup group: 11	Station: TORUN	Total bit rate: 1024
Format: MARK5B	Bits per sample: 2	Sample rate: 32.000
Number of channels: 16	DBE type: DBBC_DDC	Speedup factor: 1.00

Disk used to record data.

1st L0=	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	4200.00	4200.00

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

The following frequency sets based on these setups were used.

Frequency Set: 7 Setup file default. Used with PCAL = off

LO sum=	4942.49	4942.49	4942.49	4942.49	4974.49	4974.49	4974.49	4974.49
	5006.49	5006.49	5006.49	5006.49	5038.49	5038.49	5038.49	5038.49
BBC fr=	742.49	742.49	742.49	742.49	774.49	774.49	774.49	774.49
	806.49	806.49	806.49	806.49	838.49	838.49	838.49	838.49
Bandwd=	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00
	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00

Matching frequency sets: 7

Track assignments are:

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* J1236+6215	12 34 03.330979	* 12 36 17.558700	12 36 59.717309	0.00
	62 32 10.79505	* 62 15 40.75900	62 10 29.19017	0.00
* J1236+6207	12 34 35.608621	* 12 36 49.653500	12 37 31.751157	0.00
	62 24 07.72904	* 62 07 38.05400	62 02 26.57638	0.00
* J1236+6218	12 34 45.536408	* 12 36 59.338300	12 37 41.366999	0.00
	62 35 02.12246	* 62 18 32.55900	62 13 21.12132	0.00
* J1237+6222	12 34 56.293566	* 12 37 09.934000	12 37 51.915342	0.00
	62 39 28.32169	* 62 22 58.88000	62 17 47.47941	0.00
* J1237+6217	12 35 33.298914	* 12 37 46.676800	12 38 28.574022	0.00
	62 34 07.62033	* 62 17 38.60300	62 12 27.31357	0.00
* J1241+6020	12 39 18.314858	* 12 41 29.590600	12 42 10.840000	0.00
	62 37 07.60786	* 62 20 41.32200	62 15 30.78597	0.00
* J1234+6190	12 31 56.129239	* 12 34 11.740000	12 34 54.316299	0.00
	62 15 03.90433	* 61 58 32.50000	61 53 20.54523	0.00
J1642+3948	16 41 17.606228	* 16 42 58.809965	16 43 29.619160	0.77
* 3C345	39 54 10.81496	* 39 48 36.99402	39 46 46.23753	0.52

rk08sctr

RADIOASTRON AGN SURVEY

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Sun 8 Mar 2015 Day 67 ---

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

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

00 00 00	0749+426	12 15 47	46.4	-76.6	4.4		52.4	0	0	00 00 00
00 14 30	---	12 30 20	44.3	-74.2	4.6		51.6	870	28	00 00 01
00 15 00	0749+426	12 30 50	44.2	-74.1	4.6		51.6	24	28	00 15 00
00 29 30	---	12 45 22	42.1	-71.8	4.9		50.7	870	56	00 15 01
00 30 00	0749+426	12 45 52	42.1	-71.7	4.9		50.6	24	56	00 30 00
00 44 30	---	13 00 24	40.0	-69.5	5.1		49.7	870	84	00 30 01
00 45 00	0749+426	13 00 55	39.9	-69.4	5.1		49.7	24	84	00 45 00
01 00 00	---	13 15 57	37.8	-67.1	5.4		48.6	900	112	00 45 01

SETUP FILE INFORMATION:

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

=====
Setup file: ra18cm2.set

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 53.969370	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 48.51972	0.00
	fake circumpolar target for a TS to look at			
* 0749+426	07 49 35.292496	* 07 53 03.337499	07 54 07.638367	0.00
J0753+4231	42 39 18.53136	* 42 31 30.76523	42 29 01.27961	0.00
	./rk08sc_sources.radioastron HIGHz, rfc_2013d Petrov, 2013, unpublished 80 observations, RA-A02-03			

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)
0749+426	122.4

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

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

EVN OBSERVATIONS OF SWIFT J1644+57 AT THE 5TH EPOCH

PI: Jun Yang

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Observing mode: 1024-16-2

Schedule for TORUN (Code Tr) Page 2

EVN Observations of Swift J1644+57 at the 5th epoch

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Mon 9 Mar 2015 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										

00 00 00	3C286	12 19 44	63.8	142.8	-1.2		-24.9	0	0	00 00 00
00 05 00	---	12 24 45	64.3	145.0	-1.1		-23.5	300	38	00 00 01
00 07 00	3C345	12 26 45	45.4	80.4	-4.3		-50.4	-24	38	00 07 00
00 12 00	---	12 31 46	46.2	81.3	-4.2		-50.6	276	77	00 07 01
00 14 00	J1638+5720	12 33 46	56.0	57.9	-4.1		-70.3	58	77	00 14 00
00 15 00	---	12 34 46	56.2	58.0	-4.1		-70.4	60	85	00 14 01
00 15 20	J1638+5720	12 35 06	56.2	58.0	-4.1		-70.5	14	85	00 15 20
00 16 10	---	12 35 56	56.3	58.0	-4.0		-70.6	50	91	00 15 21
00 16 20	TDF	12 36 06	55.6	57.1	-4.1		-70.1	-5	91	00 16 20
00 18 30	---	12 38 17	55.9	57.3	-4.1		-70.4	125	108	00 16 21
00 18 30	FIRST-1	12 38 17	55.9	57.3	-4.1		-70.4	-5	108	No stop
00 22 30	---	12 42 17	56.4	57.6	-4.0		-71.0	235	138	00 18 31
00 22 40	J1638+5720	12 42 27	57.1	58.6	-3.9		-71.6	-5	138	00 22 40
00 23 40	---	12 43 28	57.3	58.6	-3.9		-71.7	55	146	00 22 41
00 23 50	TDF	12 43 38	56.5	57.7	-4.0		-71.2	-5	146	00 23 50
00 26 00	---	12 45 48	56.8	57.9	-4.0		-71.5	125	163	00 23 51
00 26 00	FIRST-1	12 45 48	56.8	57.9	-4.0		-71.5	-5	163	No stop
00 30 00	---	12 49 49	57.3	58.2	-3.9		-72.1	235	194	00 26 01
00 30 20	J1638+5720	12 50 09	58.1	59.2	-3.8		-72.7	5	194	00 30 20
00 31 10	---	12 50 59	58.2	59.2	-3.8		-72.8	50	200	00 30 21
00 31 20	TDF	12 51 09	57.5	58.3	-3.9		-72.3	-5	200	00 31 20
00 33 30	---	12 53 19	57.8	58.4	-3.9		-72.6	125	217	00 31 21

Schedule for TORUN (Code Tr)

Page 3

EVN Observations of Swift J1644+57 at the 5th epoch

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon 9 Mar 2015	Day 68	---							
00 33 30	FIRST-1	12 53 19	57.8	58.4	-3.9		-72.6	-5	217	No stop
00 37 30	---	12 57 20	58.3	58.7	-3.8		-73.2	235	247	00 33 31
00 37 40	J1638+5720	12 57 30	59.1	59.7	-3.7		-73.7	-5	247	00 37 40
00 38 40	---	12 58 30	59.2	59.8	-3.7		-73.9	55	255	00 37 41
00 38 50	TDF	12 58 40	58.5	58.8	-3.8		-73.4	-5	255	00 38 50
00 41 00	---	13 00 50	58.7	59.0	-3.7		-73.7	125	272	00 38 51
00 41 00	FIRST-1	13 00 50	58.7	59.0	-3.7		-73.7	-5	272	No stop
00 45 00	---	13 04 51	59.3	59.3	-3.7		-74.3	235	303	00 41 01
00 45 20	J1638+5720	13 05 11	60.1	60.3	-3.6		-74.9	5	303	00 45 20
00 46 10	---	13 06 01	60.2	60.3	-3.5		-75.0	50	309	00 45 21
00 46 20	TDF	13 06 11	59.4	59.4	-3.6		-74.5	-5	309	00 46 20
00 48 30	---	13 08 22	59.7	59.5	-3.6		-74.8	125	326	00 46 21
00 48 30	FIRST-1	13 08 22	59.7	59.5	-3.6		-74.8	-5	326	No stop
00 52 30	---	13 12 22	60.2	59.8	-3.5		-75.4	235	356	00 48 31
00 52 40	J1638+5720	13 12 32	61.0	60.8	-3.4		-76.0	-5	356	00 52 40
00 53 40	---	13 13 33	61.2	60.8	-3.4		-76.1	55	364	00 52 41
00 53 50	TDF	13 13 43	60.4	59.9	-3.5		-75.6	-5	364	00 53 50
00 56 00	---	13 15 53	60.7	60.1	-3.5		-76.0	125	381	00 53 51
00 56 00	FIRST-1	13 15 53	60.7	60.1	-3.5		-76.0	-5	381	No stop
01 00 00	---	13 19 54	61.2	60.3	-3.4		-76.6	235	412	00 56 01
01 00 20	J1638+5720	13 20 14	62.0	61.3	-3.3		-77.2	5	412	01 00 20
01 01 10	---	13 21 04	62.2	61.3	-3.3		-77.3	50	418	01 00 21
01 01 20	TDF	13 21 14	61.4	60.4	-3.4		-76.8	-5	418	01 01 20
01 03 30	---	13 23 24	61.7	60.5	-3.4		-77.1	125	435	01 01 21
01 03 30	FIRST-1	13 23 24	61.7	60.5	-3.4		-77.1	-5	435	No stop
01 07 30	---	13 27 25	62.2	60.8	-3.3		-77.8	235	465	01 03 31
01 07 40	J1638+5720	13 27 35	63.0	61.7	-3.2		-78.3	-5	465	01 07 40
01 08 40	---	13 28 35	63.1	61.8	-3.2		-78.5	55	473	01 07 41
01 08 50	TDF	13 28 45	62.4	60.9	-3.3		-78.0	-5	473	01 08 50
01 11 00	---	13 30 55	62.7	61.0	-3.2		-78.3	125	490	01 08 51
01 11 00	FIRST-1	13 30 55	62.7	61.0	-3.2		-78.3	-5	490	No stop
01 15 00	---	13 34 56	63.2	61.2	-3.2		-78.9	235	521	01 11 01
01 15 20	J1638+5720	13 35 16	64.0	62.2	-3.1		-79.5	4	521	01 15 20
01 16 10	---	13 36 06	64.1	62.2	-3.0		-79.7	50	527	01 15 21

Schedule for TORUN (Code Tr)

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EVN Observations of Swift J1644+57 at the 5th epoch

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	9 Mar 2015	Day	68	---					
01 16 20	TDF	13 36 16	63.4	61.3	-3.1		-79.2	-5	527	01 16 20
01 18 30	---	13 38 27	63.6	61.4	-3.1		-79.5	125	544	01 16 21
01 18 30	FIRST-1	13 38 27	63.6	61.4	-3.1		-79.5	-5	544	No stop
01 22 30	---	13 42 27	64.2	61.6	-3.0		-80.2	235	574	01 18 31
01 22 40	J1638+5720	13 42 37	65.0	62.6	-2.9		-80.7	-6	574	01 22 40
01 23 40	---	13 43 37	65.1	62.6	-2.9		-80.9	54	582	01 22 41
01 23 50	TDF	13 43 47	64.4	61.7	-3.0		-80.4	-5	582	01 23 50
01 26 00	---	13 45 58	64.6	61.8	-3.0		-80.7	125	599	01 23 51
01 26 00	FIRST-1	13 45 58	64.6	61.8	-3.0		-80.7	-5	599	No stop
01 30 00	---	13 49 59	65.2	62.0	-2.9		-81.4	235	629	01 26 01
01 30 20	J1638+5720	13 50 19	66.0	63.0	-2.8		-82.0	4	629	01 30 20
01 31 10	---	13 51 09	66.1	63.0	-2.8		-82.1	50	636	01 30 21
01 31 20	TDF	13 51 19	65.3	62.1	-2.9		-81.6	-5	636	01 31 20
01 33 30	---	13 53 29	65.6	62.2	-2.9		-82.0	125	653	01 31 21
01 33 30	FIRST-1	13 53 29	65.6	62.2	-2.9		-82.0	-5	653	No stop
01 37 30	---	13 57 30	66.2	62.4	-2.8		-82.7	235	683	01 33 31
01 37 40	J1638+5720	13 57 40	67.0	63.3	-2.7		-83.2	-6	683	01 37 40
01 38 40	---	13 58 40	67.2	63.3	-2.7		-83.4	54	691	01 37 41
01 38 50	TDF	13 58 50	66.3	62.4	-2.8		-82.9	-5	691	01 38 50
01 41 00	---	14 01 00	66.6	62.5	-2.7		-83.3	125	708	01 38 51
01 41 00	FIRST-1	14 01 00	66.6	62.5	-2.7		-83.3	-5	708	No stop
01 45 00	---	14 05 01	67.2	62.7	-2.7		-84.0	235	738	01 41 01
01 45 20	J1638+5720	14 05 21	68.1	63.6	-2.6		-84.6	4	738	01 45 20
01 46 10	---	14 06 11	68.2	63.6	-2.5		-84.7	50	745	01 45 21
01 46 20	TDF	14 06 21	67.3	62.7	-2.6		-84.2	-5	745	01 46 20
01 48 30	---	14 08 32	67.6	62.8	-2.6		-84.6	125	762	01 46 21
01 48 30	FIRST-1	14 08 32	67.6	62.8	-2.6		-84.6	-5	762	No stop
01 52 30	---	14 12 32	68.2	62.9	-2.5		-85.4	235	792	01 48 31
01 52 40	J1638+5720	14 12 42	69.0	63.8	-2.4		-85.9	-6	792	01 52 40
01 53 40	---	14 13 42	69.2	63.8	-2.4		-86.1	54	800	01 52 41

EVN Observations of Swift J1644+57 at the 5th epoch

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Mon 9 Mar 2015 Day 68 ---										
01 53 50	TDF	14 13 52	68.4	62.9	-2.5		-85.6	-5	800	01 53 50
01 56 00	---	14 16 03	68.6	63.0	-2.5		-86.0	125	817	01 53 51
01 56 00	FIRST-1	14 16 03	68.6	63.0	-2.5		-86.0	-5	817	No stop
02 00 00	---	14 20 03	69.2	63.1	-2.4		-86.8	235	847	01 56 01
02 00 20	J1638+5720	14 20 23	70.1	64.0	-2.3		-87.4	4	847	02 00 20
02 01 10	---	14 21 14	70.2	64.0	-2.3		-87.5	50	854	02 00 21
02 01 20	TDF	14 21 24	69.4	63.1	-2.4		-87.0	-6	854	02 01 20
02 03 30	---	14 23 34	69.6	63.2	-2.4		-87.4	124	871	02 01 21
02 03 30	FIRST-1	14 23 34	69.6	63.2	-2.4		-87.4	-5	871	No stop
02 07 30	---	14 27 35	70.2	63.2	-2.3		-88.2	235	901	02 03 31
02 07 40	J1638+5720	14 27 45	71.1	64.1	-2.2		-88.8	-6	901	02 07 40
02 08 40	---	14 28 45	71.2	64.1	-2.2		-89.0	54	909	02 07 41
02 08 50	TDF	14 28 55	70.4	63.2	-2.3		-88.5	-6	909	02 08 50
02 11 00	---	14 31 05	70.7	63.3	-2.2		-88.9	124	926	02 08 51
02 11 00	FIRST-1	14 31 05	70.7	63.3	-2.2		-88.9	-5	926	No stop
02 15 00	---	14 35 06	71.2	63.3	-2.2		-89.8	235	956	02 11 01
02 15 20	J1638+5720	14 35 26	72.1	64.1	-2.1		-90.4	4	956	02 15 20
02 16 10	---	14 36 16	72.2	64.1	-2.0		-90.6	50	963	02 15 21
02 16 20	TDF	14 36 26	71.4	63.3	-2.1		-90.1	-6	963	02 16 20
02 18 30	---	14 38 36	71.7	63.3	-2.1		-90.5	124	979	02 16 21
02 18 30	FIRST-1	14 38 36	71.7	63.3	-2.1		-90.5	-5	979	No stop
02 22 30	---	14 42 37	72.2	63.2	-2.0		-91.4	235	1010	02 18 31
02 22 40	J1638+5720	14 42 47	73.1	64.0	-1.9		-92.0	-6	1010	02 22 40
02 23 40	---	14 43 47	73.2	64.0	-1.9		-92.3	54	1018	02 22 41
02 23 50	TDF	14 43 57	72.4	63.2	-2.0		-91.7	-6	1018	02 23 50
02 26 00	---	14 46 08	72.7	63.2	-2.0		-92.2	124	1035	02 23 51
02 26 00	FIRST-1	14 46 08	72.7	63.2	-2.0		-92.2	-5	1035	No stop
02 30 00	---	14 50 08	73.2	63.1	-1.9		-93.1	235	1065	02 26 01
02 30 20	J1638+5720	14 50 28	74.1	63.8	-1.8		-93.8	4	1065	02 30 20
02 31 10	---	14 51 19	74.3	63.8	-1.8		-94.0	50	1072	02 30 21

EVN Observations of Swift J1644+57 at the 5th epoch

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	9 Mar 2015	Day	68	---					
02 31 20	TDF	14 51 29	73.4	63.1	-1.9		-93.4	-6	1072	02 31 20
02 33 30	---	14 53 39	73.7	63.0	-1.9		-93.9	124	1088	02 31 21
02 33 30	FIRST-1	14 53 39	73.7	63.0	-1.9		-93.9	-5	1088	No stop
02 37 30	---	14 57 40	74.2	62.9	-1.8		-94.9	235	1119	02 33 31
02 37 40	J1638+5720	14 57 50	75.1	63.5	-1.7		-95.7	-6	1119	02 37 40
02 38 40	---	14 58 50	75.3	63.5	-1.7		-96.0	54	1127	02 37 41
02 38 50	TDF	14 59 00	74.4	62.8	-1.8		-95.3	-6	1127	02 38 50
02 41 00	---	15 01 10	74.7	62.7	-1.7		-95.8	124	1144	02 38 51
02 41 00	FIRST-1	15 01 10	74.7	62.7	-1.7		-95.8	-5	1144	No stop
02 45 00	---	15 05 11	75.2	62.5	-1.7		-96.9	235	1174	02 41 01
02 45 20	J1638+5720	15 05 31	76.2	63.0	-1.5		-97.8	4	1174	02 45 20
02 46 10	---	15 06 21	76.3	63.0	-1.5		-98.0	50	1181	02 45 21
02 46 20	TDF	15 06 31	75.4	62.4	-1.6		-97.3	-6	1181	02 46 20
02 48 30	---	15 08 41	75.7	62.2	-1.6		-97.9	124	1197	02 46 21
02 48 30	FIRST-1	15 08 41	75.7	62.2	-1.6		-97.9	-5	1197	No stop
02 52 30	---	15 12 42	76.2	61.9	-1.5		-99.0	235	1228	02 48 31
02 52 40	J1638+5720	15 12 52	77.1	62.4	-1.4		-100.0	-6	1228	02 52 40
02 53 40	---	15 13 52	77.3	62.3	-1.4		-100.3	54	1236	02 52 41
02 53 50	TDF	15 14 02	76.4	61.8	-1.5		-99.4	-6	1236	02 53 50
02 56 00	---	15 16 13	76.7	61.6	-1.5		-100.1	124	1253	02 53 51
02 56 00	FIRST-1	15 16 13	76.7	61.6	-1.5		-100.1	-5	1253	No stop
03 00 00	---	15 20 13	77.2	61.1	-1.4		-101.4	235	1283	02 56 01
03 00 20	J1638+5720	15 20 33	78.2	61.4	-1.3		-102.5	4	1283	03 00 20
03 01 10	---	15 21 23	78.3	61.3	-1.3		-102.8	50	1290	03 00 21
03 01 20	TDF	15 21 34	77.4	60.9	-1.4		-101.8	-6	1290	03 01 20
03 03 30	---	15 23 44	77.7	60.7	-1.4		-102.6	124	1306	03 01 21
03 03 30	FIRST-1	15 23 44	77.7	60.7	-1.4		-102.6	-5	1306	No stop
03 07 30	---	15 27 45	78.2	60.1	-1.3		-104.0	235	1337	03 03 31
03 07 40	J1638+5720	15 27 55	79.1	60.2	-1.2		-105.3	-6	1337	03 07 40
03 08 40	---	15 28 55	79.3	60.0	-1.2		-105.7	54	1345	03 07 41

Schedule for TORUN (Code Tr) Page 7

EVN Observations of Swift J1644+57 at the 5th epoch

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Mon 9 Mar 2015 Day 68 ---										
03 08 50	TDF	15 29 05	78.4	59.9	-1.3		-104.5	-6	1345	03 08 50
03 11 00	---	15 31 15	78.6	59.5	-1.2		-105.3	124	1362	03 08 51
03 11 00	FIRST-1	15 31 15	78.6	59.5	-1.2		-105.3	-5	1362	No stop
03 15 00	---	15 35 16	79.2	58.7	-1.2		-106.9	235	1392	03 11 01
03 15 20	J1638+5720	15 35 36	80.1	58.5	-1.0		-108.5	4	1392	03 15 20
03 16 10	---	15 36 26	80.2	58.3	-1.0		-108.9	50	1399	03 15 21
03 16 20	TDF	15 36 36	79.3	58.4	-1.1		-107.5	-6	1399	03 16 20
03 18 30	---	15 38 46	79.6	57.9	-1.1		-108.4	124	1415	03 16 21
03 18 30	FIRST-1	15 38 46	79.6	57.9	-1.1		-108.4	-5	1415	No stop
03 22 30	---	15 42 47	80.1	56.9	-1.0		-110.3	235	1446	03 18 31
03 22 40	J1638+5720	15 42 57	81.0	56.4	-0.9		-112.1	-6	1446	03 22 40
03 23 40	---	15 43 57	81.2	56.1	-0.9		-112.7	54	1454	03 22 41
03 23 50	TDF	15 44 07	80.3	56.5	-1.0		-110.9	-6	1454	03 23 50
03 26 00	---	15 46 18	80.6	55.9	-1.0		-112.0	124	1471	03 23 51
03 26 00	FIRST-1	15 46 18	80.6	55.9	-1.0		-112.0	-5	1471	No stop
03 30 00	---	15 50 18	81.1	54.6	-0.9		-114.2	235	1501	03 26 01
03 30 20	J1638+5720	15 50 38	82.0	53.5	-0.8		-116.6	4	1501	03 30 20
03 31 10	---	15 51 28	82.1	53.1	-0.8		-117.2	50	1508	03 30 21
03 31 20	TDF	15 51 38	81.2	54.1	-0.9		-114.9	-6	1508	03 31 20
03 33 30	---	15 53 49	81.5	53.3	-0.9		-116.2	124	1524	03 31 21
03 33 30	FIRST-1	15 53 49	81.5	53.3	-0.9		-116.2	-5	1524	No stop
03 37 30	---	15 57 49	82.0	51.5	-0.8		-118.7	235	1555	03 33 31
03 37 40	J1638+5720	15 57 59	82.9	49.8	-0.7		-121.8	-7	1555	03 37 40
03 38 40	---	15 59 00	83.0	49.3	-0.7		-122.6	53	1563	03 37 41
03 38 50	TDF	15 59 10	82.1	50.9	-0.8		-119.7	-6	1563	03 38 50
03 41 00	---	16 01 20	82.4	49.8	-0.7		-121.2	124	1579	03 38 51
03 41 00	FIRST-1	16 01 20	82.4	49.8	-0.7		-121.2	-5	1579	No stop
03 45 00	---	16 05 21	82.8	47.6	-0.7		-124.3	235	1610	03 41 01
03 45 20	J1638+5720	16 05 41	83.7	44.7	-0.5		-128.5	0	1610	03 45 20
03 46 10	---	16 06 31	83.8	44.1	-0.5		-129.4	50	1617	03 45 21

Schedule for TORUN (Code Tr) Page 8

EVN Observations of Swift J1644+57 at the 5th epoch

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Mon 9 Mar 2015 Day 68 ---										
03 46 20	TDF	16 06 41	83.0	46.7	-0.6		-125.4	-9	1617	03 46 20
03 48 30	---	16 08 51	83.2	45.3	-0.6		-127.3	121	1633	03 46 21
03 48 30	FIRST-1	16 08 51	83.2	45.3	-0.6		-127.3	-5	1633	No stop
03 52 30	---	16 12 52	83.6	42.3	-0.5		-131.1	235	1664	03 48 31
03 52 40	J1638+5720	16 13 02	84.4	38.2	-0.4		-136.5	-13	1664	03 52 40
03 53 40	---	16 14 02	84.5	37.2	-0.4		-137.8	47	1672	03 52 41
03 53 50	TDF	16 14 12	83.8	41.3	-0.5		-132.4	-13	1672	03 53 50
03 56 00	---	16 16 22	84.0	39.4	-0.5		-134.7	117	1688	03 53 51
03 56 00	FIRST-1	16 16 22	84.0	39.4	-0.5		-134.7	-5	1688	No stop
04 00 00	---	16 20 23	84.3	35.5	-0.4		-139.4	235	1719	03 56 01
04 00 20	J1638+5720	16 20 43	85.1	29.3	-0.3		-147.1	-8	1719	04 00 20
04 01 10	---	16 21 33	85.1	28.1	-0.3		-148.4	42	1726	04 00 21
04 01 20	TDF	16 21 43	84.4	34.1	-0.4		-141.1	-16	1726	04 01 20
04 03 30	---	16 23 54	84.6	31.7	-0.4		-144.0	114	1742	04 01 21
04 03 30	FIRST-1	16 23 54	84.6	31.7	-0.4		-144.0	-5	1742	No stop
04 07 30	---	16 27 54	84.9	26.7	-0.3		-149.7	235	1773	04 03 31
04 07 40	J1638+5720	16 28 04	85.5	18.4	-0.2		-159.5	-23	1773	04 07 40
04 08 40	---	16 29 05	85.6	16.8	-0.2		-161.3	37	1781	04 07 41
04 08 50	TDF	16 29 15	85.0	25.0	-0.3		-151.8	-21	1781	04 08 50
04 11 00	---	16 31 25	85.1	21.9	-0.2		-155.3	109	1797	04 08 51
04 11 00	FIRST-1	16 31 25	85.1	21.9	-0.2		-155.3	-5	1797	No stop
04 15 00	---	16 35 26	85.3	15.9	-0.2		-162.1	235	1828	04 11 01
04 15 20	J1638+5720	16 35 46	85.8	5.0	-0.0		-174.4	-17	1828	04 15 20
04 16 10	---	16 36 36	85.8	3.5	-0.0		-176.1	33	1835	04 15 21
04 16 20	TDF	16 36 46	85.4	13.8	-0.1		-164.5	-24	1835	04 16 20
04 18 30	---	16 38 56	85.4	10.2	-0.1		-168.5	106	1851	04 16 21
04 18 30	FIRST-1	16 38 56	85.4	10.2	-0.1		-168.5	-5	1851	No stop
04 22 30	---	16 42 57	85.5	3.5	-0.0		-176.1	235	1882	04 18 31
04 22 40	J1638+5720	16 43 07	85.7	-8.4	0.1		170.7	-30	1882	04 22 40
04 23 40	---	16 44 07	85.7	-10.2	0.1		168.7	30	1890	04 22 41

Schedule for TORUN (Code Tr)

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EVN Observations of Swift J1644+57 at the 5th epoch

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Mon 9 Mar 2015 Day 68 ---										
04 23 50	TDF	16 44 17	85.5	1.2	-0.0		-178.7	-26	1890	04 23 50
04 26 00	---	16 46 27	85.5	-2.6	0.0		177.1	104	1906	04 23 51
04 26 00	FIRST-1	16 46 27	85.5	-2.6	0.0		177.1	-5	1906	No stop
04 30 00	---	16 50 28	85.5	-9.4	0.1		169.5	235	1937	04 26 01
04 30 20	J1638+5720	16 50 48	85.4	-21.4	0.2		156.1	-20	1937	04 30 20
04 31 10	---	16 51 38	85.4	-22.6	0.2		154.7	30	1944	04 30 21
04 31 20	TDF	16 51 48	85.4	-11.6	0.1		167.0	-26	1944	04 31 20
04 33 30	---	16 53 59	85.3	-15.1	0.2		163.1	104	1960	04 31 21
04 33 30	FIRST-1	16 53 59	85.3	-15.1	0.2		163.1	-5	1960	No stop
04 37 30	---	16 57 59	85.2	-21.2	0.2		156.1	235	1991	04 33 31
04 37 40	J1638+5720	16 58 09	84.9	-31.7	0.3		144.3	-27	1991	04 37 40
04 38 40	---	16 59 09	84.9	-32.9	0.3		142.9	33	1999	04 37 41
04 38 50	TDF	16 59 20	85.1	-23.1	0.2		154.0	-24	1999	04 38 50
04 41 00	---	17 01 30	85.0	-26.1	0.3		150.5	106	2015	04 38 51
04 41 00	FIRST-1	17 01 30	85.0	-26.1	0.3		150.5	-5	2015	No stop
04 45 00	---	17 05 31	84.7	-31.1	0.3		144.7	235	2046	04 41 01
04 45 20	J1638+5720	17 05 51	84.3	-40.0	0.5		134.4	-13	2046	04 45 20
04 46 10	---	17 06 41	84.2	-40.8	0.5		133.4	37	2053	04 45 21
04 46 20	TDF	17 06 51	84.6	-32.6	0.4		142.9	-21	2053	04 46 20
04 48 30	---	17 09 01	84.4	-35.0	0.4		140.1	109	2069	04 46 21
04 48 30	FIRST-1	17 09 01	84.4	-35.0	0.4		140.1	-5	2069	No stop
04 52 30	---	17 13 02	84.0	-38.9	0.5		135.3	235	2100	04 48 31
04 52 40	J1638+5720	17 13 12	83.5	-46.1	0.6		126.8	-20	2100	04 52 40
04 53 40	---	17 14 12	83.4	-46.8	0.6		125.9	40	2108	04 52 41
04 53 50	TDF	17 14 22	83.9	-40.1	0.5		133.8	-18	2108	04 53 50
04 56 00	---	17 16 32	83.7	-41.9	0.5		131.6	112	2124	04 53 51
04 56 00	FIRST-1	17 16 32	83.7	-41.9	0.5		131.6	-5	2124	No stop
05 00 00	---	17 20 33	83.3	-44.9	0.6		127.7	235	2155	04 56 01
05 00 20	J1638+5720	17 20 53	82.6	-50.9	0.7		120.4	-7	2155	05 00 20
05 01 10	---	17 21 43	82.5	-51.3	0.7		119.8	43	2162	05 00 21

Schedule for TORUN (Code Tr)

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EVN Observations of Swift J1644+57 at the 5th epoch

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	9 Mar 2015	Day	68	---					
05 01 20	TDF	17 21 53	83.1	-45.9	0.6		126.5	-16	2162	05 01 20
05 03 30	---	17 24 04	82.9	-47.2	0.7		124.7	114	2178	05 01 21
05 03 30	FIRST-1	17 24 04	82.9	-47.2	0.7		124.7	-5	2178	No stop
05 07 30	---	17 28 04	82.4	-49.5	0.7		121.6	235	2209	05 03 31
05 07 40	J1638+5720	17 28 14	81.8	-54.3	0.8		115.5	-15	2209	05 07 40
05 08 40	---	17 29 14	81.6	-54.7	0.8		114.9	45	2217	05 07 41
05 08 50	TDF	17 29 24	82.3	-50.2	0.7		120.6	-14	2217	05 08 50
05 11 00	---	17 31 35	82.0	-51.3	0.8		119.1	116	2233	05 08 51
05 11 00	FIRST-1	17 31 35	82.0	-51.3	0.8		119.1	-5	2233	No stop
05 15 00	---	17 35 35	81.5	-53.1	0.8		116.5	235	2264	05 11 01
05 15 20	J1638+5720	17 35 56	80.8	-57.0	1.0		111.2	-3	2264	05 15 20
05 16 10	---	17 36 46	80.7	-57.3	1.0		110.7	47	2271	05 15 21
05 16 20	TDF	17 36 56	81.4	-53.6	0.9		115.7	-12	2271	05 16 20
05 18 30	---	17 39 06	81.1	-54.4	0.9		114.4	118	2287	05 16 21
05 18 30	FIRST-1	17 39 06	81.1	-54.4	0.9		114.4	-5	2287	No stop
05 22 30	---	17 43 07	80.6	-55.7	1.0		112.3	235	2318	05 18 31
05 22 40	J1638+5720	17 43 17	79.9	-59.0	1.1		107.7	-11	2318	05 22 40
05 23 40	---	17 44 17	79.7	-59.2	1.1		107.2	49	2326	05 22 41
05 23 50	TDF	17 44 27	80.5	-56.1	1.0		111.6	-11	2326	05 23 50
05 26 00	---	17 46 37	80.2	-56.8	1.0		110.5	119	2342	05 23 51
05 26 00	FIRST-1	17 46 37	80.2	-56.8	1.0		110.5	-5	2342	No stop
05 30 00	---	17 50 38	79.7	-57.8	1.1		108.7	235	2373	05 26 01
05 30 20	J1638+5720	17 50 58	78.9	-60.5	1.2		104.5	0	2373	05 30 20
05 31 10	---	17 51 48	78.8	-60.7	1.2		104.2	50	2379	05 30 21
05 31 20	TDF	17 51 58	79.5	-58.1	1.1		108.1	-9	2379	05 31 20
05 33 30	---	17 54 09	79.2	-58.6	1.2		107.1	121	2396	05 31 21
05 33 30	FIRST-1	17 54 09	79.2	-58.6	1.2		107.1	-5	2396	No stop
05 37 30	---	17 58 09	78.7	-59.4	1.2		105.5	235	2427	05 33 31
05 37 40	J1638+5720	17 58 19	77.9	-61.7	1.3		101.9	-9	2427	05 37 40
05 38 40	---	17 59 19	77.8	-61.8	1.3		101.5	51	2435	05 37 41

Schedule for TORUN (Code Tr)

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EVN Observations of Swift J1644+57 at the 5th epoch

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	9 Mar 2015	Day	68	---					
05 38 50	TDF	17 59 29	78.5	-59.6	1.2		105.0	-8	2435	05 38 50
05 41 00	---	18 01 40	78.3	-60.0	1.3		104.2	122	2451	05 38 51
05 41 00	FIRST-1	18 01 40	78.3	-60.0	1.3		104.2	-5	2451	No stop
05 45 00	---	18 05 40	77.7	-60.6	1.3		102.7	235	2482	05 41 01
05 45 20	J1638+5720	18 06 00	76.9	-62.6	1.5		99.4	3	2482	05 45 20
05 46 10	---	18 06 51	76.8	-62.6	1.5		99.2	50	2488	05 45 21
05 46 20	TDF	18 07 01	77.6	-60.8	1.4		102.3	-7	2488	05 46 20
05 48 30	---	18 09 11	77.3	-61.0	1.4		101.6	123	2505	05 46 21
05 48 30	FIRST-1	18 09 11	77.3	-61.0	1.4		101.6	-5	2505	No stop
05 52 30	---	18 13 12	76.8	-61.5	1.5		100.3	235	2536	05 48 31
05 52 40	J1638+5720	18 13 22	75.9	-63.2	1.6		97.3	-7	2536	05 52 40
05 53 40	---	18 14 22	75.8	-63.2	1.6		97.0	53	2544	05 52 41
05 53 50	TDF	18 14 32	76.6	-61.6	1.5		99.9	-6	2544	05 53 50
05 56 00	---	18 16 42	76.3	-61.8	1.5		99.2	124	2560	05 53 51
05 56 00	FIRST-1	18 16 42	76.3	-61.8	1.5		99.2	-5	2560	No stop
06 00 00	---	18 20 43	75.8	-62.2	1.6		98.0	235	2591	05 56 01
06 00 20	J1638+5720	18 21 03	74.9	-63.6	1.7		95.2	4	2591	06 00 20
06 01 10	---	18 21 53	74.8	-63.6	1.7		95.0	50	2597	06 00 21
06 01 20	TDF	18 22 03	75.6	-62.3	1.6		97.7	-5	2597	06 01 20
06 03 30	---	18 24 13	75.3	-62.4	1.7		97.0	125	2614	06 01 21
06 03 30	FIRST-1	18 24 13	75.3	-62.4	1.7		97.0	-5	2614	No stop
06 07 30	---	18 28 14	74.8	-62.7	1.7		96.0	235	2645	06 03 31
06 07 40	J1638+5720	18 28 24	73.9	-63.9	1.8		93.4	-6	2645	06 07 40
06 08 40	---	18 29 24	73.8	-63.9	1.8		93.2	54	2653	06 07 41
06 08 50	TDF	18 29 34	74.6	-62.7	1.7		95.6	-5	2653	06 08 50
06 11 00	---	18 31 45	74.3	-62.8	1.8		95.1	125	2669	06 08 51
06 11 00	FIRST-1	18 31 45	74.3	-62.8	1.8		95.1	-5	2669	No stop
06 15 00	---	18 35 45	73.8	-63.0	1.8		94.1	235	2700	06 11 01
06 15 20	J1638+5720	18 36 05	72.9	-64.0	2.0		91.6	4	2700	06 15 20
06 16 10	---	18 36 56	72.7	-64.1	2.0		91.4	50	2706	06 15 21

Schedule for TORUN (Code Tr)

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EVN Observations of Swift J1644+57 at the 5th epoch

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	9 Mar 2015	Day	68	---				
06 16 20	TDF	18 37 06	73.6	-63.0	1.9	93.8	-6	2706	06 16 20
06 18 30	---	18 39 16	73.3	-63.1	1.9	93.2	124	2723	06 16 21
06 18 30	FIRST-1	18 39 16	73.3	-63.1	1.9	93.2	-5	2723	No stop
06 22 30	---	18 43 17	72.7	-63.2	2.0	92.3	235	2754	06 18 31
06 22 40	J1638+5720	18 43 27	71.9	-64.1	2.1	90.0	-6	2754	06 22 40
06 23 40	---	18 44 27	71.7	-64.1	2.1	89.8	54	2762	06 22 41
06 23 50	TDF	18 44 37	72.6	-63.2	2.0	92.0	-6	2762	06 23 50
06 26 00	---	18 46 47	72.3	-63.2	2.0	91.5	124	2778	06 23 51
06 26 00	FIRST-1	18 46 47	72.3	-63.2	2.0	91.5	-5	2778	No stop
06 30 00	---	18 50 48	71.7	-63.3	2.1	90.6	235	2809	06 26 01
06 30 20	J1638+5720	18 51 08	70.8	-64.1	2.2	88.5	4	2809	06 30 20
06 31 10	---	18 51 58	70.7	-64.0	2.2	88.3	50	2815	06 30 21
06 31 20	TDF	18 52 08	71.6	-63.3	2.1	90.3	-6	2815	06 31 20
06 33 30	---	18 54 18	71.3	-63.3	2.2	89.9	124	2832	06 31 21
06 33 30	FIRST-1	18 54 18	71.3	-63.3	2.2	89.9	-5	2832	No stop
06 37 30	---	18 58 19	70.7	-63.3	2.2	89.1	235	2863	06 33 31
06 37 40	J1638+5720	18 58 29	69.8	-63.9	2.3	87.0	-6	2863	06 37 40
06 38 40	---	18 59 29	69.7	-63.9	2.3	86.8	54	2871	06 37 41
06 38 50	TDF	18 59 39	70.5	-63.2	2.2	88.8	-6	2871	06 38 50
06 41 00	---	19 01 50	70.3	-63.2	2.3	88.3	124	2887	06 38 51
06 41 00	FIRST-1	19 01 50	70.3	-63.2	2.3	88.3	-5	2887	No stop
06 45 00	---	19 05 50	69.7	-63.2	2.3	87.6	235	2918	06 41 01
06 45 20	J1638+5720	19 06 10	68.8	-63.7	2.5	85.6	4	2918	06 45 20
06 46 10	---	19 07 00	68.7	-63.7	2.5	85.4	50	2924	06 45 21
06 46 20	TDF	19 07 10	69.5	-63.1	2.4	87.3	-6	2924	06 46 20
06 48 30	---	19 09 21	69.2	-63.1	2.4	86.9	124	2941	06 46 21
06 48 30	FIRST-1	19 09 21	69.2	-63.1	2.4	86.9	-5	2941	No stop
06 52 30	---	19 13 21	68.7	-63.0	2.5	86.1	235	2972	06 48 31
06 52 40	J1638+5720	19 13 32	67.8	-63.5	2.6	84.3	-6	2972	06 52 40
06 53 40	---	19 14 32	67.7	-63.5	2.6	84.1	54	2979	06 52 41

Schedule for TORUN (Code Tr)

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EVN Observations of Swift J1644+57 at the 5th epoch

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	9 Mar 2015	Day	68	---			
06 53 50	TDF	19 14 42	68.5	-63.0	2.5	85.9	-6	2979 06 53 50
06 56 00	---	19 16 52	68.2	-62.9	2.5	85.5	124	2996 06 53 51
06 56 00	FIRST-1	19 16 52	68.2	-62.9	2.5	85.5	-5	2996 No stop
07 00 00	---	19 20 53	67.7	-62.8	2.6	84.7	235	3027 06 56 01
07 00 20	J1638+5720	19 21 13	66.8	-63.2	2.7	82.9	4	3027 07 00 20
07 01 10	---	19 22 03	66.7	-63.2	2.7	82.8	50	3033 07 00 21
07 01 20	TDF	19 22 13	67.5	-62.7	2.6	84.5	-6	3033 07 01 20
07 03 30	---	19 24 23	67.2	-62.7	2.7	84.1	124	3050 07 01 21
07 03 30	FIRST-1	19 24 23	67.2	-62.7	2.7	84.1	-5	3050 No stop
07 07 30	---	19 28 24	66.7	-62.5	2.7	83.4	235	3081 07 03 31
07 07 40	J1638+5720	19 28 34	65.8	-62.9	2.8	81.7	-6	3081 07 07 40
07 08 40	---	19 29 34	65.7	-62.8	2.9	81.5	54	3088 07 07 41
07 08 50	TDF	19 29 44	66.5	-62.5	2.7	83.2	-6	3088 07 08 50
07 11 00	---	19 31 55	66.2	-62.4	2.8	82.8	124	3105 07 08 51
07 11 00	FIRST-1	19 31 55	66.2	-62.4	2.8	82.8	-5	3105 No stop
07 15 00	---	19 35 55	65.7	-62.2	2.8	82.1	235	3136 07 11 01
07 15 20	J1638+5720	19 36 15	64.8	-62.5	3.0	80.4	4	3136 07 15 20
07 16 10	---	19 37 05	64.7	-62.4	3.0	80.3	50	3142 07 15 21
07 16 20	TDF	19 37 15	65.5	-62.1	2.9	81.9	-6	3142 07 16 20
07 18 30	---	19 39 26	65.2	-62.0	2.9	81.5	124	3159 07 16 21
07 18 30	FIRST-1	19 39 26	65.2	-62.0	2.9	81.5	-5	3159 No stop
07 22 30	---	19 43 26	64.7	-61.9	3.0	80.8	235	3190 07 18 31
07 22 40	J1638+5720	19 43 36	63.8	-62.1	3.1	79.2	-6	3190 07 22 40
07 23 40	---	19 44 37	63.7	-62.0	3.1	79.1	54	3197 07 22 41
07 23 50	TDF	19 44 47	64.5	-61.8	3.0	80.6	-6	3197 07 23 50
07 26 00	---	19 46 57	64.2	-61.7	3.0	80.2	124	3214 07 23 51
07 26 00	FIRST-1	19 46 57	64.2	-61.7	3.0	80.2	-5	3214 No stop
07 30 00	---	19 50 58	63.7	-61.5	3.1	79.6	235	3245 07 26 01
07 30 20	J1638+5720	19 51 18	62.8	-61.6	3.2	78.0	4	3245 07 30 20
07 31 10	---	19 52 08	62.7	-61.6	3.2	77.9	50	3251 07 30 21

Schedule for TORUN (Code Tr)

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EVN Observations of Swift J1644+57 at the 5th epoch

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	9 Mar 2015	Day	68	---					
07 31 20	TDF	19 52 18	63.5	-61.4	3.1		79.4	-6	3251	07 31 20
07 33 30	---	19 54 28	63.3	-61.3	3.2		79.0	124	3268	07 31 21
07 33 30	FIRST-1	19 54 28	63.3	-61.3	3.2		79.0	-5	3268	No stop
07 37 30	---	19 58 29	62.7	-61.0	3.2		78.4	235	3299	07 33 31
07 37 40	J1638+5720	19 58 39	61.8	-61.2	3.3		76.9	-6	3299	07 37 40
07 38 40	---	19 59 39	61.7	-61.1	3.4		76.7	54	3306	07 37 41
07 38 50	TDF	19 59 49	62.5	-60.9	3.2		78.2	-6	3306	07 38 50
07 41 00	---	20 01 59	62.3	-60.8	3.3		77.8	124	3323	07 38 51
07 41 00	FIRST-1	20 01 59	62.3	-60.8	3.3		77.8	-5	3323	No stop
07 45 00	---	20 06 00	61.7	-60.6	3.4		77.2	235	3354	07 41 01
07 45 20	J1638+5720	20 06 20	60.8	-60.7	3.5		75.7	4	3354	07 45 20
07 46 10	---	20 07 10	60.7	-60.6	3.5		75.6	50	3360	07 45 21
07 46 20	TDF	20 07 20	61.6	-60.5	3.4		77.0	-6	3360	07 46 20
07 48 30	---	20 09 31	61.3	-60.3	3.4		76.7	124	3377	07 46 21
07 48 30	FIRST-1	20 09 31	61.3	-60.3	3.4		76.7	-5	3377	No stop
07 52 30	---	20 13 31	60.8	-60.1	3.5		76.0	235	3408	07 48 31
07 52 40	J1638+5720	20 13 41	59.8	-60.1	3.6		74.6	-6	3408	07 52 40
07 53 40	---	20 14 42	59.7	-60.1	3.6		74.5	54	3415	07 52 41
07 53 50	TDF	20 14 52	60.6	-60.0	3.5		75.8	-6	3415	07 53 50
07 56 00	---	20 17 02	60.3	-59.9	3.5		75.5	124	3432	07 53 51
07 56 00	FIRST-1	20 17 02	60.3	-59.9	3.5		75.5	-5	3432	No stop
08 00 00	---	20 21 03	59.8	-59.6	3.6		74.9	235	3463	07 56 01
08 00 20	J1638+5720	20 21 23	58.8	-59.6	3.7		73.5	4	3463	08 00 20
08 01 10	---	20 22 13	58.7	-59.5	3.7		73.3	50	3469	08 00 21
08 01 20	TDF	20 22 23	59.6	-59.5	3.6		74.7	-6	3469	08 01 20
08 03 30	---	20 24 33	59.3	-59.3	3.7		74.4	124	3486	08 01 21
08 03 30	FIRST-1	20 24 33	59.3	-59.3	3.7		74.4	-5	3486	No stop
08 07 30	---	20 28 34	58.8	-59.0	3.7		73.8	235	3517	08 03 31
08 07 40	J1638+5720	20 28 44	57.9	-59.0	3.8		72.4	-6	3517	08 07 40
08 08 40	---	20 29 44	57.8	-58.9	3.9		72.2	54	3524	08 07 41

Schedule for TORUN (Code Tr)

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EVN Observations of Swift J1644+57 at the 5th epoch

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	9 Mar 2015	Day	68	---					
08 08 50	TDF	20 29 54	58.6	-58.9	3.7		73.6	-6	3524	08 08 50
08 11 00	---	20 32 04	58.4	-58.8	3.8		73.3	124	3541	08 08 51
08 11 00	FIRST-1	20 32 04	58.4	-58.8	3.8		73.3	-5	3541	No stop
08 15 00	---	20 36 05	57.8	-58.5	3.9		72.7	235	3572	08 11 01
08 15 20	J1638+5720	20 36 25	56.9	-58.4	4.0		71.3	4	3572	08 15 20
08 16 10	---	20 37 15	56.8	-58.4	4.0		71.2	50	3578	08 15 21
08 16 20	TDF	20 37 25	57.7	-58.4	3.9		72.5	-6	3578	08 16 20
08 18 30	---	20 39 36	57.4	-58.2	3.9		72.1	124	3595	08 16 21
08 18 30	FIRST-1	20 39 36	57.4	-58.2	3.9		72.1	-5	3595	No stop
08 22 30	---	20 43 36	56.9	-57.9	4.0		71.6	235	3626	08 18 31
08 22 40	J1638+5720	20 43 46	56.0	-57.8	4.1		70.2	-6	3626	08 22 40
08 23 40	---	20 44 46	55.8	-57.7	4.1		70.1	54	3633	08 22 41
08 23 50	TDF	20 44 56	56.7	-57.8	4.0		71.4	-6	3633	08 23 50
08 26 00	---	20 47 07	56.4	-57.6	4.0		71.0	124	3650	08 23 51
08 26 00	FIRST-1	20 47 07	56.4	-57.6	4.0		71.0	-5	3650	No stop
08 30 00	---	20 51 07	55.9	-57.3	4.1		70.5	235	3681	08 26 01
08 30 20	J1638+5720	20 51 28	55.0	-57.2	4.2		69.1	4	3681	08 30 20
08 31 10	---	20 52 18	54.9	-57.1	4.2		69.0	50	3687	08 30 21
08 31 20	TDF	20 52 28	55.8	-57.2	4.1		70.3	-6	3687	08 31 20
08 33 30	---	20 54 38	55.5	-57.0	4.2		70.0	124	3704	08 31 21
08 33 30	FIRST-1	20 54 38	55.5	-57.0	4.2		70.0	-5	3704	No stop
08 37 30	---	20 58 39	55.0	-56.7	4.2		69.4	235	3735	08 33 31
08 37 40	J1638+5720	20 58 49	54.1	-56.6	4.3		68.1	-6	3735	08 37 40
08 38 40	---	20 59 49	53.9	-56.5	4.4		68.0	54	3742	08 37 41
08 38 50	TDF	20 59 59	54.8	-56.6	4.3		69.2	-6	3742	08 38 50
08 41 00	---	21 02 09	54.5	-56.4	4.3		68.9	124	3759	08 38 51
08 41 00	FIRST-1	21 02 09	54.5	-56.4	4.3		68.9	-5	3759	No stop
08 45 00	---	21 06 10	54.0	-56.1	4.4		68.3	235	3790	08 41 01
08 45 20	J1638+5720	21 06 30	53.1	-55.9	4.5		67.0	4	3790	08 45 20
08 46 10	---	21 07 20	53.0	-55.8	4.5		66.9	50	3796	08 45 21

Schedule for TORUN (Code Tr)

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EVN Observations of Swift J1644+57 at the 5th epoch

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	9 Mar 2015	Day	68	---					
08 46 20	TDF	21 07 30	53.9	-56.0	4.4		68.1	-6	3796	08 46 20
08 48 30	---	21 09 41	53.6	-55.8	4.4		67.8	124	3813	08 46 21
08 48 30	FIRST-1	21 09 41	53.6	-55.8	4.4		67.8	-5	3813	No stop
08 52 30	---	21 13 41	53.1	-55.4	4.5		67.2	235	3844	08 48 31
08 52 40	J1638+5720	21 13 51	52.2	-55.3	4.6		66.0	-6	3844	08 52 40
08 53 40	---	21 14 51	52.1	-55.2	4.6		65.8	54	3851	08 52 41
08 53 50	TDF	21 15 01	52.9	-55.3	4.5		67.0	-6	3851	08 53 50
08 56 00	---	21 17 12	52.7	-55.1	4.5		66.7	124	3868	08 53 51
08 56 00	FIRST-1	21 17 12	52.7	-55.1	4.5		66.7	-5	3868	No stop
09 00 00	---	21 21 12	52.2	-54.8	4.6		66.2	235	3899	08 56 01
09 00 20	J1638+5720	21 21 32	51.2	-54.6	4.7		64.9	4	3899	09 00 20
09 01 10	---	21 22 23	51.1	-54.5	4.7		64.8	50	3905	09 00 21
09 01 20	TDF	21 22 33	52.0	-54.7	4.6		66.0	-6	3905	09 01 20
09 03 30	---	21 24 43	51.8	-54.5	4.7		65.7	124	3922	09 01 21
09 03 30	FIRST-1	21 24 43	51.8	-54.5	4.7		65.7	-5	3922	No stop
09 07 30	---	21 28 44	51.3	-54.1	4.7		65.1	235	3953	09 03 31
09 07 40	J1638+5720	21 28 54	50.4	-53.9	4.8		63.9	-6	3953	09 07 40
09 08 40	---	21 29 54	50.2	-53.8	4.9		63.8	54	3960	09 07 41
09 08 50	TDF	21 30 04	51.1	-54.0	4.8		64.9	-6	3960	09 08 50
09 11 00	---	21 32 14	50.8	-53.8	4.8		64.6	124	3977	09 08 51
09 11 00	FIRST-1	21 32 14	50.8	-53.8	4.8		64.6	-5	3977	No stop
09 15 00	---	21 36 15	50.4	-53.4	4.9		64.1	235	4008	09 11 01
09 15 20	J1638+5720	21 36 35	49.4	-53.2	5.0		62.8	4	4008	09 15 20
09 16 10	---	21 37 25	49.3	-53.1	5.0		62.7	50	4014	09 15 21
09 16 20	TDF	21 37 35	50.2	-53.3	4.9		63.9	-6	4014	09 16 20
09 18 30	---	21 39 45	49.9	-53.1	4.9		63.6	124	4031	09 16 21
09 18 30	FIRST-1	21 39 45	49.9	-53.1	4.9		63.6	-5	4031	No stop
09 22 30	---	21 43 46	49.5	-52.7	5.0		63.0	235	4062	09 18 31
09 22 40	J1638+5720	21 43 56	48.5	-52.5	5.1		61.8	-6	4062	09 22 40
09 23 40	---	21 44 56	48.4	-52.4	5.1		61.7	54	4069	09 22 41

Schedule for TORUN (Code Tr)

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EVN Observations of Swift J1644+57 at the 5th epoch

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	9 Mar 2015	Day	68	---					
09 23 50	TDF	21 45 06	49.3	-52.6	5.0		62.8	-6	4069	09 23 50
09 26 00	---	21 47 17	49.0	-52.4	5.0		62.5	124	4086	09 23 51
09 26 00	FIRST-1	21 47 17	49.0	-52.4	5.0		62.5	-5	4086	No stop
09 30 00	---	21 51 17	48.6	-52.0	5.1		61.9	235	4117	09 26 01
09 30 20	J1638+5720	21 51 37	47.6	-51.7	5.2		60.8	4	4117	09 30 20
09 31 10	---	21 52 28	47.5	-51.6	5.2		60.6	50	4123	09 30 21
09 31 20	TDF	21 52 38	48.4	-51.9	5.1		61.8	-6	4123	09 31 20
09 33 30	---	21 54 48	48.1	-51.7	5.2		61.5	124	4140	09 31 21
09 33 30	FIRST-1	21 54 48	48.1	-51.7	5.2		61.5	-5	4140	No stop
09 37 30	---	21 58 49	47.7	-51.3	5.2		60.9	235	4170	09 33 31
09 37 40	J1638+5720	21 58 59	46.8	-51.0	5.3		59.7	-6	4170	09 37 40
09 38 40	---	21 59 59	46.7	-50.9	5.4		59.6	54	4178	09 37 41
09 38 50	TDF	22 00 09	47.5	-51.2	5.3		60.7	-6	4178	09 38 50
09 41 00	---	22 02 19	47.3	-51.0	5.3		60.4	124	4195	09 38 51
09 41 00	FIRST-1	22 02 19	47.3	-51.0	5.3		60.4	-5	4195	No stop
09 45 00	---	22 06 20	46.8	-50.6	5.4		59.9	235	4226	09 41 01
09 45 20	J1638+5720	22 06 40	45.9	-50.2	5.5		58.7	4	4226	09 45 20
09 46 10	---	22 07 30	45.8	-50.1	5.5		58.6	50	4232	09 45 21
09 46 20	TDF	22 07 40	46.6	-50.4	5.4		59.7	-6	4232	09 46 20
09 48 30	---	22 09 50	46.4	-50.2	5.4		59.4	124	4249	09 46 21
09 48 30	FIRST-1	22 09 50	46.4	-50.2	5.4		59.4	-5	4249	No stop
09 52 30	---	22 13 51	45.9	-49.8	5.5		58.8	235	4279	09 48 31
09 52 40	J1638+5720	22 14 01	45.0	-49.5	5.6		57.7	-6	4279	09 52 40
09 53 40	---	22 15 01	44.9	-49.4	5.6		57.5	54	4287	09 52 41
09 53 50	TDF	22 15 11	45.8	-49.7	5.5		58.6	-6	4287	09 53 50
09 56 00	---	22 17 22	45.5	-49.5	5.5		58.3	124	4304	09 53 51
09 56 00	FIRST-1	22 17 22	45.5	-49.5	5.5		58.3	-5	4304	No stop
10 00 00	---	22 21 22	45.1	-49.1	5.6		57.8	235	4335	09 56 01
10 00 20	J1638+5720	22 21 42	44.2	-48.7	5.7		56.6	4	4335	10 00 20
10 01 10	---	22 22 32	44.1	-48.6	5.7		56.5	50	4341	10 00 21

Schedule for TORUN (Code Tr)

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EVN Observations of Swift J1644+57 at the 5th epoch

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	9 Mar 2015	Day	68	---					
10 01 20	TDF	22 22 43	44.9	-48.9	5.6		57.6	-6	4341	10 01 20
10 03 30	---	22 24 53	44.7	-48.7	5.7		57.3	124	4358	10 01 21
10 03 30	FIRST-1	22 24 53	44.7	-48.7	5.7		57.3	-5	4358	No stop
10 07 30	---	22 28 54	44.2	-48.3	5.7		56.7	235	4388	10 03 31
10 07 40	J1638+5720	22 29 04	43.3	-47.9	5.8		55.6	-6	4388	10 07 40
10 08 40	---	22 30 04	43.2	-47.8	5.9		55.4	54	4396	10 07 41
10 08 50	TDF	22 30 14	44.1	-48.2	5.8		56.5	-6	4396	10 08 50
10 11 00	---	22 32 24	43.8	-47.9	5.8		56.2	124	4413	10 08 51
10 11 00	FIRST-1	22 32 24	43.8	-47.9	5.8		56.2	-5	4413	No stop
10 15 00	---	22 36 25	43.4	-47.5	5.9		55.7	235	4444	10 11 01
10 15 20	J1638+5720	22 36 45	42.5	-47.1	6.0		54.5	4	4444	10 15 20
10 16 10	---	22 37 35	42.4	-47.0	6.0		54.4	50	4450	10 15 21
10 16 20	TDF	22 37 45	43.2	-47.4	5.9		55.5	-6	4450	10 16 20
10 18 30	---	22 39 55	43.0	-47.1	5.9		55.2	124	4467	10 16 21
10 18 30	FIRST-1	22 39 55	43.0	-47.1	5.9		55.2	-5	4467	No stop
10 22 30	---	22 43 56	42.6	-46.7	6.0		54.6	235	4497	10 18 31
10 22 40	J1638+5720	22 44 06	41.7	-46.3	6.1		53.5	-6	4497	10 22 40
10 23 40	---	22 45 06	41.6	-46.2	6.1		53.4	54	4505	10 22 41
10 23 50	TDF	22 45 16	42.4	-46.6	6.0		54.4	-6	4505	10 23 50
10 26 00	---	22 47 27	42.2	-46.4	6.0		54.1	124	4522	10 23 51
10 26 00	FIRST-1	22 47 27	42.2	-46.4	6.0		54.1	-5	4522	No stop
10 30 00	---	22 51 27	41.7	-45.9	6.1		53.6	235	4553	10 26 01
10 30 20	J1638+5720	22 51 47	40.9	-45.5	6.2		52.4	4	4553	10 30 20
10 31 10	---	22 52 37	40.8	-45.4	6.2		52.3	50	4559	10 30 21
10 31 20	TDF	22 52 47	41.6	-45.8	6.1		53.4	-6	4559	10 31 20
10 33 30	---	22 54 58	41.4	-45.6	6.2		53.1	124	4576	10 31 21
10 33 30	FIRST-1	22 54 58	41.4	-45.6	6.2		53.1	-5	4576	No stop
10 37 30	---	22 58 58	40.9	-45.1	6.2		52.5	235	4606	10 33 31
10 37 40	J1638+5720	22 59 08	40.1	-44.7	6.3		51.4	-6	4606	10 37 40
10 38 40	---	23 00 09	40.0	-44.6	6.4		51.3	54	4614	10 37 41

Schedule for TORUN (Code Tr)

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EVN Observations of Swift J1644+57 at the 5th epoch

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	9 Mar 2015	Day	68	---					
10 38 50	TDF	23 00 19	40.8	-45.0	6.3		52.3	-5	4614	10 38 50
10 41 00	---	23 02 29	40.6	-44.7	6.3		52.0	125	4631	10 38 51
10 41 00	FIRST-1	23 02 29	40.6	-44.7	6.3		52.0	-5	4631	No stop
10 45 00	---	23 06 30	40.1	-44.3	6.4		51.4	235	4662	10 41 01
10 45 20	J1638+5720	23 06 50	39.3	-43.8	6.5		50.3	4	4662	10 45 20
10 46 10	---	23 07 40	39.2	-43.7	6.5		50.2	50	4668	10 45 21
10 46 20	TDF	23 07 50	40.0	-44.2	6.4		51.3	-5	4668	10 46 20
10 48 30	---	23 10 00	39.8	-43.9	6.4		51.0	125	4685	10 46 21
10 48 30	FIRST-1	23 10 00	39.8	-43.9	6.4		51.0	-5	4685	No stop
10 52 30	---	23 14 01	39.4	-43.5	6.5		50.4	235	4715	10 48 31
10 52 40	J1638+5720	23 14 11	38.5	-43.0	6.6		49.3	-6	4715	10 52 40
10 53 40	---	23 15 11	38.4	-42.9	6.6		49.2	54	4723	10 52 41
10 53 50	TDF	23 15 21	39.2	-43.3	6.5		50.2	-5	4723	10 53 50
10 56 00	---	23 17 31	39.0	-43.1	6.5		49.9	125	4740	10 53 51
10 56 00	FIRST-1	23 17 31	39.0	-43.1	6.5		49.9	-5	4740	No stop
11 00 00	---	23 21 32	38.6	-42.6	6.6		49.3	235	4770	10 56 01
11 00 20	J1638+5720	23 21 52	37.7	-42.1	6.7		48.2	4	4770	11 00 20
11 01 10	---	23 22 42	37.6	-42.0	6.7		48.1	50	4777	11 00 21
11 01 20	TDF	23 22 52	38.5	-42.5	6.6		49.1	-5	4777	11 01 20
11 03 30	---	23 25 03	38.2	-42.2	6.7		48.8	125	4794	11 01 21
11 03 30	FIRST-1	23 25 03	38.2	-42.2	6.7		48.8	-5	4794	No stop
11 07 30	---	23 29 03	37.8	-41.8	6.7		48.3	235	4824	11 03 31
11 07 40	J1638+5720	23 29 13	37.0	-41.3	6.8		47.2	-6	4824	11 07 40
11 08 40	---	23 30 14	36.9	-41.2	6.9		47.0	54	4832	11 07 41
11 08 50	TDF	23 30 24	37.7	-41.6	6.8		48.1	-5	4832	11 08 50
11 11 00	---	23 32 34	37.5	-41.4	6.8		47.8	125	4849	11 08 51
11 11 00	FIRST-1	23 32 34	37.5	-41.4	6.8		47.8	-5	4849	No stop
11 15 00	---	23 36 35	37.1	-40.9	6.9		47.2	235	4879	11 11 01
11 15 20	J1638+5720	23 36 55	36.2	-40.4	7.0		46.1	4	4879	11 15 20
11 16 10	---	23 37 45	36.2	-40.3	7.0		46.0	50	4886	11 15 21

Schedule for TORUN (Code Tr)

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EVN Observations of Swift J1644+57 at the 5th epoch

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	9 Mar 2015	Day	68	---					
11 16 20	TDF	23 37 55	37.0	-40.8	6.9		47.0	-5	4886	11 16 20
11 18 30	---	23 40 05	36.7	-40.5	6.9		46.7	125	4903	11 16 21
11 18 30	FIRST-1	23 40 05	36.7	-40.5	6.9		46.7	-5	4903	No stop
11 22 30	---	23 44 06	36.4	-40.1	7.0		46.1	235	4933	11 18 31
11 22 40	J1638+5720	23 44 16	35.5	-39.5	7.1		45.1	-5	4933	11 22 40
11 23 40	---	23 45 16	35.4	-39.4	7.1		44.9	55	4941	11 22 41
11 23 50	TDF	23 45 26	36.2	-39.9	7.0		45.9	-5	4941	11 23 50
11 26 00	---	23 47 36	36.0	-39.7	7.0		45.6	125	4958	11 23 51
11 26 00	FIRST-1	23 47 36	36.0	-39.7	7.0		45.6	-5	4958	No stop
11 30 00	---	23 51 37	35.6	-39.2	7.1		45.1	235	4988	11 26 01
11 30 20	J1638+5720	23 51 57	34.8	-38.6	7.2		44.0	5	4988	11 30 20
11 31 10	---	23 52 47	34.7	-38.5	7.2		43.8	50	4995	11 30 21
11 31 20	TDF	23 52 57	35.5	-39.1	7.1		44.9	-5	4995	11 31 20
11 33 30	---	23 55 08	35.3	-38.8	7.2		44.6	125	5012	11 31 21
11 33 30	FIRST-1	23 55 08	35.3	-38.8	7.2		44.6	-5	5012	No stop
11 37 30	---	23 59 08	34.9	-38.3	7.2		44.0	235	5042	11 33 31
11 37 40	J1638+5720	23 59 18	34.1	-37.8	7.3		42.9	-5	5042	11 37 40
11 38 40	---	00 00 18	34.0	-37.6	7.4		42.8	55	5050	11 37 41
11 38 50	TDF	00 00 29	34.8	-38.2	7.3		43.8	-5	5050	11 38 50
11 41 00	---	00 02 39	34.6	-37.9	7.3		43.5	125	5067	11 38 51
11 41 00	FIRST-1	00 02 39	34.6	-37.9	7.3		43.5	-5	5067	No stop
11 45 00	---	00 06 40	34.2	-37.4	7.4		42.9	235	5097	11 41 01
11 45 20	J1638+5720	00 07 00	33.4	-36.8	7.5		41.8	5	5097	11 45 20
11 46 10	---	00 07 50	33.3	-36.7	7.5		41.7	50	5104	11 45 21
11 46 20	TDF	00 08 00	34.1	-37.3	7.4		42.7	-5	5104	11 46 20
11 48 30	---	00 10 10	33.9	-37.0	7.4		42.4	125	5120	11 46 21
11 48 30	FIRST-1	00 10 10	33.9	-37.0	7.4		42.4	-5	5120	No stop
11 52 30	---	00 14 11	33.6	-36.5	7.5		41.8	235	5151	11 48 31
11 52 40	J1638+5720	00 14 21	32.8	-35.9	7.6		40.7	-5	5151	11 52 40
11 53 40	---	00 15 21	32.7	-35.8	7.6		40.6	55	5159	11 52 41

Schedule for TORUN (Code Tr) Page 21

EVN Observations of Swift J1644+57 at the 5th epoch

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Mon 9 Mar 2015 Day 68 ---

```
11 53 50 TDF          00 15 31 33.4 -36.4 7.5    41.6  -5   5159  11 53 50
11 56 00 ---          00 17 41 33.2 -36.1 7.5    41.3  125  5176  11 53 51

11 56 00 FIRST-1    00 17 41 33.2 -36.1 7.5    41.3  -5   5176  No stop
12 00 00 ---          00 21 42 32.9 -35.6 7.6    40.7  235  5206  11 56 01
```

SETUP FILE INFORMATION:

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

==== Setup file: sess115.C1024

```
Setup group: 9          Station: TORUN          Total bit rate: 1024
Format: MARK5B        Bits per sample: 2      Sample rate: 32.000
Number of channels: 16 DBE type: DBBC_DDC    Speedup factor: 1.00
```

Disk used to record data.

```
1st L0= 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 4200.00 4200.00
Net SB=   L      L      U      U      L      L      U      U
         L      L      U      U      L      L      U      U
IF SB =   U      U      U      U      U      U      U      U
         U      U      U      U      U      U      U      U
Pol.  =   RCP    LCP    RCP    LCP    RCP    LCP    RCP    LCP
         RCP    LCP    RCP    LCP    RCP    LCP    RCP    LCP
BBC   =     1     5     1     5     2     6     2     6
         3     7     3     7     4     8     4     8
BBC SB=  L      L      U      U      L      L      U      U
         L      L      U      U      L      L      U      U
IF    =   A1    B1    A1    B1    A1    B1    A1    B1
         A1    B1    A1    B1    A1    B1    A1    B1
```

The following frequency sets based on these setups were used.

```
Frequency Set: 4 Setup file default. Used with PCAL = off
LO sum= 4942.49 4942.49 4942.49 4942.49 4974.49 4974.49 4974.49 4974.49
         5006.49 5006.49 5006.49 5006.49 5038.49 5038.49 5038.49 5038.49
BBC fr= 742.49 742.49 742.49 742.49 774.49 774.49 774.49 774.49
         806.49 806.49 806.49 806.49 838.49 838.49 838.49 838.49
Bandwd= 16.00 16.00 16.00 16.00 16.00 16.00 16.00 16.00
         16.00 16.00 16.00 16.00 16.00 16.00 16.00 16.00
Matching frequency sets: 4
```

Track assignments are:

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec)		(Date)	Error
	(B1950)	(J2000)		(mas)
* TDF	16 43 47.242390	* 16 44 41.306125	16 44 57.748546	0.00
	57 41 16.13000	* 57 35 51.01031	57 34 00.27269	0.00
* FIRST-1	16 43 47.242390	* 16 44 41.306125	16 44 57.748546	0.00
	57 41 16.13000	* 57 35 51.01031	57 34 00.27269	0.00
* J1638+5720	16 37 17.425183	* 16 38 13.456298	16 38 30.544068	0.00
	57 26 15.76133	* 57 20 23.97905	57 18 25.10103	0.00
J1331+3030	13 28 49.657778	* 13 31 08.288070	13 31 51.421528	0.20
* 3C286	30 45 58.64061	* 30 30 32.95925	30 25 41.80802	0.19
J1642+3948	16 41 17.606228	* 16 42 58.809965	16 43 29.690495	0.77
* 3C345	39 54 10.81496	* 39 48 36.99402	39 46 46.25092	0.52

rk08setr

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: C/L-band, dual-pol

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

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

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

--- Mon 9 Mar 2015 Day 68 ---

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

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

Table with 11 columns: Start UT, Stop UT, Source, LST, EL, AZ, HA, UP, ParA, Dwell, GBytes, SYNC. It lists observation times and parameters for source 0954+658.

SETUP FILE INFORMATION:

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

==== Setup file: ra18cm2.set

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.041709	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 49.09046	0.00
	fake circumpolar target for a TS to look at			
* 0954+658	09 54 57.847936	* 09 58 47.245116	09 59 58.522534	0.00
J0958+6533	65 48 15.53882	* 65 33 54.81801	65 29 27.77606	0.00
	./rk08se_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 13350 observations, RA-A02-12			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
3C147	97.4
0954+658	117.4

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

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

THE AGN IN H-BOOTES2, EVN+EMERLIN (REOBS)

PI: Edo Ibar

Address: Chile Phone:+56223541631 EMAIL:eduardo.ibar@uv.cl, cromero@astro.puc.cl

Observing mode: 1024 Mbps

Schedule for TORUN (Code Tr)

Page 2

The AGN in H-Bootes2, EVN+eMERLIN (reobs)

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Mon 9 Mar 2015 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										
21 00 00	J1159+2914	09 23 11	52.7	114.1	-2.6		-38.9	0	0	21 00 00
21 04 50	=1156+295	09 28 01	53.4	115.5	-2.5		-38.4	290	37	21 00 01
21 07 20	J1426+3625	09 30 32	37.3	76.9	-4.9		-46.6	57	37	21 07 20
21 08 20	=1424+366	09 31 32	37.4	77.1	-4.9		-46.6	60	45	21 07 21
21 08 20	HBOOTES2	09 31 32	36.1	78.1	-5.0		-45.7	-18	45	No stop
21 11 50	---	09 35 03	36.6	78.7	-4.9		-45.9	192	72	21 08 21
21 11 50	J1426+3625	09 35 03	37.9	77.7	-4.9		-46.8	-18	72	No stop
21 13 10	=1424+366	09 36 23	38.1	77.9	-4.8		-46.8	62	82	21 11 51
21 13 10	HBOOTES2	09 36 23	36.8	79.0	-4.9		-45.9	-18	82	No stop
21 16 40	---	09 39 53	37.4	79.6	-4.8		-46.0	192	109	21 13 11
21 17 20	J1426+3625	09 40 34	38.8	78.7	-4.8		-47.0	22	109	21 17 20
21 18 20	=1424+366	09 41 34	38.9	78.8	-4.8		-47.0	60	117	21 17 21
21 18 20	HBOOTES2	09 41 34	37.6	79.9	-4.8		-46.1	-18	117	No stop
21 21 50	---	09 45 04	38.1	80.5	-4.7		-46.2	192	144	21 18 21
21 21 50	J1426+3625	09 45 04	39.4	79.5	-4.7		-47.1	-18	144	No stop
21 23 10	=1424+366	09 46 25	39.6	79.7	-4.7		-47.2	62	154	21 21 51
21 23 10	HBOOTES2	09 46 25	38.3	80.8	-4.7		-46.2	-18	154	No stop
21 26 40	---	09 49 55	38.8	81.4	-4.7		-46.3	192	181	21 23 11
21 27 20	J1426+3625	09 50 35	40.2	80.4	-4.6		-47.3	22	181	21 27 20
21 28 20	=1424+366	09 51 35	40.4	80.6	-4.6		-47.4	60	188	21 27 21
21 28 20	HBOOTES2	09 51 35	39.1	81.7	-4.6		-46.4	-18	188	No stop
21 31 50	---	09 55 06	39.6	82.3	-4.6		-46.5	192	215	21 28 21
21 31 50	J1426+3625	09 55 06	40.9	81.2	-4.5		-47.5	-18	215	No stop
21 33 10	=1424+366	09 56 26	41.1	81.5	-4.5		-47.5	62	226	21 31 51

Schedule for TORUN (Code Tr)

Page 3

The AGN in H-Bootes2, EVN+eMERLIN (reobs)

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon 9 Mar 2015	Day 68	---							
21 33 10	HBOOTES2	09 56 26	39.8	82.6	-4.5		-46.5	-18	226	No stop
21 36 40	---	09 59 57	40.3	83.2	-4.5		-46.6	192	253	21 33 11
21 37 20	J1426+3625	10 00 37	41.7	82.2	-4.4		-47.6	22	253	21 37 20
21 38 20	=1424+366	10 01 37	41.9	82.4	-4.4		-47.6	60	260	21 37 21
21 38 20	HBOOTES2	10 01 37	40.6	83.5	-4.5		-46.6	-18	260	No stop
21 41 50	---	10 05 08	41.1	84.2	-4.4		-46.7	192	287	21 38 21
21 41 50	J1426+3625	10 05 08	42.4	83.1	-4.4		-47.7	-18	287	No stop
21 43 10	=1424+366	10 06 28	42.6	83.3	-4.3		-47.8	62	297	21 41 51
21 43 10	HBOOTES2	10 06 28	41.3	84.4	-4.4		-46.7	-18	297	No stop
21 46 40	---	10 09 58	41.8	85.1	-4.3		-46.8	192	324	21 43 11
21 47 20	J1426+3625	10 10 38	43.2	84.1	-4.3		-47.9	22	324	21 47 20
21 48 20	=1424+366	10 11 39	43.4	84.3	-4.3		-47.9	60	332	21 47 21
21 48 20	HBOOTES2	10 11 39	42.1	85.4	-4.3		-46.8	-18	332	No stop
21 51 50	---	10 15 09	42.6	86.1	-4.2		-46.9	192	359	21 48 21
21 51 50	J1426+3625	10 15 09	43.9	84.9	-4.2		-48.0	-18	359	No stop
21 53 10	=1424+366	10 16 29	44.1	85.2	-4.2		-48.0	62	369	21 51 51
21 53 10	HBOOTES2	10 16 29	42.8	86.3	-4.2		-46.9	-18	369	No stop
21 56 40	---	10 20 00	43.3	87.0	-4.2		-47.0	192	396	21 53 11
21 57 20	J1426+3625	10 20 40	44.7	86.0	-4.1		-48.0	22	396	21 57 20
21 58 20	=1424+366	10 21 40	44.9	86.2	-4.1		-48.1	60	404	21 57 21
21 58 20	HBOOTES2	10 21 40	43.6	87.3	-4.1		-47.0	-18	404	No stop
22 01 50	---	10 25 11	44.1	88.0	-4.1		-47.0	192	431	21 58 21
22 01 50	J1426+3625	10 25 11	45.4	86.8	-4.0		-48.1	-18	431	No stop
22 03 10	=1424+366	10 26 31	45.6	87.1	-4.0		-48.1	62	441	22 01 51
22 06 10	J1159+2914	10 29 32	60.9	136.2	-1.5		-28.4	68	441	22 06 10
22 11 10	=1156+295	10 34 32	61.4	138.2	-1.4		-27.3	300	479	22 06 11
22 14 00	J1426+3625	10 37 23	47.2	89.2	-3.8		-48.2	57	479	22 14 00
22 15 00	=1424+366	10 38 23	47.4	89.4	-3.8		-48.2	60	487	22 14 01
22 15 00	HBOOTES2	10 38 23	46.1	90.6	-3.8		-47.0	-18	487	No stop
22 18 10	---	10 41 34	46.6	91.3	-3.8		-47.0	172	512	22 15 01
22 18 10	J1426+3625	10 41 34	47.9	90.0	-3.8		-48.2	-18	512	No stop
22 19 30	=1424+366	10 42 54	48.1	90.3	-3.7		-48.2	62	522	22 18 11

Schedule for TORUN (Code Tr)

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The AGN in H-Bootes2, EVN+eMERLIN (reobs)

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	9 Mar 2015	Day	68	---					
22 19 30	HBOOTES2	10 42 54	46.8	91.5	-3.8		-47.0	-18	522	No stop
22 23 00	---	10 46 24	47.3	92.3	-3.7		-47.0	192	549	22 19 31
22 23 40	J1426+3625	10 47 04	48.7	91.1	-3.7		-48.2	22	549	22 23 40
22 24 40	=1424+366	10 48 05	48.8	91.3	-3.7		-48.2	60	556	22 23 41
22 24 40	HBOOTES2	10 48 05	47.6	92.6	-3.7		-47.0	-18	556	No stop
22 28 10	---	10 51 35	48.1	93.3	-3.6		-46.9	192	583	22 24 41
22 28 10	J1426+3625	10 51 35	49.4	92.1	-3.6		-48.2	-18	583	No stop
22 29 30	=1424+366	10 52 55	49.6	92.3	-3.6		-48.2	62	594	22 28 11
22 29 30	HBOOTES2	10 52 55	48.3	93.6	-3.6		-46.9	-18	594	No stop
22 33 00	---	10 56 26	48.8	94.4	-3.5		-46.9	192	621	22 29 31
22 33 40	J1426+3625	10 57 06	50.2	93.2	-3.5		-48.1	22	621	22 33 40
22 34 40	=1424+366	10 58 06	50.3	93.4	-3.5		-48.1	60	628	22 33 41
22 34 40	HBOOTES2	10 58 06	49.1	94.7	-3.5		-46.8	-18	628	No stop
22 38 10	---	11 01 37	49.6	95.5	-3.5		-46.8	192	655	22 34 41
22 38 10	J1426+3625	11 01 37	50.9	94.2	-3.4		-48.0	-18	655	No stop
22 39 30	=1424+366	11 02 57	51.1	94.4	-3.4		-48.0	62	665	22 38 11
22 39 30	HBOOTES2	11 02 57	49.8	95.8	-3.4		-46.7	-18	665	No stop
22 43 00	---	11 06 28	50.3	96.5	-3.4		-46.6	192	692	22 39 31
22 43 40	J1426+3625	11 07 08	51.7	95.3	-3.3		-47.9	22	692	22 43 40
22 44 40	=1424+366	11 08 08	51.8	95.6	-3.3		-47.9	60	700	22 43 41
22 44 40	HBOOTES2	11 08 08	50.6	96.9	-3.3		-46.6	-18	700	No stop
22 48 10	---	11 11 38	51.1	97.7	-3.3		-46.5	192	727	22 44 41
22 48 10	J1426+3625	11 11 38	52.4	96.3	-3.3		-47.8	-18	727	No stop
22 49 30	=1424+366	11 12 59	52.6	96.6	-3.2		-47.8	62	737	22 48 11
22 49 30	HBOOTES2	11 12 59	51.3	98.0	-3.3		-46.4	-18	737	No stop
22 53 00	---	11 16 29	51.8	98.8	-3.2		-46.3	192	764	22 49 31
22 53 40	J1426+3625	11 17 09	53.2	97.6	-3.2		-47.6	22	764	22 53 40
22 54 40	=1424+366	11 18 10	53.3	97.8	-3.2		-47.6	60	772	22 53 41
22 54 40	HBOOTES2	11 18 10	52.0	99.2	-3.2		-46.3	-18	772	No stop
22 58 10	---	11 21 40	52.6	100.0	-3.1		-46.1	192	799	22 54 41

Schedule for TORUN (Code Tr)

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The AGN in H-Bootes2, EVN+eMERLIN (reobs)

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Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	9 Mar 2015	Day	68	---					
22 58 10	J1426+3625	11 21 40	53.9	98.6	-3.1		-47.5	-18	799	No stop
22 59 30	=1424+366	11 23 00	54.0	98.9	-3.1		-47.4	62	809	22 58 11
22 59 30	HBOOTES2	11 23 00	52.8	100.3	-3.1		-46.1	-18	809	No stop
23 03 00	---	11 26 31	53.3	101.1	-3.0		-45.9	192	836	22 59 31
23 03 40	J1426+3625	11 27 11	54.7	99.9	-3.0		-47.3	22	836	23 03 40
23 04 40	=1424+366	11 28 11	54.8	100.1	-3.0		-47.2	60	844	23 03 41
23 04 40	HBOOTES2	11 28 11	53.5	101.5	-3.0		-45.8	-18	844	No stop
23 08 10	---	11 31 42	54.0	102.4	-3.0		-45.6	192	871	23 04 41
23 08 10	J1426+3625	11 31 42	55.3	101.0	-2.9		-47.0	-18	871	No stop
23 09 30	=1424+366	11 33 02	55.5	101.3	-2.9		-47.0	62	881	23 08 11
23 11 20	3C286	11 34 52	59.0	125.2	-1.9		-34.7	48	881	23 11 20
23 16 20	---	11 39 53	59.6	127.0	-1.9		-33.8	300	919	23 11 21
23 17 40	0Q208	11 41 13	53.5	118.0	-2.4		-37.1	43	919	23 17 40
23 22 40	---	11 46 14	54.2	119.5	-2.4		-36.4	300	958	23 17 41
23 24 10	J1426+3625	11 47 44	57.7	105.0	-2.7		-46.1	46	958	23 24 10
23 25 10	=1424+366	11 48 45	57.8	105.3	-2.6		-46.0	60	965	23 24 11
23 25 10	HBOOTES2	11 48 45	56.5	106.7	-2.7		-44.5	-18	965	No stop
23 28 40	---	11 52 15	57.0	107.7	-2.6		-44.2	192	992	23 25 11
23 28 40	J1426+3625	11 52 15	58.3	106.2	-2.6		-45.7	-18	992	No stop
23 30 00	=1424+366	11 53 35	58.5	106.5	-2.6		-45.6	62	1003	23 28 41
23 30 00	HBOOTES2	11 53 35	57.2	108.0	-2.6		-44.1	-18	1003	No stop
23 33 30	---	11 57 06	57.7	109.0	-2.5		-43.8	192	1029	23 30 01
23 34 10	J1426+3625	11 57 46	59.1	107.7	-2.5		-45.3	22	1029	23 34 10
23 35 10	=1424+366	11 58 46	59.3	108.0	-2.5		-45.2	60	1037	23 34 11
23 35 10	HBOOTES2	11 58 46	57.9	109.5	-2.5		-43.6	-18	1037	No stop
23 38 40	---	12 02 17	58.4	110.5	-2.4		-43.3	192	1064	23 35 11
23 38 40	J1426+3625	12 02 17	59.8	109.0	-2.4		-44.8	-18	1064	No stop
23 40 00	=1424+366	12 03 37	60.0	109.3	-2.4		-44.7	62	1074	23 38 41
23 40 00	HBOOTES2	12 03 37	58.6	110.8	-2.4		-43.2	-18	1074	No stop
23 43 30	---	12 07 08	59.1	111.9	-2.4		-42.8	192	1101	23 40 01

Schedule for TORUN (Code Tr)

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The AGN in H-Bootes2, EVN+eMERLIN (reobs)

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Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Mon	9 Mar 2015	Day	68	---					
23 44 10	J1426+3625	12 07 48	60.5	110.5	-2.3		-44.3	22	1101	23 44 10
23 45 10	=1424+366	12 08 48	60.7	110.8	-2.3		-44.2	60	1109	23 44 11
23 45 10	HBOOTES2	12 08 48	59.4	112.3	-2.3		-42.6	-18	1109	No stop
23 48 40	---	12 12 18	59.8	113.4	-2.3		-42.2	192	1136	23 45 11
23 48 40	J1426+3625	12 12 18	61.2	111.9	-2.2		-43.8	-19	1136	No stop
23 50 00	=1424+366	12 13 39	61.4	112.3	-2.2		-43.6	61	1146	23 48 41
23 50 00	HBOOTES2	12 13 39	60.0	113.8	-2.3		-42.0	-18	1146	No stop
23 53 30	---	12 17 09	60.5	114.9	-2.2		-41.6	192	1173	23 50 01
23 54 10	J1426+3625	12 17 49	61.9	113.6	-2.2		-43.1	21	1173	23 54 10
23 55 10	=1424+366	12 18 49	62.1	113.9	-2.1		-43.0	60	1181	23 54 11
23 55 10	HBOOTES2	12 18 49	60.7	115.4	-2.2		-41.4	-18	1181	No stop
23 58 40	---	12 22 20	61.2	116.5	-2.1		-40.9	192	1208	23 55 11
23 58 40	J1426+3625	12 22 20	62.6	115.0	-2.1		-42.5	-19	1208	No stop
23 59 59	=1424+366	12 23 40	62.7	115.4	-2.1		-42.3	60	1218	23 58 41

---	Tue	10 Mar 2015	Day	69	---					
00 00 00	HBOOTES2	12 23 40	61.4	117.0	-2.1		-40.7	-18	1218	00 00 00
00 03 30	---	12 27 11	61.8	118.1	-2.0		-40.2	192	1245	00 00 01
00 04 10	J1426+3625	12 27 51	63.3	116.8	-2.0		-41.7	21	1245	00 04 10
00 05 10	=1424+366	12 28 51	63.4	117.2	-2.0		-41.6	60	1253	00 04 11
00 05 10	HBOOTES2	12 28 51	62.1	118.7	-2.0		-39.9	-18	1253	No stop
00 08 40	---	12 32 22	62.5	119.9	-1.9		-39.4	192	1279	00 05 11
00 08 40	J1426+3625	12 32 22	63.9	118.4	-1.9		-41.0	-19	1279	No stop
00 10 00	=1424+366	12 33 42	64.1	118.8	-1.9		-40.8	61	1290	00 08 41
00 10 00	HBOOTES2	12 33 42	62.7	120.3	-1.9		-39.2	-18	1290	No stop
00 13 30	---	12 37 12	63.2	121.6	-1.9		-38.6	192	1317	00 10 01
00 14 10	J1426+3625	12 37 53	64.6	120.3	-1.8		-40.1	21	1317	00 14 10
00 15 10	=1424+366	12 38 53	64.8	120.7	-1.8		-39.9	60	1324	00 14 11
00 15 10	HBOOTES2	12 38 53	63.4	122.2	-1.8		-38.3	-18	1324	No stop
00 18 40	---	12 42 23	63.8	123.4	-1.8		-37.6	192	1351	00 15 11

Schedule for TORUN (Code Tr)

Page 7

The AGN in H-Bootes2, EVN+eMERLIN (reobs)

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Tue 10 Mar 2015 Day 69 ---										
00 18 40	J1426+3625	12 42 23	65.2	121.9	-1.7		-39.2	-19	1351	No stop
00 20 00	=1424+366	12 43 44	65.4	122.4	-1.7		-39.0	61	1362	00 18 41
00 20 00	HBOOTES2	12 43 44	64.0	123.9	-1.8		-37.4	-19	1362	No stop
00 23 30	---	12 47 14	64.4	125.2	-1.7		-36.7	191	1388	00 20 01
00 24 10	J1426+3625	12 47 54	65.9	124.0	-1.7		-38.2	21	1388	00 24 10
00 25 10	=1424+366	12 48 54	66.0	124.4	-1.6		-37.9	60	1396	00 24 11
00 25 10	HBOOTES2	12 48 54	64.6	125.9	-1.7		-36.4	-19	1396	No stop
00 28 40	---	12 52 25	65.0	127.3	-1.6		-35.6	191	1423	00 25 11
00 28 40	J1426+3625	12 52 25	66.5	125.8	-1.6		-37.2	-19	1423	No stop
00 30 00	=1424+366	12 53 45	66.6	126.4	-1.6		-36.9	61	1433	00 28 41
00 30 00	HBOOTES2	12 53 45	65.2	127.8	-1.6		-35.3	-19	1433	No stop
00 33 30	---	12 57 16	65.6	129.2	-1.5		-34.5	191	1460	00 30 01
00 34 10	J1426+3625	12 57 56	67.1	128.1	-1.5		-35.9	21	1460	00 34 10
00 35 10	=1424+366	12 58 56	67.2	128.5	-1.5		-35.7	60	1468	00 34 11
00 35 10	HBOOTES2	12 58 56	65.8	129.9	-1.5		-34.2	-19	1468	No stop
00 38 40	---	13 02 27	66.2	131.4	-1.4		-33.3	191	1495	00 35 11
00 38 40	J1426+3625	13 02 27	67.6	130.0	-1.4		-34.8	-19	1495	No stop
00 40 00	=1424+366	13 03 47	67.8	130.6	-1.4		-34.5	61	1505	00 38 41
00 40 00	HBOOTES2	13 03 47	66.4	131.9	-1.4		-33.0	-19	1505	No stop
00 43 30	---	13 07 17	66.7	133.5	-1.4		-32.1	191	1532	00 40 01
00 44 10	J1426+3625	13 07 58	68.3	132.5	-1.3		-33.4	21	1532	00 44 10
00 45 10	=1424+366	13 08 58	68.4	132.9	-1.3		-33.1	60	1540	00 44 11
00 45 10	HBOOTES2	13 08 58	66.9	134.2	-1.3		-31.6	-19	1540	No stop
00 48 40	---	13 12 28	67.3	135.8	-1.3		-30.7	191	1567	00 45 11
00 48 40	J1426+3625	13 12 28	68.8	134.5	-1.2		-32.1	-19	1567	No stop
00 50 00	=1424+366	13 13 48	68.9	135.2	-1.2		-31.7	61	1577	00 48 41
00 50 00	HBOOTES2	13 13 48	67.4	136.4	-1.3		-30.3	-19	1577	No stop
00 53 30	---	13 17 19	67.8	138.0	-1.2		-29.3	191	1604	00 50 01
00 54 10	J1426+3625	13 17 59	69.3	137.2	-1.2		-30.4	21	1604	00 54 10
00 55 10	=1424+366	13 18 59	69.4	137.7	-1.1		-30.1	60	1612	00 54 11

Schedule for TORUN (Code Tr)

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The AGN in H-Bootes2, EVN+eMERLIN (reobs)

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Tue 10 Mar 2015 Day 69 ---										
00 55 10	HBOOTES2	13 18 59	68.0	138.8	-1.2		-28.8	-19	1612	No stop
00 58 40	---	13 22 30	68.3	140.5	-1.1		-27.7	191	1638	00 55 11
00 58 40	J1426+3625	13 22 30	69.8	139.5	-1.1		-29.0	-19	1638	No stop
01 00 00	=1424+366	13 23 50	69.9	140.1	-1.1		-28.5	61	1649	00 58 41
01 00 00	HBOOTES2	13 23 50	68.4	141.2	-1.1		-27.3	-19	1649	No stop
01 03 30	---	13 27 21	68.8	143.0	-1.0		-26.2	191	1676	01 00 01
01 04 10	J1426+3625	13 28 01	70.3	142.3	-1.0		-27.1	21	1676	01 04 10
01 05 10	=1424+366	13 29 01	70.4	142.9	-1.0		-26.7	60	1683	01 04 11
01 05 10	HBOOTES2	13 29 01	68.9	143.8	-1.0		-25.6	-19	1683	No stop
01 08 40	---	13 32 32	69.2	145.6	-0.9		-24.4	191	1710	01 05 11
01 08 40	J1426+3625	13 32 32	70.7	144.8	-0.9		-25.5	-19	1710	No stop
01 10 00	=1424+366	13 33 52	70.8	145.5	-0.9		-25.0	61	1721	01 08 41
01 10 00	HBOOTES2	13 33 52	69.3	146.3	-0.9		-23.9	-19	1721	No stop
01 13 30	---	13 37 22	69.6	148.2	-0.9		-22.7	191	1747	01 10 01
01 14 10	J1426+3625	13 38 02	71.2	147.9	-0.8		-23.4	21	1747	01 14 10
01 15 10	=1424+366	13 39 03	71.2	148.4	-0.8		-23.0	60	1755	01 14 11
01 15 10	HBOOTES2	13 39 03	69.7	149.1	-0.8		-22.0	-19	1755	No stop
01 18 40	---	13 42 33	70.0	151.1	-0.8		-20.7	191	1782	01 15 11
01 18 40	J1426+3625	13 42 33	71.5	150.5	-0.7		-21.5	-19	1782	No stop
01 20 00	=1424+366	13 43 53	71.6	151.3	-0.7		-21.0	61	1792	01 18 41
01 20 00	HBOOTES2	13 43 53	70.1	151.8	-0.8		-20.2	-19	1792	No stop
01 23 30	---	13 47 24	70.3	153.8	-0.7		-18.8	191	1819	01 20 01
01 24 10	J1426+3625	13 48 04	71.9	153.8	-0.7		-19.2	21	1819	01 24 10
01 25 10	=1424+366	13 49 04	72.0	154.4	-0.6		-18.8	60	1827	01 24 11
01 25 10	HBOOTES2	13 49 04	70.4	154.8	-0.7		-18.1	-19	1827	No stop
01 28 40	---	13 52 35	70.7	156.9	-0.6		-16.7	191	1854	01 25 11
01 28 40	J1426+3625	13 52 35	72.2	156.6	-0.6		-17.2	-19	1854	No stop
01 30 00	=1424+366	13 53 55	72.3	157.5	-0.6		-16.6	61	1864	01 28 41
01 30 00	HBOOTES2	13 53 55	70.7	157.7	-0.6		-16.1	-19	1864	No stop
01 33 30	---	13 57 26	70.9	159.8	-0.5		-14.6	191	1891	01 30 01

Schedule for TORUN (Code Tr)

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The AGN in H-Bootes2, EVN+eMERLIN (reobs)

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Tue 10 Mar 2015 Day 69 ---										
01 34 10	J1426+3625	13 58 06	72.5	160.1	-0.5		-14.7	21	1891	01 34 10
01 35 10	=1424+366	13 59 06	72.5	160.8	-0.5		-14.2	60	1899	01 34 11
01 35 10	HBOOTES2	13 59 06	71.0	160.8	-0.5		-13.9	-19	1899	No stop
01 38 40	---	14 02 36	71.2	163.0	-0.4		-12.4	191	1926	01 35 11
01 38 40	J1426+3625	14 02 36	72.7	163.1	-0.4		-12.5	-19	1926	No stop
01 40 00	=1424+366	14 03 57	72.8	164.0	-0.4		-11.9	61	1936	01 38 41
01 40 00	HBOOTES2	14 03 57	71.2	163.8	-0.4		-11.8	-19	1936	No stop
01 43 30	---	14 07 27	71.4	166.0	-0.4		-10.2	191	1963	01 40 01
01 44 10	J1426+3625	14 08 07	72.9	166.8	-0.3		-9.8	21	1963	01 44 10
01 45 10	=1424+366	14 09 08	73.0	167.5	-0.3		-9.3	60	1971	01 44 11
01 45 10	HBOOTES2	14 09 08	71.4	167.1	-0.3		-9.4	-19	1971	No stop
01 48 40	---	14 12 38	71.5	169.3	-0.3		-7.8	191	1997	01 45 11
01 48 40	J1426+3625	14 12 38	73.1	169.8	-0.2		-7.6	-19	1997	No stop
01 50 00	=1424+366	14 13 58	73.1	170.8	-0.2		-6.9	61	2008	01 48 41
01 50 00	HBOOTES2	14 13 58	71.6	170.2	-0.3		-7.2	-19	2008	No stop
01 53 30	---	14 17 29	71.6	172.4	-0.2		-5.5	191	2035	01 50 01
01 54 10	J1426+3625	14 18 09	73.2	173.6	-0.2		-4.7	21	2035	01 54 10
01 55 10	=1424+366	14 19 09	73.2	174.3	-0.1		-4.2	60	2042	01 54 11
01 55 10	HBOOTES2	14 19 09	71.7	173.5	-0.2		-4.7	-19	2042	No stop
01 58 40	---	14 22 40	71.7	175.8	-0.1		-3.1	191	2069	01 55 11
01 58 40	J1426+3625	14 22 40	73.2	176.8	-0.1		-2.4	-19	2069	No stop
02 00 00	=1424+366	14 24 00	73.2	177.7	-0.1		-1.7	61	2079	01 58 41

SETUP FILE INFORMATION:

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

==== Setup file: sess115.C1024

Setup group: 12	Station: TORUN	Total bit rate: 1024
Format: MARK5B	Bits per sample: 2	Sample rate: 32.000
Number of channels: 16	DBE type: DBBC_DDC	Speedup factor: 1.00

Disk used to record data.

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

The following frequency sets based on these setups were used.

Frequency Set:	7	Setup file default.	Used with PCAL = off
LO sum=	4942.49	4942.49	4942.49
	4974.49	4974.49	4974.49
	5006.49	5006.49	5006.49
	5038.49	5038.49	5038.49
BBC fr=	742.49	742.49	742.49
	774.49	774.49	774.49
	806.49	806.49	806.49
	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
Matching frequency sets:	7		

Track assignments are:

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

barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* HBOOTES2	14 26 19.788961	* 14 28 25.472000	14 29 04.476612	0.00
	35 09 08.88345	* 34 55 47.11000	34 51 33.67933	0.00
* J1159+2914	11 56 57.786211	* 11 59 31.833912	12 00 19.861997	0.11
1156+295	29 31 25.73868	* 29 14 43.82678	29 09 28.87777	0.10
J1331+3030	13 28 49.657778	* 13 31 08.288070	13 31 51.435718	0.20
* 3C286	30 45 58.64061	* 30 30 32.95925	30 25 41.91429	0.19
J1407+2827	14 04 45.615156	* 14 07 00.394414	14 07 42.262078	0.24
* OQ208	28 41 29.23519	* 28 27 14.69022	28 22 45.92986	0.34
* J1426+3625	14 24 32.676812	* 14 26 37.087493	14 27 15.710026	0.13
1424+366	36 38 36.02416	* 36 25 09.57347	36 20 54.50693	0.11

rk08sgtr

RADIOASTRON AGN SURVEY
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Observing mode: C/L-band, dual-pol

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

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

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

--- Tue 10 Mar 2015 Day 69 ---

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

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

05 00 00	1413+135	17 24 30	35.6	241.0	3.1	32.7	0	0	05 00 00
05 14 30	---	17 39 02	33.7	244.6	3.4	33.9	870	28	05 00 01
05 15 00	1413+135	17 39 32	33.6	244.8	3.4	33.9	24	28	05 15 00
05 29 30	---	17 54 04	31.6	248.2	3.6	35.0	870	56	05 15 01
05 30 00	1413+135	17 54 34	31.5	248.3	3.6	35.0	24	56	05 30 00
05 44 30	---	18 09 07	29.5	251.7	3.9	35.9	870	84	05 30 01
05 45 00	1413+135	18 09 37	29.4	251.8	3.9	35.9	24	84	05 45 00
06 00 00	---	18 24 39	27.3	255.2	4.1	36.6	900	112	05 45 01

SETUP FILE INFORMATION:

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

==== Setup file: ra18cm2.set

Setup group: 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)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.058692	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 49.25804	0.00
	fake circumpolar target for a TS to look at			
* 1413+135	14 13 33.910857	* 14 15 58.817509	14 16 43.824930	0.00
J1415+1320	13 34 17.40450	* 13 20 23.71274	13 16 04.20425	0.00
	./rk08sg_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 1895 observations, RA-A02-12			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
1413+135	135.7

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

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

EXPLORING THE OBSCURED NUCLEUS OF THE Sy2 IRAS15480-0344

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 Observing mode: 6cm, continuum

Schedule for TORUN (Code Tr) Page 2

Exploring the obscured nucleus of the Sy2 IRAS15480-0344

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Wed 11 Mar 2015 Day 70 ---										
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										
01 00 00	3C345	13 27 47	54.6	91.9	-3.3	-51.3	0	0	0	01 00 00
01 05 00	---	13 32 48	55.3	93.0	-3.2	-51.3	300	38	38	01 00 01
01 05 30	J1555-0326	13 33 18	26.0	139.6	-2.4	-23.0	-93	38	38	01 05 30
01 09 00	=1552-033	13 36 48	26.3	140.5	-2.3	-22.5	117	65	65	01 05 31
01 09 00	IRAS15480	13 36 48	26.3	141.9	-2.2	-21.8	-16	65	65	No stop
01 12 00	---	13 39 49	26.6	142.7	-2.2	-21.4	164	88	88	01 09 01
01 12 30	J1555-0326	13 40 19	26.6	141.4	-2.3	-22.1	14	88	88	01 12 30
01 14 30	=1552-033	13 42 19	26.8	141.9	-2.2	-21.8	120	104	104	01 12 31
01 14 30	IRAS15480	13 42 19	26.8	143.3	-2.2	-21.1	-16	104	104	No stop
01 17 30	---	13 45 20	27.1	144.1	-2.1	-20.7	164	127	127	01 14 31
01 17 30	J1555-0326	13 45 20	27.1	142.7	-2.2	-21.4	-16	127	127	No stop
01 19 30	=1552-033	13 47 20	27.3	143.2	-2.1	-21.1	104	142	142	01 17 31
01 19 30	IRAS15480	13 47 20	27.3	144.6	-2.1	-20.4	-16	142	142	No stop
01 22 30	---	13 50 20	27.5	145.4	-2.0	-20.0	164	165	165	01 19 31
01 23 00	J1555-0326	13 50 50	27.6	144.1	-2.1	-20.7	14	165	165	01 23 00
01 25 00	=1552-033	13 52 51	27.8	144.6	-2.1	-20.4	120	181	181	01 23 01
01 25 00	IRAS15480	13 52 51	27.8	146.1	-2.0	-19.6	-16	181	181	No stop
01 28 00	---	13 55 51	28.0	146.9	-1.9	-19.2	164	204	204	01 25 01
01 28 00	J1555-0326	13 55 51	28.0	145.4	-2.0	-20.0	-16	204	204	No stop
01 30 00	=1552-033	13 57 52	28.2	146.0	-2.0	-19.7	104	219	219	01 28 01
01 30 00	IRAS15480	13 57 52	28.2	147.4	-1.9	-18.9	-16	219	219	No stop
01 33 00	---	14 00 52	28.4	148.2	-1.8	-18.5	164	242	242	01 30 01
01 33 30	J1555-0326	14 01 22	28.5	146.9	-1.9	-19.2	14	242	242	01 33 30
01 35 30	=1552-033	14 03 23	28.6	147.4	-1.9	-18.9	120	258	258	01 33 31

Schedule for TORUN (Code Tr) Page 3

Exploring the obscured nucleus of the Sy2 IRAS15480-0344

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Wed 11 Mar 2015	Day	70	---							
01 35 30	IRAS15480	14 03 23	28.6	148.9	-1.8		-18.1	-16	258	No stop	
01 38 30	---	14 06 23	28.8	149.7	-1.8		-17.7	164	281	01 35 31	
01 38 30	J1555-0326	14 06 23	28.9	148.3	-1.8		-18.5	-16	281	No stop	
01 40 30	=1552-033	14 08 23	29.0	148.8	-1.8		-18.2	104	296	01 38 31	
01 40 30	IRAS15480	14 08 23	29.0	150.3	-1.7		-17.4	-16	296	No stop	
01 43 30	---	14 11 24	29.2	151.1	-1.7		-16.9	164	319	01 40 31	
01 44 00	J1555-0326	14 11 54	29.3	149.8	-1.7		-17.6	14	319	01 44 00	
01 46 00	=1552-033	14 13 54	29.5	150.3	-1.7		-17.3	120	335	01 44 01	
01 46 00	IRAS15480	14 13 54	29.4	151.8	-1.6		-16.5	-16	335	No stop	
01 49 00	---	14 16 55	29.6	152.6	-1.6		-16.1	164	358	01 46 01	
01 49 00	J1555-0326	14 16 55	29.7	151.1	-1.7		-16.9	-16	358	No stop	
01 51 00	=1552-033	14 18 55	29.8	151.7	-1.6		-16.6	104	373	01 49 01	
01 51 00	IRAS15480	14 18 55	29.7	153.2	-1.5		-15.8	-16	373	No stop	
01 54 00	---	14 21 56	29.9	154.0	-1.5		-15.3	164	396	01 51 01	
01 54 30	J1555-0326	14 22 26	30.1	152.7	-1.6		-16.0	14	396	01 54 30	
01 56 30	=1552-033	14 24 26	30.2	153.2	-1.5		-15.7	120	412	01 54 31	
01 56 30	IRAS15480	14 24 26	30.1	154.7	-1.5		-14.9	-16	412	No stop	
01 59 30	---	14 27 26	30.3	155.5	-1.4		-14.4	164	435	01 56 31	
01 59 30	J1555-0326	14 27 26	30.4	154.0	-1.5		-15.3	-16	435	No stop	
02 01 30	=1552-033	14 29 27	30.5	154.6	-1.4		-15.0	104	450	01 59 31	
02 01 30	IRAS15480	14 29 27	30.4	156.1	-1.4		-14.1	-16	450	No stop	
02 04 30	---	14 32 27	30.6	156.9	-1.3		-13.6	164	473	02 01 31	
02 05 00	J1555-0326	14 32 57	30.8	155.6	-1.4		-14.4	14	473	02 05 00	
02 07 00	=1552-033	14 34 58	30.9	156.2	-1.4		-14.1	120	488	02 05 01	
02 07 00	IRAS15480	14 34 58	30.7	157.6	-1.3		-13.2	-16	488	No stop	
02 10 00	---	14 37 58	30.9	158.5	-1.2		-12.8	164	512	02 07 01	
02 10 00	J1555-0326	14 37 58	31.1	157.0	-1.3		-13.6	-16	512	No stop	
02 12 00	=1552-033	14 39 59	31.2	157.6	-1.3		-13.3	104	527	02 10 01	
02 12 00	IRAS15480	14 39 59	31.0	159.1	-1.2		-12.4	-16	527	No stop	
02 15 00	---	14 42 59	31.2	159.9	-1.1		-11.9	164	550	02 12 01	
02 15 30	J1555-0326	14 43 29	31.4	158.6	-1.2		-12.7	14	550	02 15 30	
02 17 30	=1552-033	14 45 29	31.5	159.1	-1.2		-12.4	120	565	02 15 31	

Schedule for TORUN (Code Tr) Page 4

Exploring the obscured nucleus of the Sy2 IRAS15480-0344

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Wed 11 Mar 2015 Day 70 ---										
02 17 30	IRAS15480	14 45 29	31.3	160.6	-1.1		-11.5	-16	565	No stop
02 20 30	---	14 48 30	31.4	161.5	-1.1		-11.0	164	588	02 17 31
02 20 30	J1555-0326	14 48 30	31.6	160.0	-1.1		-11.9	-16	588	No stop
02 22 30	=1552-033	14 50 30	31.7	160.6	-1.1		-11.5	104	604	02 20 31
02 22 30	IRAS15480	14 50 30	31.5	162.1	-1.0		-10.7	-16	604	No stop
02 25 30	---	14 53 31	31.7	162.9	-1.0		-10.2	164	627	02 22 31
02 26 00	J1555-0326	14 54 01	31.9	161.6	-1.0		-11.0	14	627	02 26 00
02 28 00	=1552-033	14 56 01	32.0	162.2	-1.0		-10.6	120	642	02 26 01
02 28 00	IRAS15480	14 56 01	31.8	163.7	-0.9		-9.8	-16	642	No stop
02 31 00	---	14 59 02	31.9	164.5	-0.9		-9.2	164	665	02 28 01
02 31 00	J1555-0326	14 59 02	32.1	163.0	-1.0		-10.1	-16	665	No stop
02 33 00	=1552-033	15 01 02	32.2	163.6	-0.9		-9.8	104	681	02 31 01
02 33 00	IRAS15480	15 01 02	32.0	165.1	-0.8		-8.9	-16	681	No stop
02 36 00	---	15 04 02	32.1	166.0	-0.8		-8.4	164	704	02 33 01
02 36 30	J1555-0326	15 04 33	32.4	164.6	-0.9		-9.2	14	704	02 36 30
02 38 30	=1552-033	15 06 33	32.5	165.2	-0.8		-8.8	120	719	02 36 31
02 38 30	IRAS15480	15 06 33	32.2	166.7	-0.7		-7.9	-16	719	No stop
02 41 30	---	15 09 33	32.3	167.6	-0.7		-7.4	164	742	02 38 31
02 41 30	J1555-0326	15 09 33	32.6	166.1	-0.8		-8.3	-16	742	No stop
02 43 30	=1552-033	15 11 34	32.6	166.7	-0.7		-8.0	104	758	02 41 31
02 43 30	IRAS15480	15 11 34	32.4	168.2	-0.7		-7.1	-16	758	No stop
02 46 30	---	15 14 34	32.4	169.1	-0.6		-6.6	164	781	02 43 31
02 47 00	J1555-0326	15 15 04	32.8	167.7	-0.7		-7.3	14	781	02 47 00
02 49 00	=1552-033	15 17 05	32.8	168.3	-0.7		-7.0	120	796	02 47 01
02 49 00	IRAS15480	15 17 05	32.5	169.8	-0.6		-6.1	-16	796	No stop
02 52 00	---	15 20 05	32.6	170.7	-0.5		-5.6	164	819	02 49 01
02 52 00	J1555-0326	15 20 05	32.9	169.2	-0.6		-6.5	-16	819	No stop
02 54 00	=1552-033	15 22 05	33.0	169.8	-0.6		-6.1	104	835	02 52 01
02 54 00	IRAS15480	15 22 05	32.6	171.3	-0.5		-5.2	-16	835	No stop
02 57 00	---	15 25 06	32.7	172.2	-0.4		-4.7	164	858	02 54 01

Schedule for TORUN (Code Tr) Page 5

Exploring the obscured nucleus of the Sy2 IRAS15480-0344

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Wed 11 Mar 2015 Day 70 ---										
02 57 30	J1555-0326	15 25 36	33.0	170.8	-0.5		-5.5	14	858	02 57 30
02 59 30	=1552-033	15 27 36	33.1	171.4	-0.5		-5.1	120	873	02 57 31
02 59 30	IRAS15480	15 27 36	32.7	172.9	-0.4		-4.3	-16	873	No stop
03 02 30	---	15 30 37	32.8	173.8	-0.3		-3.7	164	896	02 59 31
03 02 30	J1555-0326	15 30 37	33.2	172.3	-0.4		-4.6	-16	896	No stop
03 04 30	=1552-033	15 32 37	33.2	172.9	-0.4		-4.2	104	912	03 02 31
03 04 30	IRAS15480	15 32 37	32.8	174.4	-0.3		-3.4	-16	912	No stop
03 07 30	---	15 35 38	32.9	175.3	-0.3		-2.8	164	935	03 04 31
03 08 00	J1555-0326	15 36 08	33.3	174.0	-0.3		-3.6	14	935	03 08 00
03 10 00	=1552-033	15 38 08	33.3	174.6	-0.3		-3.3	120	950	03 08 01
03 10 00	IRAS15480	15 38 08	32.9	176.0	-0.2		-2.4	-16	950	No stop
03 13 00	---	15 41 09	32.9	176.9	-0.2		-1.9	164	973	03 10 01
03 13 00	J1555-0326	15 41 09	33.3	175.5	-0.3		-2.7	-16	973	No stop
03 15 00	=1552-033	15 43 09	33.3	176.1	-0.2		-2.4	104	988	03 13 01
03 15 00	IRAS15480	15 43 09	32.9	177.5	-0.1		-1.5	-16	988	No stop
03 18 00	---	15 46 09	33.0	178.4	-0.1		-1.0	164	1012	03 15 01
03 20 00	J1751+0939	15 48 10	39.9	138.5	-2.1		-23.8	25	1012	03 20 00
03 25 00	=1749+096	15 53 11	40.4	140.0	-2.0		-23.0	300	1050	03 20 01
03 27 00	J1555-0326	15 55 11	33.4	179.7	-0.0		-0.2	26	1050	03 27 00
03 29 00	=1552-033	15 57 11	33.4	180.3	0.0		0.2	120	1065	03 27 01
03 29 00	IRAS15480	15 57 11	33.0	181.7	0.1		1.0	-16	1065	No stop
03 32 00	---	16 00 12	32.9	182.6	0.1		1.6	164	1088	03 29 01
03 32 30	J1555-0326	16 00 42	33.4	181.3	0.1		0.8	15	1088	03 32 30
03 34 30	=1552-033	16 02 42	33.4	181.9	0.1		1.1	120	1104	03 32 31
03 34 30	IRAS15480	16 02 42	32.9	183.3	0.2		2.0	-16	1104	No stop
03 37 30	---	16 05 43	32.9	184.2	0.2		2.5	164	1127	03 34 31
03 37 30	J1555-0326	16 05 43	33.4	182.8	0.2		1.7	-15	1127	No stop
03 39 30	=1552-033	16 07 43	33.4	183.4	0.2		2.0	105	1142	03 37 31
03 39 30	IRAS15480	16 07 43	32.9	184.8	0.3		2.9	-16	1142	No stop
03 42 30	---	16 10 43	32.8	185.7	0.3		3.4	164	1165	03 39 31

Schedule for TORUN (Code Tr) Page 6

Exploring the obscured nucleus of the Sy2 IRAS15480-0344

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Wed 11 Mar 2015 Day 70 ---										
03 43 00	J1555-0326	16 11 13	33.3	184.5	0.2		2.7	15	1165	03 43 00
03 45 00	=1552-033	16 13 14	33.3	185.1	0.3		3.0	120	1181	03 43 01
03 45 00	IRAS15480	16 13 14	32.8	186.5	0.4		3.9	-16	1181	No stop
03 48 00	---	16 16 14	32.7	187.3	0.4		4.4	164	1204	03 45 01
03 48 00	J1555-0326	16 16 14	33.3	185.9	0.3		3.6	-15	1204	No stop
03 50 00	=1552-033	16 18 15	33.2	186.5	0.4		3.9	105	1219	03 48 01
03 50 00	IRAS15480	16 18 15	32.7	187.9	0.4		4.8	-16	1219	No stop
03 53 00	---	16 21 15	32.6	188.8	0.5		5.3	164	1242	03 50 01
03 53 30	J1555-0326	16 21 45	33.2	187.6	0.4		4.6	15	1242	03 53 30
03 55 30	=1552-033	16 23 46	33.1	188.2	0.5		4.9	120	1258	03 53 31
03 55 30	IRAS15480	16 23 46	32.6	189.6	0.5		5.7	-16	1258	No stop
03 58 30	---	16 26 46	32.5	190.4	0.6		6.3	164	1281	03 55 31
03 58 30	J1555-0326	16 26 46	33.1	189.1	0.5		5.4	-15	1281	No stop
04 00 30	=1552-033	16 28 46	33.0	189.7	0.5		5.8	105	1296	03 58 31
04 00 30	IRAS15480	16 28 46	32.4	191.0	0.6		6.6	-16	1296	No stop
04 03 30	---	16 31 47	32.3	191.9	0.7		7.1	164	1319	04 00 31
04 04 00	J1555-0326	16 32 17	32.9	190.7	0.6		6.4	15	1319	04 04 00
04 06 00	=1552-033	16 34 17	32.9	191.3	0.6		6.8	120	1335	04 04 01
04 06 00	IRAS15480	16 34 17	32.3	192.6	0.7		7.6	-16	1335	No stop
04 09 00	---	16 37 18	32.2	193.5	0.8		8.1	164	1358	04 06 01
04 09 00	J1555-0326	16 37 18	32.8	192.2	0.7		7.3	-15	1358	No stop
04 11 00	=1552-033	16 39 18	32.7	192.8	0.7		7.6	105	1373	04 09 01
04 11 00	IRAS15480	16 39 18	32.1	194.1	0.8		8.4	-16	1373	No stop
04 14 00	---	16 42 19	32.0	195.0	0.8		9.0	164	1396	04 11 01
04 14 30	J1555-0326	16 42 49	32.6	193.8	0.8		8.3	15	1396	04 14 30
04 16 30	=1552-033	16 44 49	32.5	194.4	0.8		8.6	120	1412	04 14 31
04 16 30	IRAS15480	16 44 49	31.9	195.7	0.9		9.4	-15	1412	No stop
04 19 30	---	16 47 49	31.8	196.6	0.9		9.9	165	1435	04 16 31
04 19 30	J1555-0326	16 47 49	32.4	195.3	0.9		9.1	-15	1435	No stop
04 21 30	=1552-033	16 49 50	32.3	195.9	0.9		9.5	105	1450	04 19 31

Schedule for TORUN (Code Tr) Page 7

Exploring the obscured nucleus of the Sy2 IRAS15480-0344

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Wed 11 Mar 2015 Day 70 ---										
04 21 30	IRAS15480	16 49 50	31.7	197.2	1.0		10.2	-15	1450	No stop
04 24 30	---	16 52 50	31.5	198.0	1.0		10.7	165	1473	04 21 31
04 25 00	J1555-0326	16 53 20	32.2	196.9	1.0		10.1	15	1473	04 25 00
04 27 00	=1552-033	16 55 21	32.1	197.5	1.0		10.4	120	1488	04 25 01
04 27 00	IRAS15480	16 55 21	31.4	198.7	1.1		11.2	-15	1488	No stop
04 30 00	---	16 58 21	31.3	199.6	1.1		11.7	165	1512	04 27 01
04 30 00	J1555-0326	16 58 21	31.9	198.3	1.0		10.9	-15	1512	No stop
04 32 00	=1552-033	17 00 22	31.8	198.9	1.1		11.2	105	1527	04 30 01
04 32 00	IRAS15480	17 00 22	31.2	200.2	1.1		12.0	-15	1527	No stop
04 35 00	---	17 03 22	31.0	201.0	1.2		12.5	165	1550	04 32 01
04 35 30	J1555-0326	17 03 52	31.7	199.9	1.1		11.8	15	1550	04 35 30
04 37 30	=1552-033	17 05 52	31.6	200.5	1.2		12.2	120	1565	04 35 31
04 37 30	IRAS15480	17 05 52	30.9	201.7	1.2		12.9	-15	1565	No stop
04 40 30	---	17 08 53	30.7	202.6	1.3		13.4	165	1588	04 37 31
04 40 30	J1555-0326	17 08 53	31.4	201.3	1.2		12.7	-15	1588	No stop
04 42 30	=1552-033	17 10 53	31.3	201.9	1.2		13.0	105	1604	04 40 31
04 42 30	IRAS15480	17 10 53	30.6	203.2	1.3		13.7	-15	1604	No stop
04 45 30	---	17 13 54	30.4	204.0	1.4		14.2	165	1627	04 42 31
04 46 00	J1555-0326	17 14 24	31.1	202.9	1.3		13.5	15	1627	04 46 00
04 48 00	=1552-033	17 16 24	31.0	203.5	1.3		13.9	120	1642	04 46 01
04 48 00	IRAS15480	17 16 24	30.2	204.7	1.4		14.6	-15	1642	No stop
04 51 00	---	17 19 25	30.0	205.6	1.5		15.0	165	1665	04 48 01
04 51 00	J1555-0326	17 19 25	30.8	204.3	1.4		14.4	-15	1665	No stop
04 53 00	=1552-033	17 21 25	30.7	204.9	1.4		14.7	105	1681	04 51 01
04 53 00	IRAS15480	17 21 25	29.9	206.1	1.5		15.4	-15	1681	No stop
04 56 00	---	17 24 25	29.7	206.9	1.5		15.8	165	1704	04 53 01
04 56 30	J1555-0326	17 24 56	30.4	205.9	1.5		15.2	15	1704	04 56 30
04 58 30	=1552-033	17 26 56	30.3	206.4	1.5		15.5	120	1719	04 56 31
04 58 30	IRAS15480	17 26 56	29.5	207.6	1.6		16.2	-15	1719	No stop
05 01 30	---	17 29 56	29.3	208.5	1.6		16.7	165	1742	04 58 31

Schedule for TORUN (Code Tr) Page 8

Exploring the obscured nucleus of the Sy2 IRAS15480-0344

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Wed 11 Mar 2015 Day 70 ---										
05 01 30	J1555-0326	17 29 56	30.1	207.3	1.6		16.0	-15	1742	No stop
05 03 30	=1552-033	17 31 57	30.0	207.8	1.6		16.3	105	1758	05 01 31
05 03 30	IRAS15480	17 31 57	29.2	209.0	1.7		17.0	-15	1758	No stop
05 06 30	---	17 34 57	29.0	209.8	1.7		17.4	165	1781	05 03 31
05 07 00	J1555-0326	17 35 27	29.7	208.8	1.7		16.8	15	1781	05 07 00
05 09 00	=1552-033	17 37 28	29.6	209.3	1.7		17.1	120	1796	05 07 01
05 09 00	IRAS15480	17 37 28	28.8	210.5	1.8		17.8	-15	1796	No stop
05 12 00	---	17 40 28	28.5	211.3	1.8		18.2	165	1819	05 09 01
05 12 00	J1555-0326	17 40 28	29.3	210.2	1.7		17.6	-15	1819	No stop
05 14 00	=1552-033	17 42 28	29.2	210.7	1.8		17.9	105	1835	05 12 01
05 14 00	IRAS15480	17 42 28	28.4	211.9	1.8		18.5	-15	1835	No stop
05 17 00	---	17 45 29	28.1	212.7	1.9		19.0	165	1858	05 14 01
05 17 30	J1555-0326	17 45 59	28.9	211.7	1.8		18.4	15	1858	05 17 30
05 19 30	=1552-033	17 47 59	28.7	212.2	1.9		18.7	120	1873	05 17 31
05 19 30	IRAS15480	17 47 59	27.9	213.3	1.9		19.3	-15	1873	No stop
05 22 30	---	17 51 00	27.7	214.1	2.0		19.7	165	1896	05 19 31
05 22 30	J1555-0326	17 51 00	28.5	213.0	1.9		19.1	-15	1896	No stop
05 24 30	=1552-033	17 53 00	28.3	213.6	1.9		19.4	105	1912	05 22 31
05 24 30	IRAS15480	17 53 00	27.5	214.7	2.0		20.0	-16	1912	No stop
05 27 30	---	17 56 01	27.3	215.5	2.1		20.4	164	1935	05 24 31
05 32 30	J2005+7752	18 01 01	62.8	373.6	-2.1		-137.4	-31	1935	05 32 30
05 39 00	=2007+777	18 07 33	63.1	373.1	-2.0		-139.5	359	1985	05 32 31
05 45 30	J1555-0326	18 14 04	26.5	219.1	2.3		22.3	66	1985	05 45 30
05 47 30	=1552-033	18 16 04	26.3	219.6	2.3		22.6	120	2000	05 45 31
05 47 30	IRAS15480	18 16 04	25.4	220.6	2.4		23.1	-16	2000	No stop
05 50 30	---	18 19 04	25.1	221.4	2.5		23.5	164	2023	05 47 31
05 51 00	J1555-0326	18 19 34	25.9	220.5	2.4		23.0	14	2023	05 51 00
05 53 00	=1552-033	18 21 35	25.7	221.0	2.4		23.3	120	2038	05 51 01
05 53 00	IRAS15480	18 21 35	24.9	222.0	2.5		23.8	-16	2038	No stop
05 56 00	---	18 24 35	24.5	222.8	2.6		24.1	164	2062	05 53 01

Schedule for TORUN (Code Tr) Page 9

Exploring the obscured nucleus of the Sy2 IRAS15480-0344

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Wed 11 Mar 2015 Day 70 ---										
05 56 00	J1555-0326	18 24 35	25.4	221.8	2.5		23.6	-16	2062	No stop
05 58 00	=1552-033	18 26 36	25.2	222.3	2.5		23.9	104	2077	05 56 01
05 58 00	IRAS15480	18 26 36	24.3	223.3	2.6		24.4	-16	2077	No stop
06 01 00	---	18 29 36	24.0	224.0	2.6		24.7	164	2100	05 58 01
06 01 30	J1555-0326	18 30 06	24.9	223.2	2.6		24.3	14	2100	06 01 30
06 03 30	=1552-033	18 32 07	24.7	223.7	2.6		24.5	120	2115	06 01 31
06 03 30	IRAS15480	18 32 07	23.8	224.7	2.7		25.0	-16	2115	No stop
06 06 30	---	18 35 07	23.4	225.4	2.7		25.4	164	2138	06 03 31
06 06 30	J1555-0326	18 35 07	24.4	224.4	2.6		24.9	-16	2138	No stop
06 08 30	=1552-033	18 37 07	24.1	224.9	2.7		25.1	104	2154	06 06 31
06 08 30	IRAS15480	18 37 07	23.2	225.9	2.8		25.6	-16	2154	No stop
06 11 30	---	18 40 08	22.9	226.6	2.8		25.9	164	2177	06 08 31
06 12 00	J1555-0326	18 40 38	23.8	225.8	2.7		25.5	14	2177	06 12 00
06 14 00	=1552-033	18 42 38	23.6	226.3	2.8		25.8	120	2192	06 12 01
06 14 00	IRAS15480	18 42 38	22.6	227.2	2.9		26.2	-16	2192	No stop
06 17 00	---	18 45 39	22.3	228.0	2.9		26.6	164	2215	06 14 01
06 17 00	J1555-0326	18 45 39	23.2	227.0	2.8		26.1	-16	2215	No stop
06 19 00	=1552-033	18 47 39	23.0	227.5	2.9		26.3	104	2231	06 17 01
06 19 00	IRAS15480	18 47 39	22.1	228.4	2.9		26.8	-16	2231	No stop
06 22 00	---	18 50 40	21.7	229.2	3.0		27.1	164	2254	06 19 01
06 22 30	J1555-0326	18 51 10	22.6	228.3	2.9		26.7	14	2254	06 22 30
06 24 30	=1552-033	18 53 10	22.4	228.8	2.9		26.9	120	2269	06 22 31
06 24 30	IRAS15480	18 53 10	21.4	229.8	3.0		27.4	-16	2269	No stop
06 27 30	---	18 56 10	21.1	230.5	3.1		27.7	164	2292	06 24 31
06 27 30	J1555-0326	18 56 10	22.0	229.6	3.0		27.2	-16	2292	No stop
06 29 30	=1552-033	18 58 11	21.8	230.0	3.0		27.5	104	2308	06 27 31
06 29 30	IRAS15480	18 58 11	20.9	231.0	3.1		27.9	-16	2308	No stop
06 32 30	---	19 01 11	20.5	231.7	3.2		28.2	164	2331	06 29 31
06 33 00	J1555-0326	19 01 41	21.4	230.9	3.1		27.8	14	2331	06 33 00
06 35 00	=1552-033	19 03 42	21.2	231.3	3.1		28.0	120	2346	06 33 01

Schedule for TORUN (Code Tr) Page 10

Exploring the obscured nucleus of the Sy2 IRAS15480-0344

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Wed 11 Mar 2015 Day 70 ---										
06 35 00	IRAS15480	19 03 42	20.2	232.2	3.2		28.4	-16	2346	No stop
06 38 00	---	19 06 42	19.9	233.0	3.3		28.7	164	2369	06 35 01
06 38 00	J1555-0326	19 06 42	20.8	232.1	3.2		28.3	-16	2369	No stop
06 40 00	=1552-033	19 08 43	20.6	232.5	3.2		28.5	104	2385	06 38 01
06 40 00	IRAS15480	19 08 43	19.6	233.4	3.3		28.9	-16	2385	No stop
06 43 00	---	19 11 43	19.3	234.1	3.3		29.2	164	2408	06 40 01
06 43 30	J1555-0326	19 12 13	20.2	233.3	3.3		28.9	14	2408	06 43 30
06 45 30	=1552-033	19 14 13	19.9	233.8	3.3		29.0	120	2423	06 43 31
06 45 30	IRAS15480	19 14 13	18.9	234.7	3.4		29.4	-17	2423	No stop
06 48 30	---	19 17 14	18.6	235.4	3.4		29.7	163	2446	06 45 31
06 48 30	J1555-0326	19 17 14	19.6	234.5	3.3		29.3	-16	2446	No stop
06 50 30	=1552-033	19 19 14	19.3	235.0	3.4		29.5	104	2462	06 48 31
06 50 30	IRAS15480	19 19 14	18.3	235.8	3.5		29.9	-17	2462	No stop
06 53 30	---	19 22 15	18.0	236.5	3.5		30.1	163	2485	06 50 31
06 53 30	J1555-0326	19 22 15	18.9	235.7	3.4		29.8	-16	2485	No stop
06 55 30	=1552-033	19 24 15	18.7	236.1	3.5		30.0	104	2500	06 53 31
06 55 30	IRAS15480	19 24 15	17.7	237.0	3.5		30.3	-17	2500	No stop
06 58 30	---	19 27 16	17.3	237.7	3.6		30.6	163	2523	06 55 31
06 59 00	J1555-0326	19 27 46	18.3	236.9	3.5		30.3	14	2523	06 59 00
07 01 00	=1552-033	19 29 46	18.0	237.4	3.6		30.4	120	2538	06 59 01

SETUP FILE INFORMATION:

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

==== Setup file: sess115.C1024

Setup group: 11	Station: TORUN	Total bit rate: 1024
Format: MARK5B	Bits per sample: 2	Sample rate: 32.000
Number of channels: 16	DBE type: DBBC_DDC	Speedup factor: 1.00

Disk used to record data.

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

The following frequency sets based on these setups were used.

Frequency Set:	8	Setup file default.	Used with PCAL = off
LO sum=	4942.49	4942.49	4942.49
	5006.49	5006.49	5006.49
BBC fr=	742.49	742.49	742.49
	806.49	806.49	806.49
Bandwd=	16.00	16.00	16.00
	16.00	16.00	16.00
Matching frequency sets:	8		

Track assignments are:

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

barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* IRAS15480	15 48 03.967267	* 15 50 41.498000	15 51 30.074602	0.00
	-03 44 17.32904	*-03 53 18.05000	-03 56 00.72773	0.00
* J1555-0326	15 52 53.605530	* 15 55 30.748133	15 56 19.176439	0.18
1552-033	-03 18 06.67875	*-03 26 49.51953	-03 29 26.75820	0.36
J1642+3948	16 41 17.606228	* 16 42 58.809965	16 43 29.755859	0.77
* 3C345	39 54 10.81496	* 39 48 36.99402	39 46 46.31309	0.52
* J1751+0939	17 49 10.387929	* 17 51 32.818572	17 52 16.066169	0.10
1749+096	09 39 42.82574	* 09 39 00.72829	09 38 47.42777	0.10
* J2005+7752	20 07 20.430170	* 20 05 30.998498	20 04 53.919919	0.48
2007+777	77 43 58.12300	* 77 52 43.24753	77 55 14.26147	0.10

rk08shtr

RADIOASTRON AGN SURVEY
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Observing mode: C/L-band, dual-pol

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

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

--- Thu 12 Mar 2015 Day 71 ---

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

Next scan frequencies:	1668.00	1668.00	1668.00	1668.00						
Next BBC frequencies:	732.00	732.00	732.00	732.00						
Next scan bandwidths:	16.00	16.00	16.00	16.00						
06 10 00	1604+315	18 42 34	54.6	247.9	2.6		40.7	0	0	06 10 00
06 22 00	---	18 54 36	52.9	251.1	2.8		41.7	720	23	06 10 01
06 22 30	1604+315	18 55 06	52.8	251.3	2.8		41.8	24	23	06 22 30
06 34 30	---	19 07 08	51.1	254.4	3.0		42.6	720	46	06 22 31
06 35 00	1604+315	19 07 38	51.0	254.5	3.0		42.7	24	46	06 35 00
06 47 00	---	19 19 40	49.3	257.4	3.2		43.3	720	69	06 35 01
06 47 30	1604+315	19 20 10	49.2	257.5	3.2		43.4	24	69	06 47 30
07 00 00	---	19 32 42	47.3	260.4	3.4		43.9	750	93	06 47 31

SETUP FILE INFORMATION:

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

==== Setup file: ra18cm2.set

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(Date)	Error (mas)	
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.118938	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 49.89475	0.00
	fake circumpolar target for a TS to look at			
* 1604+315	16 04 10.611566	* 16 06 08.518385	16 06 44.800004	0.00
J1606+3124	31 32 47.72177	* 31 24 46.45776	31 22 12.27495	0.00
	./rk08sh_sources.radioastron			
	AGN, HIGHz, rfc_2013d Petrov, 2013, unpublished 90 observations, RA-A02-03, RA-A			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
1604+315	109.1

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

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk08sitr

RADIOASTRON AGN SURVEY

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

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

--- Thu 12 Mar 2015 Day 71 ---

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

Next scan frequencies:	1668.00	1668.00	1668.00	1668.00							
Next BBC frequencies:	732.00	732.00	732.00	732.00							
Next scan bandwidths:	16.00	16.00	16.00	16.00							
08 00 00	1548+056	20 32 52	16.0	257.3	4.7	36.1	0	0	08 00 00		
08 12 00	---	20 44 54	14.3	259.8	4.9	36.4	720	23	08 00 01		
08 12 30	1548+056	20 45 24	14.2	259.9	4.9	36.4	24	23	08 12 30		
08 24 30	---	20 57 26	12.4	262.4	5.1	36.7	720	46	08 12 31		
08 25 00	1548+056	20 57 56	12.3	262.5	5.1	36.7	24	46	08 25 00		
08 37 00	---	21 09 58	10.5	265.0	5.3	36.9	720	69	08 25 01		
08 37 30	1548+056	21 10 28	10.5	265.1	5.3	36.9	24	69	08 37 30		
08 50 00	---	21 23 00	8.6	267.6	5.5	37.1	750	93	08 37 31		

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)	(Date)	Error (mas)	
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.121270	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 49.91750	0.00
	fake circumpolar target for a TS to look at			
* 1548+056	15 48 06.931010	* 15 50 35.269243	15 51 21.015500	0.00
J1550+0527	05 36 11.23071	* 05 27 10.44825	05 24 24.73021	0.00
	./rk08si_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 8410 observations, RA-A02-12			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
1548+056	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 $60 \text{ deg } F^{-0.6}$ where F is in GHz.

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

n15m1tr

NETWORK MONITORING EXPERIMENT

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Schedule for TORUN (Code Tr)

Page 2

Network Monitoring Experiment

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Thu 12 Mar 2015 Day 71 ---										
Next scan frequencies: 6661.49 6661.49 6661.49 6661.49 6665.49 6665.49 6665.49 6665.49										
6669.49 6669.49 6669.49 6669.49 6673.49 6673.49 6673.49 6673.49										
Next BBC frequencies: 761.49 761.49 761.49 761.49 765.49 765.49 765.49 765.49										
769.49 769.49 769.49 769.49 773.49 773.49 773.49 773.49										
Next scan bandwidths: 2.00 2.00 2.00 2.00 2.00 2.00 2.00 2.00										
2.00 2.00 2.00 2.00 2.00 2.00 2.00 2.00										
13 00 00	3C84	01 33 42	68.7	111.9	-1.8	-48.1	0	0	13 00 00	
13 05 00	---	01 38 42	69.4	113.7	-1.7	-47.3	300	5	13 00 01	
13 06 00	3C84	01 39 43	69.5	114.1	-1.7	-47.1	53	5	13 06 00	
13 11 00	---	01 44 43	70.2	115.9	-1.6	-46.2	300	10	13 06 01	
13 12 00	3C84	01 45 43	70.3	116.3	-1.6	-46.0	53	10	13 12 00	
13 17 00	---	01 50 44	71.0	118.3	-1.5	-45.0	300	14	13 12 01	
13 17 30	3C84	01 51 14	71.1	118.5	-1.5	-44.9	24	14	13 17 30	
13 18 30	---	01 52 15	71.2	118.9	-1.5	-44.6	60	15	13 17 31	
13 19 00	J0313+4120	01 52 45	72.0	122.4	-1.4	-42.5	8	15	13 19 00	
13 20 00	=0309+411	01 53 45	72.1	122.9	-1.3	-42.2	60	16	13 19 01	
13 20 30	3C84	01 54 15	71.5	119.8	-1.4	-44.2	9	16	13 20 30	
13 21 30	---	01 55 15	71.6	120.2	-1.4	-43.9	60	17	13 20 31	
13 22 00	J0313+4120	01 55 45	72.4	123.8	-1.3	-41.7	8	17	13 22 00	
13 23 00	=0309+411	01 56 45	72.5	124.3	-1.3	-41.4	60	18	13 22 01	
13 23 30	3C84	01 57 15	71.9	121.0	-1.4	-43.4	9	18	13 23 30	
13 24 30	---	01 58 16	72.0	121.5	-1.4	-43.2	60	19	13 23 31	
13 25 00	J0313+4120	01 58 46	72.8	125.2	-1.3	-40.8	8	19	13 25 00	
13 26 00	=0309+411	01 59 46	72.9	125.7	-1.2	-40.5	60	20	13 25 01	
13 26 30	3C84	02 00 16	72.2	122.4	-1.3	-42.7	8	20	13 26 30	
13 27 30	---	02 01 16	72.4	122.8	-1.3	-42.4	60	21	13 26 31	
13 28 00	J0313+4120	02 01 46	73.1	126.7	-1.2	-39.9	8	21	13 28 00	
13 29 00	=0309+411	02 02 46	73.3	127.2	-1.2	-39.6	60	22	13 28 01	
13 29 30	3C84	02 03 16	72.6	123.8	-1.3	-41.9	8	22	13 29 30	
13 30 30	---	02 04 17	72.7	124.2	-1.3	-41.6	60	23	13 29 31	
13 31 00	J0313+4120	02 04 47	73.5	128.2	-1.2	-39.0	7	23	13 31 00	
13 32 00	=0309+411	02 05 47	73.6	128.7	-1.1	-38.6	60	24	13 31 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 L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

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

---	Thu 12 Mar 2015	Day	71	---							
13 32 30	3C84	02 06 17	73.0	125.2	-1.2		-41.0	8	24	13 32 30	
13 33 30	---	02 07 17	73.1	125.7	-1.2		-40.7	60	25	13 32 31	
13 34 00	J0313+4120	02 07 47	73.8	129.8	-1.1		-38.0	7	25	13 34 00	
13 35 00	=0309+411	02 08 47	74.0	130.3	-1.1		-37.6	60	26	13 34 01	
13 35 30	3C84	02 09 17	73.4	126.7	-1.2		-40.1	8	26	13 35 30	
13 36 30	---	02 10 18	73.5	127.2	-1.2		-39.8	60	27	13 35 31	
13 37 00	J0313+4120	02 10 48	74.2	131.4	-1.1		-36.9	7	27	13 37 00	
13 38 00	=0309+411	02 11 48	74.3	132.0	-1.0		-36.5	60	28	13 37 01	
13 38 30	3C84	02 12 18	73.7	128.2	-1.1		-39.1	7	28	13 38 30	
13 39 30	---	02 13 18	73.8	128.7	-1.1		-38.8	60	29	13 38 31	
13 40 00	J0313+4120	02 13 48	74.5	133.1	-1.0		-35.8	7	29	13 40 00	
13 41 00	=0309+411	02 14 48	74.6	133.7	-1.0		-35.4	60	30	13 40 01	
13 41 30	3C84	02 15 18	74.1	129.8	-1.1		-38.1	7	30	13 41 30	
13 42 30	---	02 16 18	74.2	130.3	-1.1		-37.7	60	31	13 41 31	
13 43 00	J0313+4120	02 16 49	74.8	134.8	-1.0		-34.6	6	31	13 43 00	
13 44 00	=0309+411	02 17 49	75.0	135.4	-0.9		-34.2	60	32	13 43 01	
13 44 30	3C84	02 18 19	74.4	131.4	-1.0		-37.0	7	32	13 44 30	
13 45 30	---	02 19 19	74.5	132.0	-1.0		-36.6	60	33	13 44 31	
13 46 00	J0313+4120	02 19 49	75.2	136.6	-0.9		-33.3	6	33	13 46 00	
13 47 00	=0309+411	02 20 49	75.3	137.3	-0.9		-32.9	60	34	13 46 01	
13 47 30	3C84	02 21 19	74.7	133.1	-1.0		-35.9	7	34	13 47 30	
13 48 30	---	02 22 19	74.9	133.7	-1.0		-35.5	60	35	13 47 31	
13 49 00	J0313+4120	02 22 50	75.5	138.5	-0.9		-32.0	6	35	13 49 00	
13 50 00	=0309+411	02 23 50	75.6	139.2	-0.8		-31.6	60	36	13 49 01	
13 50 30	3C84	02 24 20	75.1	134.9	-0.9		-34.7	6	36	13 50 30	
13 51 30	---	02 25 20	75.2	135.5	-0.9		-34.2	60	37	13 50 31	
13 52 00	J0313+4120	02 25 50	75.8	140.5	-0.8		-30.6	5	37	13 52 00	
13 53 00	=0309+411	02 26 50	75.9	141.1	-0.8		-30.2	60	37	13 52 01	
13 53 30	3C84	02 27 20	75.4	136.7	-0.9		-33.4	6	37	13 53 30	
13 54 30	---	02 28 20	75.5	137.3	-0.9		-32.9	60	38	13 53 31	

Schedule for TORUN (Code Tr)

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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 L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

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

---	Thu 12 Mar 2015	Day	71	---						
13 55 00	J0313+4120	02 28 51	76.0	142.5	-0.8		-29.2	5	38	13 55 00
13 56 00	=0309+411	02 29 51	76.1	143.1	-0.7		-28.7	60	39	13 55 01
13 56 30	3C84	02 30 21	75.7	138.6	-0.8		-32.0	6	39	13 56 30
13 57 30	---	02 31 21	75.8	139.3	-0.8		-31.6	60	40	13 56 31
13 58 00	J0313+4120	02 31 51	76.3	144.5	-0.7		-27.7	5	40	13 58 00
13 59 00	=0309+411	02 32 51	76.4	145.2	-0.7		-27.1	60	41	13 58 01
13 59 30	3C84	02 33 21	76.0	140.6	-0.8		-30.6	5	41	13 59 30
14 00 30	---	02 34 21	76.1	141.2	-0.8		-30.2	60	42	13 59 31
14 01 00	J0313+4120	02 34 52	76.6	146.7	-0.7		-26.1	4	42	14 01 00
14 02 00	=0309+411	02 35 52	76.6	147.4	-0.6		-25.5	60	43	14 01 01
14 02 30	3C84	02 36 22	76.3	142.6	-0.7		-29.2	5	43	14 02 30
14 03 30	---	02 37 22	76.4	143.3	-0.7		-28.7	60	44	14 02 31
14 04 00	J0313+4120	02 37 52	76.8	148.9	-0.6		-24.4	4	44	14 04 00
14 05 00	=0309+411	02 38 52	76.9	149.7	-0.6		-23.9	60	45	14 04 01
14 05 30	3C84	02 39 22	76.5	144.7	-0.7		-27.6	5	45	14 05 30
14 06 30	---	02 40 22	76.6	145.4	-0.7		-27.1	60	46	14 05 31
14 07 00	J0313+4120	02 40 53	77.0	151.2	-0.6		-22.7	4	46	14 07 00
14 08 00	=0309+411	02 41 53	77.1	152.0	-0.5		-22.1	60	47	14 07 01
14 08 30	3C84	02 42 23	76.8	146.9	-0.6		-26.0	5	47	14 08 30
14 09 30	---	02 43 23	76.9	147.6	-0.6		-25.4	60	48	14 08 31
14 10 00	J0313+4120	02 43 53	77.2	153.5	-0.5		-20.9	3	48	14 10 00
14 11 00	=0309+411	02 44 53	77.3	154.3	-0.5		-20.3	60	49	14 10 01
14 11 30	3C84	02 45 23	77.0	149.1	-0.6		-24.3	4	49	14 11 30
14 12 30	---	02 46 23	77.1	149.9	-0.6		-23.7	60	50	14 11 31
14 13 00	J0313+4120	02 46 54	77.4	156.0	-0.5		-19.0	3	50	14 13 00
14 14 00	=0309+411	02 47 54	77.5	156.8	-0.4		-18.4	60	51	14 13 01
14 14 30	3C84	02 48 24	77.2	151.5	-0.5		-22.5	4	51	14 14 30
14 16 30	---	02 50 24	77.4	153.0	-0.5		-21.3	120	53	14 14 31
14 22 00	0528+134	02 55 55	39.9	127.2	-2.6		-29.5	174	53	14 22 00
14 26 30	---	03 00 26	40.4	128.4	-2.5		-28.9	270	57	14 22 01

Schedule for TORUN (Code Tr)

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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 L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

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

---	Thu 12 Mar 2015	Day	71	---							
14 27 30	0528+134	03 01 26	40.5	128.7	-2.5		-28.8	54	57	14 27 30	
14 32 30	---	03 06 27	41.1	130.1	-2.4		-28.2	300	62	14 27 31	
14 34 30	0528+134	03 08 27	41.3	130.7	-2.4		-27.9	113	62	14 34 30	
14 41 30	---	03 15 28	42.1	132.7	-2.3		-27.0	420	69	14 34 31	
14 42 30	0528+134	03 16 28	42.2	133.0	-2.3		-26.8	54	69	14 42 30	
14 49 30	---	03 23 30	43.0	135.1	-2.1		-25.8	420	75	14 42 31	
14 52 30	DA193	03 26 30	61.4	102.4	-2.5		-49.8	98	75	14 52 30	
14 57 30	---	03 31 31	62.1	103.7	-2.4		-49.4	300	80	14 52 31	
14 58 00	DA193	03 32 01	62.2	103.8	-2.4		-49.4	24	80	14 58 00	
14 59 00	---	03 33 01	62.3	104.1	-2.4		-49.3	60	81	14 58 01	
14 59 30	J0552+3754	03 33 31	61.6	108.1	-2.3		-46.3	7	81	14 59 30	
15 00 30	=0548+378	03 34 31	61.7	108.4	-2.3		-46.2	60	82	14 59 31	
15 01 00	DA193	03 35 01	62.6	104.6	-2.4		-49.1	7	82	15 01 00	
15 02 00	---	03 36 02	62.8	104.9	-2.3		-49.1	60	83	15 01 01	
15 02 30	J0552+3754	03 36 32	62.0	109.0	-2.3		-46.0	7	83	15 02 30	
15 03 30	=0548+378	03 37 32	62.2	109.3	-2.3		-45.9	60	84	15 02 31	
15 04 00	DA193	03 38 02	63.1	105.5	-2.3		-48.9	7	84	15 04 00	
15 05 00	---	03 39 02	63.2	105.8	-2.3		-48.8	60	85	15 04 01	
15 05 30	J0552+3754	03 39 32	62.4	109.9	-2.2		-45.7	7	85	15 05 30	
15 06 30	=0548+378	03 40 32	62.6	110.2	-2.2		-45.6	60	86	15 05 31	
15 07 00	DA193	03 41 02	63.5	106.3	-2.3		-48.6	7	86	15 07 00	
15 08 00	---	03 42 03	63.6	106.6	-2.2		-48.5	60	87	15 07 01	
15 08 30	J0552+3754	03 42 33	62.9	110.8	-2.2		-45.4	7	87	15 08 30	
15 09 30	=0548+378	03 43 33	63.0	111.1	-2.2		-45.2	60	88	15 08 31	
15 10 00	DA193	03 44 03	63.9	107.2	-2.2		-48.3	7	88	15 10 00	
15 11 00	---	03 45 03	64.1	107.5	-2.2		-48.2	60	89	15 10 01	
15 11 30	J0552+3754	03 45 33	63.3	111.7	-2.1		-45.0	7	89	15 11 30	
15 12 30	=0548+378	03 46 33	63.4	112.0	-2.1		-44.9	60	90	15 11 31	
15 13 00	DA193	03 47 03	64.4	108.1	-2.2		-48.0	7	90	15 13 00	
15 14 00	---	03 48 04	64.5	108.4	-2.1		-47.9	60	91	15 13 01	

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 L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

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

--- Thu 12 Mar 2015 Day 71 ---										
15 14 30	J0552+3754	03 48 34	63.7	112.7	-2.1		-44.6	7	91	15 14 30
15 15 30	=0548+378	03 49 34	63.8	113.0	-2.1		-44.5	60	92	15 14 31
15 16 00	DA193	03 50 04	64.8	109.0	-2.1		-47.7	7	92	15 16 00
15 17 00	---	03 51 04	64.9	109.3	-2.1		-47.6	60	93	15 16 01
15 17 30	J0552+3754	03 51 34	64.1	113.6	-2.0		-44.2	6	93	15 17 30
15 18 30	=0548+378	03 52 34	64.3	114.0	-2.0		-44.1	60	94	15 17 31
15 19 00	DA193	03 53 04	65.2	109.9	-2.1		-47.3	7	94	15 19 00
15 20 00	---	03 54 05	65.4	110.2	-2.0		-47.2	60	95	15 19 01
15 20 30	J0552+3754	03 54 35	64.5	114.6	-2.0		-43.8	6	95	15 20 30
15 21 30	=0548+378	03 55 35	64.7	115.0	-2.0		-43.6	60	96	15 20 31
15 22 00	DA193	03 56 05	65.6	110.8	-2.0		-46.9	7	96	15 22 00
15 23 00	---	03 57 05	65.8	111.2	-2.0		-46.8	60	97	15 22 01
15 23 30	J0552+3754	03 57 35	64.9	115.6	-1.9		-43.3	6	97	15 23 30
15 24 30	=0548+378	03 58 35	65.1	116.0	-1.9		-43.2	60	98	15 23 31
15 25 00	DA193	03 59 05	66.1	111.8	-2.0		-46.5	7	98	15 25 00
15 26 00	---	04 00 06	66.2	112.1	-1.9		-46.4	60	99	15 25 01
15 26 30	J0552+3754	04 00 36	65.4	116.7	-1.9		-42.9	6	99	15 26 30
15 27 30	=0548+378	04 01 36	65.5	117.0	-1.9		-42.7	60	100	15 26 31
15 28 00	DA193	04 02 06	66.5	112.8	-1.9		-46.1	7	100	15 28 00
15 29 00	---	04 03 06	66.6	113.1	-1.9		-46.0	60	100	15 28 01
15 29 30	J0552+3754	04 03 36	65.8	117.7	-1.8		-42.4	6	100	15 29 30
15 30 30	=0548+378	04 04 36	65.9	118.1	-1.8		-42.2	60	101	15 29 31
15 31 00	DA193	04 05 06	66.9	113.8	-1.9		-45.7	6	101	15 31 00
15 32 00	---	04 06 06	67.0	114.2	-1.8		-45.5	60	102	15 31 01
15 32 30	J0552+3754	04 06 37	66.2	118.8	-1.8		-41.8	6	102	15 32 30
15 33 30	=0548+378	04 07 37	66.3	119.2	-1.8		-41.7	60	103	15 32 31
15 34 00	DA193	04 08 07	67.3	114.9	-1.8		-45.2	6	103	15 34 00
15 35 00	---	04 09 07	67.4	115.2	-1.8		-45.0	60	104	15 34 01
15 35 30	J0552+3754	04 09 37	66.5	119.9	-1.7		-41.3	6	104	15 35 30
15 36 30	=0548+378	04 10 37	66.7	120.3	-1.7		-41.1	60	105	15 35 31

Schedule for TORUN (Code Tr)

Page 7

Network Monitoring Experiment

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Thu 12 Mar 2015 Day 71 ---										
15 37 00	DA193	04 11 07	67.7	115.9	-1.8		-44.7	6	105	15 37 00
15 38 00	---	04 12 07	67.8	116.3	-1.7		-44.5	60	106	15 37 01
15 38 30	J0552+3754	04 12 38	66.9	121.0	-1.7		-40.7	6	106	15 38 30
15 39 30	=0548+378	04 13 38	67.1	121.4	-1.7		-40.5	60	107	15 38 31
15 40 00	DA193	04 14 08	68.1	117.0	-1.7		-44.1	6	107	15 40 00
15 41 00	---	04 15 08	68.2	117.4	-1.7		-44.0	60	108	15 40 01
15 41 30	J0552+3754	04 15 38	67.3	122.2	-1.6		-40.1	6	108	15 41 30
15 42 30	=0548+378	04 16 38	67.4	122.6	-1.6		-39.9	60	109	15 41 31
15 43 00	DA193	04 17 08	68.5	118.2	-1.7		-43.6	6	109	15 43 00
15 44 00	---	04 18 08	68.6	118.5	-1.6		-43.4	60	110	15 43 01
15 44 30	J0552+3754	04 18 39	67.7	123.4	-1.6		-39.5	5	110	15 44 30
15 45 30	=0548+378	04 19 39	67.8	123.8	-1.6		-39.2	60	111	15 44 31
15 46 00	DA193	04 20 09	68.9	119.3	-1.6		-43.0	6	111	15 46 00
15 47 00	---	04 21 09	69.0	119.7	-1.6		-42.8	60	112	15 46 01
15 47 30	J0552+3754	04 21 39	68.1	124.6	-1.5		-38.8	5	112	15 47 30
15 48 30	=0548+378	04 22 39	68.2	125.0	-1.5		-38.6	60	113	15 47 31
15 49 00	DA193	04 23 09	69.3	120.5	-1.6		-42.3	6	113	15 49 00
15 50 00	---	04 24 09	69.4	120.9	-1.5		-42.1	60	114	15 49 01
15 51 00	DA193	04 25 10	69.6	121.3	-1.5		-41.9	53	114	15 51 00
15 56 00	---	04 30 10	70.2	123.4	-1.4		-40.7	300	119	15 51 01
15 58 00	DA193	04 32 11	70.4	124.3	-1.4		-40.2	113	119	15 58 00
16 00 00	---	04 34 11	70.7	125.2	-1.4		-39.7	120	121	15 58 01

SETUP FILE INFORMATION:

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

==== Setup file: sess115.M128

Setup group: 8	Station: TORUN	Total bit rate: 128
Format: MARK5B	Bits per sample: 2	Sample rate: 4.000
Number of channels: 16	DBE type: DBBC_DDC	Speedup factor: 1.00

Disk used to record data.

1st LO=	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00
	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00
Net SB=	L	L	U	U	L	L	U	U	U
	L	L	U	U	L	L	U	U	U
IF SB =	U	U	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	LCP
	RCP	LCP	RCP	LCP	RCP	LCP	RCP	LCP	LCP
BBC =	1	5	1	5	2	6	2	6	6
	3	7	3	7	4	8	4	8	8
BBC SB=	L	L	U	U	L	L	U	U	U
	L	L	U	U	L	L	U	U	U
IF =	A1	B1	A1	B1	A1	B1	A1	B1	B1
	A1	B1	A1	B1	A1	B1	A1	B1	B1

The following frequency sets based on these setups were used.

Frequency Set: 7 Setup file default. Used with PCAL = off

LO sum=	6661.49	6661.49	6661.49	6661.49	6665.49	6665.49	6665.49	6665.49
	6669.49	6669.49	6669.49	6669.49	6673.49	6673.49	6673.49	6673.49
BBC fr=	761.49	761.49	761.49	761.49	765.49	765.49	765.49	765.49
	769.49	769.49	769.49	769.49	773.49	773.49	773.49	773.49
Bandwd=	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00

Matching frequency sets: 7

Track assignments are:

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

barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	Source position (RA/Dec) (J2000)	(Date)	Error (mas)
* J0313+4120	03 09 44.793518	* 03 13 01.962133	03 14 01.789670	0.14
0309+411	41 08 48.80254	* 41 20 01.18313	41 23 22.55806	0.10
J0319+4130	03 16 29.567260	* 03 19 48.160090	03 20 48.451552	1.30
* 3C84	41 19 51.91699	* 41 30 42.10412	41 33 56.70761	2.72
J0530+1331	05 28 06.759218	* 05 30 56.416749	05 31 48.319217	0.10
* 0528+134	13 29 42.28877	* 13 31 55.14944	13 32 21.28265	0.10
* J0552+3754	05 48 52.231755	* 05 52 17.936920	05 53 21.004318	0.13
0548+378	37 53 44.15048	* 37 54 25.28236	37 54 31.38880	0.11
J0555+3948	05 52 01.407174	* 05 55 30.805616	05 56 35.021182	0.13
* DA193	39 48 21.94578	* 39 48 49.16493	39 48 51.59441	0.10

rk08sjtr

RADIOASTRON AGN SURVEY

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

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

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

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

--- Thu 12 Mar 2015 Day 71 ---

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

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

23 00 00	1413+135	11 35 20	39.0	125.9	-2.7	-30.0	0	0	23 00 00
23 14 30	---	11 49 52	40.7	129.9	-2.4	-28.3	870	28	23 00 01
23 15 00	1413+135	11 50 23	40.8	130.0	-2.4	-28.2	24	28	23 15 00
23 25 00	---	12 00 24	41.9	132.9	-2.3	-26.9	600	47	23 15 01

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

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

23 30 00	1413+135	12 05 25	42.4	134.4	-2.2	-26.2	293	47	23 30 00
23 44 30	---	12 19 57	43.9	138.8	-1.9	-24.0	870	75	23 30 01
23 45 00	1413+135	12 20 27	44.0	138.9	-1.9	-23.9	24	75	23 45 00
23 59 59	---	12 35 30	45.4	143.7	-1.7	-21.4	899	104	23 45 01

SETUP FILE INFORMATION:

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

=====
Setup file: ra1cm2.set

Matching groups in ./rk08sj_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

```

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:  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)		(Date)	Error (mas)
	(B1950)	(J2000)		
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.141463	0.00
	85 16 41.77889	* 85 00 00.00000	84 54 50.10179	0.00
* 1413+135	14 13 33.910857	* 14 15 58.817509	14 16 43.886049	0.00
J1415+1320	13 34 17.40450	* 13 20 23.71274	13 16 04.24967	0.00

rk08sktr

RADIOASTRON AGN SURVEY

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

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

--- Fri 13 Mar 2015 Day 72 ---

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

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

Table with 11 columns: Start UT, Stop UT, Source, LST, EL, AZ, HA, UP, ParA, Dwell, GBytes, SYNC. It lists observation times and parameters for source 0917+449.

SETUP FILE INFORMATION:

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

==== Setup file: ra6cm2.set

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.145703	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 50.13758	0.00
	fake circumpolar target for a TS to look at			
* 0917+449	09 17 41.919222	* 09 20 58.458485	09 21 59.367383	0.00
J0920+4441	44 54 39.62449	* 44 41 53.98501	44 37 53.72800	0.00
	./rk08sk_sources.radioastron AGN, rfc_2013d Petrov, 2013, unpublished 2520 observations, RA-A02-12			

EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
0917+449    129.7

```

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

For common VLBI bands, this is:

```

1.6 GHz     45. deg
2.3 GHz     36. deg
5.0 GHz     23. deg
8.4 GHz     17. deg
15.0 GHz    12. deg
22.0 GHz     9. deg

```

rk08sltr

RADIOASTRON AGN SURVEY

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

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

--- Fri 13 Mar 2015 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

04 10 00	1406-076	16 46 11	20.5	221.8	2.6	23.9	0	0	04 10 00
04 22 00	---	16 58 13	19.3	224.7	2.8	25.3	720	23	04 10 01
04 22 30	1406-076	16 58 43	19.3	224.8	2.8	25.3	24	23	04 22 30
04 30 00	---	17 06 14	18.4	226.6	2.9	26.1	450	37	04 22 31

----- 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

04 35 00	1406-076	17 11 15	17.9	227.8	3.0	26.7	293	37	04 35 00
04 47 00	---	17 23 17	16.5	230.6	3.2	27.9	720	60	04 35 01
04 47 30	1406-076	17 23 47	16.5	230.7	3.2	28.0	24	60	04 47 30
05 00 00	---	17 36 19	15.0	233.5	3.4	29.2	750	84	04 47 31

SETUP FILE INFORMATION:

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

=====
Setup file: ra1cm2.set

Matching groups in ./rk08sl_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

```

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:  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) (B1950)	Source position (RA/Dec) (J2000)	(Date)	Error (mas)
* 1406-076	14 06 17.898821	* 14 08 56.481199	14 09 45.964757	0.00
J1408-0752	-07 38 15.91695	*-07 52 26.66668	-07 56 46.86266	0.00

3D VELOCITY FIELD OF THE METHANOL GAS AROUND CEPHEUS A HW2
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 Observing mode: Phase referencing and Polariz. obs. of 1 source at 6.7 GHz

Schedule for TORUN (Code Tr) Page 2

3D velocity field of the methanol gas around Cepheus A HW2

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Fri 13 Mar 2015 Day 72 ---

Next scan frequencies:	6665.64	6665.64	6665.64	6665.64	6669.64	6669.64	6669.64	6669.64	6669.64
	6673.64	6673.64	6673.64	6673.64	6677.64	6677.64	6677.64	6677.64	6677.64
Next BBC frequencies:	765.64	765.64	765.64	765.64	769.64	769.64	769.64	769.64	769.64
	773.64	773.64	773.64	773.64	777.64	777.64	777.64	777.64	777.64
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	2.00	2.00
06 30 00	J1331+3030	19 06 34	27.5	-75.1	5.6	42.3	0	0	06 30 00
06 40 00	---	19 16 36	26.1	-73.3	5.7	41.8	600	10	06 30 01
06 49 00	J2202+4216	19 25 37	61.8	96.3	-2.6	-53.9	187	10	06 49 00
06 57 00	---	19 33 38	63.0	98.2	-2.5	-53.5	480	17	06 49 01
07 06 00	CEPHEUSA	19 42 40	63.2	51.1	-3.2	-87.1	430	17	07 06 00
07 08 00	---	19 44 40	63.4	51.1	-3.2	-87.5	120	19	07 06 01
07 08 00	J2302+6405	19 44 40	62.8	46.5	-3.3	-90.2	-24	19	No stop
07 09 30	---	19 46 10	62.9	46.5	-3.3	-90.6	66	21	07 08 01
07 09 45	J2302+6405	19 46 26	63.0	46.5	-3.3	-90.6	9	21	07 09 45
07 11 15	---	19 47 56	63.1	46.5	-3.3	-91.0	90	22	07 09 46
07 11 15	CEPHEUSA	19 47 56	63.8	51.1	-3.1	-88.2	-24	22	No stop
07 13 15	---	19 49 56	64.1	51.1	-3.1	-88.7	96	24	07 11 16
07 13 15	J2302+6405	19 49 56	63.3	46.5	-3.2	-91.4	-24	24	No stop
07 16 15	---	19 52 57	63.7	46.5	-3.2	-92.1	156	27	07 13 16
07 16 15	CEPHEUSA	19 52 57	64.4	51.2	-3.1	-89.3	-24	27	No stop
07 18 15	---	19 54 57	64.6	51.2	-3.0	-89.7	96	29	07 16 16
07 18 15	J2302+6405	19 54 57	63.9	46.4	-3.1	-92.6	-24	29	No stop
07 21 15	---	19 57 57	64.2	46.4	-3.1	-93.3	156	32	07 18 16
07 21 15	CEPHEUSA	19 57 57	65.0	51.2	-3.0	-90.4	-25	32	No stop
07 23 15	---	19 59 58	65.2	51.2	-2.9	-90.9	95	34	07 21 16
07 23 15	J2302+6405	19 59 58	64.4	46.4	-3.1	-93.8	-25	34	No stop
07 24 45	---	20 01 28	64.6	46.3	-3.0	-94.1	65	35	07 23 16

Schedule for TORUN (Code Tr)

Page 3

3D velocity field of the methanol gas around Cepheus A HW2

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 13 Mar 2015	Day	72	---							
07 25 00	J2302+6405	20 01 43	64.6	46.3	-3.0		-94.2	9	35	07 25 00	
07 26 30	---	20 03 13	64.8	46.3	-3.0		-94.6	90	37	07 25 01	
07 26 30	CEPHEUSA	20 03 13	65.6	51.1	-2.9		-91.6	-25	37	No stop	
07 28 30	---	20 05 14	65.9	51.1	-2.9		-92.1	95	38	07 26 31	
07 28 30	J2302+6405	20 05 14	65.0	46.3	-3.0		-95.0	-25	38	No stop	
07 31 30	---	20 08 14	65.3	46.2	-2.9		-95.8	155	41	07 28 31	
07 31 30	CEPHEUSA	20 08 14	66.2	51.1	-2.8		-92.8	-25	41	No stop	
07 33 30	---	20 10 14	66.4	51.1	-2.8		-93.2	95	43	07 31 31	
07 33 30	J2302+6405	20 10 14	65.5	46.1	-2.9		-96.3	-25	43	No stop	
07 36 30	---	20 13 15	65.9	46.0	-2.8		-97.1	155	46	07 33 31	
07 36 30	CEPHEUSA	20 13 15	66.8	51.0	-2.7		-93.9	-25	46	No stop	
07 38 30	---	20 15 15	67.0	51.0	-2.7		-94.4	95	48	07 36 31	
07 38 30	J2302+6405	20 15 15	66.1	46.0	-2.8		-97.6	-25	48	No stop	
07 40 00	---	20 16 46	66.2	45.9	-2.8		-98.0	65	50	07 38 31	
07 40 15	J2302+6405	20 17 01	66.3	45.9	-2.8		-98.0	9	50	07 40 15	
07 41 45	---	20 18 31	66.4	45.9	-2.7		-98.4	90	51	07 40 16	
07 41 45	CEPHEUSA	20 18 31	67.4	50.9	-2.6		-95.2	-25	51	No stop	
07 43 45	---	20 20 31	67.6	50.8	-2.6		-95.7	95	53	07 41 46	
07 43 45	J2302+6405	20 20 31	66.7	45.8	-2.7		-98.9	-25	53	No stop	
07 46 45	---	20 23 32	67.0	45.6	-2.7		-99.7	155	56	07 43 46	
07 46 45	CEPHEUSA	20 23 32	68.0	50.7	-2.6		-96.5	-25	56	No stop	
07 48 45	---	20 25 32	68.2	50.6	-2.5		-97.0	95	58	07 46 46	
07 48 45	J2302+6405	20 25 32	67.2	45.5	-2.6		-100.3	-25	58	No stop	
07 51 45	---	20 28 32	67.5	45.4	-2.6		-101.1	155	61	07 48 46	
07 51 45	CEPHEUSA	20 28 32	68.6	50.5	-2.5		-97.8	-25	61	No stop	
07 53 45	---	20 30 33	68.8	50.4	-2.4		-98.3	95	62	07 51 46	
07 53 45	J2302+6405	20 30 33	67.7	45.3	-2.5		-101.7	-25	62	No stop	
07 55 15	---	20 32 03	67.9	45.2	-2.5		-102.1	65	64	07 53 46	
07 55 30	J2302+6405	20 32 18	67.9	45.2	-2.5		-102.2	9	64	07 55 30	
07 57 00	---	20 33 48	68.1	45.1	-2.5		-102.6	90	65	07 55 31	
07 57 00	CEPHEUSA	20 33 48	69.2	50.3	-2.4		-99.2	-25	65	No stop	
07 59 00	---	20 35 49	69.4	50.2	-2.4		-99.7	95	67	07 57 01	
08 01 34	J2202+4216	20 38 23	72.2	118.7	-1.4		-45.5	2	67	08 01 34	
08 09 34	---	20 46 24	73.3	122.2	-1.3		-43.4	480	75	08 01 35	

Schedule for TORUN (Code Tr)

Page 4

3D velocity field of the methanol gas around Cepheus A HW2

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Fri 13 Mar 2015 Day 72 ---										
08 12 15	CEPHEUSA	20 49 06	70.9	49.2	-2.1		-103.5	0	75	08 12 15
08 14 15	---	20 51 06	71.2	49.1	-2.1		-104.1	120	77	08 12 16
08 14 15	J2302+6405	20 51 06	69.9	43.7	-2.2		-107.8	-26	77	No stop
08 15 45	---	20 52 36	70.0	43.5	-2.2		-108.2	64	78	08 14 16
08 16 00	J2302+6405	20 52 51	70.1	43.5	-2.2		-108.3	9	78	08 16 00
08 17 30	---	20 54 21	70.2	43.4	-2.1		-108.8	90	80	08 16 01
08 17 30	CEPHEUSA	20 54 21	71.5	48.8	-2.0		-105.1	-26	80	No stop
08 19 30	---	20 56 22	71.7	48.6	-2.0		-105.7	94	82	08 17 31
08 19 30	J2302+6405	20 56 22	70.4	43.2	-2.1		-109.4	-26	82	No stop
08 22 30	---	20 59 22	70.7	42.8	-2.1		-110.4	154	85	08 19 31
08 22 30	CEPHEUSA	20 59 22	72.1	48.2	-2.0		-106.7	-26	85	No stop
08 24 30	---	21 01 23	72.3	48.0	-1.9		-107.4	94	87	08 22 31
08 24 30	J2302+6405	21 01 23	70.9	42.6	-2.0		-111.1	-26	87	No stop
08 27 30	---	21 04 23	71.3	42.2	-2.0		-112.1	154	89	08 24 31
08 27 30	CEPHEUSA	21 04 23	72.6	47.7	-1.9		-108.4	-26	89	No stop
08 29 30	---	21 06 23	72.9	47.4	-1.8		-109.1	94	91	08 27 31
08 29 30	J2302+6405	21 06 23	71.5	41.9	-1.9		-112.8	-26	91	No stop
08 31 00	---	21 07 54	71.6	41.7	-1.9		-113.4	64	93	08 29 31
08 31 15	J2302+6405	21 08 09	71.6	41.7	-1.9		-113.5	9	93	08 31 15
08 32 45	---	21 09 39	71.8	41.5	-1.9		-114.0	90	94	08 31 16
08 32 45	CEPHEUSA	21 09 39	73.2	47.0	-1.8		-110.2	-26	94	No stop
08 34 45	---	21 11 39	73.4	46.7	-1.8		-110.9	94	96	08 32 46
08 34 45	J2302+6405	21 11 39	72.0	41.2	-1.9		-114.7	-26	96	No stop
08 37 45	---	21 14 40	72.3	40.8	-1.8		-115.8	154	99	08 34 46
08 37 45	CEPHEUSA	21 14 40	73.8	46.2	-1.7		-112.0	-26	99	No stop
08 39 45	---	21 16 40	74.0	45.9	-1.7		-112.8	94	101	08 37 46
08 39 45	J2302+6405	21 16 40	72.5	40.4	-1.8		-116.6	-26	101	No stop
08 42 45	---	21 19 41	72.8	39.9	-1.7		-117.7	154	104	08 39 46
08 42 45	CEPHEUSA	21 19 41	74.3	45.4	-1.6		-113.9	-26	104	No stop
08 44 45	---	21 21 41	74.5	45.0	-1.6		-114.7	94	106	08 42 46

Schedule for TORUN (Code Tr)

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3D velocity field of the methanol gas around Cepheus A HW2

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Fri 13 Mar 2015 Day 72 ---										
08 44 45	J2302+6405	21 21 41	73.0	39.6	-1.7		-118.5	-26	106	No stop
08 46 15	---	21 23 11	73.1	39.3	-1.7		-119.1	64	107	08 44 46
08 46 30	J2302+6405	21 23 26	73.1	39.3	-1.7		-119.2	9	107	08 46 30
08 48 00	---	21 24 56	73.3	39.0	-1.6		-119.8	90	109	08 46 31
08 48 00	CEPHEUSA	21 24 56	74.9	44.4	-1.5		-116.0	-26	109	No stop
08 50 00	---	21 26 57	75.1	44.0	-1.5		-116.9	94	111	08 48 01
08 50 00	J2302+6405	21 26 57	73.5	38.6	-1.6		-120.7	-26	111	No stop
08 53 00	---	21 29 57	73.7	38.0	-1.6		-121.9	154	113	08 50 01
08 53 00	CEPHEUSA	21 29 57	75.4	43.4	-1.4		-118.2	-26	113	No stop
08 55 00	---	21 31 58	75.6	42.9	-1.4		-119.0	94	115	08 53 01
08 55 00	J2302+6405	21 31 58	73.9	37.6	-1.5		-122.8	-26	115	No stop
08 58 00	---	21 34 58	74.2	36.9	-1.5		-124.1	154	118	08 55 01
08 58 00	CEPHEUSA	21 34 58	75.9	42.2	-1.4		-120.4	-25	118	No stop
09 00 00	---	21 36 58	76.1	41.7	-1.3		-121.3	95	120	08 58 01
09 00 00	J2302+6405	21 36 58	74.4	36.5	-1.4		-125.0	-26	120	No stop
09 01 30	---	21 38 29	74.5	36.1	-1.4		-125.6	64	122	09 00 01
09 01 45	J2302+6405	21 38 44	74.5	36.1	-1.4		-125.8	9	122	09 01 45
09 03 15	---	21 40 14	74.7	35.7	-1.4		-126.4	90	123	09 01 46
09 03 15	CEPHEUSA	21 40 14	76.4	40.9	-1.3		-122.9	-25	123	No stop
09 05 15	---	21 42 14	76.6	40.3	-1.2		-123.8	95	125	09 03 16
09 16 53	J2202+4216	21 53 54	79.1	170.7	-0.2		-7.5	436	125	09 16 53
09 24 53	---	22 01 55	79.3	178.6	-0.0		-1.1	480	133	09 16 54
09 30 02	CEPHEUSA	22 07 06	78.8	31.3	-0.8		-138.1	0	133	09 30 02
09 32 02	---	22 09 06	79.0	30.4	-0.8		-139.4	120	135	09 30 03
09 32 02	J2302+6405	22 09 06	76.9	26.8	-0.9		-141.6	-22	135	No stop
09 33 32	---	22 10 36	77.0	26.2	-0.9		-142.5	68	136	09 32 03
09 33 47	J2302+6405	22 10 51	77.0	26.1	-0.9		-142.6	9	136	09 33 47
09 35 17	---	22 12 21	77.1	25.5	-0.8		-143.5	90	137	09 33 48
09 35 17	CEPHEUSA	22 12 21	79.2	28.9	-0.7		-141.7	-22	137	No stop
09 37 17	---	22 14 22	79.4	27.9	-0.7		-143.1	98	139	09 35 18

Schedule for TORUN (Code Tr)

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3D velocity field of the methanol gas around Cepheus A HW2

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Fri 13 Mar 2015 Day 72 ---										
09 37 17	J2302+6405	22 14 22	77.3	24.7	-0.8		-144.8	-22	139	No stop
09 40 17	---	22 17 22	77.5	23.5	-0.8		-146.6	158	142	09 37 18
09 40 17	CEPHEUSA	22 17 22	79.6	26.3	-0.7		-145.3	-22	142	No stop
09 42 17	---	22 19 23	79.7	25.2	-0.6		-146.8	98	144	09 40 18
09 42 17	J2302+6405	22 19 23	77.6	22.7	-0.7		-147.9	-22	144	No stop
09 45 17	---	22 22 23	77.7	21.3	-0.7		-149.9	158	147	09 42 18
09 45 17	CEPHEUSA	22 22 23	79.9	23.5	-0.6		-149.1	-22	147	No stop
09 47 17	---	22 24 23	80.0	22.4	-0.5		-150.7	98	149	09 45 18
09 47 17	J2302+6405	22 24 23	77.8	20.4	-0.6		-151.2	-22	149	No stop
09 48 47	---	22 25 54	77.9	19.8	-0.6		-152.2	68	150	09 47 18
09 49 02	J2302+6405	22 26 09	77.9	19.6	-0.6		-152.4	9	150	09 49 02
09 50 32	---	22 27 39	78.0	18.9	-0.6		-153.4	90	152	09 49 03
09 50 32	CEPHEUSA	22 27 39	80.2	20.4	-0.5		-153.4	-22	152	No stop
09 52 32	---	22 29 39	80.3	19.2	-0.5		-155.1	98	154	09 50 33
09 52 32	J2302+6405	22 29 39	78.1	18.0	-0.6		-154.8	-22	154	No stop
09 55 32	---	22 32 40	78.2	16.5	-0.5		-156.9	158	157	09 52 33
09 55 32	CEPHEUSA	22 32 40	80.4	17.3	-0.4		-157.6	-22	157	No stop
09 57 32	---	22 34 40	80.5	15.9	-0.4		-159.4	98	159	09 55 33
09 57 32	J2302+6405	22 34 40	78.3	15.5	-0.5		-158.3	-22	159	No stop
10 00 32	---	22 37 41	78.4	14.0	-0.4		-160.5	158	162	09 57 33
10 00 32	CEPHEUSA	22 37 41	80.6	13.9	-0.3		-162.0	-22	162	No stop
10 02 32	---	22 39 41	80.7	12.5	-0.3		-163.8	98	163	10 00 33
10 02 32	J2302+6405	22 39 41	78.5	13.0	-0.4		-162.0	-22	163	No stop
10 04 02	---	22 41 11	78.6	12.2	-0.4		-163.1	68	165	10 02 33
10 04 17	J2302+6405	22 41 26	78.6	12.1	-0.4		-163.3	8	165	10 04 17
10 05 47	---	22 42 56	78.6	11.3	-0.3		-164.4	90	166	10 04 18
10 05 47	CEPHEUSA	22 42 56	80.8	10.2	-0.2		-166.8	-22	166	No stop
10 07 47	---	22 44 57	80.8	8.8	-0.2		-168.7	98	168	10 05 48
10 07 47	J2302+6405	22 44 57	78.7	10.2	-0.3		-165.9	-22	168	No stop
10 10 47	---	22 47 57	78.7	8.6	-0.3		-168.1	158	171	10 07 48

Schedule for TORUN (Code Tr)

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3D velocity field of the methanol gas around Cepheus A HW2

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Fri 13 Mar 2015 Day 72 ---										
10 10 47	CEPHEUSA	22 47 57	80.9	6.6	-0.1		-171.5	-22	171	No stop
10 12 47	---	22 49 58	80.9	5.1	-0.1		-173.4	98	173	10 10 48
10 12 47	J2302+6405	22 49 58	78.8	7.5	-0.2		-169.7	-22	173	No stop
10 15 47	---	22 52 58	78.8	5.8	-0.2		-172.0	158	176	10 12 48
10 15 47	CEPHEUSA	22 52 58	81.0	2.9	-0.1		-176.3	-22	176	No stop
10 17 47	---	22 54 58	81.0	1.4	-0.0		-178.2	98	178	10 15 48
10 17 47	J2302+6405	22 54 58	78.9	4.7	-0.1		-173.5	-22	178	No stop
10 19 17	---	22 56 29	78.9	3.8	-0.1		-174.7	68	179	10 17 48
10 19 32	J2302+6405	22 56 44	78.9	3.7	-0.1		-174.9	8	179	10 19 32
10 21 02	---	22 58 14	78.9	2.8	-0.1		-176.1	90	181	10 19 33
10 21 02	CEPHEUSA	22 58 14	81.0	-1.0	0.0		178.7	-23	181	No stop
10 23 02	---	23 00 14	81.0	-2.5	0.1		176.8	97	183	10 21 03
10 31 05	J2202+4216	23 08 19	74.7	231.8	1.1		39.7	0	183	10 31 05
10 39 05	---	23 16 20	73.8	235.9	1.2		42.3	480	190	10 31 06
10 46 13	CEPHEUSA	23 23 29	80.3	341.2	0.4		155.6	198	190	10 46 13
10 48 13	---	23 25 30	80.2	339.9	0.5		153.9	120	192	10 46 14
10 48 13	J2302+6405	23 25 30	78.6	347.7	0.4		163.0	-30	192	No stop
10 49 43	---	23 27 00	78.5	346.9	0.4		161.9	60	194	10 48 14
10 49 58	J2302+6405	23 27 15	78.5	346.8	0.4		161.7	9	194	10 49 58
10 51 28	---	23 28 45	78.4	346.0	0.4		160.6	90	195	10 49 59
10 51 28	CEPHEUSA	23 28 45	80.0	338.0	0.5		151.2	-32	195	No stop
10 53 28	---	23 30 46	79.9	336.8	0.6		149.6	88	197	10 51 29
10 53 28	J2302+6405	23 30 46	78.4	345.0	0.5		159.1	-31	197	No stop
10 56 28	---	23 33 46	78.2	343.5	0.5		157.0	149	200	10 53 29
10 56 28	CEPHEUSA	23 33 46	79.7	335.1	0.6		147.3	-32	200	No stop
10 58 28	---	23 35 46	79.6	334.0	0.6		145.8	88	202	10 56 29
10 58 28	J2302+6405	23 35 46	78.2	342.5	0.5		155.6	-32	202	No stop
11 01 28	---	23 38 47	78.0	341.1	0.6		153.5	148	205	10 58 29
11 01 28	CEPHEUSA	23 38 47	79.4	332.4	0.7		143.6	-33	205	No stop
11 03 28	---	23 40 47	79.3	331.4	0.7		142.1	87	207	11 01 29

Schedule for TORUN (Code Tr) Page 8

3D velocity field of the methanol gas around Cepheus A HW2

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Fri 13 Mar 2015	Day	72	---							
11 03 28	J2302+6405	23 40 47	77.9	340.2	0.6		152.1	-32	207	No stop	
11 04 58	---	23 42 18	77.8	339.5	0.7		151.1	58	208	11 03 29	
11 05 13	J2302+6405	23 42 33	77.8	339.4	0.7		150.9	9	208	11 05 13	
11 06 43	---	23 44 03	77.7	338.7	0.7		150.0	90	210	11 05 14	
11 06 43	CEPHEUSA	23 44 03	79.0	329.9	0.8		139.9	-33	210	No stop	
11 08 43	---	23 46 03	78.9	328.9	0.8		138.5	87	212	11 06 44	
11 08 43	J2302+6405	23 46 03	77.6	337.8	0.7		148.6	-32	212	No stop	
11 11 43	---	23 49 04	77.5	336.5	0.8		146.7	148	214	11 08 44	
11 11 43	CEPHEUSA	23 49 04	78.6	327.6	0.9		136.5	-33	214	No stop	
11 13 43	---	23 51 04	78.5	326.7	0.9		135.3	87	216	11 11 44	
11 13 43	J2302+6405	23 51 04	77.3	335.7	0.8		145.4	-33	216	No stop	
11 16 43	---	23 54 04	77.1	334.5	0.8		143.6	147	219	11 13 44	
11 16 43	CEPHEUSA	23 54 04	78.2	325.5	1.0		133.4	-33	219	No stop	
11 18 43	---	23 56 05	78.0	324.8	1.0		132.2	87	221	11 16 44	
11 18 43	J2302+6405	23 56 05	77.0	333.7	0.9		142.4	-33	221	No stop	
11 20 13	---	23 57 35	76.9	333.1	0.9		141.5	57	223	11 18 44	
11 20 28	J2302+6405	23 57 50	76.9	333.1	0.9		141.3	9	223	11 20 28	
11 21 58	---	23 59 20	76.8	332.5	0.9		140.5	90	224	11 20 29	
11 21 58	CEPHEUSA	23 59 20	77.8	323.6	1.0		130.3	-33	224	No stop	
11 23 58	---	00 01 21	77.6	322.9	1.1		129.2	87	226	11 21 59	
11 23 58	J2302+6405	00 01 21	76.7	331.8	1.0		139.3	-32	226	No stop	
11 26 58	---	00 04 21	76.4	330.7	1.0		137.6	148	229	11 23 59	
11 26 58	CEPHEUSA	00 04 21	77.3	321.9	1.1		127.5	-33	229	No stop	
11 28 58	---	00 06 21	77.1	321.2	1.2		126.5	87	231	11 26 59	
11 28 58	J2302+6405	00 06 21	76.3	330.0	1.1		136.5	-32	231	No stop	
11 30 28	---	00 07 52	76.2	329.5	1.1		135.7	58	232	11 28 59	
11 30 43	J2302+6405	00 08 07	76.2	329.5	1.1		135.5	9	232	11 30 43	
11 32 13	---	00 09 37	76.0	329.0	1.1		134.7	90	234	11 30 44	
11 32 13	CEPHEUSA	00 09 37	76.8	320.2	1.2		124.8	-33	234	No stop	
11 34 13	---	00 11 37	76.6	319.7	1.2		123.8	87	236	11 32 14	

Schedule for TORUN (Code Tr)

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3D velocity field of the methanol gas around Cepheus A HW2

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 13 Mar 2015	Day	72	---							
11 45 35	J2202+4216	00 23 01	64.5	259.3	2.3		53.0	541	236	11 45 35	
11 53 35	---	00 31 02	63.3	261.3	2.5		53.4	480	243	11 45 36	
12 06 21	CEPHEUSA	00 43 50	73.3	313.1	1.8		110.3	644	243	12 06 21	
12 08 21	---	00 45 50	73.0	312.8	1.8		109.6	120	245	12 06 22	
12 08 21	J2302+6405	00 45 50	72.9	320.2	1.7		118.1	-30	245	No stop	
12 09 51	---	00 47 21	72.7	320.0	1.7		117.6	60	247	12 08 22	
12 10 06	J2302+6405	00 47 36	72.7	319.9	1.7		117.5	9	247	12 10 06	
12 11 36	---	00 49 06	72.5	319.7	1.8		116.9	90	248	12 10 07	
12 11 36	CEPHEUSA	00 49 06	72.7	312.4	1.9		108.5	-30	248	No stop	
12 13 36	---	00 51 06	72.5	312.1	1.9		107.8	90	250	12 11 37	
12 13 36	J2302+6405	00 51 06	72.3	319.4	1.8		116.1	-29	250	No stop	
12 16 36	---	00 54 07	72.1	318.9	1.8		115.0	151	253	12 13 37	
12 16 36	CEPHEUSA	00 54 07	72.1	311.8	2.0		106.8	-29	253	No stop	
12 18 36	---	00 56 07	71.9	311.6	2.0		106.2	91	255	12 16 37	
12 18 36	J2302+6405	00 56 07	71.9	318.6	1.9		114.3	-29	255	No stop	
12 21 36	---	00 59 07	71.6	318.2	1.9		113.2	151	258	12 18 37	
12 21 36	CEPHEUSA	00 59 07	71.6	311.3	2.0		105.2	-29	258	No stop	
12 23 36	---	01 01 08	71.3	311.1	2.1		104.6	91	260	12 21 37	
12 23 36	J2302+6405	01 01 08	71.4	317.9	2.0		112.5	-29	260	No stop	
12 25 06	---	01 02 38	71.2	317.7	2.0		112.0	61	261	12 23 37	
12 25 21	J2302+6405	01 02 53	71.2	317.7	2.0		111.9	9	261	12 25 21	
12 26 51	---	01 04 23	71.0	317.5	2.0		111.4	90	262	12 25 22	
12 26 51	CEPHEUSA	01 04 23	71.0	310.8	2.1		103.6	-29	262	No stop	
12 28 51	---	01 06 24	70.7	310.6	2.2		103.0	91	264	12 26 52	
12 28 51	J2302+6405	01 06 24	70.8	317.3	2.1		110.7	-28	264	No stop	
12 31 51	---	01 09 24	70.5	316.9	2.1		109.7	152	267	12 28 52	
12 31 51	CEPHEUSA	01 09 24	70.4	310.4	2.2		102.1	-28	267	No stop	
12 33 51	---	01 11 24	70.2	310.2	2.2		101.5	92	269	12 31 52	
12 33 51	J2302+6405	01 11 24	70.3	316.7	2.1		109.0	-28	269	No stop	
12 36 51	---	01 14 25	70.0	316.4	2.2		108.1	152	272	12 33 52	

Schedule for TORUN (Code Tr)

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3D velocity field of the methanol gas around Cepheus A HW2

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Fri 13 Mar 2015 Day 72 ---										
12 36 51	CEPHEUSA	01 14 25	69.8	310.1	2.3		100.7	-28	272	No stop
12 38 51	---	01 16 25	69.6	309.9	2.3		100.1	92	274	12 36 52
12 38 51	J2302+6405	01 16 25	69.8	316.2	2.2		107.4	-27	274	No stop
12 40 21	---	01 17 56	69.6	316.1	2.2		107.0	63	275	12 38 52
12 40 36	J2302+6405	01 18 11	69.6	316.1	2.2		106.9	9	275	12 40 36
12 42 06	---	01 19 41	69.5	315.9	2.3		106.4	90	277	12 40 37
12 42 06	CEPHEUSA	01 19 41	69.2	309.7	2.4		99.2	-27	277	No stop
12 44 06	---	01 21 41	69.0	309.6	2.4		98.7	93	279	12 42 07
12 59 07	J2202+4216	01 36 45	53.5	275.0	3.6		54.0	812	279	12 59 07
13 07 07	---	01 44 46	52.3	276.4	3.7		53.8	480	287	12 59 08
13 10 22	CEPHEUSA	01 48 02	65.9	308.9	2.9		92.2	116	287	13 10 22
13 12 22	---	01 50 02	65.7	308.9	2.9		91.7	120	288	13 10 23
13 12 22	J2302+6405	01 50 02	66.2	314.1	2.8		97.9	-25	288	No stop
13 13 52	---	01 51 33	66.1	314.0	2.8		97.5	65	290	13 12 23
13 14 07	J2302+6405	01 51 48	66.0	314.0	2.8		97.4	9	290	13 14 07
13 15 37	---	01 53 18	65.9	314.0	2.8		97.1	90	291	13 14 08
13 15 37	CEPHEUSA	01 53 18	65.3	308.8	2.9		91.0	-25	291	No stop
13 17 37	---	01 55 18	65.1	308.8	3.0		90.5	95	293	13 15 38
13 17 37	J2302+6405	01 55 18	65.7	313.9	2.9		96.5	-25	293	No stop
13 20 37	---	01 58 19	65.3	313.8	2.9		95.8	155	296	13 17 38
13 20 37	CEPHEUSA	01 58 19	64.7	308.8	3.0		89.9	-25	296	No stop
13 22 37	---	02 00 19	64.5	308.8	3.1		89.4	95	298	13 20 38
13 22 37	J2302+6405	02 00 19	65.1	313.8	3.0		95.3	-25	298	No stop
13 25 37	---	02 03 19	64.8	313.7	3.0		94.6	155	301	13 22 38
13 25 37	CEPHEUSA	02 03 19	64.1	308.9	3.1		88.8	-25	301	No stop
13 27 37	---	02 05 20	63.9	308.9	3.1		88.3	95	303	13 25 38
13 27 37	J2302+6405	02 05 20	64.6	313.7	3.0		94.1	-25	303	No stop
13 29 07	---	02 06 50	64.4	313.6	3.1		93.7	65	304	13 27 38
13 29 22	J2302+6405	02 07 05	64.4	313.6	3.1		93.6	9	304	13 29 22
13 30 52	---	02 08 35	64.2	313.6	3.1		93.3	90	306	13 29 23

Schedule for TORUN (Code Tr)

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3D velocity field of the methanol gas around Cepheus A HW2

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Fri 13 Mar 2015 Day 72 ---										
13 30 52	CEPHEUSA	02 08 35	63.5	308.9	3.2		87.6	-24	306	No stop
13 32 52	---	02 10 36	63.3	308.9	3.2		87.2	96	308	13 30 53
13 32 52	J2302+6405	02 10 36	64.0	313.6	3.1		92.8	-24	308	No stop
13 35 52	---	02 13 36	63.7	313.5	3.2		92.1	156	311	13 32 53
13 35 52	CEPHEUSA	02 13 36	62.9	309.0	3.3		86.6	-24	311	No stop
13 37 52	---	02 15 36	62.7	309.0	3.3		86.2	96	312	13 35 53
13 37 52	J2302+6405	02 15 36	63.4	313.5	3.2		91.6	-24	312	No stop
13 40 52	---	02 18 37	63.1	313.5	3.3		91.0	156	315	13 37 53
13 40 52	CEPHEUSA	02 18 37	62.3	309.0	3.4		85.6	-24	315	No stop
13 42 52	---	02 20 37	62.1	309.1	3.4		85.1	96	317	13 40 53
13 42 52	J2302+6405	02 20 37	62.9	313.5	3.3		90.5	-24	317	No stop
13 44 22	---	02 22 08	62.7	313.5	3.3		90.2	66	319	13 42 53
13 44 37	J2302+6405	02 22 23	62.7	313.5	3.3		90.1	9	319	13 44 37
13 46 07	---	02 23 53	62.5	313.5	3.3		89.8	90	320	13 44 38
13 46 07	CEPHEUSA	02 23 53	61.7	309.2	3.5		84.5	-24	320	No stop
13 48 07	---	02 25 53	61.5	309.2	3.5		84.1	96	322	13 46 08
13 48 07	J2302+6405	02 25 53	62.3	313.5	3.4		89.3	-24	322	No stop
13 51 07	---	02 28 54	62.0	313.5	3.4		88.6	156	325	13 48 08
13 51 07	CEPHEUSA	02 28 54	61.1	309.3	3.5		83.5	-23	325	No stop
13 53 07	---	02 30 54	60.9	309.3	3.6		83.1	97	327	13 51 08
13 53 07	J2302+6405	02 30 54	61.8	313.5	3.5		88.2	-23	327	No stop
13 56 07	---	02 33 54	61.5	313.6	3.5		87.6	157	330	13 53 08
13 56 07	CEPHEUSA	02 33 54	60.6	309.4	3.6		82.5	-23	330	No stop
13 58 07	---	02 35 55	60.3	309.5	3.7		82.1	97	332	13 56 08
13 58 07	J2302+6405	02 35 55	61.2	313.6	3.5		87.1	-23	332	No stop
13 59 37	---	02 37 25	61.1	313.6	3.6		86.8	67	333	13 58 08
13 59 52	J2302+6405	02 37 40	61.0	313.6	3.6		86.7	9	333	13 59 52
14 01 22	---	02 39 10	60.9	313.6	3.6		86.4	90	335	13 59 53
14 01 22	CEPHEUSA	02 39 10	59.9	309.6	3.7		81.5	-23	335	No stop
14 03 22	---	02 41 11	59.7	309.7	3.7		81.1	97	337	14 01 23

Schedule for TORUN (Code Tr) Page 12

3D velocity field of the methanol gas around Cepheus A HW2

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Fri 13 Mar 2015 Day 72 ---										
14 03 22	J2302+6405	02 41 11	60.7	313.7	3.6		86.0	-23	337	No stop
14 06 22	---	02 44 11	60.3	313.7	3.7		85.4	157	339	14 03 23
14 06 22	CEPHEUSA	02 44 11	59.4	309.8	3.8		80.6	-23	339	No stop
14 08 22	---	02 46 11	59.1	309.9	3.8		80.2	97	341	14 06 23
14 08 22	J2302+6405	02 46 11	60.1	313.7	3.7		84.9	-23	341	No stop
14 09 52	---	02 47 42	60.0	313.8	3.7		84.6	67	343	14 08 23
14 10 07	J2302+6405	02 47 57	59.9	313.8	3.7		84.6	9	343	14 10 07
14 11 37	---	02 49 27	59.8	313.8	3.8		84.3	90	344	14 10 08
14 11 37	CEPHEUSA	02 49 27	58.8	310.0	3.9		79.6	-22	344	No stop
14 13 37	---	02 51 27	58.5	310.1	3.9		79.2	98	346	14 11 38
14 15 47	J2202+4216	02 53 37	42.2	287.9	4.8		50.6	55	346	14 15 47
14 23 47	---	03 01 38	41.0	289.1	5.0		50.1	480	354	14 15 48

SETUP FILE INFORMATION:

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

==== Setup file: sess115.M128

Setup group: 6	Station: TORUN	Total bit rate: 128
Format: MARK5B	Bits per sample: 2	Sample rate: 4.000
Number of channels: 16	DBE type: DBBC_DDC	Speedup factor: 1.00

Disk used to record data.

1st LO=	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00
	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00
Net SB=	L	L	U	U	L	L	U	U	U
	L	L	U	U	L	L	U	U	U
IF SB =	U	U	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	LCP
	RCP	LCP	RCP	LCP	RCP	LCP	RCP	LCP	LCP
BBC =	1	5	1	5	2	6	2	6	6
	3	7	3	7	4	8	4	8	8
BBC SB=	L	L	U	U	L	L	U	U	U
	L	L	U	U	L	L	U	U	U
IF =	A1	B1	A1	B1	A1	B1	A1	B1	B1
	A1	B1	A1	B1	A1	B1	A1	B1	B1

The following frequency sets based on these setups were used.

Frequency Set: 7 Based on FREQ, BW, and/or DOPPLER in schedule. Used with PCAL = off

LO sum=	6665.64	6665.64	6665.64	6665.64	6669.64	6669.64	6669.64	6669.64
	6673.64	6673.64	6673.64	6673.64	6677.64	6677.64	6677.64	6677.64
BBC fr=	765.64	765.64	765.64	765.64	769.64	769.64	769.64	769.64
	773.64	773.64	773.64	773.64	777.64	777.64	777.64	777.64
Bandwd=	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00

Matching frequency sets: 7

Track assignments are:

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

barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec)		(Date)	Error (mas)
	(B1950)	(J2000)		
* CEPHEUSA	22 54 18.964445	* 22 56 17.905100	22 56 52.707383	0.00
	61 45 47.36537	* 62 01 49.58400	62 06 40.62101	0.00
* J2302+6405	23 00 41.944885	* 23 02 41.314960	23 03 16.166777	0.00
	63 49 43.23614	* 64 05 52.84888	64 10 46.56874	0.00
* J1331+3030	13 28 49.657778	* 13 31 08.288070	13 31 51.501189	0.00
	30 45 58.64060	* 30 30 32.95924	30 25 42.26939	0.00
* J2202+4216	22 00 39.362504	* 22 02 43.291371	22 03 20.019108	0.00
	42 02 08.59073	* 42 16 39.97987	42 21 00.87076	0.00

rk08sntr

RADIOASTRON AGN SURVEY

PI: Yuri Kovalev

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

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

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

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

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

--- Sat 14 Mar 2015 Day 73 ---

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

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

Table with columns: Start UT, Stop UT, Source, LST, EL, AZ, HA, UP, ParA, Dwell, Disk GBytes, TPStart SYNC. Contains scan data for 1406-076 source.

SETUP FILE INFORMATION:

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

==== Setup file: ra18cm2.set

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.180315	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 50.39736	0.00
	fake circumpolar target for a TS to look at			
* 1406-076	14 06 17.898821	* 14 08 56.481199	14 09 45.985525	0.00
J1408-0752	-07 38 15.91695	*-07 52 26.66668	-07 56 46.95001	0.00
	./rk08sn_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 2135 observations, RA-A02-12			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
3C286	140.8
1406-076	139.9

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

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

PERIODIC MASERS I
PI: *Marian Szymczak*

Observing mode: MKV, 256Mb/s

Schedule for TORUN (Code Tr) Page 2
Periodic masers I

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

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

--- Sat 14 Mar 2015 Day 73 ---										
Next scan frequencies: 6665.37 6665.37 6665.37 6665.37 6669.37 6669.37 6669.37 6669.37										
6673.37 6673.37 6673.37 6673.37 6677.37 6677.37 6677.37 6677.37										
Next BBC frequencies: 765.37 765.37 765.37 765.37 769.37 769.37 769.37 769.37										
773.37 773.37 773.37 773.37 777.37 777.37 777.37 777.37										
Next scan bandwidths: 4.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00										
4.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00										
02 00 00	3C345	14 39 46	65.2	109.9	-2.1		-47.3	0	0	02 00 00
02 05 00	---	14 44 47	65.9	111.5	-2.0		-46.6	300	10	02 00 01
02 05 00	3C345	14 44 47	65.9	111.5	-2.0		-46.6	-5	10	No stop
02 10 00	---	14 49 48	66.6	113.1	-1.9		-45.9	295	19	02 05 01
Next scan frequencies: 6666.07 6666.07 6666.07 6666.07 6670.07 6670.07 6670.07 6670.07										
6674.07 6674.07 6674.07 6674.07 6678.07 6678.07 6678.07 6678.07										
Next BBC frequencies: 766.07 766.07 766.07 766.07 770.07 770.07 770.07 770.07										
774.07 774.07 774.07 774.07 778.07 778.07 778.07 778.07										
02 13 00	3C345	14 52 48	67.0	114.1	-1.8		-45.5	173	19	02 13 00
02 18 00	---	14 57 49	67.7	115.9	-1.8		-44.7	300	29	02 13 01
02 18 00	3C345	14 57 49	67.7	115.9	-1.8		-44.7	-5	29	No stop
02 23 00	---	15 02 50	68.3	117.8	-1.7		-43.7	295	38	02 18 01
Next scan frequencies: 6667.32 6667.32 6667.32 6667.32 6671.32 6671.32 6671.32 6671.32										
6675.32 6675.32 6675.32 6675.32 6679.32 6679.32 6679.32 6679.32										
Next BBC frequencies: 767.32 767.32 767.32 767.32 771.32 771.32 771.32 771.32										
775.32 775.32 775.32 775.32 779.32 779.32 779.32 779.32										
02 26 00	3C345	15 05 50	68.7	118.9	-1.6		-43.2	173	38	02 26 00
02 31 00	---	15 10 51	69.4	120.9	-1.5		-42.1	300	48	02 26 01
02 31 00	3C345	15 10 51	69.4	120.9	-1.5		-42.1	-5	48	No stop
02 36 00	---	15 15 52	70.0	123.0	-1.5		-41.0	295	58	02 31 01
02 39 08	J2015+3710	15 19 00	37.8	76.0	-5.0		-47.0	53	58	02 39 08
02 40 53	=2013+370	15 20 46	38.1	76.3	-4.9		-47.1	105	61	02 39 09
02 40 53	G73.060	15 20 46	38.4	78.7	-4.8		-46.7	-19	61	No stop
02 44 08	---	15 24 01	38.8	79.3	-4.7		-46.9	176	67	02 40 54
02 44 08	J2015+3710	15 24 01	38.6	76.9	-4.9		-47.3	-19	67	No stop
02 45 53	=2013+370	15 25 46	38.8	77.2	-4.8		-47.3	86	71	02 44 09

Schedule for TORUN (Code Tr)

Page 3

Periodic masers I

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

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

--- Sat 14 Mar 2015 Day 73 ---										
02 45 53	G75.761	15 25 46	38.1	75.9	-4.9		-47.2	-15	71	No stop
02 49 08	---	15 29 02	38.6	76.5	-4.9		-47.4	180	77	02 45 54
02 50 08	J2015+3710	15 30 02	39.5	77.9	-4.8		-47.5	45	77	02 50 08
02 51 53	=2013+370	15 31 47	39.7	78.3	-4.7		-47.6	105	80	02 50 09
02 51 53	G73.060	15 31 47	40.0	80.7	-4.6		-47.1	-19	80	No stop
02 55 08	---	15 35 03	40.5	81.3	-4.6		-47.2	176	87	02 51 54
02 55 08	J2015+3710	15 35 03	40.2	78.8	-4.7		-47.7	-19	87	No stop
02 56 53	=2013+370	15 36 48	40.5	79.1	-4.7		-47.8	86	90	02 55 09
02 56 53	G75.761	15 36 48	39.7	77.8	-4.8		-47.7	-15	90	No stop
03 00 08	---	15 40 04	40.2	78.4	-4.7		-47.8	180	96	02 56 54
03 01 08	J2015+3710	15 41 04	41.1	79.9	-4.6		-47.9	45	96	03 01 08
03 02 53	=2013+370	15 42 49	41.3	80.2	-4.6		-48.0	105	100	03 01 09
03 02 53	G73.060	15 42 49	41.6	82.7	-4.4		-47.4	-19	100	No stop
03 06 08	---	15 46 05	42.1	83.3	-4.4		-47.5	176	106	03 02 54
03 06 08	J2015+3710	15 46 05	41.8	80.8	-4.5		-48.1	-19	106	No stop
03 07 53	=2013+370	15 47 50	42.1	81.1	-4.5		-48.2	86	109	03 06 09
03 07 53	G75.761	15 47 50	41.3	79.7	-4.6		-48.1	-15	109	No stop
03 11 08	---	15 51 06	41.8	80.3	-4.5		-48.2	180	115	03 07 54
03 12 08	J2015+3710	15 52 06	42.7	81.8	-4.4		-48.3	44	115	03 12 08
03 13 53	=2013+370	15 53 51	43.0	82.2	-4.4		-48.3	105	119	03 12 09
03 17 06	3C345	15 57 05	74.5	144.6	-0.8		-26.9	54	119	03 17 06
03 22 06	---	16 02 05	74.9	147.9	-0.7		-24.5	300	128	03 17 07
03 22 06	3C345	16 02 05	74.9	147.9	-0.7		-24.5	-5	128	No stop
03 27 06	---	16 07 06	75.3	151.4	-0.6		-22.0	295	138	03 22 07
Next scan frequencies: 6665.37 6665.37 6665.37 6665.37 6669.37 6669.37 6669.37 6669.37										
6673.37 6673.37 6673.37 6673.37 6677.37 6677.37 6677.37 6677.37										
Next BBC frequencies: 765.37 765.37 765.37 765.37 769.37 769.37 769.37 769.37										
773.37 773.37 773.37 773.37 777.37 777.37 777.37 777.37										
03 30 06	3C345	16 10 07	75.5	153.5	-0.6		-20.4	171	138	03 30 06
03 35 06	---	16 15 08	75.8	157.2	-0.5		-17.6	300	148	03 30 07
03 35 06	3C345	16 15 08	75.8	157.2	-0.5		-17.6	-5	148	No stop
03 40 06	---	16 20 08	76.1	161.0	-0.4		-14.7	295	157	03 35 07

Schedule for TORUN (Code Tr)

Page 4

Periodic masers I

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Sat 14 Mar 2015 Day 73 ---										
Next scan frequencies: 6666.07 6666.07 6666.07 6666.07 6670.07 6670.07 6670.07 6670.07										
6674.07 6674.07 6674.07 6674.07 6678.07 6678.07 6678.07 6678.07										
Next BBC frequencies: 766.07 766.07 766.07 766.07 770.07 770.07 770.07 770.07										
774.07 774.07 774.07 774.07 778.07 778.07 778.07 778.07										
03 43 06	3C345	16 23 09	76.2	163.4	-0.3		-12.9	171	157	03 43 06
03 48 06	---	16 28 10	76.4	167.3	-0.3		-9.9	300	167	03 43 07
03 48 06	3C345	16 28 10	76.4	167.3	-0.3		-9.9	-5	167	No stop
03 53 06	---	16 33 10	76.6	171.4	-0.2		-6.7	295	176	03 48 07
03 58 26	J1905+0952	16 38 32	37.6	131.6	-2.5		-27.1	160	176	03 58 26
04 00 11	=1903+097	16 40 17	37.8	132.1	-2.4		-26.9	105	180	03 58 27
04 00 11	G45.473	16 40 17	38.0	129.0	-2.6		-28.4	-21	180	No stop
04 03 26	---	16 43 33	38.4	129.9	-2.5		-28.0	174	186	04 00 12
04 03 26	J1905+0952	16 43 33	38.1	133.0	-2.4		-26.5	-21	186	No stop
04 05 11	=1903+097	16 45 18	38.3	133.5	-2.4		-26.2	84	189	04 03 27
04 05 11	G45.473	16 45 18	38.6	130.4	-2.5		-27.8	-21	189	No stop
04 08 26	---	16 48 34	39.0	131.3	-2.4		-27.4	174	196	04 05 12
04 08 26	J1905+0952	16 48 34	38.7	134.4	-2.3		-25.8	-21	196	No stop
04 10 11	=1903+097	16 50 19	38.9	134.9	-2.3		-25.6	84	199	04 08 27
04 11 11	G45.473	16 51 19	39.3	132.1	-2.4		-27.0	39	199	04 11 11
04 14 26	---	16 54 35	39.6	133.0	-2.3		-26.6	195	205	04 11 12
04 14 26	J1905+0952	16 54 35	39.3	136.2	-2.2		-25.0	-21	205	No stop
04 16 11	=1903+097	16 56 20	39.5	136.7	-2.2		-24.7	84	209	04 14 27
04 16 11	G45.473	16 56 20	39.8	133.5	-2.3		-26.4	-21	209	No stop
04 19 26	---	16 59 36	40.2	134.4	-2.3		-25.9	174	215	04 16 12
04 19 26	J1905+0952	16 59 36	39.8	137.6	-2.1		-24.3	-21	215	No stop
04 21 11	=1903+097	17 01 21	40.0	138.1	-2.1		-24.0	84	218	04 19 27

Schedule for TORUN (Code Tr)

Page 5

Periodic masers I

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Sat 14 Mar 2015 Day 73 ---										
Next scan frequencies: 6665.37 6665.37 6665.37 6665.37 6669.37 6669.37 6669.37 6669.37										
6673.37 6673.37 6673.37 6673.37 6677.37 6677.37 6677.37 6677.37										
Next BBC frequencies: 765.37 765.37 765.37 765.37 769.37 769.37 769.37 769.37										
773.37 773.37 773.37 773.37 777.37 777.37 777.37 777.37										
04 24 11	J1825-0737	17 04 21	26.8	157.1	-1.4		-13.6	116	218	04 24 11
04 25 56	=1822-076	17 06 07	26.9	157.6	-1.3		-13.4	105	222	04 24 12
04 25 56	G25.411	17 06 07	27.2	154.1	-1.5		-15.3	-21	222	No stop
04 29 11	---	17 09 22	27.4	155.0	-1.5		-14.8	174	228	04 25 57
04 30 11	J1825-0737	17 10 22	27.2	158.7	-1.3		-12.7	38	228	04 30 11
04 31 56	=1822-076	17 12 08	27.3	159.2	-1.2		-12.4	105	231	04 30 12
04 31 56	G22.357	17 12 08	25.2	158.0	-1.3		-13.2	-21	231	No stop
04 35 11	---	17 15 23	25.4	158.8	-1.3		-12.7	174	237	04 31 57
04 35 11	J1825-0737	17 15 23	27.4	160.1	-1.2		-11.9	-21	237	No stop
04 36 56	=1822-076	17 17 08	27.5	160.6	-1.2		-11.6	84	241	04 35 12
04 36 56	G25.411	17 17 08	27.9	157.1	-1.3		-13.6	-21	241	No stop
04 40 11	---	17 20 24	28.0	158.0	-1.3		-13.1	174	247	04 36 57
04 41 11	J1825-0737	17 21 24	27.7	161.7	-1.1		-11.0	38	247	04 41 11
04 42 56	=1822-076	17 23 09	27.8	162.2	-1.1		-10.7	105	250	04 41 12
04 42 56	G22.357	17 23 09	25.8	160.9	-1.2		-11.5	-21	250	No stop
04 46 11	---	17 26 25	26.0	161.8	-1.1		-11.0	174	257	04 42 57
04 46 11	J1825-0737	17 26 25	28.0	163.1	-1.0		-10.1	-21	257	No stop
04 47 56	=1822-076	17 28 10	28.0	163.6	-1.0		-9.9	84	260	04 46 12
04 47 56	G25.411	17 28 10	28.5	160.2	-1.2		-11.8	-21	260	No stop
04 51 11	---	17 31 26	28.6	161.1	-1.1		-11.3	174	266	04 47 57
04 52 11	J1825-0737	17 32 26	28.2	164.8	-0.9		-9.2	38	266	04 52 11
04 53 56	=1822-076	17 34 11	28.3	165.3	-0.9		-8.9	105	270	04 52 12
04 53 56	G22.357	17 34 11	26.3	163.9	-1.0		-9.7	-21	270	No stop
04 57 11	---	17 37 27	26.5	164.8	-0.9		-9.2	174	276	04 53 57
04 57 11	J1825-0737	17 37 27	28.4	166.2	-0.8		-8.3	-21	276	No stop
04 58 56	=1822-076	17 39 12	28.5	166.7	-0.8		-8.0	84	279	04 57 12
04 58 56	G25.411	17 39 12	29.0	163.2	-1.0		-10.0	-21	279	No stop
05 02 11	---	17 42 28	29.1	164.1	-0.9		-9.5	174	286	04 58 57

Schedule for TORUN (Code Tr)

Page 6

Periodic masers I

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Sat 14 Mar 2015 Day 73 ---

```
05 03 11  J1825-0737  17 43 28  28.6 167.8 -0.7    -7.3   38    286  05 03 11
05 04 56  =1822-076     17 45 13  28.7 168.3 -0.7    -7.0  105    289  05 03 12

05 04 56  G22.357       17 45 13  26.7 166.9 -0.8    -7.9  -21    289  No stop
05 08 11  ---           17 48 29  26.8 167.8 -0.7    -7.4  174    295  05 04 57

05 08 11  J1825-0737  17 48 29  28.8 169.3 -0.6    -6.5  -21    295  No stop
05 09 56  =1822-076     17 50 14  28.8 169.7 -0.6    -6.2   84    299  05 08 12
```

```
Next scan frequencies: 6666.07 6666.07 6666.07 6666.07 6670.07 6670.07 6670.07 6670.07
                       6674.07 6674.07 6674.07 6674.07 6678.07 6678.07 6678.07 6678.07
Next BBC frequencies:  766.07  766.07  766.07  766.07  770.07  770.07  770.07  770.07
                       774.07  774.07  774.07  774.07  778.07  778.07  778.07  778.07
```

```
05 12 56  J1905+0952  17 53 14  44.4 154.4 -1.2   -15.3  108    299  05 12 56
05 14 41  =1903+097   17 55 00  44.5 155.0 -1.2   -14.9  105    302  05 12 57

05 14 41  G45.473   17 55 00  45.2 151.6 -1.3   -16.9  -21    302  No stop
05 17 56  ---           17 58 15  45.4 152.7 -1.3   -16.3  174    308  05 14 42

05 17 56  J1905+0952  17 58 15  44.7 156.1 -1.1   -14.3  -22    308  No stop
05 19 41  =1903+097   18 00 01  44.8 156.7 -1.1   -14.0   83    312  05 17 57

05 19 41  G45.473   18 00 01  45.5 153.3 -1.2   -16.0  -21    312  No stop
05 22 56  ---           18 03 16  45.7 154.4 -1.2   -15.3  174    318  05 19 42

05 22 56  J1905+0952  18 03 16  45.0 157.8 -1.1   -13.3  -22    318  No stop
05 24 41  =1903+097   18 05 01  45.1 158.3 -1.0   -13.0   83    321  05 22 57

05 25 41  G45.473   18 06 01  45.9 155.4 -1.1   -14.8   39    321  05 25 41
05 28 56  ---           18 09 17  46.1 156.5 -1.1   -14.1  195    327  05 25 42

05 28 56  J1905+0952  18 09 17  45.3 159.8 -1.0   -12.1  -22    327  No stop
05 30 41  =1903+097   18 11 02  45.4 160.4 -0.9   -11.8   83    331  05 28 57

05 30 41  G45.473   18 11 02  46.2 157.1 -1.1   -13.8  -21    331  No stop
05 33 56  ---           18 14 18  46.4 158.2 -1.0   -13.1  174    337  05 30 42

05 33 56  J1905+0952  18 14 18  45.5 161.5 -0.9   -11.1  -22    337  No stop
05 35 41  =1903+097   18 16 03  45.6 162.1 -0.8   -10.8   83    340  05 33 57
```

Schedule for TORUN (Code Tr)

Page 7

Periodic masers I

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Sat 14 Mar 2015 Day 73 ---										
Next scan frequencies: 6665.37 6665.37 6665.37 6665.37 6669.37 6669.37 6669.37 6669.37										
6673.37 6673.37 6673.37 6673.37 6677.37 6677.37 6677.37 6677.37										
Next BBC frequencies: 765.37 765.37 765.37 765.37 769.37 769.37 769.37 769.37										
773.37 773.37 773.37 773.37 777.37 777.37 777.37 777.37										
05 38 41	J1825-0737	18 19 04	29.3	177.9	-0.1		-1.3	105	340	05 38 41
05 40 26	=1822-076	18 20 49	29.3	178.4	-0.1		-1.0	105	344	05 38 42
05 40 26	G25.411	18 20 49	30.2	175.0	-0.3		-3.0	-21	344	No stop
05 43 41	---	18 24 04	30.2	176.0	-0.2		-2.4	174	350	05 40 27
05 44 41	J1825-0737	18 25 05	29.3	179.6	-0.0		-0.2	38	350	05 44 41
05 46 26	=1822-076	18 26 50	29.3	180.1	0.0		0.1	105	353	05 44 42
05 46 26	G22.357	18 26 50	27.5	178.4	-0.1		-1.0	-20	353	No stop
05 49 41	---	18 30 05	27.5	179.3	-0.0		-0.4	175	360	05 46 27
05 49 41	J1825-0737	18 30 05	29.3	181.0	0.1		0.6	-20	360	No stop
05 51 26	=1822-076	18 31 51	29.3	181.5	0.1		0.9	85	363	05 49 42
05 51 26	G25.411	18 31 51	30.3	178.2	-0.1		-1.1	-21	363	No stop
05 54 41	---	18 35 06	30.3	179.1	-0.0		-0.5	174	369	05 51 27
05 55 41	J1825-0737	18 36 06	29.3	182.7	0.2		1.7	39	369	05 55 41
05 57 26	=1822-076	18 37 52	29.2	183.2	0.2		2.0	105	373	05 55 42
05 57 26	G22.357	18 37 52	27.5	181.5	0.1		0.9	-20	373	No stop
06 00 41	---	18 41 07	27.5	182.4	0.1		1.4	175	379	05 57 27
06 00 41	J1825-0737	18 41 07	29.2	184.2	0.2		2.5	-20	379	No stop
06 02 26	=1822-076	18 42 53	29.2	184.7	0.3		2.8	85	382	06 00 42
06 02 26	G25.411	18 42 53	30.3	181.4	0.1		0.8	-21	382	No stop
06 05 41	---	18 46 08	30.3	182.3	0.1		1.4	174	388	06 02 27
06 06 41	J1825-0737	18 47 08	29.1	185.9	0.3		3.6	39	388	06 06 41
06 08 26	=1822-076	18 48 54	29.1	186.4	0.4		3.9	105	392	06 06 42
06 08 26	G22.357	18 48 54	27.5	184.5	0.3		2.8	-20	392	No stop
06 11 41	---	18 52 09	27.4	185.4	0.3		3.3	175	398	06 08 27
06 11 41	J1825-0737	18 52 09	29.0	187.3	0.4		4.4	-20	398	No stop
06 13 26	=1822-076	18 53 54	29.0	187.8	0.5		4.7	85	401	06 11 42
06 13 26	G25.411	18 53 54	30.2	184.5	0.3		2.7	-21	401	No stop
06 16 41	---	18 57 10	30.1	185.5	0.3		3.3	174	408	06 13 27

Schedule for TORUN (Code Tr)

Page 8

Periodic masers I

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Sat 14 Mar 2015 Day 73 ---

```
06 17 41  J1825-0737  18 58 10  28.9 189.0  0.5      5.4   39   408  06 17 41
06 19 26  =1822-076   18 59 55  28.9 189.5  0.6      5.7  105   411  06 17 42

06 19 26  G22.357    18 59 55  27.3 187.6  0.5      4.6  -20   411  No stop
06 22 41  ---          19 03 11  27.2 188.5  0.5      5.2  175   417  06 19 27

06 22 41  J1825-0737  19 03 11  28.8 190.4  0.6      6.3  -19   417  No stop
06 24 26  =1822-076   19 04 56  28.7 190.9  0.6      6.6   86   421  06 22 42
```

```
Next scan frequencies: 6667.32 6667.32 6667.32 6667.32 6671.32 6671.32 6671.32 6671.32
                       6675.32 6675.32 6675.32 6675.32 6679.32 6679.32 6679.32 6679.32
Next BBC frequencies:  767.32  767.32  767.32  767.32  771.32  771.32  771.32  771.32
                       775.32  775.32  775.32  775.32  779.32  779.32  779.32  779.32
```

```
06 27 53  J2015+3710  19 08 23  70.3 136.7 -1.1     -31.1  37   421  06 27 53
06 29 38  =2013+370  19 10 08  70.4 137.6 -1.1     -30.6  105  424  06 27 54

06 29 38  G73.060    19 10 08  70.1 143.1 -1.0     -26.5  -26  424  No stop
06 32 53  ---          19 13 24  70.4 144.9 -0.9     -25.3  169  430  06 29 39

06 32 53  J2015+3710  19 13 24  70.8 139.3 -1.0     -29.5  -26  430  No stop
06 34 38  =2013+370  19 15 09  70.9 140.2 -1.0     -28.9   79  434  06 32 54

06 34 38  G75.761    19 15 09  70.5 136.6 -1.1     -31.3  -22  434  No stop
06 37 53  ---          19 18 24  70.9 138.3 -1.1     -30.2  173  440  06 34 39

06 38 53  J2015+3710  19 19 25  71.3 142.5 -0.9     -27.3   37  440  06 38 53
06 40 38  =2013+370  19 21 10  71.5 143.5 -0.9     -26.6  105  443  06 38 54

06 40 38  G73.060    19 21 10  71.0 149.2 -0.8     -22.3  -27  443  No stop
06 43 53  ---          19 24 25  71.3 151.1 -0.7     -21.0  168  450  06 40 39

06 43 53  J2015+3710  19 24 25  71.8 145.4 -0.9     -25.4  -26  450  No stop
06 45 38  =2013+370  19 26 11  71.9 146.4 -0.8     -24.7   79  453  06 43 54

06 45 38  G75.761    19 26 11  71.6 142.5 -0.9     -27.4  -22  453  No stop
06 48 53  ---          19 29 26  71.9 144.3 -0.9     -26.2  173  459  06 45 39

06 49 53  J2015+3710  19 30 26  72.3 148.9 -0.8     -22.9   37  459  06 49 53
06 51 38  =2013+370  19 32 12  72.4 150.0 -0.7     -22.2  105  462  06 49 54

06 51 38  G73.060    19 32 12  71.8 155.8 -0.6     -17.7  -27  462  No stop
06 54 53  ---          19 35 27  72.0 157.8 -0.6     -16.3  168  469  06 51 39

06 54 53  J2015+3710  19 35 27  72.6 152.0 -0.7     -20.8  -26  469  No stop
06 56 38  =2013+370  19 37 13  72.8 153.1 -0.6     -20.0   79  472  06 54 54
```

Schedule for TORUN (Code Tr)

Page 9

Periodic masers I

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

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

--- Sat 14 Mar 2015 Day 73 ---

06 56 38	G75.761	19 37 13	72.5	148.9	-0.8	-23.0	-23	472	No stop
06 59 53	---	19 40 28	72.8	150.9	-0.7	-21.6	172	478	06 56 39
07 00 53	J2015+3710	19 41 28	73.0	155.8	-0.6	-18.0	36	478	07 00 53
07 02 38	=2013+370	19 43 13	73.1	156.9	-0.5	-17.2	105	482	07 00 54
07 02 38	G73.060	19 43 13	72.4	162.8	-0.4	-12.7	-27	482	No stop
07 05 53	---	19 46 29	72.5	164.9	-0.4	-11.2	168	488	07 02 39
07 05 53	J2015+3710	19 46 29	73.3	159.1	-0.5	-15.6	-26	488	No stop
07 07 38	=2013+370	19 48 14	73.4	160.3	-0.5	-14.7	79	491	07 05 54
07 07 38	G75.761	19 48 14	73.3	155.9	-0.6	-18.0	-23	491	No stop
07 10 53	---	19 51 30	73.5	158.1	-0.5	-16.4	172	498	07 07 39
07 11 53	J2015+3710	19 52 30	73.6	163.2	-0.4	-12.6	36	498	07 11 53
07 13 38	=2013+370	19 54 15	73.7	164.4	-0.4	-11.7	105	501	07 11 54

Next scan frequencies: 6666.07 6666.07 6666.07 6666.07 6670.07 6670.07 6670.07 6670.07
 6674.07 6674.07 6674.07 6674.07 6678.07 6678.07 6678.07 6678.07
 Next BBC frequencies: 766.07 766.07 766.07 766.07 770.07 770.07 770.07 770.07
 774.07 774.07 774.07 774.07 778.07 778.07 778.07 778.07

07 16 38	J1905+0952	19 57 16	45.6	198.1	0.8	10.9	61	501	07 16 38
07 18 23	=1903+097	19 59 01	45.5	198.7	0.9	11.2	105	504	07 16 39
07 18 23	G45.473	19 59 01	47.2	196.1	0.7	9.8	-20	504	No stop
07 21 38	---	20 02 17	47.1	197.2	0.8	10.4	175	511	07 18 24
07 21 38	J1905+0952	20 02 17	45.4	199.8	0.9	11.9	-20	511	No stop
07 23 23	=1903+097	20 04 02	45.3	200.4	1.0	12.3	85	514	07 21 39
07 23 23	G45.473	20 04 02	47.0	197.8	0.8	10.8	-20	514	No stop
07 26 38	---	20 07 17	46.8	199.0	0.9	11.5	175	520	07 23 24
07 26 38	J1905+0952	20 07 17	45.1	201.5	1.0	12.9	-20	520	No stop
07 28 23	=1903+097	20 09 03	45.0	202.1	1.0	13.3	85	524	07 26 39
07 29 23	G45.473	20 10 03	46.7	200.0	0.9	12.1	40	524	07 29 23
07 32 38	---	20 13 18	46.5	201.1	1.0	12.7	195	530	07 29 24
07 32 38	J1905+0952	20 13 18	44.7	203.5	1.1	14.1	-20	530	No stop
07 34 23	=1903+097	20 15 04	44.6	204.1	1.1	14.4	85	533	07 32 39
07 34 23	G45.473	20 15 04	46.4	201.7	1.0	13.1	-20	533	No stop
07 37 38	---	20 18 19	46.2	202.8	1.1	13.7	175	539	07 34 24

Schedule for TORUN (Code Tr)

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Periodic masers I

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

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

--- Sat 14 Mar 2015 Day 73 ---

```
07 37 38 J1905+0952  20 18 19  44.4 205.2  1.2      15.0  -21    539  No stop
07 39 23 =1903+097   20 20 05  44.3 205.8  1.2      15.4   84    543  07 37 39
```

```
Next scan frequencies: 6665.37 6665.37 6665.37 6665.37 6669.37 6669.37 6669.37 6669.37
                        6673.37 6673.37 6673.37 6673.37 6677.37 6677.37 6677.37 6677.37
Next BBC frequencies:  765.37  765.37  765.37  765.37  769.37  769.37  769.37  769.37
                        773.37  773.37  773.37  773.37  777.37  777.37  777.37  777.37
```

```
07 50 23 J1825-0737  20 31 06  23.8 214.1  2.1      19.9  572    543  07 50 23
07 52 08 =1822-076   20 32 52  23.6 214.5  2.1      20.1  105    546  07 50 24
```

```
07 52 08 G25.411     20 32 52  25.5 211.9  1.9      18.6  -21    546  No stop
07 55 23 ---          20 36 07  25.3 212.7  2.0      19.1  174    552  07 52 09
```

```
07 56 23 J1825-0737  20 37 07  23.3 215.6  2.2      20.7   39    552  07 56 23
07 58 08 =1822-076   20 38 53  23.1 216.1  2.2      20.9  105    556  07 56 24
```

```
07 58 08 G22.357     20 38 53  22.0 213.9  2.1      19.8  -18    556  No stop
08 01 23 ---          20 42 08  21.7 214.7  2.2      20.3  177    562  07 58 09
```

```
08 01 23 J1825-0737  20 42 08  22.8 216.9  2.3      21.3  -18    562  No stop
08 03 08 =1822-076   20 43 53  22.7 217.3  2.3      21.5   87    565  08 01 24
```

```
08 03 08 G25.411     20 43 53  24.6 214.8  2.1      20.2  -21    565  No stop
08 06 23 ---          20 47 09  24.3 215.6  2.2      20.6  174    572  08 03 09
```

```
08 07 23 J1825-0737  20 48 09  22.3 218.4  2.4      22.1   39    572  08 07 23
08 09 08 =1822-076   20 49 54  22.1 218.8  2.4      22.3  105    575  08 07 24
```

```
08 09 08 G22.357     20 49 54  21.1 216.6  2.3      21.3  -18    575  No stop
08 12 23 ---          20 53 10  20.8 217.4  2.3      21.7  177    581  08 09 09
```

```
08 12 23 J1825-0737  20 53 10  21.8 219.6  2.4      22.7  -18    581  No stop
08 14 08 =1822-076   20 54 55  21.6 220.0  2.5      22.9   87    585  08 12 24
```

```
08 14 08 G25.411     20 54 55  23.6 217.6  2.3      21.6  -21    585  No stop
08 17 23 ---          20 58 11  23.3 218.4  2.3      22.0  174    591  08 14 09
```

```
08 18 23 J1825-0737  20 59 11  21.2 221.1  2.5      23.5   38    591  08 18 23
08 20 08 =1822-076   21 00 56  21.0 221.5  2.6      23.7  105    594  08 18 24
```

```
08 20 08 G22.357     21 00 56  20.0 219.3  2.5      22.7  -18    594  No stop
08 23 23 ---          21 04 12  19.7 220.1  2.5      23.1  177    600  08 20 09
```

```
08 23 23 J1825-0737  21 04 12  20.7 222.3  2.6      24.1  -18    600  No stop
08 25 08 =1822-076   21 05 57  20.5 222.7  2.7      24.3   87    604  08 23 24
```

Schedule for TORUN (Code Tr)

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Periodic masers I

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

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

--- Sat 14 Mar 2015 Day 73 ---										
08 25 08	G25.411	21 05 57	22.6	220.3	2.5		23.0	-21	604	No stop
08 28 23	---	21 09 13	22.3	221.1	2.5		23.4	174	610	08 25 09
08 29 23	J1825-0737	21 10 13	20.1	223.8	2.7		24.8	38	610	08 29 23
08 31 08	=1822-076	21 11 58	19.9	224.2	2.8		25.0	105	613	08 29 24
08 31 08	G22.357	21 11 58	19.0	222.0	2.7		24.0	-18	613	No stop
08 34 23	---	21 15 14	18.6	222.7	2.7		24.4	177	620	08 31 09
08 34 23	J1825-0737	21 15 14	19.6	225.0	2.8		25.3	-19	620	No stop
08 36 08	=1822-076	21 16 59	19.4	225.4	2.8		25.5	86	623	08 34 24
08 36 08	G25.411	21 16 59	21.5	223.0	2.6		24.4	-22	623	No stop
08 39 23	---	21 20 14	21.2	223.8	2.7		24.7	173	629	08 36 09
08 40 23	J1825-0737	21 21 15	18.9	226.4	2.9		26.0	38	629	08 40 23
08 42 08	=1822-076	21 23 00	18.7	226.8	2.9		26.2	105	633	08 40 24
08 42 08	G22.357	21 23 00	17.8	224.6	2.8		25.3	-18	633	No stop
08 45 23	---	21 26 15	17.5	225.3	2.9		25.6	177	639	08 42 09
08 45 23	J1825-0737	21 26 15	18.4	227.6	3.0		26.6	-19	639	No stop
08 47 08	=1822-076	21 28 01	18.2	228.0	3.0		26.7	86	642	08 45 24
08 47 08	G25.411	21 28 01	20.3	225.7	2.8		25.6	-22	642	No stop
08 50 23	---	21 31 16	20.0	226.5	2.9		26.0	173	649	08 47 09
08 51 23	J1825-0737	21 32 16	17.7	229.0	3.1		27.2	38	649	08 51 23
08 53 08	=1822-076	21 34 02	17.5	229.4	3.1		27.4	105	652	08 51 24
08 53 08	G22.357	21 34 02	16.6	227.1	3.0		26.5	-18	652	No stop
08 56 23	---	21 37 17	16.3	227.9	3.1		26.8	177	658	08 53 09
08 56 23	J1825-0737	21 37 17	17.1	230.1	3.2		27.7	-19	658	No stop
08 58 08	=1822-076	21 39 02	16.9	230.5	3.2		27.9	86	662	08 56 24
Next scan frequencies: 6666.07 6666.07 6666.07 6666.07 6670.07 6670.07 6670.07 6670.07										
6674.07 6674.07 6674.07 6674.07 6678.07 6678.07 6678.07 6678.07										
Next BBC frequencies: 766.07 766.07 766.07 766.07 770.07 770.07 770.07 770.07										
774.07 774.07 774.07 774.07 778.07 778.07 778.07 778.07										
09 01 08	J1905+0952	21 42 03	36.7	230.5	2.6		28.1	91	662	09 01 08
09 02 53	=1903+097	21 43 48	36.5	231.0	2.6		28.3	105	665	09 01 09
09 02 53	G45.473	21 43 48	38.7	229.5	2.5		27.7	-22	665	No stop
09 06 08	---	21 47 04	38.3	230.4	2.5		28.1	173	671	09 02 54

Schedule for TORUN (Code Tr)

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Periodic masers I

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

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

--- Sat 14 Mar 2015 Day 73 ---

09 06 08	J1905+0952	21 47 04	36.1	231.9	2.7	28.7	-22	671	No stop
09 07 53	=1903+097	21 48 49	35.9	232.3	2.7	28.9	83	675	09 06 09
09 07 53	G45.473	21 48 49	38.1	230.9	2.6	28.3	-22	675	No stop
09 11 08	---	21 52 05	37.7	231.7	2.6	28.7	173	681	09 07 54
09 11 08	J1905+0952	21 52 05	35.5	233.2	2.8	29.2	-22	681	No stop
09 12 53	=1903+097	21 53 50	35.3	233.7	2.8	29.4	83	684	09 11 09
09 13 53	G45.473	21 54 50	37.4	232.5	2.7	29.1	38	684	09 13 53
09 17 08	---	21 58 06	37.0	233.4	2.7	29.4	195	690	09 13 54
09 17 08	J1905+0952	21 58 06	34.8	234.8	2.9	29.9	-22	690	No stop
09 18 53	=1903+097	21 59 51	34.6	235.2	2.9	30.0	83	694	09 17 09
09 18 53	G45.473	21 59 51	36.8	233.8	2.8	29.6	-22	694	No stop
09 22 08	---	22 03 06	36.4	234.7	2.8	30.0	173	700	09 18 54
09 22 08	J1905+0952	22 03 06	34.2	236.1	2.9	30.4	-22	700	No stop
09 23 53	=1903+097	22 04 52	33.9	236.5	3.0	30.6	83	703	09 22 09

```
Next scan frequencies: 6667.32 6667.32 6667.32 6667.32 6671.32 6671.32 6671.32 6671.32
                       6675.32 6675.32 6675.32 6675.32 6679.32 6679.32 6679.32 6679.32
Next BBC frequencies:  767.32  767.32  767.32  767.32  771.32  771.32  771.32  771.32
                       775.32  775.32  775.32  775.32  779.32  779.32  779.32  779.32
```

09 26 53	J2015+3710	22 07 52	65.0	241.9	1.9	41.7	49	703	09 26 53
09 28 38	=2013+370	22 09 37	64.7	242.5	1.9	42.0	105	707	09 26 54
09 28 38	G73.060	22 09 37	62.9	243.2	2.0	41.5	-21	707	No stop
09 31 53	---	22 12 53	62.4	244.3	2.1	42.0	174	713	09 28 39
09 31 53	J2015+3710	22 12 53	64.3	243.7	1.9	42.5	-21	713	No stop
09 33 38	=2013+370	22 14 38	64.1	244.2	2.0	42.8	84	716	09 31 54
09 33 38	G75.761	22 14 38	65.1	242.5	1.9	42.2	-17	716	No stop
09 36 53	---	22 17 54	64.6	243.6	1.9	42.7	178	723	09 33 39
09 37 53	J2015+3710	22 18 54	63.5	245.6	2.0	43.4	43	723	09 37 53
09 39 38	=2013+370	22 20 39	63.2	246.2	2.1	43.6	105	726	09 37 54
09 39 38	G73.060	22 20 39	61.4	246.7	2.2	43.0	-21	726	No stop
09 42 53	---	22 23 55	60.9	247.7	2.3	43.4	174	732	09 39 39
09 42 53	J2015+3710	22 23 55	62.8	247.2	2.1	44.1	-21	732	No stop
09 44 38	=2013+370	22 25 40	62.6	247.8	2.2	44.3	84	736	09 42 54

Schedule for TORUN (Code Tr)

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Periodic masers I

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Sat 14 Mar 2015 Day 73 ---										
09 44 38	G75.761	22 25 40	63.6	246.2	2.1		43.8	-17	736	No stop
09 47 53	---	22 28 56	63.1	247.2	2.1		44.2	178	742	09 44 39
09 48 53	J2015+3710	22 29 56	62.0	249.1	2.2		44.8	43	742	09 48 53
09 50 38	=2013+370	22 31 41	61.7	249.6	2.3		45.0	105	745	09 48 54
09 50 38	G73.060	22 31 41	59.8	250.0	2.4		44.3	-21	745	No stop
09 53 53	---	22 34 57	59.4	251.0	2.4		44.6	174	751	09 50 39
09 53 53	J2015+3710	22 34 57	61.3	250.6	2.3		45.3	-21	751	No stop
09 55 38	=2013+370	22 36 42	61.0	251.1	2.3		45.5	84	755	09 53 54
09 55 38	G75.761	22 36 42	62.1	249.6	2.2		45.2	-17	755	No stop
09 58 53	---	22 39 57	61.6	250.6	2.3		45.5	178	761	09 55 39
09 59 53	J2015+3710	22 40 58	60.4	252.3	2.4		45.9	43	761	09 59 53
10 01 38	=2013+370	22 42 43	60.1	252.8	2.4		46.1	105	764	09 59 54
10 01 38	G73.060	22 42 43	58.3	253.1	2.6		45.3	-21	764	No stop
10 04 53	---	22 45 58	57.8	254.0	2.6		45.5	174	771	10 01 39
10 04 53	J2015+3710	22 45 58	59.7	253.7	2.5		46.4	-21	771	No stop
10 06 38	=2013+370	22 47 44	59.4	254.1	2.5		46.5	84	774	10 04 54
10 06 38	G75.761	22 47 44	60.5	252.8	2.4		46.3	-17	774	No stop
10 09 53	---	22 50 59	60.0	253.7	2.5		46.6	178	780	10 06 39
10 10 53	J2015+3710	22 51 59	58.8	255.3	2.6		46.8	43	780	10 10 53
10 12 38	=2013+370	22 53 45	58.5	255.7	2.6		47.0	105	784	10 10 54
Next scan frequencies: 6666.07 6666.07 6666.07 6666.07 6670.07 6670.07 6670.07 6670.07										
6674.07 6674.07 6674.07 6674.07 6678.07 6678.07 6678.07 6678.07										
Next BBC frequencies: 766.07 766.07 766.07 766.07 770.07 770.07 770.07 770.07										
774.07 774.07 774.07 774.07 778.07 778.07 778.07 778.07										
10 15 38	J1905+0952	22 56 45	27.0	249.0	3.8		34.7	48	784	10 15 38
10 17 23	=1903+097	22 58 30	26.8	249.4	3.9		34.8	105	787	10 15 39
10 17 23	G45.473	22 58 30	29.1	248.3	3.7		34.7	-22	787	No stop
10 20 38	---	23 01 46	28.6	249.1	3.8		34.9	173	793	10 17 24
10 20 38	J1905+0952	23 01 46	26.3	250.1	3.9		35.0	-23	793	No stop
10 22 23	=1903+097	23 03 31	26.1	250.5	4.0		35.1	82	797	10 20 39
10 22 23	G45.473	23 03 31	28.4	249.5	3.8		35.0	-22	797	No stop
10 25 38	---	23 06 47	27.9	250.2	3.9		35.2	173	803	10 22 24

Schedule for TORUN (Code Tr)

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Periodic masers I

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Sat 14 Mar 2015 Day 73 ---										
10 25 38	J1905+0952	23 06 47	25.6	251.3	4.0		35.3	-23	803	No stop
10 27 23	=1903+097	23 08 32	25.4	251.7	4.0		35.4	82	806	10 25 39
10 28 23	G45.473	23 09 32	27.5	250.9	3.9		35.3	38	806	10 28 23
10 31 38	---	23 12 48	27.0	251.6	4.0		35.5	195	812	10 28 24
10 31 38	J1905+0952	23 12 48	24.8	252.6	4.1		35.6	-23	812	No stop
10 33 23	=1903+097	23 14 33	24.5	253.0	4.1		35.7	82	816	10 31 39
10 33 23	G45.473	23 14 33	26.8	252.0	4.0		35.6	-22	816	No stop
10 36 38	---	23 17 49	26.3	252.7	4.0		35.8	173	822	10 33 24
10 36 38	J1905+0952	23 17 49	24.0	253.7	4.2		35.8	-23	822	No stop
10 38 23	=1903+097	23 19 34	23.8	254.1	4.2		35.9	82	825	10 36 39
Next scan frequencies: 6667.32 6667.32 6667.32 6667.32 6671.32 6671.32 6671.32 6671.32										
6675.32 6675.32 6675.32 6675.32 6679.32 6679.32 6679.32 6679.32										
Next BBC frequencies: 767.32 767.32 767.32 767.32 771.32 771.32 771.32 771.32										
775.32 775.32 775.32 775.32 779.32 779.32 779.32 779.32										
10 41 23	J2015+3710	23 22 34	54.3	262.7	3.1		48.4	51	825	10 41 23
10 43 08	=2013+370	23 24 20	54.0	263.1	3.1		48.5	105	829	10 41 24
10 43 08	G73.060	23 24 20	52.1	263.3	3.3		47.5	-21	829	No stop
10 46 23	---	23 27 35	51.7	264.0	3.3		47.6	174	835	10 43 09
10 46 23	J2015+3710	23 27 35	53.6	263.8	3.2		48.6	-21	835	No stop
10 48 08	=2013+370	23 29 21	53.3	264.2	3.2		48.6	84	838	10 46 24
10 48 08	G75.761	23 29 21	54.4	263.2	3.1		48.7	-17	838	No stop
10 51 23	---	23 32 36	53.9	263.9	3.2		48.8	178	845	10 48 09
10 52 23	J2015+3710	23 33 36	52.7	265.2	3.3		48.7	43	845	10 52 23
10 54 08	=2013+370	23 35 22	52.4	265.5	3.3		48.8	105	848	10 52 24
10 54 08	G73.060	23 35 22	50.5	265.7	3.4		47.8	-21	848	No stop
10 57 23	---	23 38 37	50.0	266.4	3.5		47.8	174	854	10 54 09
10 57 23	J2015+3710	23 38 37	51.9	266.2	3.4		48.8	-21	854	No stop
10 59 08	=2013+370	23 40 22	51.6	266.6	3.4		48.8	84	858	10 57 24
10 59 08	G75.761	23 40 22	52.7	265.6	3.3		49.0	-17	858	No stop
11 02 23	---	23 43 38	52.2	266.3	3.4		49.0	178	864	10 59 09
11 03 23	J2015+3710	23 44 38	51.0	267.5	3.5		48.9	43	864	11 03 23
11 05 08	=2013+370	23 46 23	50.7	267.9	3.5		48.9	105	867	11 03 24

Schedule for TORUN (Code Tr)

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Periodic masers I

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Sat 14 Mar 2015 Day 73 ---											
11 05 08	G73.060	23 46 23	48.8	268.0	3.6		47.9	-21	867	No stop	
11 08 23	---	23 49 39	48.4	268.7	3.7		47.9	174	874	11 05 09	
11 08 23	J2015+3710	23 49 39	50.2	268.5	3.6		48.9	-21	874	No stop	
11 10 08	=2013+370	23 51 24	50.0	268.9	3.6		48.9	84	877	11 08 24	
11 10 08	G75.761	23 51 24	51.1	267.9	3.5		49.1	-17	877	No stop	
11 13 23	---	23 54 40	50.6	268.6	3.5		49.1	178	883	11 10 09	
11 14 23	J2015+3710	23 55 40	49.3	269.8	3.7		49.0	43	883	11 14 23	
11 16 08	=2013+370	23 57 25	49.1	270.1	3.7		49.0	105	887	11 14 24	
11 16 08	G73.060	23 57 25	47.2	270.2	3.8		47.9	-21	887	No stop	
11 19 23	---	00 00 41	46.7	270.9	3.9		47.9	174	893	11 16 09	
11 19 23	J2015+3710	00 00 41	48.6	270.8	3.7		48.9	-21	893	No stop	
11 21 08	=2013+370	00 02 26	48.3	271.1	3.8		48.9	84	896	11 19 24	
11 21 08	G75.761	00 02 26	49.4	270.2	3.7		49.2	-17	896	No stop	
11 24 23	---	00 05 41	48.9	270.8	3.7		49.2	178	902	11 21 09	
11 25 23	J2015+3710	00 06 42	47.7	271.9	3.8		48.9	43	902	11 25 23	
11 27 08	=2013+370	00 08 27	47.4	272.3	3.9		48.9	105	906	11 25 24	
Next scan frequencies:		6666.07	6666.07	6666.07	6666.07	6666.07	6666.07	6670.07	6670.07	6670.07	6670.07
		6674.07	6674.07	6674.07	6674.07	6674.07	6674.07	6678.07	6678.07	6678.07	6678.07
Next BBC frequencies:		766.07	766.07	766.07	766.07	766.07	766.07	770.07	770.07	770.07	770.07
		774.07	774.07	774.07	774.07	774.07	774.07	778.07	778.07	778.07	778.07
11 30 08	J1905+0952	00 11 27	16.1	265.0	5.1		37.4	49	906	11 30 08	
11 31 53	=1903+097	00 13 13	15.9	265.4	5.1		37.4	105	909	11 30 09	
11 31 53	G45.473	00 13 13	18.2	264.5	5.0		37.5	-22	909	No stop	
11 35 08	---	00 16 28	17.7	265.1	5.0		37.6	173	915	11 31 54	
11 35 08	J1905+0952	00 16 28	15.4	266.0	5.2		37.5	-23	915	No stop	
11 36 53	=1903+097	00 18 14	15.1	266.4	5.2		37.5	82	919	11 35 09	
11 36 53	G45.473	00 18 14	17.4	265.5	5.1		37.6	-22	919	No stop	
11 40 08	---	00 21 29	17.0	266.2	5.1		37.6	173	925	11 36 54	
11 40 08	J1905+0952	00 21 29	14.6	267.0	5.3		37.5	-23	925	No stop	
11 41 53	=1903+097	00 23 14	14.4	267.4	5.3		37.5	82	928	11 40 09	
11 42 53	G45.473	00 24 15	16.5	266.7	5.2		37.7	38	928	11 42 53	
11 46 08	---	00 27 30	16.1	267.4	5.2		37.7	195	935	11 42 54	

Schedule for TORUN (Code Tr)

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Periodic masers I

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Sat 14 Mar 2015 Day 73 ---											
11 46 08	J1905+0952	00 27 30	13.7	268.2	5.4		37.5	-23	935	No stop	
11 47 53	=1903+097	00 29 15	13.5	268.6	5.4		37.5	82	938	11 46 09	
11 47 53	G45.473	00 29 15	15.8	267.7	5.2		37.7	-22	938	No stop	
11 51 08	---	00 32 31	15.3	268.4	5.3		37.7	173	944	11 47 54	
11 51 08	J1905+0952	00 32 31	13.0	269.2	5.4		37.6	-23	944	No stop	
11 52 53	=1903+097	00 34 16	12.7	269.6	5.5		37.6	82	948	11 51 09	
Next scan frequencies:		6667.32	6667.32	6667.32	6667.32	6667.32	6667.32	6671.32	6671.32	6671.32	6671.32
		6675.32	6675.32	6675.32	6675.32	6675.32	6675.32	6679.32	6679.32	6679.32	6679.32
Next BBC frequencies:		767.32	767.32	767.32	767.32	767.32	767.32	771.32	771.32	771.32	771.32
		775.32	775.32	775.32	775.32	775.32	775.32	779.32	779.32	779.32	779.32
11 55 53	J2015+3710	00 37 17	43.1	277.7	4.4		48.4	52	948	11 55 53	
11 57 38	=2013+370	00 39 02	42.9	278.0	4.4		48.3	105	951	11 55 54	
11 57 38	G73.060	00 39 02	41.0	278.1	4.5		47.3	-21	951	No stop	
12 00 53	---	00 42 17	40.5	278.7	4.6		47.2	174	957	11 57 39	
12 00 53	J2015+3710	00 42 17	42.4	278.6	4.4		48.2	-21	957	No stop	
12 02 38	=2013+370	00 44 03	42.1	278.9	4.5		48.2	84	961	12 00 54	
12 02 38	G75.761	00 44 03	43.2	278.0	4.4		48.5	-17	961	No stop	
12 05 53	---	00 47 18	42.7	278.6	4.4		48.4	178	967	12 02 39	
12 06 53	J2015+3710	00 48 18	41.5	279.6	4.5		48.0	43	967	12 06 53	
12 08 38	=2013+370	00 50 04	41.2	280.0	4.6		48.0	105	970	12 06 54	
12 08 38	G73.060	00 50 04	39.3	280.1	4.7		47.0	-21	970	No stop	
12 11 53	---	00 53 19	38.9	280.7	4.7		46.9	174	976	12 08 39	
12 11 53	J2015+3710	00 53 19	40.7	280.5	4.6		47.9	-21	976	No stop	
12 13 38	=2013+370	00 55 05	40.5	280.8	4.7		47.8	84	980	12 11 54	
12 13 38	G75.761	00 55 05	41.6	280.0	4.5		48.2	-17	980	No stop	
12 16 53	---	00 58 20	41.1	280.6	4.6		48.1	178	986	12 13 39	
12 17 53	J2015+3710	00 59 20	39.9	281.6	4.7		47.6	43	986	12 17 53	
12 19 38	=2013+370	01 01 06	39.6	281.9	4.8		47.6	105	989	12 17 54	
12 30 38	G73.060	01 12 07	36.1	284.0	5.1		46.1	639	989	12 30 38	
12 33 53	---	01 15 23	35.6	284.5	5.1		46.0	195	996	12 30 39	
12 33 53	J2015+3710	01 15 23	37.5	284.4	5.0		46.9	-21	996	No stop	
12 35 38	=2013+370	01 17 08	37.3	284.7	5.0		46.9	84	999	12 33 54	

Schedule for TORUN (Code Tr)

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Periodic masers I

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Sat 14 Mar 2015 Day 73 ---										
12 35 38	G75.761	01 17 08	38.3	283.8	4.9		47.3	-17	999	No stop
12 38 53	---	01 20 24	37.8	284.4	5.0		47.1	178	1005	12 35 39
12 39 53	J2015+3710	01 21 24	36.6	285.4	5.1		46.6	43	1005	12 39 53
12 41 38	=2013+370	01 23 09	36.4	285.7	5.1		46.6	105	1009	12 39 54
12 41 38	G73.060	01 23 09	34.5	285.9	5.2		45.6	-21	1009	No stop
12 44 53	---	01 26 25	34.0	286.4	5.3		45.4	174	1015	12 41 39
12 44 53	J2015+3710	01 26 25	35.9	286.2	5.2		46.4	-21	1015	No stop
12 46 38	=2013+370	01 28 10	35.7	286.5	5.2		46.3	84	1018	12 44 54
12 46 38	G75.761	01 28 10	36.7	285.7	5.1		46.7	-17	1018	No stop
12 49 53	---	01 31 26	36.2	286.3	5.2		46.6	178	1025	12 46 39
12 50 53	J2015+3710	01 32 26	35.0	287.3	5.3		46.1	43	1025	12 50 53
12 52 38	=2013+370	01 34 11	34.8	287.6	5.3		46.0	105	1028	12 50 54
12 52 38	G73.060	01 34 11	32.9	287.8	5.4		45.0	-21	1028	No stop
12 55 53	---	01 37 27	32.4	288.3	5.5		44.8	174	1034	12 52 39
12 55 53	J2015+3710	01 37 27	34.3	288.1	5.4		45.8	-21	1034	No stop
12 57 38	=2013+370	01 39 12	34.1	288.4	5.4		45.7	84	1037	12 55 54
12 57 38	G75.761	01 39 12	35.1	287.6	5.3		46.2	-17	1037	No stop
13 00 53	---	01 42 27	34.7	288.1	5.3		46.0	178	1044	12 57 39
13 01 53	J2015+3710	01 43 28	33.5	289.1	5.5		45.4	43	1044	13 01 53
13 03 38	=2013+370	01 45 13	33.2	289.4	5.5		45.3	105	1047	13 01 54
13 03 38	G73.060	01 45 13	31.3	289.6	5.6		44.4	-21	1047	No stop
13 06 53	---	01 48 28	30.9	290.2	5.7		44.2	174	1053	13 03 39
13 06 53	J2015+3710	01 48 28	32.8	289.9	5.5		45.1	-21	1053	No stop
13 08 38	=2013+370	01 50 14	32.5	290.2	5.6		45.0	84	1057	13 06 54
13 08 38	G75.761	01 50 14	33.6	289.4	5.5		45.5	-17	1057	No stop
13 11 53	---	01 53 29	33.1	290.0	5.5		45.3	178	1063	13 08 39
13 12 53	J2015+3710	01 54 29	31.9	291.0	5.6		44.8	43	1063	13 12 53
13 14 38	=2013+370	01 56 15	31.7	291.2	5.7		44.7	105	1066	13 12 54
13 14 38	G73.060	01 56 15	29.8	291.5	5.8		43.7	-21	1066	No stop
13 17 53	---	01 59 30	29.3	292.0	5.8		43.5	174	1073	13 14 39

Schedule for TORUN (Code Tr)

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Periodic masers I

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Sat 14 Mar 2015 Day 73 ---										
13 17 53	J2015+3710	01 59 30	31.2	291.8	5.7		44.5	-21	1073	No stop
13 19 38	=2013+370	02 01 15	31.0	292.1	5.8		44.3	84	1076	13 17 54
13 19 38	G75.761	02 01 15	32.0	291.2	5.7		44.8	-17	1076	No stop
13 22 53	---	02 04 31	31.6	291.8	5.7		44.6	178	1082	13 19 39
13 23 53	J2015+3710	02 05 31	30.4	292.8	5.8		44.1	43	1082	13 23 53
13 25 38	=2013+370	02 07 16	30.1	293.1	5.9		43.9	105	1086	13 23 54
13 25 38	G73.060	02 07 16	28.3	293.4	6.0		43.0	-21	1086	No stop
13 28 53	---	02 10 32	27.8	293.9	6.0		42.8	174	1092	13 25 39
13 28 53	J2015+3710	02 10 32	29.7	293.6	5.9		43.7	-21	1092	No stop
13 30 38	=2013+370	02 12 17	29.4	293.9	5.9		43.6	84	1095	13 28 54
13 30 38	G75.761	02 12 17	30.5	293.1	5.8		44.1	-17	1095	No stop
13 33 53	---	02 15 33	30.0	293.6	5.9		43.9	178	1101	13 30 39
13 34 53	J2015+3710	02 16 33	28.9	294.6	6.0		43.3	43	1101	13 34 53
13 36 38	=2013+370	02 18 18	28.6	294.9	6.0		43.2	105	1105	13 34 54
13 36 38	G73.060	02 18 18	26.8	295.2	6.2		42.2	-21	1105	No stop
13 39 53	---	02 21 34	26.3	295.7	6.2		42.0	174	1111	13 36 39
13 39 53	J2015+3710	02 21 34	28.2	295.4	6.1		42.9	-21	1111	No stop
13 41 38	=2013+370	02 23 19	27.9	295.7	6.1		42.8	84	1114	13 39 54
13 41 38	G75.761	02 23 19	29.0	294.9	6.0		43.3	-17	1114	No stop
13 44 53	---	02 26 35	28.5	295.4	6.1		43.1	178	1121	13 41 39
13 45 53	J2015+3710	02 27 35	27.4	296.4	6.2		42.5	43	1121	13 45 53
13 47 38	=2013+370	02 29 20	27.1	296.7	6.2		42.3	105	1124	13 45 54
13 47 38	G73.060	02 29 20	25.3	297.1	6.3		41.4	-21	1124	No stop
13 50 53	---	02 32 36	24.8	297.6	6.4		41.2	174	1130	13 47 39
13 50 53	J2015+3710	02 32 36	26.7	297.3	6.3		42.1	-21	1130	No stop
13 52 38	=2013+370	02 34 21	26.5	297.6	6.3		42.0	84	1134	13 50 54
13 52 38	G75.761	02 34 21	27.5	296.7	6.2		42.5	-16	1134	No stop
13 55 53	---	02 37 36	27.0	297.2	6.3		42.3	179	1140	13 52 39
13 56 53	J2015+3710	02 38 37	25.9	298.3	6.4		41.6	43	1140	13 56 53
13 58 38	=2013+370	02 40 22	25.7	298.5	6.4		41.5	105	1143	13 56 54

Schedule for TORUN (Code Tr)

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Periodic masers I

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Sat 14 Mar 2015 Day 73 ---										
13 58 38	G73.060	02 40 22	23.8	298.9	6.5		40.5	-21	1143	No stop
14 01 53	---	02 43 37	23.4	299.4	6.6		40.3	174	1150	13 58 39
14 01 53	J2015+3710	02 43 37	25.2	299.1	6.5		41.2	-21	1150	No stop
14 03 38	=2013+370	02 45 23	25.0	299.4	6.5		41.1	84	1153	14 01 54
14 03 38	G75.761	02 45 23	26.0	298.5	6.4		41.7	-16	1153	No stop
14 06 53	---	02 48 38	25.6	299.1	6.4		41.4	179	1159	14 03 39
14 07 53	J2015+3710	02 49 38	24.5	300.1	6.6		40.7	43	1159	14 07 53
14 09 38	=2013+370	02 51 24	24.2	300.4	6.6		40.6	105	1162	14 07 54
14 09 38	G73.060	02 51 24	22.4	300.8	6.7		39.7	-21	1162	No stop
14 12 53	---	02 54 39	21.9	301.3	6.8		39.4	174	1169	14 09 39
14 12 53	J2015+3710	02 54 39	23.8	300.9	6.6		40.3	-21	1169	No stop
14 14 38	=2013+370	02 56 24	23.6	301.2	6.7		40.2	84	1172	14 12 54
14 14 38	G75.761	02 56 24	24.6	300.4	6.6		40.8	-16	1172	No stop
14 17 53	---	02 59 40	24.1	300.9	6.6		40.5	179	1178	14 14 39
14 18 53	J2015+3710	03 00 40	23.0	301.9	6.7		39.8	43	1178	14 18 53
14 20 38	=2013+370	03 02 25	22.8	302.2	6.8		39.7	105	1182	14 18 54
14 20 38	G73.060	03 02 25	21.0	302.6	6.9		38.7	-21	1182	No stop
14 23 53	---	03 05 41	20.5	303.2	6.9		38.4	174	1188	14 20 39
14 23 53	J2015+3710	03 05 41	22.4	302.7	6.8		39.4	-21	1188	No stop
14 25 38	=2013+370	03 07 26	22.2	303.0	6.9		39.2	84	1191	14 23 54
14 25 38	G75.761	03 07 26	23.1	302.2	6.8		39.8	-16	1191	No stop
14 28 53	---	03 10 42	22.7	302.7	6.8		39.5	179	1198	14 25 39
14 29 53	J2015+3710	03 11 42	21.6	303.8	6.9		38.8	43	1198	14 29 53
14 31 38	=2013+370	03 13 27	21.4	304.0	7.0		38.7	105	1201	14 29 54
14 31 38	G73.060	03 13 27	19.6	304.5	7.1		37.7	-21	1201	No stop
14 34 53	---	03 16 43	19.2	305.0	7.1		37.4	174	1207	14 31 39
14 34 53	J2015+3710	03 16 43	21.0	304.6	7.0		38.4	-21	1207	No stop
14 36 38	=2013+370	03 18 28	20.8	304.9	7.0		38.2	84	1211	14 34 54
14 36 38	G75.761	03 18 28	21.8	304.0	6.9		38.8	-16	1211	No stop
14 39 53	---	03 21 44	21.4	304.6	7.0		38.5	179	1217	14 36 39

Schedule for TORUN (Code Tr)

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Periodic masers I

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

---	Sat 14 Mar 2015	Day	73	---							
14 40 53	J2015+3710	03 22 44	20.3	305.6	7.1		37.8	44	1217	14 40 53	
14 42 38	=2013+370	03 24 29	20.1	305.9	7.1		37.7	105	1220	14 40 54	
14 42 38	G73.060	03 24 29	18.2	306.4	7.3		36.7	-21	1220	No stop	
14 45 53	---	03 27 45	17.8	306.9	7.3		36.4	174	1226	14 42 39	
14 45 53	J2015+3710	03 27 45	19.7	306.4	7.2		37.4	-21	1226	No stop	
14 47 38	=2013+370	03 29 30	19.5	306.7	7.2		37.2	84	1230	14 45 54	
14 47 38	G75.761	03 29 30	20.4	305.8	7.1		37.8	-16	1230	No stop	
14 50 53	---	03 32 45	20.0	306.4	7.2		37.5	179	1236	14 47 39	
14 51 53	J2015+3710	03 33 46	18.9	307.4	7.3		36.8	44	1236	14 51 53	
14 53 38	=2013+370	03 35 31	18.7	307.7	7.3		36.6	105	1239	14 51 54	
14 53 38	G73.060	03 35 31	16.9	308.2	7.4		35.7	-21	1239	No stop	
14 56 53	---	03 38 46	16.5	308.8	7.5		35.4	174	1246	14 53 39	
14 56 53	J2015+3710	03 38 46	18.4	308.3	7.4		36.3	-20	1246	No stop	
14 58 38	=2013+370	03 40 32	18.1	308.6	7.4		36.1	85	1249	14 56 54	
14 58 38	G75.761	03 40 32	19.1	307.7	7.3		36.8	-16	1249	No stop	
15 01 53	---	03 43 47	18.7	308.2	7.4		36.5	179	1255	14 58 39	
15 02 53	J2015+3710	03 44 47	17.7	309.3	7.5		35.7	44	1255	15 02 53	
15 04 38	=2013+370	03 46 33	17.4	309.6	7.5		35.5	105	1259	15 02 54	
15 04 38	G73.060	03 46 33	15.6	310.1	7.6		34.6	-21	1259	No stop	
15 07 53	---	03 49 48	15.3	310.7	7.7		34.3	174	1265	15 04 39	
15 07 53	J2015+3710	03 49 48	17.1	310.2	7.6		35.2	-20	1265	No stop	
15 09 38	=2013+370	03 51 33	16.9	310.5	7.6		35.0	85	1268	15 07 54	
15 09 38	G75.761	03 51 33	17.8	309.6	7.5		35.7	-16	1268	No stop	
15 12 53	---	03 54 49	17.4	310.1	7.5		35.4	179	1275	15 09 39	
15 13 53	J2015+3710	03 55 49	16.4	311.2	7.7		34.6	44	1275	15 13 53	
15 15 38	=2013+370	03 57 34	16.2	311.5	7.7		34.4	105	1278	15 13 54	
15 15 38	G73.060	03 57 34	14.4	312.1	7.8		33.5	-21	1278	No stop	
15 18 53	---	04 00 50	14.0	312.6	7.9		33.1	174	1284	15 15 39	
15 18 53	J2015+3710	04 00 50	15.8	312.0	7.7		34.1	-20	1284	No stop	
15 20 38	=2013+370	04 02 35	15.6	312.4	7.8		33.9	85	1287	15 18 54	

Schedule for TORUN (Code Tr)

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Periodic masers I

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Sat 14 Mar 2015 Day 73 ---										
15 20 38	G75.761	04 02 35	16.5	311.4	7.7		34.6	-16	1287	No stop
15 23 53	---	04 05 51	16.2	312.0	7.7		34.2	179	1294	15 20 39
15 24 53	J2015+3710	04 06 51	15.2	313.1	7.8		33.4	44	1294	15 24 53
15 26 38	=2013+370	04 08 36	15.0	313.4	7.9		33.2	105	1297	15 24 54
15 26 38	G73.060	04 08 36	13.2	314.0	8.0		32.3	-21	1297	No stop
15 29 53	---	04 11 52	12.8	314.6	8.1		31.9	174	1303	15 26 39
15 29 53	J2015+3710	04 11 52	14.6	313.9	7.9		32.9	-20	1303	No stop
15 31 38	=2013+370	04 13 37	14.4	314.3	8.0		32.7	85	1307	15 29 54
15 31 38	G75.761	04 13 37	15.3	313.3	7.9		33.4	-16	1307	No stop
15 34 53	---	04 16 53	14.9	313.9	7.9		33.0	179	1313	15 31 39
15 35 53	J2015+3710	04 17 53	14.0	315.0	8.0		32.2	44	1313	15 35 53
15 37 38	=2013+370	04 19 38	13.8	315.3	8.1		32.0	105	1316	15 35 54
15 37 38	G73.060	04 19 38	12.0	315.9	8.2		31.1	-21	1316	No stop
15 40 53	---	04 22 54	11.7	316.5	8.2		30.7	174	1323	15 37 39
15 40 53	J2015+3710	04 22 54	13.4	315.9	8.1		31.7	-20	1323	No stop
15 42 38	=2013+370	04 24 39	13.3	316.2	8.1		31.5	85	1326	15 40 54
15 42 38	G75.761	04 24 39	14.1	315.2	8.0		32.2	-16	1326	No stop
15 45 53	---	04 27 54	13.8	315.8	8.1		31.8	179	1332	15 42 39
15 46 53	J2015+3710	04 28 55	12.8	316.9	8.2		31.0	44	1332	15 46 53
15 48 38	=2013+370	04 30 40	12.6	317.2	8.2		30.8	105	1336	15 46 54
15 48 38	G73.060	04 30 40	10.9	317.9	8.4		29.9	-20	1336	No stop
15 51 53	---	04 33 55	10.5	318.5	8.4		29.5	175	1342	15 48 39
15 51 53	J2015+3710	04 33 55	12.3	317.8	8.3		30.4	-20	1342	No stop
15 53 38	=2013+370	04 35 41	12.1	318.1	8.3		30.2	85	1345	15 51 54
15 53 38	G75.761	04 35 41	13.0	317.1	8.2		31.0	-15	1345	No stop
15 57 03	---	04 39 06	12.6	317.7	8.3		30.6	190	1352	15 53 39
15 58 03	J2015+3710	04 40 06	11.7	318.9	8.4		29.7	44	1352	15 58 03
16 00 00	=2013+370	04 42 04	11.5	319.2	8.4		29.5	117	1356	15 58 04

SETUP FILE INFORMATION:

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

==== Setup file: sess115M2.ES075

Setup group: 8 Station: TORUN Total bit rate: 256
Format: MARK5B Bits per sample: 2 Sample rate: 8.000
Number of channels: 16 DBE type: DBBC_DDC Speedup factor: 1.00

Disk used to record data.

1st LO=	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00
	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00
Net SB=	L	L	U	U	L	L	U	U	
	L	L	U	U	L	L	U	U	
IF SB =	U	U	U	U	U	U	U	U	
	U	U	U	U	U	U	U	U	
Pol. =	RCP	LCP	RCP	LCP	RCP	LCP	RCP	LCP	
	RCP	LCP	RCP	LCP	RCP	LCP	RCP	LCP	
BBC =	1	5	1	5	2	6	2	6	
	3	7	3	7	4	8	4	8	
BBC SB=	L	L	U	U	L	L	U	U	
	L	L	U	U	L	L	U	U	
IF =	A1	B1	A1	B1	A1	B1	A1	B1	
	A1	B1	A1	B1	A1	B1	A1	B1	

The following frequency sets based on these setups were used.

Frequency Set: 5 Based on FREQ, BW, and/or DOPPLER in schedule. Used with PCAL = off
LO sum= 6665.37 6665.37 6665.37 6665.37 6669.37 6669.37 6669.37 6669.37
6673.37 6673.37 6673.37 6673.37 6677.37 6677.37 6677.37 6677.37
BBC fr= 765.37 765.37 765.37 765.37 769.37 769.37 769.37 769.37
773.37 773.37 773.37 773.37 777.37 777.37 777.37 777.37
Bandwd= 4.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00
4.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00
Matching frequency sets: 5

Frequency Set: 16 Based on FREQ, BW, and/or DOPPLER in schedule. Used with PCAL = off
LO sum= 6666.07 6666.07 6666.07 6666.07 6670.07 6670.07 6670.07 6670.07
6674.07 6674.07 6674.07 6674.07 6678.07 6678.07 6678.07 6678.07
BBC fr= 766.07 766.07 766.07 766.07 770.07 770.07 770.07 770.07
774.07 774.07 774.07 774.07 778.07 778.07 778.07 778.07
Bandwd= 4.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00
4.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00
Matching frequency sets: 16

Frequency Set: 27 Based on FREQ, BW, and/or DOPPLER in schedule. Used with PCAL = off
LO sum= 6667.32 6667.32 6667.32 6667.32 6671.32 6671.32 6671.32 6671.32
6675.32 6675.32 6675.32 6675.32 6679.32 6679.32 6679.32 6679.32
BBC fr= 767.32 767.32 767.32 767.32 771.32 771.32 771.32 771.32
775.32 775.32 775.32 775.32 779.32 779.32 779.32 779.32
Bandwd= 4.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00
4.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00
Matching frequency sets: 27

Track assignments are:

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec)		(Date)	Error
	(B1950)	(J2000)		(mas)
* G22.357	18 28 59.382163	* 18 31 44.120000	18 32 34.031280	0.00
	-09 24 24.71248	*-09 22 12.31200	-09 21 26.03032	0.00
* G25.411	18 34 35.423427	* 18 37 16.921000	18 38 05.817490	0.00
	-06 41 07.02031	*-06 38 30.50100	-06 37 37.86712	0.00
* G45.473	19 11 46.088871	* 19 14 07.358000	19 14 49.930534	0.00
	11 07 02.73465	* 11 12 16.36000	11 13 51.00953	0.00
* G73.060	20 06 17.442660	* 20 08 10.110000	20 08 43.712626	0.00
	35 50 36.55623	* 35 59 24.70000	36 01 59.68032	0.00
* G75.761	20 19 48.980381	* 20 21 41.110000	20 22 14.495488	0.00
	37 15 51.81430	* 37 25 29.24000	37 28 19.22240	0.00
J1642+3948	16 41 17.606228	* 16 42 58.809965	16 43 29.863283	0.77
* 3C345	39 54 10.81496	* 39 48 36.99402	39 46 46.39487	0.52
* J1825-0737	18 22 54.910260	* 18 25 37.609553	18 26 26.940313	0.22
1822-076	-07 39 15.96775	*-07 37 30.01383	-07 36 52.36521	0.34
* J1905+0952	19 03 17.231805	* 19 05 39.898867	19 06 22.935753	1.72
1903+097	09 47 30.15838	* 09 52 08.40772	09 53 32.69042	1.97
* J2015+3710	20 13 37.014489	* 20 15 28.729775	20 16 02.010446	0.16
2013+370	37 01 44.45943	* 37 10 59.51531	37 13 42.62992	0.16

rk08sptr

RADIOASTRON AGN SURVEY

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

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

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

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

--- Sat 14 Mar 2015 Day 73 ---

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

Table with columns: Next scan frequencies, Next BBC frequencies, Next scan bandwidths, and a main data table with columns: Start UT, Source, LST, EL, AZ, HA, UP, ParA, Dwell, GBytes, TPStart, SYNC.

SETUP FILE INFORMATION:

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

==== Setup file: ra18cm2.set

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

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

Track assignments are:

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.223176	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 50.66247	0.00
	fake circumpolar target for a TS to look at			
* 1604+315	16 04 10.611566	* 16 06 08.518385	16 06 44.888464	0.00
J1606+3124	31 32 47.72177	* 31 24 46.45776	31 22 12.34588	0.00
	./rk08sp_sources.radioastron AGN, HIGHz, rfc_2013d Petrov, 2013, unpublished 90 observations, RA-A02-03, RA-A			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
1604+315	110.6

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

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk08sqtr

RADIOASTRON AGN SURVEY

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

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

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

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

--- Sun 15 Mar 2015 Day 74 ---

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

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

00 00 00	1656-075	12 43 23	8.8 115.6 -4.3	-33.1	0	0	00 00 00
00 12 00	---	12 55 25	10.4 118.2 -4.1	-32.3	720	23	00 00 01
00 12 30	1656-075	12 55 55	10.5 118.3 -4.1	-32.3	24	23	00 12 30
00 20 00	---	13 03 26	11.5 119.9 -3.9	-31.7	450	37	00 12 31

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

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

00 25 00	1656-075	13 08 27	12.2 120.9 -3.9	-31.3	293	37	00 25 00
00 37 00	---	13 20 29	13.7 123.6 -3.7	-30.3	720	60	00 25 01
00 37 30	1656-075	13 20 59	13.7 123.7 -3.6	-30.3	24	60	00 37 30
00 50 00	---	13 33 31	15.3 126.5 -3.4	-29.2	750	84	00 37 31

SETUP FILE INFORMATION:

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

=====
Setup file: ra6cm2.set

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

```

Track assignments are:

```

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

```

==== Setup file: ra18cm2.set

```

Setup group:  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)	Source position (RA/Dec) (J2000)	(Date)	Error (mas)
* 1656-075	16 56 01.672906	* 16 58 44.061993	16 59 33.870168	0.00
J1658-0739	-07 34 47.28706	*-07 39 17.69432	-07 40 35.25332	0.00

NATURE OF METHANOL MASER RINGS

PI: *Anna Bartkiewicz*

Observing mode: MKV, 128 Mbps

Schedule for TORUN (Code Tr)

Page 2

Nature of methanol maser rings

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 15 Mar 2015 Day 74 ---										
Next scan frequencies: 6664.77 6664.77 6664.77 6664.77 6668.77 6668.77 6668.77 6668.77										
6672.77 6672.77 6672.77 6672.77 6676.77 6676.77 6676.77 6676.77										
Next BBC frequencies: 764.77 764.77 764.77 764.77 768.77 768.77 768.77 768.77										
772.77 772.77 772.77 772.77 776.77 776.77 776.77 776.77										
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 2.00 2.00										

02 00 00	3C345	14 43 43	65.7	111.1	-2.0		-46.8	0	0	02 00 00
02 15 00	---	14 58 45	67.8	116.3	-1.7		-44.5	900	14	02 00 01
02 15 40	3C345	14 59 25	67.9	116.5	-1.7		-44.4	34	14	02 15 40
02 30 40	---	15 14 28	69.8	122.4	-1.5		-41.3	900	29	02 15 41
02 31 20	3C345	15 15 08	69.9	122.7	-1.5		-41.1	33	29	02 31 20
02 46 20	---	15 30 10	71.7	129.5	-1.2		-37.1	900	43	02 31 21
02 47 00	3C345	15 30 50	71.8	129.8	-1.2		-36.9	33	43	02 47 00
03 02 00	---	15 45 53	73.5	137.8	-1.0		-31.6	900	58	02 47 01
03 05 48	J1825-0737	15 49 42	20.8	137.9	-2.6		-23.9	17	58	03 05 48
03 07 33	=1822-076	15 51 27	21.0	138.4	-2.6		-23.7	105	59	03 05 49
03 07 33	G23.207	15 51 27	19.0	136.6	-2.7		-24.7	-21	59	No stop
03 10 48	---	15 54 43	19.3	137.4	-2.7		-24.3	174	62	03 07 34
03 10 48	J1825-0737	15 54 43	21.3	139.2	-2.5		-23.3	-22	62	No stop
03 12 33	=1822-076	15 56 28	21.5	139.6	-2.5		-23.1	83	64	03 10 49
03 12 33	G23.389	15 56 28	20.0	138.1	-2.6		-23.9	-19	64	No stop
03 15 48	---	15 59 43	20.3	138.8	-2.6		-23.5	176	67	03 12 34
03 15 48	J1825-0737	15 59 43	21.8	140.4	-2.4		-22.7	-19	67	No stop
03 17 33	=1822-076	16 01 29	22.0	140.8	-2.4		-22.5	86	69	03 15 49
03 18 13	G23.657	16 02 09	20.5	139.0	-2.6		-23.5	21	69	03 18 13
03 21 28	---	16 05 24	20.8	139.8	-2.5		-23.1	195	72	03 18 14
03 22 08	J1825-0737	16 06 05	22.4	142.0	-2.3		-21.9	21	72	03 22 08
03 23 53	=1822-076	16 07 50	22.6	142.4	-2.3		-21.7	105	74	03 22 09
03 23 53	G23.207	16 07 50	20.6	140.6	-2.5		-22.7	-21	74	No stop
03 27 08	---	16 11 05	20.9	141.4	-2.4		-22.3	174	77	03 23 54
03 27 08	J1825-0737	16 11 05	22.9	143.2	-2.3		-21.3	-21	77	No stop
03 28 53	=1822-076	16 12 51	23.0	143.6	-2.2		-21.0	84	79	03 27 09

Schedule for TORUN (Code Tr)

Page 3

Nature of methanol maser rings

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Sun 15 Mar 2015 Day 74 ---										
03 28 53	G23.389	16 12 51	21.6	142.1	-2.4		-21.9	-19	79	No stop
03 32 08	---	16 16 06	21.9	142.9	-2.3		-21.5	176	82	03 28 54
03 32 08	J1825-0737	16 16 06	23.3	144.5	-2.2		-20.6	-19	82	No stop
03 33 53	=1822-076	16 17 51	23.5	144.9	-2.1		-20.4	86	83	03 32 09
03 34 33	G23.657	16 18 32	22.1	143.0	-2.3		-21.4	21	83	03 34 33
03 37 48	---	16 21 47	22.4	143.8	-2.2		-21.0	195	87	03 34 34
03 38 28	J1825-0737	16 22 27	23.8	146.1	-2.1		-19.8	21	87	03 38 28
03 40 13	=1822-076	16 24 13	24.0	146.5	-2.0		-19.5	105	88	03 38 29
03 40 13	G23.207	16 24 13	22.1	144.6	-2.2		-20.6	-21	88	No stop
03 43 28	---	16 27 28	22.4	145.4	-2.1		-20.2	174	91	03 40 14
03 43 28	J1825-0737	16 27 28	24.3	147.4	-2.0		-19.1	-21	91	No stop
03 45 13	=1822-076	16 29 13	24.4	147.8	-2.0		-18.8	84	93	03 43 29
03 45 13	G23.389	16 29 13	23.0	146.1	-2.1		-19.8	-18	93	No stop
03 48 28	---	16 32 29	23.3	147.0	-2.0		-19.3	177	96	03 45 14
03 48 28	J1825-0737	16 32 29	24.7	148.7	-1.9		-18.4	-18	96	No stop
03 50 13	=1822-076	16 34 14	24.8	149.1	-1.9		-18.1	87	98	03 48 29
03 50 53	G23.657	16 34 54	23.5	147.1	-2.0		-19.2	22	98	03 50 53
03 54 08	---	16 38 10	23.7	148.0	-2.0		-18.8	195	101	03 50 54
03 54 48	J1825-0737	16 38 50	25.1	150.3	-1.8		-17.5	21	101	03 54 48
03 56 33	=1822-076	16 40 35	25.3	150.8	-1.8		-17.2	105	103	03 54 49
03 56 33	G23.207	16 40 35	23.4	148.8	-1.9		-18.4	-21	103	No stop
03 59 48	---	16 43 51	23.7	149.6	-1.9		-17.9	174	106	03 56 34
03 59 48	J1825-0737	16 43 51	25.5	151.6	-1.7		-16.7	-21	106	No stop
04 01 33	=1822-076	16 45 36	25.6	152.1	-1.7		-16.5	84	107	03 59 49
04 01 33	G23.389	16 45 36	24.3	150.3	-1.8		-17.5	-18	107	No stop
04 04 48	---	16 48 52	24.6	151.2	-1.8		-17.0	177	111	04 01 34
04 04 48	J1825-0737	16 48 52	25.9	152.9	-1.6		-16.0	-18	111	No stop
04 06 33	=1822-076	16 50 37	26.0	153.4	-1.6		-15.7	87	112	04 04 49
04 07 13	G23.657	16 51 17	24.7	151.4	-1.7		-16.9	22	112	04 07 13
04 10 28	---	16 54 32	25.0	152.2	-1.7		-16.4	195	115	04 07 14

Schedule for TORUN (Code Tr)

Page 4

Nature of methanol maser rings

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Sun 15 Mar 2015 Day 74 ---										
04 11 08	J1825-0737	16 55 13	26.3	154.6	-1.5		-15.0	21	115	04 11 08
04 12 53	=1822-076	16 56 58	26.4	155.1	-1.5		-14.8	105	117	04 11 09
04 12 53	G23.207	16 56 58	24.6	153.0	-1.6		-16.0	-20	117	No stop
04 16 08	---	17 00 13	24.8	153.8	-1.6		-15.5	175	120	04 12 54
04 16 08	J1825-0737	17 00 13	26.6	156.0	-1.4		-14.3	-20	120	No stop
04 17 53	=1822-076	17 01 59	26.7	156.4	-1.4		-14.0	85	122	04 16 09
04 17 53	G23.389	17 01 59	25.5	154.6	-1.5		-15.1	-18	122	No stop
04 21 08	---	17 05 14	25.7	155.5	-1.5		-14.6	177	125	04 17 54
04 21 08	J1825-0737	17 05 14	26.9	157.3	-1.4		-13.5	-18	125	No stop
04 22 53	=1822-076	17 07 00	27.0	157.8	-1.3		-13.2	87	127	04 21 09
04 23 33	G23.657	17 07 40	25.8	155.7	-1.5		-14.5	22	127	04 23 33
04 26 48	---	17 10 55	26.0	156.5	-1.4		-14.0	195	130	04 23 34
04 27 28	J1825-0737	17 11 35	27.2	159.0	-1.2		-12.5	21	130	04 27 28
04 29 13	=1822-076	17 13 21	27.3	159.5	-1.2		-12.2	105	131	04 27 29
04 29 13	G23.207	17 13 21	25.7	157.3	-1.4		-13.6	-20	131	No stop
04 32 28	---	17 16 36	25.8	158.2	-1.3		-13.1	175	135	04 29 14
04 32 28	J1825-0737	17 16 36	27.5	160.4	-1.2		-11.7	-20	135	No stop
04 34 13	=1822-076	17 18 21	27.6	160.9	-1.1		-11.4	85	136	04 32 29
04 34 13	G23.389	17 18 21	26.4	159.0	-1.3		-12.6	-17	136	No stop
04 37 28	---	17 21 37	26.6	159.9	-1.2		-12.1	178	139	04 34 14
04 37 28	J1825-0737	17 21 37	27.7	161.8	-1.1		-10.9	-18	139	No stop
04 39 13	=1822-076	17 23 22	27.8	162.3	-1.1		-10.6	87	141	04 37 29
04 39 53	G23.657	17 24 02	26.7	160.1	-1.2		-11.9	21	141	04 39 53
04 43 08	---	17 27 18	26.9	161.0	-1.1		-11.4	195	144	04 39 54
04 43 48	J1825-0737	17 27 58	28.0	163.5	-1.0		-9.9	21	144	04 43 48
04 45 33	=1822-076	17 29 43	28.1	164.0	-0.9		-9.6	105	146	04 43 49
04 45 33	G23.207	17 29 43	26.5	161.7	-1.1		-11.0	-19	146	No stop
04 48 48	---	17 32 59	26.7	162.6	-1.0		-10.5	176	149	04 45 34
04 48 48	J1825-0737	17 32 59	28.2	164.9	-0.9		-9.1	-19	149	No stop
04 50 33	=1822-076	17 34 44	28.3	165.4	-0.9		-8.8	86	151	04 48 49

Schedule for TORUN (Code Tr)

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Nature of methanol maser rings

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Sun 15 Mar 2015 Day 74 ---										
04 50 33	G23.389	17 34 44	27.2	163.5	-1.0		-10.0	-17	151	No stop
04 53 48	---	17 38 00	27.4	164.3	-0.9		-9.4	178	154	04 50 34
04 53 48	J1825-0737	17 38 00	28.4	166.3	-0.8		-8.2	-18	154	No stop
04 55 33	=1822-076	17 39 45	28.5	166.8	-0.8		-7.9	87	156	04 53 49
04 56 13	G23.657	17 40 25	27.5	164.5	-0.9		-9.3	21	156	04 56 13
04 59 28	---	17 43 41	27.6	165.4	-0.9		-8.8	195	159	04 56 14
05 00 08	J1825-0737	17 44 21	28.6	168.1	-0.7		-7.2	21	159	05 00 08
05 01 53	=1822-076	17 46 06	28.7	168.6	-0.7		-6.9	105	160	05 00 09
05 01 53	G23.207	17 46 06	27.2	166.2	-0.8		-8.3	-19	160	No stop
05 05 08	---	17 49 21	27.3	167.1	-0.8		-7.8	176	163	05 01 54
05 05 08	J1825-0737	17 49 21	28.8	169.5	-0.6		-6.3	-19	163	No stop
05 06 53	=1822-076	17 51 07	28.8	170.0	-0.6		-6.0	86	165	05 05 09
05 06 53	G23.389	17 51 07	27.8	168.0	-0.7		-7.3	-18	165	No stop
05 10 08	---	17 54 22	27.9	168.9	-0.7		-6.7	177	168	05 06 54
05 10 08	J1825-0737	17 54 22	28.9	170.9	-0.5		-5.5	-18	168	No stop
05 11 53	=1822-076	17 56 08	28.9	171.4	-0.5		-5.2	87	170	05 10 09
05 12 33	G23.657	17 56 48	28.1	169.1	-0.6		-6.6	21	170	05 12 33
05 15 48	---	18 00 03	28.1	170.0	-0.6		-6.1	195	173	05 12 34
05 16 28	J1825-0737	18 00 43	29.0	172.7	-0.4		-4.4	21	173	05 16 28
05 18 13	=1822-076	18 02 29	29.1	173.2	-0.4		-4.1	105	175	05 16 29
05 18 13	G23.207	18 02 29	27.7	170.7	-0.6		-5.6	-19	175	No stop
05 21 28	---	18 05 44	27.8	171.6	-0.5		-5.1	176	178	05 18 14
05 21 28	J1825-0737	18 05 44	29.1	174.1	-0.3		-3.6	-19	178	No stop
05 23 13	=1822-076	18 07 29	29.2	174.6	-0.3		-3.3	86	180	05 21 29
05 23 13	G23.389	18 07 29	28.3	172.5	-0.4		-4.5	-18	180	No stop
05 26 28	---	18 10 45	28.3	173.4	-0.4		-4.0	177	183	05 23 14
05 26 28	J1825-0737	18 10 45	29.2	175.5	-0.3		-2.7	-18	183	No stop
05 28 13	=1822-076	18 12 30	29.2	176.0	-0.2		-2.4	87	184	05 26 29
05 28 53	G23.657	18 13 10	28.4	173.7	-0.4		-3.8	21	184	05 28 53
05 32 08	---	18 16 26	28.5	174.6	-0.3		-3.3	195	187	05 28 54

Schedule for TORUN (Code Tr)

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Nature of methanol maser rings

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Sun 15 Mar 2015 Day 74 ---										
05 32 48	J1825-0737	18 17 06	29.3	177.3	-0.2		-1.6	20	187	05 32 48
05 34 33	=1822-076	18 18 51	29.3	177.8	-0.1		-1.3	105	189	05 32 49
05 34 33	G23.207	18 18 51	28.0	175.3	-0.3		-2.9	-19	189	No stop
05 37 48	---	18 22 07	28.0	176.2	-0.2		-2.3	176	192	05 34 34
05 37 48	J1825-0737	18 22 07	29.3	178.8	-0.1		-0.7	-20	192	No stop
05 39 33	=1822-076	18 23 52	29.3	179.3	-0.0		-0.4	85	194	05 37 49
05 39 33	G23.389	18 23 52	28.5	177.1	-0.2		-1.7	-18	194	No stop
05 42 48	---	18 27 08	28.5	178.0	-0.1		-1.2	177	197	05 39 34
05 42 48	J1825-0737	18 27 08	29.3	180.2	0.0		0.1	-18	197	No stop
05 44 33	=1822-076	18 28 53	29.3	180.7	0.0		0.4	87	199	05 42 49
05 45 13	G23.657	18 29 33	28.6	178.3	-0.1		-1.0	21	199	05 45 13
05 48 28	---	18 32 49	28.6	179.2	-0.0		-0.5	195	202	05 45 14
05 49 08	J1825-0737	18 33 29	29.3	182.0	0.1		1.2	20	202	05 49 08
05 50 53	=1822-076	18 35 14	29.3	182.5	0.1		1.5	105	204	05 49 09
05 50 53	G23.207	18 35 14	28.1	179.9	-0.0		-0.1	-19	204	No stop
05 54 08	---	18 38 30	28.1	180.8	0.0		0.5	176	207	05 50 54
05 54 08	J1825-0737	18 38 30	29.2	183.4	0.2		2.1	-20	207	No stop
05 55 53	=1822-076	18 40 15	29.2	183.9	0.2		2.4	85	208	05 54 09
05 55 53	G23.389	18 40 15	28.5	181.7	0.1		1.1	-18	208	No stop
05 59 08	---	18 43 30	28.5	182.7	0.2		1.6	177	212	05 55 54
05 59 08	J1825-0737	18 43 30	29.2	184.8	0.3		2.9	-18	212	No stop
06 00 53	=1822-076	18 45 16	29.2	185.3	0.3		3.2	87	213	05 59 09
06 01 33	G23.657	18 45 56	28.6	182.9	0.2		1.8	21	213	06 01 33
06 04 48	---	18 49 11	28.5	183.8	0.2		2.3	195	216	06 01 34
06 05 28	J1825-0737	18 49 51	29.1	186.6	0.4		4.0	20	216	06 05 28
06 07 13	=1822-076	18 51 37	29.1	187.1	0.4		4.3	105	218	06 05 29
06 07 13	G23.207	18 51 37	28.0	184.4	0.3		2.7	-20	218	No stop
06 10 28	---	18 54 52	28.0	185.3	0.3		3.2	175	221	06 07 14
06 10 28	J1825-0737	18 54 52	29.0	188.1	0.5		4.9	-20	221	No stop
06 12 13	=1822-076	18 56 37	29.0	188.6	0.5		5.2	85	223	06 10 29

Schedule for TORUN (Code Tr)

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Nature of methanol maser rings

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

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Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Sun 15 Mar 2015 Day 74 ---										
06 12 13	G23.389	18 56 37	28.3	186.3	0.4		3.8	-18	223	No stop
06 15 28	---	18 59 53	28.3	187.3	0.4		4.4	177	226	06 12 14
06 15 28	J1825-0737	18 59 53	28.9	189.5	0.6		5.7	-19	226	No stop
06 17 13	=1822-076	19 01 38	28.8	190.0	0.6		6.0	86	228	06 15 29
06 17 53	G23.657	19 02 18	28.4	187.5	0.4		4.5	21	228	06 17 53
06 21 08	---	19 05 34	28.3	188.4	0.5		5.1	195	231	06 17 54
06 21 48	J1825-0737	19 06 14	28.7	191.3	0.7		6.8	20	231	06 21 48
06 23 33	=1822-076	19 07 59	28.7	191.7	0.7		7.1	105	232	06 21 49
06 23 33	G23.207	19 07 59	27.7	189.0	0.5		5.5	-20	232	No stop
06 26 48	---	19 11 15	27.6	189.9	0.6		6.0	175	236	06 23 34
06 26 48	J1825-0737	19 11 15	28.5	192.7	0.7		7.6	-20	236	No stop
06 28 33	=1822-076	19 13 00	28.5	193.2	0.8		7.9	85	237	06 26 49
06 28 33	G23.389	19 13 00	28.0	190.9	0.6		6.6	-18	237	No stop
06 31 48	---	19 16 16	27.9	191.8	0.7		7.1	177	240	06 28 34
06 31 48	J1825-0737	19 16 16	28.4	194.1	0.8		8.5	-19	240	No stop
06 33 33	=1822-076	19 18 01	28.3	194.5	0.9		8.8	86	242	06 31 49
06 34 13	G23.657	19 18 41	27.9	192.1	0.7		7.3	21	242	06 34 13
06 37 28	---	19 21 57	27.8	193.0	0.8		7.8	195	245	06 34 14
06 38 08	J1825-0737	19 22 37	28.1	195.8	0.9		9.5	20	245	06 38 08
06 39 53	=1822-076	19 24 22	28.1	196.3	1.0		9.8	105	247	06 38 09
06 39 53	G23.207	19 24 22	27.2	193.5	0.8		8.2	-20	247	No stop
06 43 08	---	19 27 38	27.1	194.4	0.9		8.7	175	250	06 39 54
06 43 08	J1825-0737	19 27 38	27.9	197.2	1.0		10.3	-20	250	No stop
06 44 53	=1822-076	19 29 23	27.8	197.7	1.0		10.6	85	252	06 43 09
06 44 53	G23.389	19 29 23	27.4	195.4	0.9		9.3	-18	252	No stop
06 48 08	---	19 32 38	27.3	196.3	1.0		9.8	177	255	06 44 54
06 48 08	J1825-0737	19 32 38	27.7	198.6	1.1		11.1	-19	255	No stop
06 49 53	=1822-076	19 34 24	27.6	199.1	1.1		11.4	86	256	06 48 09
06 50 33	G23.657	19 35 04	27.3	196.6	1.0		10.0	21	256	06 50 33
06 53 48	---	19 38 19	27.2	197.5	1.0		10.5	195	260	06 50 34

Schedule for TORUN (Code Tr)

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Nature of methanol maser rings

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

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Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Sun 15 Mar 2015 Day 74 ---										
06 53 48	J1825-0737	19 38 19	27.4	200.1	1.2		12.0	-20	260	No stop
06 55 33	=1822-076	19 40 05	27.3	200.6	1.2		12.3	85	261	06 53 49
06 59 06	3C345	19 43 37	56.9	264.7	3.0		51.1	70	261	06 59 06
07 14 06	---	19 58 40	54.7	268.0	3.3		51.3	900	276	06 59 07
07 25 06	J1825-0737	20 09 42	25.5	208.6	1.7		16.8	522	276	07 25 06
07 26 51	=1822-076	20 11 27	25.3	209.0	1.8		17.1	105	277	07 25 07
07 26 51	G23.207	20 11 27	24.8	206.2	1.6		15.6	-20	277	No stop
07 30 06	---	20 14 43	24.6	207.1	1.6		16.0	175	281	07 26 52
07 30 06	J1825-0737	20 14 43	25.1	209.9	1.8		17.6	-20	281	No stop
07 31 51	=1822-076	20 16 28	25.0	210.3	1.8		17.8	85	282	07 30 07
07 31 51	G23.389	20 16 28	24.8	208.1	1.7		16.6	-18	282	No stop
07 35 06	---	20 19 43	24.5	208.9	1.8		17.1	177	285	07 31 52
07 35 06	J1825-0737	20 19 43	24.7	211.2	1.9		18.3	-19	285	No stop
07 36 51	=1822-076	20 21 29	24.6	211.6	1.9		18.5	86	287	07 35 07
07 37 31	G23.657	20 22 09	24.6	209.2	1.8		17.2	21	287	07 37 31
07 40 46	---	20 25 24	24.3	210.0	1.8		17.7	195	290	07 37 32
07 41 26	J1825-0737	20 26 04	24.2	212.8	2.0		19.2	20	290	07 41 26
07 43 11	=1822-076	20 27 50	24.1	213.3	2.0		19.4	105	292	07 41 27
07 43 11	G23.207	20 27 50	23.7	210.5	1.9		17.9	-20	292	No stop
07 46 26	---	20 31 05	23.4	211.3	1.9		18.4	175	295	07 43 12
07 46 26	J1825-0737	20 31 05	23.8	214.1	2.1		19.8	-20	295	No stop
07 48 11	=1822-076	20 32 51	23.6	214.5	2.1		20.1	85	297	07 46 27
07 48 11	G23.389	20 32 51	23.5	212.3	2.0		18.9	-18	297	No stop
07 51 26	---	20 36 06	23.3	213.1	2.0		19.4	177	300	07 48 12
07 51 26	J1825-0737	20 36 06	23.4	215.4	2.2		20.5	-18	300	No stop
07 53 11	=1822-076	20 37 51	23.2	215.8	2.2		20.8	87	301	07 51 27
07 53 51	G23.657	20 38 31	23.3	213.4	2.0		19.5	21	301	07 53 51
07 57 06	---	20 41 47	23.0	214.2	2.1		19.9	195	305	07 53 52
07 57 46	J1825-0737	20 42 27	22.8	217.0	2.3		21.4	20	305	07 57 46
07 59 31	=1822-076	20 44 12	22.6	217.4	2.3		21.6	105	306	07 57 47

Schedule for TORUN (Code Tr) Page 9

Nature of methanol maser rings

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Sun 15 Mar 2015 Day 74 ---										
07 59 31	G23.207	20 44 12	22.3	214.6	2.1		20.2	-20	306	No stop
08 02 46	---	20 47 28	22.1	215.4	2.2		20.6	175	309	07 59 32
08 02 46	J1825-0737	20 47 28	22.3	218.2	2.4		22.0	-20	309	No stop
08 04 31	=1822-076	20 49 13	22.2	218.6	2.4		22.2	85	311	08 02 47
08 04 31	G23.389	20 49 13	22.2	216.4	2.3		21.1	-18	311	No stop
08 07 46	---	20 52 29	21.9	217.3	2.3		21.6	177	314	08 04 32
08 07 46	J1825-0737	20 52 29	21.9	219.4	2.4		22.6	-18	314	No stop
08 09 31	=1822-076	20 54 14	21.7	219.9	2.5		22.9	87	316	08 07 47
08 10 11	G23.657	20 54 54	21.9	217.5	2.3		21.7	21	316	08 10 11
08 13 26	---	20 58 10	21.6	218.3	2.4		22.1	195	319	08 10 12
08 14 06	J1825-0737	20 58 50	21.3	221.0	2.5		23.4	21	319	08 14 06
08 15 51	=1822-076	21 00 35	21.1	221.4	2.6		23.6	105	321	08 14 07
08 15 51	G23.207	21 00 35	20.9	218.7	2.4		22.3	-20	321	No stop
08 19 06	---	21 03 51	20.6	219.5	2.5		22.7	175	324	08 15 52
08 19 06	J1825-0737	21 03 51	20.8	222.2	2.6		24.0	-20	324	No stop
08 20 51	=1822-076	21 05 36	20.6	222.6	2.7		24.2	85	325	08 19 07
08 20 51	G23.389	21 05 36	20.6	220.5	2.5		23.2	-18	325	No stop
08 24 06	---	21 08 51	20.3	221.3	2.6		23.6	177	329	08 20 52
08 24 06	J1825-0737	21 08 51	20.2	223.4	2.7		24.6	-18	329	No stop
08 25 51	=1822-076	21 10 37	20.1	223.9	2.7		24.8	87	330	08 24 07
08 26 31	G23.657	21 11 17	20.3	221.5	2.6		23.7	21	330	08 26 31
08 29 46	---	21 14 32	20.0	222.3	2.6		24.1	195	333	08 26 32
08 30 26	J1825-0737	21 15 12	19.6	225.0	2.8		25.3	21	333	08 30 26
08 32 11	=1822-076	21 16 58	19.4	225.4	2.8		25.5	105	335	08 30 27
08 32 11	G23.207	21 16 58	19.3	222.6	2.7		24.3	-20	335	No stop
08 35 26	---	21 20 13	18.9	223.4	2.7		24.7	175	338	08 32 12
08 35 26	J1825-0737	21 20 13	19.0	226.1	2.9		25.9	-20	338	No stop
08 37 11	=1822-076	21 21 59	18.8	226.6	2.9		26.1	85	340	08 35 27
08 37 11	G23.389	21 21 59	19.0	224.4	2.8		25.1	-18	340	No stop
08 40 26	---	21 25 14	18.6	225.2	2.9		25.5	177	343	08 37 12

Schedule for TORUN (Code Tr)

Page 10

Nature of methanol maser rings

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Sun 15 Mar 2015 Day 74 ---										
08 40 26	J1825-0737	21 25 14	18.5	227.3	3.0		26.4	-18	343	No stop
08 42 11	=1822-076	21 26 59	18.3	227.7	3.0		26.6	87	345	08 40 27
08 42 51	G23.657	21 27 39	18.6	225.4	2.9		25.6	21	345	08 42 51
08 46 06	---	21 30 55	18.3	226.2	2.9		26.0	195	348	08 42 52
08 46 46	J1825-0737	21 31 35	17.8	228.8	3.1		27.1	21	348	08 46 46
08 48 31	=1822-076	21 33 20	17.6	229.2	3.1		27.3	105	350	08 46 47
08 48 31	G23.207	21 33 20	17.6	226.5	3.0		26.1	-20	350	No stop
08 51 46	---	21 36 36	17.2	227.2	3.0		26.5	175	353	08 48 32
08 51 46	J1825-0737	21 36 36	17.2	229.9	3.2		27.6	-20	353	No stop
08 53 31	=1822-076	21 38 21	17.0	230.4	3.2		27.8	85	354	08 51 47
08 53 31	G23.389	21 38 21	17.2	228.2	3.1		26.9	-18	354	No stop
08 56 46	---	21 41 37	16.8	229.0	3.1		27.3	177	357	08 53 32
08 56 46	J1825-0737	21 41 37	16.6	231.1	3.3		28.1	-18	357	No stop
08 58 31	=1822-076	21 43 22	16.4	231.5	3.3		28.3	87	359	08 56 47
08 59 11	G23.657	21 44 02	16.8	229.2	3.1		27.4	21	359	08 59 11
09 02 26	---	21 47 18	16.4	230.0	3.2		27.7	195	362	08 59 12
09 03 06	J1825-0737	21 47 58	15.9	232.5	3.4		28.7	21	362	09 03 06
09 04 51	=1822-076	21 49 43	15.7	232.9	3.4		28.9	105	364	09 03 07
09 04 51	G23.207	21 49 43	15.7	230.2	3.2		27.8	-20	364	No stop
09 08 06	---	21 52 59	15.3	231.0	3.3		28.2	175	367	09 04 52
09 08 06	J1825-0737	21 52 59	15.3	233.7	3.4		29.2	-20	367	No stop
09 09 51	=1822-076	21 54 44	15.1	234.1	3.5		29.4	85	369	09 08 07
09 09 51	G23.389	21 54 44	15.3	232.0	3.3		28.6	-18	369	No stop
09 13 06	---	21 57 59	14.9	232.7	3.4		28.9	177	372	09 09 52
09 13 06	J1825-0737	21 57 59	14.7	234.8	3.5		29.7	-18	372	No stop
09 14 51	=1822-076	21 59 45	14.5	235.2	3.6		29.8	87	374	09 13 07
09 15 31	G23.657	22 00 25	14.9	232.9	3.4		29.0	21	374	09 15 31
09 18 46	---	22 03 40	14.5	233.7	3.5		29.3	195	377	09 15 32
09 19 26	J1825-0737	22 04 21	13.9	236.2	3.6		30.2	21	377	09 19 26
09 21 11	=1822-076	22 06 06	13.7	236.6	3.7		30.4	105	378	09 19 27

Schedule for TORUN (Code Tr)

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Nature of methanol maser rings

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Sun 15 Mar 2015 Day 74 ---										
09 21 11	G23.207	22 06 06	13.8	233.9	3.5		29.4	-19	378	No stop
09 24 26	---	22 09 21	13.4	234.6	3.6		29.7	176	381	09 21 12
09 24 26	J1825-0737	22 09 21	13.3	237.3	3.7		30.6	-20	381	No stop
09 26 11	=1822-076	22 11 07	13.0	237.7	3.7		30.8	85	383	09 24 27
09 26 11	G23.389	22 11 07	13.3	235.6	3.6		30.1	-18	383	No stop
09 29 26	---	22 14 22	12.9	236.3	3.7		30.3	177	386	09 26 12
09 29 26	J1825-0737	22 14 22	12.6	238.4	3.8		31.1	-18	386	No stop
09 31 11	=1822-076	22 16 07	12.4	238.8	3.8		31.2	87	388	09 29 27
09 31 51	G23.657	22 16 48	12.9	236.5	3.7		30.4	21	388	09 31 51
09 35 06	---	22 20 03	12.5	237.3	3.7		30.7	195	391	09 31 52
09 35 46	J1825-0737	22 20 43	11.8	239.8	3.9		31.6	21	391	09 35 46
09 37 31	=1822-076	22 22 28	11.6	240.1	3.9		31.7	105	393	09 35 47
09 37 31	G23.207	22 22 28	11.7	237.5	3.8		30.8	-19	393	No stop
09 40 46	---	22 25 44	11.3	238.2	3.8		31.1	176	396	09 37 32
09 40 46	J1825-0737	22 25 44	11.1	240.8	4.0		31.9	-20	396	No stop
09 42 31	=1822-076	22 27 29	10.9	241.2	4.0		32.1	85	398	09 40 47
09 42 31	G23.389	22 27 29	11.2	239.2	3.9		31.4	-18	398	No stop
09 45 46	---	22 30 45	10.8	239.9	3.9		31.7	177	401	09 42 32
09 45 46	J1825-0737	22 30 45	10.5	241.9	4.1		32.3	-18	401	No stop
09 47 31	=1822-076	22 32 30	10.2	242.3	4.1		32.4	87	402	09 45 47
09 48 11	G23.657	22 33 10	10.8	240.1	4.0		31.7	21	402	09 48 11
09 51 26	---	22 36 26	10.4	240.8	4.0		32.0	195	406	09 48 12
09 52 06	J1825-0737	22 37 06	9.6	243.3	4.2		32.8	21	406	09 52 06
09 53 51	=1822-076	22 38 51	9.4	243.6	4.2		32.9	105	407	09 52 07
09 53 51	G23.207	22 38 51	9.6	241.0	4.1		32.1	-19	407	No stop
09 57 06	---	22 42 07	9.2	241.7	4.1		32.3	176	410	09 53 52
09 57 06	J1825-0737	22 42 07	9.0	244.3	4.3		33.1	-20	410	No stop
09 58 51	=1822-076	22 43 52	8.7	244.7	4.3		33.2	85	412	09 57 07
09 58 51	G23.389	22 43 52	9.1	242.7	4.2		32.6	-18	412	No stop
10 02 06	---	22 47 08	8.7	243.3	4.2		32.9	177	415	09 58 52

Schedule for TORUN (Code Tr)

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Nature of methanol maser rings

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Sun 15 Mar 2015 Day 74 ---										
10 02 06	J1825-0737	22 47 08	8.3	245.4	4.3		33.4	-18	415	No stop
10 03 51	=1822-076	22 48 53	8.0	245.7	4.4		33.5	87	417	10 02 07
10 04 31	G23.657	22 49 33	8.6	243.6	4.2		32.9	22	417	10 04 31
10 07 46	---	22 52 48	8.2	244.3	4.3		33.1	195	420	10 04 32
10 08 26	J1825-0737	22 53 29	7.4	246.7	4.5		33.8	21	420	10 08 26
10 10 11	=1822-076	22 55 14	7.2	247.1	4.5		33.9	105	422	10 08 27
10 10 11	G23.207	22 55 14	7.4	244.5	4.3		33.2	-19	422	No stop
10 13 26	---	22 58 29	7.0	245.1	4.4		33.5	176	425	10 10 12
10 13 26	J1825-0737	22 58 29	6.7	247.7	4.5		34.1	-20	425	No stop
10 15 11	=1822-076	23 00 15	6.5	248.1	4.6		34.2	85	426	10 13 27
10 15 11	G23.389	23 00 15	6.9	246.1	4.4		33.7	-18	426	No stop
10 18 26	---	23 03 30	6.4	246.8	4.5		33.9	177	430	10 15 12
10 18 26	J1825-0737	23 03 30	6.0	248.8	4.6		34.4	-18	430	No stop
10 20 11	=1822-076	23 05 15	5.8	249.1	4.6		34.5	87	431	10 18 27
10 20 51	G23.657	23 05 56	6.4	247.0	4.5		34.0	22	431	10 20 51
10 24 06	---	23 09 11	5.9	247.7	4.6		34.1	195	434	10 20 52
10 24 46	J1825-0737	23 09 51	5.1	250.1	4.7		34.7	21	434	10 24 46
10 26 31	=1822-076	23 11 37	4.9	250.4	4.8		34.8	105	436	10 24 47
10 26 31	G23.207	23 11 37	5.2	247.8	4.6		34.2	-19	436	No stop
10 29 46	---	23 14 52	4.7	248.5	4.7		34.4	176	439	10 26 32
10 29 46	J1825-0737	23 14 52	4.4	251.1	4.8		35.0	-19	439	No stop
10 31 31	=1822-076	23 16 37	4.2	251.4	4.8		35.1	86	441	10 29 47
10 31 31	G23.389	23 16 37	4.6	249.5	4.7		34.6	-17	441	No stop
10 34 46	---	23 19 53	4.1	250.1	4.8		34.8	178	444	10 31 32
10 34 46	J1825-0737	23 19 53	3.7	252.1	4.9		35.2	-18	444	No stop
10 36 31	=1822-076	23 21 38	3.4	252.5	4.9		35.3	87	446	10 34 47
10 37 11	G23.657	23 22 18	4.1	250.3	4.8		34.9	22	446	10 37 11
10 40 26	---	23 25 34	3.6	251.0	4.8		35.0	195	449	10 37 12

SETUP FILE INFORMATION:

NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.
 ===== Setup file: sess115M1.EB052

Setup group: 7 Station: TORUN Total bit rate: 128
 Format: MARK5B Bits per sample: 2 Sample rate: 4.000
 Number of channels: 16 DBE type: DBBC_DDC Speedup factor: 1.00

Disk used to record data.

1st LO=	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00
	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00
Net SB=	L	L	U	U	L	L	U	U	U
	L	L	U	U	L	L	U	U	U
IF SB =	U	U	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	LCP
	RCP	LCP	RCP	LCP	RCP	LCP	RCP	LCP	LCP
BBC =	1	5	1	5	2	6	2	6	6
	3	7	3	7	4	8	4	8	8
BBC SB=	L	L	U	U	L	L	U	U	U
	L	L	U	U	L	L	U	U	U
IF =	A1	B1	A1	B1	A1	B1	A1	B1	B1
	A1	B1	A1	B1	A1	B1	A1	B1	B1

The following frequency sets based on these setups were used.

Frequency Set: 6 Based on FREQ, BW, and/or DOPPLER in schedule. Used with PCAL = off

LO sum=	6664.77	6664.77	6664.77	6664.77	6668.77	6668.77	6668.77	6668.77
	6672.77	6672.77	6672.77	6672.77	6676.77	6676.77	6676.77	6676.77
BBC fr=	764.77	764.77	764.77	764.77	768.77	768.77	768.77	768.77
	772.77	772.77	772.77	772.77	776.77	776.77	776.77	776.77
Bandwd=	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00

Matching frequency sets: 6

Track assignments are:

track1= 18, 26, 2, 10, 20, 28, 4, 12, 22, 30, 6, 14, 24, 32, 8, 16
 barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* G23.207	18 32 11.143328	* 18 34 55.212100	18 35 44.935816	0.00
	-08 51 41.10858	*-08 49 14.89200	-08 48 24.62040	0.00
* G23.389	18 30 30.744294	* 18 33 14.324700	18 34 03.910784	0.00
	-08 26 16.42841	*-08 23 57.47200	-08 23 09.54825	0.00
* G23.657	18 32 08.103442	* 18 34 51.565000	18 35 41.105187	0.00
	-08 20 47.27971	*-08 18 21.30400	-08 17 31.28641	0.00
J1642+3948	16 41 17.606228	* 16 42 58.809965	16 43 29.900699	0.77
* 3C345	39 54 10.81496	* 39 48 36.99402	39 46 46.40262	0.52
* J1825-0737	18 22 54.910260	* 18 25 37.609553	18 26 26.974949	0.22
1822-076	-07 39 15.96775	*-07 37 30.01383	-07 36 52.37266	0.34

SHORT-PERIOD MASER
PI: *Marian Szymczak*

Observing mode: MKV, 256Mb/s

Schedule for TORUN (Code Tr)

Page 2

Short-period maser

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are LO sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Mon 16 Mar 2015 Day 75 ---										
Next scan frequencies: 6666.86 6666.86 6666.86 6666.86 6670.86 6670.86 6670.86 6670.86										
6674.86 6674.86 6674.86 6674.86 6678.86 6678.86 6678.86 6678.86										
Next BBC frequencies: 766.86 766.86 766.86 766.86 770.86 770.86 770.86 770.86										
774.86 774.86 774.86 774.86 778.86 778.86 778.86 778.86										
Next scan bandwidths: 4.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00										
4.00 4.00 4.00 4.00 4.00 4.00 4.00 4.00										
07 30 00	3C345	20 18 34	51.7	271.9	3.6		51.3	0	0	07 30 00
07 40 00	---	20 28 35	50.2	273.8	3.8		51.2	600	19	07 30 01
07 41 00	3C345	20 29 35	50.0	274.0	3.8		51.2	54	19	07 41 00
07 51 00	---	20 39 37	48.5	275.9	3.9		51.0	600	38	07 41 01
07 58 43	3C454.3	20 47 21	45.5	133.7	-2.1		-26.9	162	38	07 58 43
08 08 43	---	20 57 23	46.6	136.8	-2.0		-25.3	600	58	07 58 44
08 09 43	3C454.3	20 58 23	46.7	137.2	-1.9		-25.2	54	58	08 09 43
08 19 43	---	21 08 24	47.7	140.4	-1.8		-23.5	600	77	08 09 44
08 23 33	J2223+6249	21 12 15	76.5	36.7	-1.2		-128.1	8	77	08 23 33
08 25 18	=2221+625	21 14 00	76.6	36.1	-1.2		-129.0	105	80	08 23 34
08 25 18	G107.29	21 14 00	76.1	32.2	-1.1		-133.2	-23	80	No stop
08 28 33	---	21 17 16	76.3	31.2	-1.1		-134.9	172	87	08 25 19
08 28 33	J2223+6249	21 17 16	76.9	35.1	-1.1		-130.7	-22	87	No stop
08 30 18	=2221+625	21 19 01	77.0	34.5	-1.1		-131.7	83	90	08 28 34
08 30 18	G107.29	21 19 01	76.5	30.6	-1.0		-135.9	-23	90	No stop
08 33 33	---	21 22 17	76.7	29.5	-1.0		-137.7	172	96	08 30 19
08 33 33	J2223+6249	21 22 17	77.3	33.4	-1.0		-133.5	-22	96	No stop
08 35 18	=2221+625	21 24 02	77.5	32.7	-1.0		-134.5	83	100	08 33 34
08 36 18	G107.29	21 25 02	76.9	28.5	-0.9		-139.3	37	100	08 36 18
08 39 33	---	21 28 18	77.2	27.3	-0.9		-141.2	195	106	08 36 19
08 39 33	J2223+6249	21 28 18	77.8	31.1	-0.9		-137.1	-22	106	No stop
08 41 18	=2221+625	21 30 03	77.9	30.4	-0.9		-138.1	83	109	08 39 34
08 52 51	3C345	21 41 39	39.4	-73.4	5.0		48.5	469	109	08 52 51
08 57 51	---	21 46 39	38.7	-72.6	5.1		48.2	300	119	08 52 52
08 57 51	3C345	21 46 39	38.7	-72.6	5.1		48.2	-5	119	No stop
09 02 51	---	21 51 40	38.0	-71.8	5.1		47.9	295	128	08 57 52

Schedule for TORUN (Code Tr)

Page 3

Short-period maser

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Mon 16 Mar 2015 Day 75 ---										
09 10 47	3C454.3	21 59 37	51.6	158.4	-0.9		-13.3	0	128	09 10 47
09 15 47	---	22 04 38	51.8	160.3	-0.8		-12.2	300	138	09 10 48
09 15 47	3C454.3	22 04 38	51.8	160.3	-0.8		-12.2	-5	138	No stop
09 20 47	---	22 09 39	52.1	162.2	-0.8		-11.0	295	148	09 15 48
09 30 54	J2223+6249	22 19 48	80.2	2.7	-0.1		-176.5	280	148	09 30 54
09 32 39	=2221+625	22 21 33	80.2	1.5	-0.0		-178.0	105	151	09 30 55
09 32 39	G107.29	22 21 33	79.2	0.2	-0.0		-179.7	-17	151	No stop
09 35 54	---	22 24 49	79.2	-1.7	0.0		177.7	178	157	09 32 40
09 35 54	J2223+6249	22 24 49	80.2	-0.7	0.0		179.1	-17	157	No stop
09 37 39	=2221+625	22 26 34	80.2	-1.9	0.0		177.6	88	161	09 35 55
09 37 39	G107.29	22 26 34	79.1	-2.7	0.1		176.3	-17	161	No stop
09 40 54	---	22 29 49	79.1	-4.6	0.1		173.7	178	167	09 37 40
09 40 54	J2223+6249	22 29 49	80.2	-4.0	0.1		174.7	-17	167	No stop
09 42 39	=2221+625	22 31 35	80.1	-5.2	0.1		173.2	88	170	09 40 55
09 43 39	G107.29	22 32 35	79.1	-6.2	0.2		171.5	43	170	09 43 39
09 46 54	---	22 35 50	79.0	-8.0	0.2		169.0	195	176	09 43 40
09 46 54	J2223+6249	22 35 50	80.1	-8.0	0.2		169.5	-17	176	No stop
09 48 39	=2221+625	22 37 36	80.0	-9.1	0.2		167.9	88	180	09 46 55
09 48 39	G107.29	22 37 36	79.0	-9.0	0.3		167.6	-17	180	No stop
09 51 54	---	22 40 51	78.9	-10.8	0.3		165.1	178	186	09 48 40
09 51 54	J2223+6249	22 40 51	79.9	-11.2	0.3		165.2	-17	186	No stop
09 53 39	=2221+625	22 42 36	79.9	-12.3	0.3		163.7	88	189	09 51 55
09 53 39	G107.29	22 42 36	78.8	-11.8	0.3		163.8	-17	189	No stop
09 56 54	---	22 45 52	78.7	-13.6	0.4		161.3	178	196	09 53 40
09 56 54	J2223+6249	22 45 52	79.8	-14.3	0.4		161.0	-17	196	No stop
09 58 39	=2221+625	22 47 37	79.7	-15.3	0.4		159.6	88	199	09 56 55
09 59 39	G107.29	22 48 37	78.6	-15.0	0.4		159.3	43	199	09 59 39
10 02 54	---	22 51 53	78.5	-16.7	0.5		156.9	195	205	09 59 40
10 02 54	J2223+6249	22 51 53	79.5	-17.8	0.5		156.2	-17	205	No stop
10 04 39	=2221+625	22 53 38	79.4	-18.8	0.5		154.8	88	209	10 02 55

Schedule for TORUN (Code Tr)

Page 4

Short-period maser

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Mon 16 Mar 2015 Day 75 ---										
10 04 39	G107.29	22 53 38	78.4	-17.6	0.5		155.6	-17	209	No stop
10 07 54	---	22 56 54	78.3	-19.2	0.6		153.3	178	215	10 04 40
10 07 54	J2223+6249	22 56 54	79.3	-20.6	0.6		152.3	-17	215	No stop
10 09 39	=2221+625	22 58 39	79.2	-21.6	0.6		151.0	88	218	10 07 55
10 09 39	G107.29	22 58 39	78.2	-20.0	0.6		152.1	-17	218	No stop
10 12 54	---	23 01 55	78.0	-21.5	0.7		149.9	178	225	10 09 40
10 12 54	J2223+6249	23 01 55	79.0	-23.3	0.6		148.6	-17	225	No stop
10 14 39	=2221+625	23 03 40	78.9	-24.2	0.7		147.4	88	228	10 12 55
10 15 39	G107.29	23 04 40	77.8	-22.8	0.7		148.1	43	228	10 15 39
10 18 54	---	23 07 56	77.6	-24.2	0.8		146.0	195	234	10 15 40
10 18 54	J2223+6249	23 07 56	78.6	-26.2	0.7		144.4	-18	234	No stop
10 20 39	=2221+625	23 09 41	78.5	-27.0	0.8		143.2	87	237	10 18 55
10 20 39	G107.29	23 09 41	77.5	-24.9	0.8		144.8	-18	237	No stop
10 23 54	---	23 12 56	77.3	-26.2	0.9		142.8	177	244	10 20 40
10 23 54	J2223+6249	23 12 56	78.3	-28.5	0.8		141.0	-19	244	No stop
10 25 39	=2221+625	23 14 42	78.1	-29.2	0.8		139.9	86	247	10 23 55
10 25 39	G107.29	23 14 42	77.2	-26.9	0.9		141.7	-18	247	No stop
10 28 54	---	23 17 57	77.0	-28.2	0.9		139.8	177	253	10 25 40
10 28 54	J2223+6249	23 17 57	77.9	-30.6	0.9		137.9	-19	253	No stop
10 30 39	=2221+625	23 19 43	77.8	-31.3	0.9		136.8	86	257	10 28 55
10 31 39	G107.29	23 20 43	76.8	-29.2	1.0		138.2	41	257	10 31 39
10 34 54	---	23 23 58	76.5	-30.3	1.0		136.4	195	263	10 31 40
10 34 54	J2223+6249	23 23 58	77.4	-32.9	1.0		134.3	-20	263	No stop
10 36 39	=2221+625	23 25 44	77.3	-33.5	1.0		133.3	85	266	10 34 55
10 36 39	G107.29	23 25 44	76.4	-30.9	1.1		135.4	-19	266	No stop
10 39 54	---	23 28 59	76.2	-32.0	1.1		133.6	176	273	10 36 40
10 39 54	J2223+6249	23 28 59	77.0	-34.7	1.1		131.4	-20	273	No stop
10 41 39	=2221+625	23 30 44	76.9	-35.2	1.1		130.5	85	276	10 39 55
10 41 39	G107.29	23 30 44	76.0	-32.5	1.1		132.7	-19	276	No stop
10 44 54	---	23 34 00	75.7	-33.5	1.2		131.0	176	282	10 41 40

Schedule for TORUN (Code Tr)

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Short-period maser

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Mon 16 Mar 2015 Day 75 ---										
10 44 54	J2223+6249	23 34 00	76.6	-36.3	1.2		128.8	-20	282	No stop
10 46 39	=2221+625	23 35 45	76.4	-36.8	1.2		127.9	85	286	10 44 55
10 47 39	G107.29	23 36 45	75.5	-34.3	1.2		129.6	40	286	10 47 39
10 50 54	---	23 40 01	75.2	-35.2	1.3		128.0	195	292	10 47 40
10 50 54	J2223+6249	23 40 01	76.0	-38.0	1.3		125.7	-20	292	No stop
10 52 39	=2221+625	23 41 46	75.9	-38.5	1.3		124.9	85	295	10 50 55
10 52 39	G107.29	23 41 46	75.1	-35.6	1.3		127.2	-20	295	No stop
10 55 54	---	23 45 02	74.8	-36.5	1.4		125.7	175	301	10 52 40
10 55 54	J2223+6249	23 45 02	75.6	-39.3	1.4		123.3	-20	301	No stop
10 57 39	=2221+625	23 46 47	75.4	-39.8	1.4		122.5	85	305	10 55 55
10 57 39	G107.29	23 46 47	74.6	-36.9	1.4		124.9	-20	305	No stop
11 00 54	---	23 50 03	74.3	-37.6	1.5		123.4	175	311	10 57 40
11 00 54	J2223+6249	23 50 03	75.1	-40.5	1.4		121.1	-20	311	No stop
11 02 39	=2221+625	23 51 48	74.9	-40.9	1.5		120.3	85	314	11 00 55
11 03 39	G107.29	23 52 48	74.1	-38.2	1.5		122.2	40	314	11 03 39
11 06 54	---	23 56 03	73.8	-38.9	1.6		120.8	195	321	11 03 40
11 06 54	J2223+6249	23 56 03	74.5	-41.8	1.5		118.5	-20	321	No stop
11 08 39	=2221+625	23 57 49	74.3	-42.2	1.6		117.7	85	324	11 06 55
11 08 39	G107.29	23 57 49	73.6	-39.3	1.6		120.1	-20	324	No stop
11 11 54	---	00 01 04	73.3	-39.9	1.7		118.8	175	330	11 08 40
11 11 54	J2223+6249	00 01 04	74.0	-42.8	1.6		116.4	-20	330	No stop
11 13 39	=2221+625	00 02 50	73.8	-43.1	1.7		115.7	85	334	11 11 55
11 13 39	G107.29	00 02 50	73.1	-40.2	1.7		118.1	-20	334	No stop
11 16 54	---	00 06 05	72.8	-40.8	1.7		116.8	175	340	11 13 40
11 16 54	J2223+6249	00 06 05	73.5	-43.7	1.7		114.5	-20	340	No stop
11 18 39	=2221+625	00 07 50	73.3	-44.0	1.7		113.8	85	343	11 16 55
11 19 39	G107.29	00 08 51	72.5	-41.2	1.8		115.8	40	343	11 19 39
11 22 54	---	00 12 06	72.2	-41.7	1.8		114.6	195	350	11 19 40
11 22 54	J2223+6249	00 12 06	72.8	-44.6	1.8		112.2	-20	350	No stop
11 24 39	=2221+625	00 13 51	72.6	-44.9	1.8		111.6	85	353	11 22 55

Schedule for TORUN (Code Tr)

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Short-period maser

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Mon 16 Mar 2015 Day 75 ---										
11 24 39	G107.29	00 13 51	72.0	-42.0	1.9		113.9	-20	353	No stop
11 27 54	---	00 17 07	71.7	-42.4	1.9		112.8	175	359	11 24 40
11 27 54	J2223+6249	00 17 07	72.3	-45.3	1.9		110.5	-20	359	No stop
11 29 39	=2221+625	00 18 52	72.1	-45.5	1.9		109.8	85	362	11 27 55
11 29 39	G107.29	00 18 52	71.5	-42.7	1.9		112.1	-20	362	No stop
11 32 54	---	00 22 08	71.2	-43.1	2.0		111.0	175	369	11 29 40
11 32 54	J2223+6249	00 22 08	71.8	-45.9	2.0		108.7	-20	369	No stop
11 34 39	=2221+625	00 23 53	71.6	-46.1	2.0		108.2	85	372	11 32 55
11 35 39	G107.29	00 24 53	70.9	-43.4	2.0		110.1	40	372	11 35 39
11 38 54	---	00 28 09	70.6	-43.8	2.1		109.0	195	378	11 35 40
11 38 54	J2223+6249	00 28 09	71.1	-46.6	2.1		106.8	-20	378	No stop
11 40 39	=2221+625	00 29 54	70.9	-46.7	2.1		106.2	85	382	11 38 55
11 40 39	G107.29	00 29 54	70.4	-44.0	2.1		108.4	-20	382	No stop
11 43 54	---	00 33 10	70.1	-44.3	2.2		107.4	175	388	11 40 40
11 43 54	J2223+6249	00 33 10	70.6	-47.1	2.2		105.2	-20	388	No stop
11 45 39	=2221+625	00 34 55	70.4	-47.2	2.2		104.7	85	391	11 43 55
11 45 39	G107.29	00 34 55	69.9	-44.4	2.2		106.9	-20	391	No stop
11 48 54	---	00 38 10	69.5	-44.7	2.3		105.9	175	398	11 45 40
11 48 54	J2223+6249	00 38 10	70.0	-47.5	2.2		103.7	-20	398	No stop
11 50 39	=2221+625	00 39 56	69.8	-47.6	2.3		103.2	85	401	11 48 55
11 51 39	G107.29	00 40 56	69.2	-45.0	2.3		105.0	40	401	11 51 39
11 54 54	---	00 44 11	68.9	-45.2	2.4		104.1	195	407	11 51 40
11 54 54	J2223+6249	00 44 11	69.3	-47.9	2.3		102.0	-20	407	No stop
11 56 39	=2221+625	00 45 57	69.1	-48.0	2.4		101.5	85	411	11 54 55
11 56 39	G107.29	00 45 57	68.7	-45.3	2.4		103.5	-20	411	No stop
11 59 54	---	00 49 12	68.4	-45.6	2.5		102.6	175	417	11 56 40
11 59 54	J2223+6249	00 49 12	68.8	-48.2	2.4		100.5	-20	417	No stop
12 01 39	=2221+625	00 50 57	68.6	-48.3	2.5		100.1	85	420	11 59 55
12 01 39	G107.29	00 50 57	68.2	-45.7	2.5		102.1	-20	420	No stop
12 04 54	---	00 54 13	67.8	-45.9	2.5		101.2	175	426	12 01 40

Schedule for TORUN (Code Tr)

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Short-period maser

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Mon 16 Mar 2015 Day 75 ---										
12 04 54	J2223+6249	00 54 13	68.2	-48.5	2.5		99.2	-20	426	No stop
12 06 39	=2221+625	00 55 58	68.0	-48.6	2.5		98.7	85	430	12 04 55
12 07 39	G107.29	00 56 58	67.5	-46.0	2.6		100.4	41	430	12 07 39
12 10 54	---	01 00 14	67.2	-46.2	2.6		99.6	195	436	12 07 40
12 10 54	J2223+6249	01 00 14	67.5	-48.8	2.6		97.6	-19	436	No stop
12 12 39	=2221+625	01 01 59	67.3	-48.8	2.6		97.1	86	439	12 10 55
12 12 39	G107.29	01 01 59	67.0	-46.3	2.7		99.1	-19	439	No stop
12 15 54	---	01 05 15	66.6	-46.4	2.7		98.2	176	446	12 12 40
12 15 54	J2223+6249	01 05 15	67.0	-48.9	2.7		96.3	-19	446	No stop
12 17 39	=2221+625	01 07 00	66.8	-49.0	2.7		95.9	86	449	12 15 55
12 17 39	G107.29	01 07 00	66.4	-46.5	2.8		97.8	-19	449	No stop
12 20 54	---	01 10 16	66.1	-46.6	2.8		96.9	176	455	12 17 40
12 20 54	J2223+6249	01 10 16	66.4	-49.1	2.8		95.1	-19	455	No stop
12 22 39	=2221+625	01 12 01	66.2	-49.1	2.8		94.6	86	459	12 20 55
12 23 39	G107.29	01 13 01	65.8	-46.7	2.9		96.2	41	459	12 23 39
12 26 54	---	01 16 17	65.4	-46.8	2.9		95.4	195	465	12 23 40
12 26 54	J2223+6249	01 16 17	65.7	-49.2	2.9		93.6	-19	465	No stop
12 28 39	=2221+625	01 18 02	65.5	-49.2	2.9		93.2	86	468	12 26 55
12 28 39	G107.29	01 18 02	65.2	-46.8	2.9		95.0	-19	468	No stop
12 31 54	---	01 21 17	64.9	-46.9	3.0		94.2	176	475	12 28 40
12 31 54	J2223+6249	01 21 17	65.1	-49.3	3.0		92.4	-19	475	No stop
12 33 39	=2221+625	01 23 03	64.9	-49.3	3.0		92.0	86	478	12 31 55
12 33 39	G107.29	01 23 03	64.7	-46.9	3.0		93.8	-19	478	No stop
12 36 54	---	01 26 18	64.3	-46.9	3.1		93.0	176	484	12 33 40
12 36 54	J2223+6249	01 26 18	64.6	-49.3	3.0		91.3	-19	484	No stop
12 38 39	=2221+625	01 28 04	64.4	-49.3	3.1		90.9	86	487	12 36 55
12 39 39	G107.29	01 29 04	64.0	-47.0	3.1		92.4	41	487	12 39 39
12 42 54	---	01 32 19	63.7	-47.0	3.2		91.6	195	494	12 39 40
12 42 54	J2223+6249	01 32 19	63.9	-49.3	3.1		89.9	-19	494	No stop
12 44 39	=2221+625	01 34 05	63.7	-49.3	3.2		89.5	86	497	12 42 55

Schedule for TORUN (Code Tr)

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Short-period maser

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Mon 16 Mar 2015 Day 75 ---										
12 44 39	G107.29	01 34 05	63.5	-47.0	3.2		91.2	-19	497	No stop
12 47 54	---	01 37 20	63.1	-47.0	3.3		90.5	176	503	12 44 40
12 47 54	J2223+6249	01 37 20	63.3	-49.3	3.2		88.8	-19	503	No stop
12 49 39	=2221+625	01 39 05	63.1	-49.3	3.3		88.4	86	507	12 47 55
12 49 39	G107.29	01 39 05	62.9	-47.0	3.3		90.1	-19	507	No stop
12 52 54	---	01 42 21	62.6	-47.0	3.3		89.3	176	513	12 49 40
12 52 54	J2223+6249	01 42 21	62.7	-49.3	3.3		87.7	-18	513	No stop
12 54 39	=2221+625	01 44 06	62.5	-49.3	3.3		87.4	87	516	12 52 55
13 05 39	G107.29	01 55 08	61.2	-46.9	3.6		86.6	642	516	13 05 39
13 08 54	---	01 58 24	60.8	-46.9	3.6		85.9	195	523	13 05 40
13 08 54	J2223+6249	01 58 24	60.9	-49.0	3.6		84.4	-18	523	No stop
13 10 39	=2221+625	02 00 09	60.7	-49.0	3.6		84.0	87	526	13 08 55
13 10 39	G107.29	02 00 09	60.6	-46.8	3.6		85.5	-18	526	No stop
13 13 54	---	02 03 24	60.3	-46.8	3.7		84.8	177	532	13 10 40
13 13 54	J2223+6249	02 03 24	60.4	-48.9	3.7		83.4	-18	532	No stop
13 15 39	=2221+625	02 05 10	60.2	-48.9	3.7		83.0	87	536	13 13 55
13 15 39	G107.29	02 05 10	60.1	-46.7	3.7		84.5	-18	536	No stop
13 18 54	---	02 08 25	59.7	-46.7	3.8		83.8	177	542	13 15 40
13 18 54	J2223+6249	02 08 25	59.8	-48.8	3.7		82.4	-18	542	No stop
13 20 39	=2221+625	02 10 10	59.6	-48.7	3.8		82.1	87	545	13 18 55
13 21 39	G107.29	02 11 11	59.4	-46.6	3.8		83.2	42	545	13 21 39
13 24 54	---	02 14 26	59.1	-46.5	3.9		82.6	195	551	13 21 40
13 24 54	J2223+6249	02 14 26	59.1	-48.6	3.8		81.2	-18	551	No stop
13 26 39	=2221+625	02 16 11	58.9	-48.5	3.9		80.9	87	555	13 24 55
13 26 39	G107.29	02 16 11	58.9	-46.5	3.9		82.2	-18	555	No stop
13 29 54	---	02 19 27	58.5	-46.4	4.0		81.6	177	561	13 26 40
13 29 54	J2223+6249	02 19 27	58.5	-48.4	3.9		80.3	-18	561	No stop
13 31 39	=2221+625	02 21 12	58.4	-48.3	4.0		79.9	87	564	13 29 55
13 31 39	G107.29	02 21 12	58.3	-46.3	4.0		81.2	-18	564	No stop
13 34 54	---	02 24 28	58.0	-46.2	4.0		80.6	177	571	13 31 40

Schedule for TORUN (Code Tr)

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Short-period maser

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Mon 16 Mar 2015 Day 75 ---										
13 34 54	J2223+6249	02 24 28	58.0	-48.2	4.0		79.3	-18	571	No stop
13 36 39	=2221+625	02 26 13	57.8	-48.1	4.0		79.0	87	574	13 34 55
13 37 39	G107.29	02 27 13	57.7	-46.1	4.1		80.0	42	574	13 37 39
13 40 54	---	02 30 29	57.3	-46.0	4.1		79.4	195	580	13 37 40
13 40 54	J2223+6249	02 30 29	57.3	-47.9	4.1		78.2	-17	580	No stop
13 42 39	=2221+625	02 32 14	57.1	-47.9	4.1		77.9	88	584	13 40 55
13 42 39	G107.29	02 32 14	57.1	-45.9	4.2		79.1	-17	584	No stop
13 45 54	---	02 35 30	56.8	-45.8	4.2		78.4	178	590	13 42 40
13 45 54	J2223+6249	02 35 30	56.8	-47.7	4.2		77.3	-17	590	No stop
13 47 39	=2221+625	02 37 15	56.6	-47.6	4.2		76.9	88	593	13 45 55
13 47 39	G107.29	02 37 15	56.6	-45.7	4.3		78.1	-17	593	No stop
13 50 54	---	02 40 30	56.2	-45.6	4.3		77.5	178	600	13 47 40
13 50 54	J2223+6249	02 40 30	56.2	-47.5	4.3		76.3	-17	600	No stop
13 52 39	=2221+625	02 42 16	56.0	-47.4	4.3		76.0	88	603	13 50 55
13 53 39	G107.29	02 43 16	55.9	-45.5	4.4		77.0	43	603	13 53 39
13 56 54	---	02 46 31	55.6	-45.3	4.4		76.4	195	609	13 53 40
13 56 54	J2223+6249	02 46 31	55.5	-47.2	4.4		75.2	-17	609	No stop
13 58 39	=2221+625	02 48 17	55.3	-47.1	4.4		74.9	88	612	13 56 55
13 58 39	G107.29	02 48 17	55.4	-45.2	4.4		76.0	-17	612	No stop
14 01 54	---	02 51 32	55.1	-45.1	4.5		75.4	178	619	13 58 40
14 01 54	J2223+6249	02 51 32	55.0	-46.9	4.5		74.3	-17	619	No stop
14 03 39	=2221+625	02 53 18	54.8	-46.8	4.5		74.0	88	622	14 01 55
14 03 39	G107.29	02 53 18	54.9	-45.0	4.5		75.1	-17	622	No stop
14 06 54	---	02 56 33	54.5	-44.8	4.6		74.5	178	628	14 03 40
14 06 54	J2223+6249	02 56 33	54.4	-46.6	4.5		73.5	-17	628	No stop
14 08 39	=2221+625	02 58 18	54.2	-46.5	4.6		73.1	88	632	14 06 55
14 09 39	G107.29	02 59 19	54.2	-44.7	4.6		74.0	43	632	14 09 39
14 12 54	---	03 02 34	53.9	-44.5	4.7		73.4	195	638	14 09 40
14 12 54	J2223+6249	03 02 34	53.8	-46.3	4.6		72.4	-17	638	No stop
14 14 39	=2221+625	03 04 19	53.6	-46.2	4.7		72.1	88	641	14 12 55

Schedule for TORUN (Code Tr)

Page 10

Short-period maser

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
 Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

```
-----
Start UT  Source          Start / Stop          Early  Disk  TPStart
Stop UT   LST      EL  AZ  HA  UP  ParA  Dwell  GBytes  SYNC
-----
```

--- Mon 16 Mar 2015 Day 75 ---

14 14 39	G107.29	03 04 19	53.7	-44.4	4.7	73.1	-17	641	No stop
14 17 54	---	03 07 35	53.4	-44.3	4.8	72.5	178	648	14 14 40
14 17 54	J2223+6249	03 07 35	53.2	-46.0	4.7	71.5	-17	648	No stop
14 19 39	=2221+625	03 09 20	53.1	-45.9	4.8	71.2	88	651	14 17 55
14 19 39	G107.29	03 09 20	53.2	-44.2	4.8	72.2	-17	651	No stop
14 22 54	---	03 12 36	52.8	-44.0	4.8	71.6	178	657	14 19 40
14 22 54	J2223+6249	03 12 36	52.7	-45.7	4.8	70.6	-17	657	No stop
14 24 39	=2221+625	03 14 21	52.5	-45.6	4.8	70.3	88	661	14 22 55
14 25 39	G107.29	03 15 21	52.5	-43.8	4.9	71.1	43	661	14 25 39
14 28 54	---	03 18 37	52.2	-43.6	4.9	70.5	195	667	14 25 40
14 28 54	J2223+6249	03 18 37	52.1	-45.3	4.9	69.6	-17	667	No stop
14 30 39	=2221+625	03 20 22	51.9	-45.2	4.9	69.3	88	670	14 28 55
14 30 39	G107.29	03 20 22	52.0	-43.5	5.0	70.2	-17	670	No stop
14 33 54	---	03 23 38	51.7	-43.3	5.0	69.6	178	676	14 30 40
14 33 54	J2223+6249	03 23 38	51.5	-45.0	5.0	68.7	-17	676	No stop
14 35 39	=2221+625	03 25 23	51.3	-44.9	5.0	68.5	88	680	14 33 55
14 35 39	G107.29	03 25 23	51.5	-43.2	5.1	69.3	-17	680	No stop
14 38 54	---	03 28 38	51.2	-43.0	5.1	68.8	178	686	14 35 40
14 38 54	J2223+6249	03 28 38	51.0	-44.7	5.1	67.9	-16	686	No stop
14 40 39	=2221+625	03 30 24	50.8	-44.5	5.1	67.6	89	689	14 38 55
14 41 39	G107.29	03 31 24	50.9	-42.8	5.2	68.3	43	689	14 41 39
14 44 54	---	03 34 39	50.6	-42.6	5.2	67.7	195	696	14 41 40
14 44 54	J2223+6249	03 34 39	50.4	-44.2	5.2	66.9	-16	696	No stop
14 46 39	=2221+625	03 36 25	50.2	-44.1	5.2	66.6	89	699	14 44 55
14 46 39	G107.29	03 36 25	50.4	-42.5	5.2	67.4	-16	699	No stop
14 49 54	---	03 39 40	50.1	-42.3	5.3	66.8	179	705	14 46 40
14 49 54	J2223+6249	03 39 40	49.8	-43.9	5.3	66.0	-16	705	No stop
14 51 39	=2221+625	03 41 25	49.7	-43.8	5.3	65.7	89	709	14 49 55
14 51 39	G107.29	03 41 25	49.9	-42.2	5.3	66.5	-16	709	No stop
14 54 54	---	03 44 41	49.6	-41.9	5.4	66.0	179	715	14 51 40

Schedule for TORUN (Code Tr)

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Short-period maser

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop				Early	Disk	TPStart		
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Mon 16 Mar 2015 Day 75 ---										
14 54 54	J2223+6249	03 44 41	49.3	-43.5	5.3		65.2	-16	715	No stop
14 56 39	=2221+625	03 46 26	49.1	-43.4	5.4		64.9	89	718	14 54 55
14 57 39	G107.29	03 47 26	49.3	-41.7	5.4		65.5	44	718	14 57 39
15 00 54	---	03 50 42	49.0	-41.5	5.5		64.9	195	725	14 57 40
15 00 54	J2223+6249	03 50 42	48.7	-43.1	5.4		64.2	-16	725	No stop
15 02 39	=2221+625	03 52 27	48.5	-42.9	5.5		63.9	89	728	15 00 55
15 02 39	G107.29	03 52 27	48.8	-41.4	5.5		64.6	-16	728	No stop
15 05 54	---	03 55 43	48.5	-41.2	5.6		64.1	179	734	15 02 40
15 05 54	J2223+6249	03 55 43	48.2	-42.7	5.5		63.4	-16	734	No stop
15 07 39	=2221+625	03 57 28	48.0	-42.6	5.6		63.1	89	737	15 05 55
15 07 39	G107.29	03 57 28	48.3	-41.0	5.6		63.8	-16	737	No stop
15 10 54	---	04 00 44	48.0	-40.8	5.6		63.2	179	744	15 07 40
15 10 54	J2223+6249	04 00 44	47.7	-42.3	5.6		62.5	-16	744	No stop
15 12 39	=2221+625	04 02 29	47.5	-42.2	5.6		62.2	89	747	15 10 55
15 13 39	G107.29	04 03 29	47.7	-40.6	5.7		62.8	44	747	15 13 39
15 16 54	---	04 06 45	47.4	-40.3	5.7		62.2	195	753	15 13 40
15 16 54	J2223+6249	04 06 45	47.1	-41.8	5.7		61.5	-16	753	No stop
15 18 39	=2221+625	04 08 30	46.9	-41.7	5.7		61.3	89	757	15 16 55
15 18 39	G107.29	04 08 30	47.2	-40.2	5.8		61.9	-16	757	No stop
15 21 54	---	04 11 45	46.9	-40.0	5.8		61.4	179	763	15 18 40
15 21 54	J2223+6249	04 11 45	46.6	-41.4	5.8		60.7	-16	763	No stop
15 23 39	=2221+625	04 13 31	46.4	-41.3	5.8		60.4	89	766	15 21 55
15 23 39	G107.29	04 13 31	46.7	-39.8	5.9		61.1	-16	766	No stop
15 26 54	---	04 16 46	46.4	-39.6	5.9		60.5	179	773	15 23 40
15 26 54	J2223+6249	04 16 46	46.1	-41.0	5.9		59.9	-16	773	No stop
15 28 39	=2221+625	04 18 31	45.9	-40.9	5.9		59.6	89	776	15 26 55
15 29 39	G107.29	04 19 32	46.1	-39.4	6.0		60.1	44	776	15 29 39
15 32 54	---	04 22 47	45.8	-39.1	6.0		59.5	195	782	15 29 40
15 32 54	J2223+6249	04 22 47	45.5	-40.5	6.0		58.9	-16	782	No stop
15 34 39	=2221+625	04 24 32	45.3	-40.4	6.0		58.6	89	786	15 32 55

Schedule for TORUN (Code Tr)

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Short-period maser

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Mon 16 Mar 2015 Day 75 ---										
15 34 39	G107.29	04 24 32	45.7	-39.0	6.0		59.2	-16	786	No stop
15 37 54	---	04 27 48	45.4	-38.7	6.1		58.7	179	792	15 34 40
15 37 54	J2223+6249	04 27 48	45.0	-40.1	6.1		58.1	-16	792	No stop
15 39 39	=2221+625	04 29 33	44.8	-39.9	6.1		57.8	89	795	15 37 55
15 39 39	G107.29	04 29 33	45.2	-38.5	6.1		58.4	-16	795	No stop
15 42 54	---	04 32 49	44.9	-38.3	6.2		57.9	179	801	15 39 40
15 42 54	J2223+6249	04 32 49	44.5	-39.7	6.2		57.3	-15	801	No stop
15 44 39	=2221+625	04 34 34	44.3	-39.5	6.2		57.0	90	805	15 42 55
15 45 39	G107.29	04 35 34	44.6	-38.1	6.2		57.4	44	805	15 45 39
15 48 54	---	04 38 50	44.3	-37.8	6.3		56.9	195	811	15 45 40
15 48 54	J2223+6249	04 38 50	43.9	-39.1	6.3		56.3	-15	811	No stop
15 50 39	=2221+625	04 40 35	43.8	-39.0	6.3		56.0	90	814	15 48 55
15 50 39	G107.29	04 40 35	44.2	-37.6	6.3		56.6	-15	814	No stop
15 53 54	---	04 43 51	43.9	-37.4	6.4		56.0	180	821	15 50 40
15 53 54	J2223+6249	04 43 51	43.5	-38.7	6.3		55.5	-15	821	No stop
15 55 39	=2221+625	04 45 36	43.3	-38.5	6.4		55.2	90	824	15 53 55
15 55 39	G107.29	04 45 36	43.7	-37.2	6.4		55.7	-15	824	No stop
15 58 54	---	04 48 51	43.4	-36.9	6.4		55.2	180	830	15 55 40
15 58 54	J2223+6249	04 48 51	43.0	-38.3	6.4		54.7	-15	830	No stop
16 00 39	=2221+625	04 50 37	42.8	-38.1	6.4		54.4	90	834	15 58 55
16 01 39	G107.29	04 51 37	43.2	-36.7	6.5		54.7	45	834	16 01 39
16 04 54	---	04 54 52	42.9	-36.4	6.5		54.2	195	840	16 01 40
16 04 54	J2223+6249	04 54 52	42.4	-37.7	6.5		53.7	-15	840	No stop
16 06 39	=2221+625	04 56 38	42.3	-37.5	6.5		53.4	90	843	16 04 55
16 06 39	G107.29	04 56 38	42.7	-36.2	6.6		53.9	-15	843	No stop
16 09 54	---	04 59 53	42.4	-36.0	6.6		53.4	180	850	16 06 40
16 09 54	J2223+6249	04 59 53	42.0	-37.2	6.6		52.9	-15	850	No stop
16 11 39	=2221+625	05 01 39	41.8	-37.1	6.6		52.6	90	853	16 09 55
16 11 39	G107.29	05 01 39	42.3	-35.8	6.7		53.1	-15	853	No stop
16 14 54	---	05 04 54	42.0	-35.5	6.7		52.5	180	859	16 11 40

Schedule for TORUN (Code Tr)

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Short-period maser

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Mon 16 Mar 2015 Day 75 ---										
16 14 54	J2223+6249	05 04 54	41.5	-36.8	6.7		52.1	-15	859	No stop
16 16 39	=2221+625	05 06 39	41.4	-36.6	6.7		51.8	90	862	16 14 55
16 17 39	G107.29	05 07 40	41.8	-35.3	6.8		52.1	45	862	16 17 39
16 20 54	---	05 10 55	41.5	-35.0	6.8		51.6	195	869	16 17 40
16 20 54	J2223+6249	05 10 55	41.0	-36.2	6.8		51.2	-15	869	No stop
16 22 39	=2221+625	05 12 40	40.8	-36.0	6.8		50.9	90	872	16 20 55
16 22 39	G107.29	05 12 40	41.3	-34.8	6.8		51.3	-15	872	No stop
16 25 54	---	05 15 56	41.0	-34.5	6.9		50.7	180	878	16 22 40
16 25 54	J2223+6249	05 15 56	40.6	-35.7	6.9		50.3	-15	878	No stop
16 27 39	=2221+625	05 17 41	40.4	-35.6	6.9		50.1	90	882	16 25 55
16 27 39	G107.29	05 17 41	40.9	-34.3	6.9		50.4	-15	882	No stop
16 30 54	---	05 20 57	40.6	-34.0	7.0		49.9	180	888	16 27 40
16 30 54	J2223+6249	05 20 57	40.1	-35.3	7.0		49.5	-15	888	No stop
16 32 39	=2221+625	05 22 42	40.0	-35.1	7.0		49.3	90	891	16 30 55
16 33 39	G107.29	05 23 42	40.4	-33.8	7.0		49.5	45	891	16 33 39
16 36 54	---	05 26 58	40.1	-33.5	7.1		48.9	195	898	16 33 40
16 36 54	J2223+6249	05 26 58	39.6	-34.7	7.1		48.6	-15	898	No stop
16 38 39	=2221+625	05 28 43	39.4	-34.5	7.1		48.3	90	901	16 36 55
16 38 39	G107.29	05 28 43	40.0	-33.3	7.1		48.6	-15	901	No stop
16 41 54	---	05 31 59	39.7	-33.0	7.2		48.1	180	907	16 38 40
16 41 54	J2223+6249	05 31 59	39.2	-34.2	7.1		47.8	-15	907	No stop
16 43 39	=2221+625	05 33 44	39.0	-34.0	7.2		47.5	90	911	16 41 55
16 43 39	G107.29	05 33 44	39.6	-32.8	7.2		47.8	-15	911	No stop
16 46 54	---	05 36 59	39.3	-32.5	7.3		47.3	180	917	16 43 40
16 46 54	J2223+6249	05 36 59	38.8	-33.7	7.2		47.0	-15	917	No stop
16 48 39	=2221+625	05 38 45	38.6	-33.5	7.2		46.7	90	920	16 46 55
16 49 39	G107.29	05 39 45	39.1	-32.3	7.3		46.8	45	920	16 49 39
16 52 54	---	05 43 00	38.8	-31.9	7.4		46.3	195	926	16 49 40
16 52 54	J2223+6249	05 43 00	38.3	-33.1	7.3		46.0	-14	926	No stop
16 54 39	=2221+625	05 44 46	38.1	-32.9	7.3		45.7	91	930	16 52 55

Schedule for TORUN (Code Tr)

Page 14

Short-period maser

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Mon 16 Mar 2015 Day 75 ---										
16 54 39	G107.29	05 44 46	38.7	-31.8	7.4		46.0	-15	930	No stop
16 57 54	---	05 48 01	38.4	-31.4	7.4		45.5	180	936	16 54 40
16 57 54	J2223+6249	05 48 01	37.8	-32.6	7.4		45.2	-14	936	No stop
16 59 39	=2221+625	05 49 46	37.7	-32.4	7.4		44.9	91	939	16 57 55
16 59 39	G107.29	05 49 46	38.3	-31.3	7.5		45.2	-15	939	No stop
17 02 54	---	05 53 02	38.0	-31.0	7.5		44.7	180	946	16 59 40
17 02 54	J2223+6249	05 53 02	37.4	-32.1	7.5		44.4	-14	946	No stop
17 04 39	=2221+625	05 54 47	37.3	-31.9	7.5		44.1	91	949	17 02 55
17 05 39	G107.29	05 55 47	37.8	-30.7	7.6		44.2	46	949	17 05 39
17 08 54	---	05 59 03	37.6	-30.4	7.6		43.7	195	955	17 05 40
17 08 54	J2223+6249	05 59 03	37.0	-31.4	7.6		43.4	-14	955	No stop
17 10 39	=2221+625	06 00 48	36.8	-31.3	7.6		43.2	91	959	17 08 55
17 10 39	G107.29	06 00 48	37.4	-30.2	7.6		43.4	-14	959	No stop
17 13 54	---	06 04 04	37.2	-29.8	7.7		42.9	181	965	17 10 40
17 13 54	J2223+6249	06 04 04	36.6	-30.9	7.7		42.6	-14	965	No stop
17 15 39	=2221+625	06 05 49	36.4	-30.7	7.7		42.4	91	968	17 13 55
17 15 39	G107.29	06 05 49	37.1	-29.7	7.7		42.6	-14	968	No stop
17 18 54	---	06 09 05	36.8	-29.3	7.8		42.0	181	975	17 15 40
17 18 54	J2223+6249	06 09 05	36.2	-30.4	7.8		41.8	-14	975	No stop
17 20 39	=2221+625	06 10 50	36.1	-30.2	7.8		41.6	91	978	17 18 55
17 21 39	G107.29	06 11 50	36.6	-29.1	7.8		41.6	46	978	17 21 39
17 24 54	---	06 15 06	36.4	-28.7	7.9		41.1	195	984	17 21 40
17 24 54	J2223+6249	06 15 06	35.7	-29.8	7.9		40.9	-14	984	No stop
17 26 39	=2221+625	06 16 51	35.6	-29.6	7.9		40.6	91	987	17 24 55
17 26 39	G107.29	06 16 51	36.3	-28.5	7.9		40.8	-14	987	No stop
17 28 39	---	06 18 51	36.1	-28.3	7.9		40.4	106	991	17 26 40
17 28 39	J2223+6249	06 18 51	35.5	-29.4	7.9		40.3	-14	991	No stop
17 30 00	=2221+625	06 20 12	35.4	-29.2	7.9		40.0	67	994	17 28 40

SETUP FILE INFORMATION:

NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

==== Setup file: sess115M2.ES076

Setup group: 7 Station: TORUN Total bit rate: 256
 Format: MARK5B Bits per sample: 2 Sample rate: 8.000
 Number of channels: 16 DBE type: DBBC_DDC Speedup factor: 1.00

Disk used to record data.

1st LO=	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00
	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00
Net SB=	L	L	U	U	L	L	U	U	U
	L	L	U	U	L	L	U	U	U
IF SB =	U	U	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	LCP
	RCP	LCP	RCP	LCP	RCP	LCP	RCP	LCP	LCP
BBC =	1	5	1	5	2	6	2	6	6
	3	7	3	7	4	8	4	8	8
BBC SB=	L	L	U	U	L	L	U	U	U
	L	L	U	U	L	L	U	U	U
IF =	A1	B1	A1	B1	A1	B1	A1	B1	B1
	A1	B1	A1	B1	A1	B1	A1	B1	B1

The following frequency sets based on these setups were used.

Frequency Set: 5 Based on FREQ, BW, and/or DOPPLER in schedule. Used with PCAL = off

LO sum=	6666.86	6666.86	6666.86	6666.86	6670.86	6670.86	6670.86	6670.86
	6674.86	6674.86	6674.86	6674.86	6678.86	6678.86	6678.86	6678.86
BBC fr=	766.86	766.86	766.86	766.86	770.86	770.86	770.86	770.86
	774.86	774.86	774.86	774.86	778.86	778.86	778.86	778.86
Bandwd=	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00

Matching frequency sets: 5

Track assignments are:

track1= 18, 26, 2, 10, 20, 28, 4, 12, 22, 30, 6, 14, 24, 32, 8, 16
 barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	Source position (RA/Dec) (J2000)	(Date)	Error (mas)
* G107.29	22 19 49.807230	* 22 21 26.730000	22 21 54.723173	0.00
	63 36 28.71743	* 63 51 37.90000	63 56 10.95057	0.00
J1642+3948	16 41 17.606228	* 16 42 58.809965	16 43 29.945860	0.77
* 3C345	39 54 10.81496	* 39 48 36.99402	39 46 46.40064	0.52
* J2223+6249	22 21 37.739338	* 22 23 18.096585	22 23 47.194999	1.67
2221+625	62 34 21.29361	* 62 49 33.80523	62 54 07.86661	1.45
J2253+1608	22 51 29.519738	* 22 53 57.747937	22 54 41.920408	0.68
* 3C454.3	15 52 54.34810	* 16 08 53.56093	16 13 40.93372	0.72

rk08srtr

RADIOASTRON AGN SURVEY
PI: *Yuri Kovalev*

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Fax: +7-495-3332378 Phone during observation: +7-903-6614865

Observing mode: C/K-band, dual-pol

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Mon 16 Mar 2015 Day 75 ---

----- C-band VLBI scans -----

Next scan frequencies: 4836.00 4836.00 4836.00 4836.00
Next BBC frequencies: 736.00 736.00 736.00 736.00
Next scan bandwidths: 16.00 16.00 16.00 16.00

21 00 00	0605-085	09 50 47	12.5	236.6	3.7	30.5	0	0	21 00 00
21 14 30	---	10 05 19	10.7	239.7	3.9	31.6	870	28	21 00 01
21 15 00	0605-085	10 05 49	10.6	239.9	4.0	31.7	24	28	21 15 00
21 29 30	---	10 20 21	8.7	242.9	4.2	32.7	870	56	21 15 01
21 30 00	0605-085	10 20 52	8.6	243.0	4.2	32.8	24	56	21 30 00
21 44 30	---	10 35 24	6.6	246.1	4.4	33.7	870	84	21 30 01
21 45 00	0605-085	10 35 54	6.6	246.2	4.5	33.7	24	84	21 45 00
22 00 00	---	10 50 56	4.5	249.3	4.7	34.6	900	112	21 45 01

SETUP FILE INFORMATION:

NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

==== Setup file: ra6cm2.set

Setup group: 4 Station: TORUN Total bit rate: 256
Format: MKIV1:4 Bits per sample: 2 Sample rate: 32.000
Number of channels: 4 DBE type: Speedup factor: 1.00

Disk used to record data.

```

1st LO=  4100.00  4100.00  4100.00  4100.00
Net SB=           L           L           U           U
IF SB =           U           U           U           U
Pol.  =          RCP          LCP          RCP          LCP
BBC   =           1           2           1           2
BBC SB=           L           L           U           U
IF    =           C           A           C           A

```

The following frequency sets based on these setups were used.

```

Frequency Set:  2  Setup file default.  Used with PCAL = 1MHz
LO sum=  4836.00  4836.00  4836.00  4836.00
BBC fr=   736.00   736.00   736.00   736.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  2

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.331577	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 51.23603	0.00
	fake circumpolar target for a TS to look at			
* 0605-085	06 05 36.027963	* 06 07 59.699233	06 08 43.776893	0.00
J0607-0834	-08 34 20.29746	*-08 34 49.97823	-08 35 20.57687	0.00
	./rk08sr_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 1357 observations, RA-A02-12			

EFFECT OF SOLAR CORONA

The solar corona can cause unstable phases for sources too close to the Sun. SCHED provides warnings at individual scans for distances less than 10 degrees. The distance from the Sun to each source in this schedule is:

Source	Sun distance (deg)
0605-085	95.6

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ where F is in GHz.

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk08sstr

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

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Fax: +7-495-3332378 Phone during observation: +7-903-6614865

Observing mode: C/K-band, dual-pol

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are LO sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Tue 17 Mar 2015 Day 76 ---

----- C-band VLBI scans -----

Next scan frequencies: 4836.00 4836.00 4836.00 4836.00
Next BBC frequencies: 736.00 736.00 736.00 736.00
Next scan bandwidths: 16.00 16.00 16.00 16.00

00 00 00	1406-076	12 51 16	26.7	158.1	-1.3		-13.0	0	0	00 00 00
00 14 30	---	13 05 49	27.5	162.1	-1.1		-10.7	870	28	00 00 01
00 15 00	1406-076	13 06 19	27.5	162.2	-1.1		-10.7	24	28	00 15 00
00 29 30	---	13 20 51	28.1	166.2	-0.8		-8.3	870	56	00 15 01
00 30 00	1406-076	13 21 21	28.1	166.4	-0.8		-8.2	24	56	00 30 00
00 44 30	---	13 35 53	28.5	170.4	-0.6		-5.8	870	84	00 30 01
00 45 00	1406-076	13 36 24	28.5	170.6	-0.6		-5.7	24	84	00 45 00
01 00 00	---	13 51 26	28.8	174.8	-0.3		-3.1	900	112	00 45 01

SETUP FILE INFORMATION:

NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

=====
Setup file: ra6cm2.set

Setup group: 4	Station: TORUN	Total bit rate: 256
Format: MKIV1:4	Bits per sample: 2	Sample rate: 32.000
Number of channels: 4	DBE type:	Speedup factor: 1.00

Disk used to record data.

```

1st LO=  4100.00  4100.00  4100.00  4100.00
Net SB=           L           L           U           U
IF SB =           U           U           U           U
Pol.  =          RCP          LCP          RCP          LCP
BBC   =           1           2           1           2
BBC SB=           L           L           U           U
IF    =           C           A           C           A

```

The following frequency sets based on these setups were used.

```

Frequency Set:  2  Setup file default.  Used with PCAL = 1MHz
LO sum=  4836.00  4836.00  4836.00  4836.00
BBC fr=   736.00   736.00   736.00   736.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  2

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.338765	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 51.27466	0.00
	fake circumpolar target for a TS to look at			
* 1406-076	14 06 17.898821	* 14 08 56.481199	14 09 46.058512	0.00
J1408-0752	-07 38 15.91695	*-07 52 26.66668	-07 56 47.30346	0.00
	./rk08ss_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 2135 observations, RA-A02-12			

EFFECT OF SOLAR CORONA

The solar corona can cause unstable phases for sources too close to the Sun. SCHED provides warnings at individual scans for distances less than 10 degrees. The distance from the Sun to each source in this schedule is:

```

Source      Sun distance (deg)
1406-076    142.8

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ where F is in GHz.

For common VLBI bands, this is:

```

1.6 GHz      45. deg
2.3 GHz      36. deg
5.0 GHz      23. deg
8.4 GHz      17. deg
15.0 GHz     12. deg
22.0 GHz     9. deg

```

NATURE OF METHANOL MASER RINGS
PI: *Anna Bartkiewicz*

Observing mode: MKV, 128 Mbps

Schedule for TORUN (Code Tr)

Page 2

Nature of methanol maser rings

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are LO sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Tue 17 Mar 2015 Day 76 ---										
Next scan frequencies: 6665.22 6665.22 6665.22 6665.22 6669.22 6669.22 6669.22 6669.22										
6673.22 6673.22 6673.22 6673.22 6677.22 6677.22 6677.22 6677.22										
Next BBC frequencies: 765.22 765.22 765.22 765.22 769.22 769.22 769.22 769.22										
773.22 773.22 773.22 773.22 777.22 777.22 777.22 777.22										
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 2.00 2.00										

01 45 00	3C345	14 36 33	64.7	108.9	-2.1		-47.7	0	0	01 45 00
02 00 00	---	14 51 36	66.8	113.7	-1.9		-45.7	900	14	01 45 01
02 00 40	3C345	14 52 16	66.9	114.0	-1.9		-45.6	34	14	02 00 40
02 15 40	---	15 07 18	68.9	119.5	-1.6		-42.9	900	29	02 00 41
02 16 20	3C345	15 07 59	69.0	119.7	-1.6		-42.7	33	29	02 16 20
02 31 20	---	15 23 01	70.9	126.1	-1.3		-39.1	900	43	02 16 21
02 32 00	3C345	15 23 41	71.0	126.4	-1.3		-39.0	33	43	02 32 00
02 47 00	---	15 38 44	72.7	133.9	-1.1		-34.3	900	58	02 32 01
02 50 48	J1825-0737	15 42 32	20.1	136.2	-2.7		-24.8	16	58	02 50 48
02 52 33	=1822-076	15 44 17	20.3	136.6	-2.7		-24.6	105	59	02 50 49
02 52 33	G24.635	15 44 17	19.1	133.8	-2.9		-25.9	-20	59	No stop
02 55 48	---	15 47 33	19.5	134.6	-2.8		-25.6	175	62	02 52 34
02 55 48	J1825-0737	15 47 33	20.6	137.4	-2.6		-24.2	-20	62	No stop
02 57 33	=1822-076	15 49 18	20.8	137.8	-2.6		-24.0	85	64	02 55 49
02 57 33	G25.411	15 49 18	20.5	134.6	-2.8		-25.5	-21	64	No stop
03 00 48	---	15 52 34	20.8	135.4	-2.8		-25.1	174	67	02 57 34
03 00 48	J1825-0737	15 52 34	21.1	138.6	-2.6		-23.6	-21	67	No stop
03 02 33	=1822-076	15 54 19	21.3	139.1	-2.5		-23.4	84	69	03 00 49
03 03 13	G26.598	15 54 59	21.7	134.9	-2.8		-25.3	16	69	03 03 13
03 06 28	---	15 58 14	22.0	135.7	-2.7		-24.9	195	72	03 03 14
03 07 08	J1825-0737	15 58 55	21.7	140.2	-2.5		-22.8	16	72	03 07 08
03 08 53	=1822-076	16 00 40	21.9	140.6	-2.4		-22.6	105	74	03 07 09
03 08 53	G24.635	16 00 40	20.8	137.7	-2.6		-24.1	-20	74	No stop
03 12 08	---	16 03 55	21.2	138.5	-2.6		-23.7	175	77	03 08 54
03 12 08	J1825-0737	16 03 55	22.2	141.4	-2.4		-22.2	-20	77	No stop
03 13 53	=1822-076	16 05 41	22.4	141.9	-2.3		-22.0	85	79	03 12 09

Schedule for TORUN (Code Tr)

Page 3

Nature of methanol maser rings

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Tue 17 Mar 2015 Day 76 ---										
03 13 53	G25.411	16 05 41	22.2	138.6	-2.5		-23.6	-21	79	No stop
03 17 08	---	16 08 56	22.5	139.4	-2.5		-23.2	174	82	03 13 54
03 17 08	J1825-0737	16 08 56	22.7	142.7	-2.3		-21.6	-21	82	No stop
03 18 53	=1822-076	16 10 42	22.8	143.1	-2.3		-21.3	84	83	03 17 09
03 19 33	G26.598	16 11 22	23.4	138.9	-2.5		-23.4	16	83	03 19 33
03 22 48	---	16 14 37	23.7	139.7	-2.4		-23.0	195	87	03 19 34
03 23 28	J1825-0737	16 15 17	23.2	144.3	-2.2		-20.7	16	87	03 23 28
03 25 13	=1822-076	16 17 03	23.4	144.7	-2.2		-20.5	105	88	03 23 29
03 25 13	G24.635	16 17 03	22.4	141.7	-2.4		-22.0	-20	88	No stop
03 28 28	---	16 20 18	22.7	142.5	-2.3		-21.6	175	91	03 25 14
03 28 28	J1825-0737	16 20 18	23.7	145.5	-2.1		-20.1	-21	91	No stop
03 30 13	=1822-076	16 22 03	23.8	146.0	-2.1		-19.8	84	93	03 28 29
03 30 13	G25.411	16 22 03	23.7	142.6	-2.3		-21.5	-21	93	No stop
03 33 28	---	16 25 19	24.0	143.5	-2.2		-21.1	174	96	03 30 14
03 33 28	J1825-0737	16 25 19	24.1	146.8	-2.0		-19.4	-22	96	No stop
03 35 13	=1822-076	16 27 04	24.2	147.3	-2.0		-19.1	83	98	03 33 29
03 35 53	G26.598	16 27 44	24.9	143.0	-2.2		-21.3	16	98	03 35 53
03 39 08	---	16 31 00	25.2	143.8	-2.2		-20.9	195	101	03 35 54
03 39 48	J1825-0737	16 31 40	24.6	148.4	-1.9		-18.5	16	101	03 39 48
03 41 33	=1822-076	16 33 25	24.7	148.9	-1.9		-18.2	105	103	03 39 49
03 41 33	G24.635	16 33 25	23.9	145.8	-2.1		-19.9	-20	103	No stop
03 44 48	---	16 36 41	24.1	146.7	-2.0		-19.4	175	106	03 41 34
03 44 48	J1825-0737	16 36 41	25.0	149.7	-1.8		-17.8	-21	106	No stop
03 46 33	=1822-076	16 38 26	25.1	150.2	-1.8		-17.5	84	107	03 44 49
03 46 33	G25.411	16 38 26	25.1	146.8	-2.0		-19.3	-21	107	No stop
03 49 48	---	16 41 42	25.4	147.7	-1.9		-18.9	174	111	03 46 34
03 49 48	J1825-0737	16 41 42	25.3	151.0	-1.7		-17.1	-22	111	No stop
03 51 33	=1822-076	16 43 27	25.5	151.5	-1.7		-16.8	83	112	03 49 49
03 52 13	G26.598	16 44 07	26.3	147.3	-1.9		-19.1	16	112	03 52 13
03 55 28	---	16 47 23	26.6	148.1	-1.9		-18.6	195	115	03 52 14

Schedule for TORUN (Code Tr)

Page 4

Nature of methanol maser rings

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Tue 17 Mar 2015 Day 76 ---										
03 56 08	J1825-0737	16 48 03	25.8	152.7	-1.6		-16.1	16	115	03 56 08
03 57 53	=1822-076	16 49 48	25.9	153.2	-1.6		-15.9	105	117	03 56 09
03 57 53	G24.635	16 49 48	25.2	150.1	-1.8		-17.6	-21	117	No stop
04 01 08	---	16 53 03	25.4	150.9	-1.8		-17.1	174	120	03 57 54
04 01 08	J1825-0737	16 53 03	26.1	154.1	-1.6		-15.4	-21	120	No stop
04 02 53	=1822-076	16 54 49	26.2	154.5	-1.5		-15.1	84	122	04 01 09
04 02 53	G25.411	16 54 49	26.4	151.1	-1.7		-17.0	-21	122	No stop
04 06 08	---	16 58 04	26.6	152.0	-1.7		-16.5	174	125	04 02 54
04 06 08	J1825-0737	16 58 04	26.5	155.4	-1.5		-14.6	-22	125	No stop
04 07 53	=1822-076	16 59 50	26.6	155.9	-1.4		-14.3	83	127	04 06 09
04 08 33	G26.598	17 00 30	27.6	151.6	-1.7		-16.7	16	127	04 08 33
04 11 48	---	17 03 45	27.8	152.5	-1.6		-16.2	195	130	04 08 34
04 12 28	J1825-0737	17 04 25	26.8	157.1	-1.4		-13.6	16	130	04 12 28
04 14 13	=1822-076	17 06 11	26.9	157.6	-1.3		-13.4	105	131	04 12 29
04 14 13	G24.635	17 06 11	26.3	154.4	-1.5		-15.2	-21	131	No stop
04 17 28	---	17 09 26	26.5	155.3	-1.5		-14.7	174	135	04 14 14
04 17 28	J1825-0737	17 09 26	27.1	158.5	-1.3		-12.9	-21	135	No stop
04 19 13	=1822-076	17 11 11	27.2	158.9	-1.3		-12.6	84	136	04 17 29
04 19 13	G25.411	17 11 11	27.5	155.5	-1.4		-14.5	-21	136	No stop
04 22 28	---	17 14 27	27.7	156.4	-1.4		-14.0	174	139	04 19 14
04 22 28	J1825-0737	17 14 27	27.4	159.8	-1.2		-12.1	-22	139	No stop
04 24 13	=1822-076	17 16 12	27.5	160.3	-1.2		-11.8	83	141	04 22 29
04 24 53	G26.598	17 16 52	28.7	156.1	-1.4		-14.2	16	141	04 24 53
04 28 08	---	17 20 08	28.9	157.0	-1.3		-13.7	195	144	04 24 54
04 28 48	J1825-0737	17 20 48	27.7	161.6	-1.1		-11.0	16	144	04 28 48
04 30 33	=1822-076	17 22 33	27.8	162.0	-1.1		-10.8	105	146	04 28 49
04 30 33	G24.635	17 22 33	27.3	158.8	-1.3		-12.7	-21	146	No stop
04 33 48	---	17 25 49	27.5	159.7	-1.2		-12.1	174	149	04 30 34
04 33 48	J1825-0737	17 25 49	27.9	162.9	-1.0		-10.2	-21	149	No stop
04 35 33	=1822-076	17 27 34	28.0	163.4	-1.0		-10.0	84	151	04 33 49

Schedule for TORUN (Code Tr)

Page 5

Nature of methanol maser rings

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Tue 17 Mar 2015 Day 76 ---										
04 35 33	G25.411	17 27 34	28.4	160.0	-1.2		-11.9	-21	151	No stop
04 38 48	---	17 30 50	28.6	160.9	-1.1		-11.4	174	154	04 35 34
04 38 48	J1825-0737	17 30 50	28.2	164.3	-0.9		-9.4	-22	154	No stop
04 40 33	=1822-076	17 32 35	28.2	164.8	-0.9		-9.1	83	156	04 38 49
04 41 13	G26.598	17 33 15	29.6	160.6	-1.1		-11.6	16	156	04 41 13
04 44 28	---	17 36 31	29.7	161.5	-1.1		-11.0	195	159	04 41 14
04 45 08	J1825-0737	17 37 11	28.4	166.1	-0.8		-8.4	16	159	04 45 08
04 46 53	=1822-076	17 38 56	28.5	166.6	-0.8		-8.1	105	160	04 45 09
04 46 53	G24.635	17 38 56	28.1	163.3	-1.0		-10.0	-21	160	No stop
04 50 08	---	17 42 12	28.2	164.2	-0.9		-9.5	174	163	04 46 54
04 50 08	J1825-0737	17 42 12	28.6	167.5	-0.7		-7.5	-21	163	No stop
04 51 53	=1822-076	17 43 57	28.6	168.0	-0.7		-7.2	84	165	04 50 09
04 51 53	G25.411	17 43 57	29.2	164.6	-0.9		-9.3	-21	165	No stop
04 55 08	---	17 47 12	29.3	165.5	-0.8		-8.7	174	168	04 51 54
04 55 08	J1825-0737	17 47 12	28.7	168.9	-0.7		-6.7	-22	168	No stop
04 56 53	=1822-076	17 48 58	28.8	169.4	-0.6		-6.4	83	170	04 55 09
04 57 33	G26.598	17 49 38	30.3	165.2	-0.9		-8.8	17	170	04 57 33
05 00 48	---	17 52 53	30.4	166.2	-0.8		-8.3	195	173	04 57 34
05 01 28	J1825-0737	17 53 33	28.9	170.7	-0.5		-5.6	16	173	05 01 28
05 03 13	=1822-076	17 55 19	28.9	171.2	-0.5		-5.3	105	175	05 01 29
05 03 13	G24.635	17 55 19	28.7	167.9	-0.7		-7.3	-21	175	No stop
05 06 28	---	17 58 34	28.8	168.8	-0.7		-6.8	174	178	05 03 14
05 06 28	J1825-0737	17 58 34	29.0	172.1	-0.5		-4.8	-21	178	No stop
05 08 13	=1822-076	18 00 19	29.0	172.6	-0.4		-4.5	84	180	05 06 29
05 08 13	G25.411	18 00 19	29.7	169.2	-0.6		-6.5	-21	180	No stop
05 11 28	---	18 03 35	29.8	170.1	-0.6		-6.0	174	183	05 08 14
05 11 28	J1825-0737	18 03 35	29.1	173.5	-0.4		-3.9	-22	183	No stop
05 13 13	=1822-076	18 05 20	29.1	174.0	-0.4		-3.6	83	184	05 11 29
05 13 53	G26.598	18 06 00	30.8	169.9	-0.6		-6.1	17	184	05 13 53
05 17 08	---	18 09 16	30.9	170.9	-0.5		-5.5	195	187	05 13 54

Schedule for TORUN (Code Tr)

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Nature of methanol maser rings

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

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Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Tue 17 Mar 2015 Day 76 ---										
05 17 48	J1825-0737	18 09 56	29.2	175.3	-0.3		-2.8	16	187	05 17 48
05 19 33	=1822-076	18 11 41	29.2	175.8	-0.2		-2.5	105	189	05 17 49
05 19 33	G24.635	18 11 41	29.1	172.5	-0.4		-4.6	-21	189	No stop
05 22 48	---	18 14 57	29.2	173.4	-0.4		-4.0	174	192	05 19 34
05 22 48	J1825-0737	18 14 57	29.2	176.7	-0.2		-2.0	-22	192	No stop
05 24 33	=1822-076	18 16 42	29.3	177.2	-0.2		-1.7	83	194	05 22 49
05 24 33	G25.411	18 16 42	30.1	173.9	-0.4		-3.7	-21	194	No stop
05 27 48	---	18 19 58	30.2	174.8	-0.3		-3.1	174	197	05 24 34
05 27 48	J1825-0737	18 19 58	29.3	178.2	-0.1		-1.1	-22	197	No stop
05 29 33	=1822-076	18 21 43	29.3	178.7	-0.1		-0.8	83	199	05 27 49
05 30 13	G26.598	18 22 23	31.1	174.7	-0.3		-3.2	17	199	05 30 13
05 33 28	---	18 25 39	31.2	175.6	-0.3		-2.6	195	202	05 30 14
05 34 08	J1825-0737	18 26 19	29.3	180.0	-0.0		-0.0	17	202	05 34 08
05 35 53	=1822-076	18 28 04	29.3	180.5	0.0		0.3	105	204	05 34 09
05 35 53	G24.635	18 28 04	29.4	177.1	-0.2		-1.7	-21	204	No stop
05 39 08	---	18 31 20	29.4	178.0	-0.1		-1.2	174	207	05 35 54
05 39 08	J1825-0737	18 31 20	29.3	181.4	0.1		0.8	-22	207	No stop
05 40 53	=1822-076	18 33 05	29.3	181.9	0.1		1.1	83	208	05 39 09
05 40 53	G25.411	18 33 05	30.3	178.6	-0.1		-0.9	-21	208	No stop
05 44 08	---	18 36 20	30.3	179.5	-0.0		-0.3	174	212	05 40 54
05 44 08	J1825-0737	18 36 20	29.3	182.8	0.2		1.7	-21	212	No stop
05 45 53	=1822-076	18 38 06	29.2	183.3	0.2		2.0	84	213	05 44 09
05 46 33	G26.598	18 38 46	31.3	179.4	-0.0		-0.3	17	213	05 46 33
05 49 48	---	18 42 01	31.3	180.4	0.0		0.2	195	216	05 46 34
05 50 28	J1825-0737	18 42 41	29.2	184.6	0.3		2.8	17	216	05 50 28
05 52 13	=1822-076	18 44 27	29.2	185.1	0.3		3.1	105	218	05 50 29
05 52 13	G24.635	18 44 27	29.4	181.8	0.1		1.1	-21	218	No stop
05 55 28	---	18 47 42	29.4	182.7	0.2		1.6	174	221	05 52 14
05 55 28	J1825-0737	18 47 42	29.1	186.0	0.4		3.6	-22	221	No stop
05 57 13	=1822-076	18 49 28	29.1	186.5	0.4		3.9	83	223	05 55 29

Schedule for TORUN (Code Tr)

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Nature of methanol maser rings

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

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TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Tue 17 Mar 2015 Day 76 ---										
05 57 13	G25.411	18 49 28	30.2	183.3	0.2		2.0	-21	223	No stop
06 00 28	---	18 52 43	30.2	184.2	0.2		2.5	174	226	05 57 14
06 00 28	J1825-0737	18 52 43	29.0	187.4	0.4		4.5	-21	226	No stop
06 02 13	=1822-076	18 54 28	29.0	187.9	0.5		4.8	84	228	06 00 29
06 02 53	G26.598	18 55 08	31.2	184.2	0.2		2.5	17	228	06 02 53
06 06 08	---	18 58 24	31.2	185.1	0.3		3.1	195	231	06 02 54
06 06 48	J1825-0737	18 59 04	28.9	189.2	0.5		5.6	17	231	06 06 48
06 08 33	=1822-076	19 00 49	28.9	189.7	0.6		5.9	105	232	06 06 49
06 08 33	G24.635	19 00 49	29.2	186.4	0.4		3.9	-21	232	No stop
06 11 48	---	19 04 05	29.1	187.3	0.4		4.4	174	236	06 08 34
06 11 48	J1825-0737	19 04 05	28.8	190.7	0.6		6.4	-21	236	No stop
06 13 33	=1822-076	19 05 50	28.7	191.1	0.7		6.7	84	237	06 11 49
06 13 33	G25.411	19 05 50	30.0	188.0	0.5		4.8	-21	237	No stop
06 16 48	---	19 09 06	29.9	188.9	0.5		5.4	174	240	06 13 34
06 16 48	J1825-0737	19 09 06	28.6	192.1	0.7		7.3	-21	240	No stop
06 18 33	=1822-076	19 10 51	28.6	192.5	0.7		7.6	84	242	06 16 49
06 19 13	G26.598	19 11 31	30.9	188.9	0.5		5.4	17	242	06 19 13
06 22 28	---	19 14 47	30.8	189.9	0.6		5.9	195	245	06 19 14
06 22 28	J1825-0737	19 14 47	28.4	193.6	0.8		8.2	-23	245	No stop
06 24 13	=1822-076	19 16 32	28.4	194.1	0.8		8.5	82	247	06 22 29
06 27 36	3C345	19 19 56	60.4	259.2	2.6		50.1	59	247	06 27 36
06 42 36	---	19 34 58	58.2	262.8	2.9		50.8	900	261	06 27 37
06 53 36	J1825-0737	19 46 00	27.0	202.2	1.3		13.3	519	261	06 53 36
06 55 21	=1822-076	19 47 45	26.9	202.7	1.4		13.5	105	263	06 53 37
06 55 21	G24.635	19 47 45	27.6	199.5	1.2		11.7	-21	263	No stop
06 58 36	---	19 51 01	27.4	200.4	1.2		12.2	174	266	06 55 22
06 58 36	J1825-0737	19 51 01	26.7	203.6	1.4		14.0	-21	266	No stop
07 00 21	=1822-076	19 52 46	26.6	204.1	1.4		14.3	84	268	06 58 37
07 00 21	G25.411	19 52 46	28.2	201.1	1.2		12.6	-20	268	No stop
07 03 36	---	19 56 02	28.0	202.0	1.3		13.1	175	271	07 00 22

Schedule for TORUN (Code Tr)

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Nature of methanol maser rings

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

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Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Tue 17 Mar 2015 Day 76 ---										
07 03 36	J1825-0737	19 56 02	26.4	204.9	1.5		14.8	-20	271	No stop
07 05 21	=1822-076	19 57 47	26.3	205.4	1.5		15.1	85	273	07 03 37
07 06 01	G26.598	19 58 27	29.0	202.2	1.3		13.2	16	273	07 06 01
07 09 16	---	20 01 43	28.8	203.1	1.3		13.7	195	276	07 06 02
07 09 56	J1825-0737	20 02 23	26.0	206.6	1.6		15.8	15	276	07 09 56
07 11 41	=1822-076	20 04 08	25.8	207.1	1.6		16.0	105	277	07 09 57
07 11 41	G24.635	20 04 08	26.7	204.0	1.4		14.3	-21	277	No stop
07 14 56	---	20 07 23	26.5	204.9	1.5		14.7	174	281	07 11 42
07 14 56	J1825-0737	20 07 23	25.6	207.9	1.7		16.5	-21	281	No stop
07 16 41	=1822-076	20 09 09	25.5	208.4	1.7		16.8	84	282	07 14 57
07 16 41	G25.411	20 09 09	27.2	205.6	1.5		15.1	-20	282	No stop
07 19 56	---	20 12 24	27.0	206.5	1.6		15.6	175	285	07 16 42
07 19 56	J1825-0737	20 12 24	25.3	209.3	1.8		17.2	-20	285	No stop
07 21 41	=1822-076	20 14 10	25.1	209.7	1.8		17.5	85	287	07 19 57
07 22 21	G26.598	20 14 50	28.0	206.7	1.6		15.7	15	287	07 22 21
07 25 36	---	20 18 05	27.8	207.6	1.6		16.2	195	290	07 22 22
07 26 16	J1825-0737	20 18 45	24.8	210.9	1.9		18.1	15	290	07 26 16
07 28 01	=1822-076	20 20 31	24.6	211.4	1.9		18.4	105	292	07 26 17
07 28 01	G24.635	20 20 31	25.6	208.3	1.7		16.7	-20	292	No stop
07 31 16	---	20 23 46	25.4	209.2	1.8		17.2	175	295	07 28 02
07 31 16	J1825-0737	20 23 46	24.4	212.2	2.0		18.8	-21	295	No stop
07 33 01	=1822-076	20 25 31	24.2	212.7	2.0		19.1	84	297	07 31 17
07 33 01	G25.411	20 25 31	26.1	210.0	1.8		17.6	-21	297	No stop
07 36 16	---	20 28 47	25.8	210.8	1.8		18.1	174	300	07 33 02
07 36 16	J1825-0737	20 28 47	24.0	213.5	2.0		19.5	-21	300	No stop
07 38 01	=1822-076	20 30 32	23.8	213.9	2.1		19.8	84	301	07 36 17
07 38 41	G26.598	20 31 12	26.8	211.1	1.8		18.2	15	301	07 38 41
07 41 56	---	20 34 28	26.6	212.0	1.9		18.6	195	305	07 38 42
07 42 36	J1825-0737	20 35 08	23.4	215.1	2.1		20.4	15	305	07 42 36
07 44 21	=1822-076	20 36 53	23.3	215.6	2.2		20.6	105	306	07 42 37

Nature of methanol maser rings

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TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Tue 17 Mar 2015 Day 76 ---										
07 44 21	G24.635	20 36 53	24.4	212.6	2.0		19.0	-20	306	No stop
07 47 36	---	20 40 09	24.1	213.4	2.0		19.5	175	309	07 44 22
07 47 36	J1825-0737	20 40 09	23.0	216.4	2.2		21.1	-21	309	No stop
07 49 21	=1822-076	20 41 54	22.8	216.8	2.3		21.3	84	311	07 47 37
07 49 21	G25.411	20 41 54	24.8	214.2	2.1		19.9	-21	311	No stop
07 52 36	---	20 45 10	24.5	215.1	2.1		20.3	174	314	07 49 22
07 52 36	J1825-0737	20 45 10	22.6	217.6	2.3		21.7	-21	314	No stop
07 54 21	=1822-076	20 46 55	22.4	218.1	2.3		21.9	84	316	07 52 37
07 55 01	G26.598	20 47 35	25.5	215.4	2.1		20.5	14	316	07 55 01
07 58 16	---	20 50 51	25.2	216.2	2.2		20.9	195	319	07 55 02
07 58 56	J1825-0737	20 51 31	22.0	219.2	2.4		22.5	14	319	07 58 56
08 00 41	=1822-076	20 53 16	21.8	219.6	2.4		22.7	105	321	07 58 57
08 00 41	G24.635	20 53 16	23.0	216.8	2.3		21.3	-20	321	No stop
08 03 56	---	20 56 31	22.7	217.6	2.3		21.7	175	324	08 00 42
08 03 56	J1825-0737	20 56 31	21.5	220.4	2.5		23.1	-20	324	No stop
08 05 41	=1822-076	20 58 17	21.3	220.9	2.5		23.4	85	325	08 03 57
08 05 41	G25.411	20 58 17	23.3	218.4	2.3		22.1	-21	325	No stop
08 08 56	---	21 01 32	23.0	219.2	2.4		22.5	174	329	08 05 42
08 08 56	J1825-0737	21 01 32	21.0	221.7	2.6		23.7	-22	329	No stop
08 10 41	=1822-076	21 03 18	20.8	222.1	2.6		24.0	83	330	08 08 57
08 11 21	G26.598	21 03 58	24.0	219.6	2.4		22.6	14	330	08 11 21
08 14 36	---	21 07 13	23.7	220.4	2.4		23.0	195	333	08 11 22
08 15 16	J1825-0737	21 07 53	20.3	223.2	2.7		24.5	14	333	08 15 16
08 17 01	=1822-076	21 09 39	20.2	223.6	2.7		24.7	105	335	08 15 17
08 17 01	G24.635	21 09 39	21.4	220.8	2.5		23.3	-20	335	No stop
08 20 16	---	21 12 54	21.1	221.6	2.6		23.7	175	338	08 17 02
08 20 16	J1825-0737	21 12 54	19.8	224.4	2.8		25.1	-20	338	No stop
08 22 01	=1822-076	21 14 39	19.6	224.8	2.8		25.3	85	340	08 20 17
08 22 01	G25.411	21 14 39	21.7	222.5	2.6		24.1	-22	340	No stop
08 25 16	---	21 17 55	21.4	223.2	2.7		24.5	173	343	08 22 02

Schedule for TORUN (Code Tr)

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Nature of methanol maser rings

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

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TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Tue 17 Mar 2015 Day 76 ---										
08 25 16	J1825-0737	21 17 55	19.3	225.6	2.9		25.6	-22	343	No stop
08 27 01	=1822-076	21 19 40	19.1	226.0	2.9		25.8	83	345	08 25 17
08 27 41	G26.598	21 20 20	22.3	223.6	2.7		24.6	14	345	08 27 41
08 30 56	---	21 23 36	22.0	224.4	2.7		25.0	195	348	08 27 42
08 31 36	J1825-0737	21 24 16	18.6	227.1	3.0		26.3	13	348	08 31 36
08 33 21	=1822-076	21 26 01	18.4	227.5	3.0		26.5	105	350	08 31 37
08 33 21	G24.635	21 26 01	19.8	224.8	2.8		25.3	-20	350	No stop
08 36 36	---	21 29 17	19.4	225.5	2.9		25.6	175	353	08 33 22
08 36 36	J1825-0737	21 29 17	18.0	228.3	3.0		26.9	-20	353	No stop
08 38 21	=1822-076	21 31 02	17.8	228.7	3.1		27.1	85	354	08 36 37
08 38 21	G25.411	21 31 02	20.0	226.4	2.9		26.0	-22	354	No stop
08 41 36	---	21 34 18	19.7	227.2	2.9		26.3	173	357	08 38 22
08 41 36	J1825-0737	21 34 18	17.5	229.4	3.1		27.4	-22	357	No stop
08 43 21	=1822-076	21 36 03	17.3	229.8	3.2		27.6	83	359	08 41 37
08 44 01	G26.598	21 36 43	20.6	227.6	2.9		26.5	14	359	08 44 01
08 47 16	---	21 39 59	20.2	228.4	3.0		26.8	195	362	08 44 02
08 47 56	J1825-0737	21 40 39	16.7	230.9	3.2		28.0	13	362	08 47 56
08 49 41	=1822-076	21 42 24	16.5	231.3	3.3		28.2	105	364	08 47 57
08 49 41	G24.635	21 42 24	18.0	228.6	3.1		27.0	-19	364	No stop
08 52 56	---	21 45 40	17.6	229.4	3.1		27.4	176	367	08 49 42
08 52 56	J1825-0737	21 45 40	16.2	232.0	3.3		28.5	-20	367	No stop
08 54 41	=1822-076	21 47 25	15.9	232.4	3.3		28.7	85	369	08 52 57
08 54 41	G25.411	21 47 25	18.2	230.2	3.2		27.7	-22	369	No stop
08 57 56	---	21 50 40	17.8	231.0	3.2		28.0	173	372	08 54 42
08 57 56	J1825-0737	21 50 40	15.6	233.1	3.4		29.0	-22	372	No stop
08 59 41	=1822-076	21 52 26	15.3	233.5	3.4		29.2	83	374	08 57 57
09 00 21	G26.598	21 53 06	18.7	231.4	3.2		28.2	13	374	09 00 21
09 03 36	---	21 56 21	18.3	232.2	3.3		28.5	195	377	09 00 22
09 04 16	J1825-0737	21 57 01	14.8	234.6	3.5		29.6	13	377	09 04 16
09 06 01	=1822-076	21 58 47	14.6	235.0	3.5		29.7	105	378	09 04 17

Schedule for TORUN (Code Tr)

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Nature of methanol maser rings

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Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Tue 17 Mar 2015 Day 76 ---										
09 06 01	G24.635	21 58 47	16.1	232.4	3.3		28.7	-19	378	No stop
09 09 16	---	22 02 02	15.7	233.1	3.4		29.0	176	381	09 06 02
09 09 16	J1825-0737	22 02 02	14.2	235.7	3.6		30.0	-19	381	No stop
09 11 01	=1822-076	22 03 48	13.9	236.1	3.6		30.2	86	383	09 09 17
09 11 01	G25.411	22 03 48	16.2	234.0	3.4		29.3	-22	383	No stop
09 14 16	---	22 07 03	15.8	234.7	3.5		29.6	173	386	09 11 02
09 14 16	J1825-0737	22 07 03	13.5	236.8	3.7		30.5	-23	386	No stop
09 16 01	=1822-076	22 08 48	13.3	237.2	3.7		30.6	82	388	09 14 17
09 16 41	G26.598	22 09 28	16.7	235.2	3.5		29.7	13	388	09 16 41
09 19 56	---	22 12 44	16.3	235.9	3.5		30.0	195	391	09 16 42
09 20 36	J1825-0737	22 13 24	12.7	238.2	3.8		31.0	13	391	09 20 36
09 22 21	=1822-076	22 15 09	12.5	238.6	3.8		31.1	105	393	09 20 37
09 22 21	G24.635	22 15 09	14.1	236.0	3.6		30.2	-19	393	No stop
09 25 36	---	22 18 25	13.7	236.8	3.7		30.4	176	396	09 22 22
09 25 36	J1825-0737	22 18 25	12.1	239.3	3.9		31.4	-20	396	No stop
09 27 21	=1822-076	22 20 10	11.9	239.6	3.9		31.5	85	398	09 25 37
09 27 21	G25.411	22 20 10	14.2	237.6	3.7		30.7	-23	398	No stop
09 30 36	---	22 23 26	13.8	238.3	3.8		31.0	172	401	09 27 22
09 30 36	J1825-0737	22 23 26	11.4	240.3	3.9		31.8	-23	401	No stop
09 32 21	=1822-076	22 25 11	11.2	240.7	4.0		31.9	82	402	09 30 37
09 33 01	G26.598	22 25 51	14.7	238.8	3.8		31.1	13	402	09 33 01
09 36 16	---	22 29 07	14.3	239.5	3.8		31.3	195	406	09 33 02
09 36 56	J1825-0737	22 29 47	10.6	241.7	4.1		32.2	13	406	09 36 56
09 38 41	=1822-076	22 31 32	10.4	242.1	4.1		32.4	105	407	09 36 57
09 38 41	G24.635	22 31 32	12.0	239.6	3.9		31.5	-20	407	No stop
09 41 56	---	22 34 48	11.6	240.3	3.9		31.8	175	410	09 38 42
09 41 56	J1825-0737	22 34 48	9.9	242.8	4.1		32.6	-20	410	No stop
09 43 41	=1822-076	22 36 33	9.7	243.1	4.2		32.7	85	412	09 41 57
09 43 41	G25.411	22 36 33	12.1	241.2	4.0		32.0	-23	412	No stop
09 46 56	---	22 39 48	11.7	241.9	4.0		32.2	172	415	09 43 42

Schedule for TORUN (Code Tr)

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Nature of methanol maser rings

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Tue 17 Mar 2015 Day 76 ---										
09 46 56	J1825-0737	22 39 48	9.3	243.8	4.2		32.9	-23	415	No stop
09 48 41	=1822-076	22 41 34	9.0	244.2	4.3		33.1	82	417	09 46 57
09 49 21	G26.598	22 42 14	12.5	242.4	4.0		32.3	13	417	09 49 21
09 52 36	---	22 45 29	12.1	243.1	4.1		32.6	195	420	09 49 22
09 53 16	J1825-0737	22 46 09	8.4	245.2	4.3		33.4	12	420	09 53 16
09 55 01	=1822-076	22 47 55	8.2	245.5	4.4		33.5	105	422	09 53 17
09 55 01	G24.635	22 47 55	9.8	243.1	4.2		32.7	-20	422	No stop
09 58 16	---	22 51 10	9.4	243.8	4.2		32.9	175	425	09 55 02
09 58 16	J1825-0737	22 51 10	7.7	246.2	4.4		33.7	-20	425	No stop
10 00 01	=1822-076	22 52 56	7.5	246.6	4.4		33.8	85	426	09 58 17
10 00 01	G25.411	22 52 56	9.9	244.7	4.2		33.1	-23	426	No stop
10 03 16	---	22 56 11	9.5	245.4	4.3		33.3	172	430	10 00 02
10 03 16	J1825-0737	22 56 11	7.0	247.3	4.5		34.0	-23	430	No stop
10 05 01	=1822-076	22 57 56	6.8	247.6	4.5		34.1	82	431	10 03 17
10 05 41	G26.598	22 58 37	10.3	245.9	4.3		33.4	13	431	10 05 41
10 08 56	---	23 01 52	9.9	246.6	4.4		33.6	195	434	10 05 42
10 09 36	J1825-0737	23 02 32	6.1	248.6	4.6		34.3	12	434	10 09 36
10 11 21	=1822-076	23 04 17	5.9	248.9	4.6		34.4	105	436	10 09 37
10 11 21	G24.635	23 04 17	7.6	246.6	4.4		33.8	-20	436	No stop
10 14 36	---	23 07 33	7.2	247.2	4.5		34.0	175	439	10 11 22
10 14 36	J1825-0737	23 07 33	5.4	249.6	4.7		34.6	-20	439	No stop
10 16 21	=1822-076	23 09 18	5.2	250.0	4.7		34.7	85	441	10 14 37
10 16 21	G25.411	23 09 18	7.6	248.1	4.5		34.1	-23	441	No stop
10 19 36	---	23 12 34	7.2	248.8	4.6		34.3	172	444	10 16 22
10 19 36	J1825-0737	23 12 34	4.7	250.6	4.8		34.9	-23	444	No stop
10 21 21	=1822-076	23 14 19	4.5	251.0	4.8		34.9	82	446	10 19 37
10 22 01	G26.598	23 14 59	8.0	249.3	4.6		34.4	13	446	10 22 01
10 25 16	---	23 18 15	7.6	250.0	4.6		34.5	195	449	10 22 02
10 25 16	J1825-0737	23 18 15	3.9	251.8	4.9		35.1	-28	449	No stop
10 27 01	=1822-076	23 20 00	3.7	252.1	4.9		35.2	77	450	10 25 17

SETUP FILE INFORMATION:

NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

=====
 Setup file: sess115M1.EB052

Setup group: 7 Station: TORUN Total bit rate: 128
 Format: MARK5B Bits per sample: 2 Sample rate: 4.000
 Number of channels: 16 DBE type: DBBC_DDC Speedup factor: 1.00

Disk used to record data.

1st LO=	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00
	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00
Net SB=	L	L	U	U	L	L	U	U	U
	L	L	U	U	L	L	U	U	U
IF SB =	U	U	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	LCP
	RCP	LCP	RCP	LCP	RCP	LCP	RCP	LCP	LCP
BBC =	1	5	1	5	2	6	2	6	6
	3	7	3	7	4	8	4	8	8
BBC SB=	L	L	U	U	L	L	U	U	U
	L	L	U	U	L	L	U	U	U
IF =	A1	B1	A1	B1	A1	B1	A1	B1	B1
	A1	B1	A1	B1	A1	B1	A1	B1	B1

The following frequency sets based on these setups were used.

Frequency Set: 6 Based on FREQ, BW, and/or DOPPLER in schedule. Used with PCAL = off

LO sum=	6665.22	6665.22	6665.22	6665.22	6669.22	6669.22	6669.22	6669.22
	6673.22	6673.22	6673.22	6673.22	6677.22	6677.22	6677.22	6677.22
BBC fr=	765.22	765.22	765.22	765.22	769.22	769.22	769.22	769.22
	773.22	773.22	773.22	773.22	777.22	777.22	777.22	777.22
Bandwd=	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00

Matching frequency sets: 6

Track assignments are:

track1= 18, 26, 2, 10, 20, 28, 4, 12, 22, 30, 6, 14, 24, 32, 8, 16
 barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* G24.635	18 34 40.178572	* 18 37 22.712700	18 38 12.021639	0.00
	-07 34 19.04262	*-07 31 42.14400	-07 30 49.13677	0.00
* G25.411	18 34 35.423527	* 18 37 16.921100	18 38 05.916467	0.00
	-06 41 07.02131	*-06 38 30.50200	-06 37 37.92095	0.00
* G26.598	18 37 15.599389	* 18 39 55.925700	18 40 44.550267	0.00
	-05 41 32.63902	*-05 38 44.64200	-05 37 48.92910	0.00
J1642+3948	16 41 17.606228	* 16 42 58.809965	16 43 29.973093	0.77
* 3C345	39 54 10.81496	* 39 48 36.99402	39 46 46.39820	0.52
* J1825-0737	18 22 54.910260	* 18 25 37.609553	18 26 27.040378	0.22
1822-076	-07 39 15.96775	*-07 37 30.01383	-07 36 52.43001	0.34

rk08sttr

RADIOASTRON AGN SURVEY

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Observing mode: C/L-band, dual-pol

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Tue 17 Mar 2015 Day 76 ---

----- L-band VLBI scans -----

Next scan frequencies:	1668.00	1668.00	1668.00	1668.00							
Next BBC frequencies:	732.00	732.00	732.00	732.00							
Next scan bandwidths:	16.00	16.00	16.00	16.00							
20 00 00	1324+224	08 54 33	30.4	93.2	-4.6		-40.3	0	0	20 00 00	
20 14 30	---	09 09 06	32.6	96.2	-4.3		-40.1	870	28	20 00 01	
20 15 00	1324+224	09 09 36	32.7	96.3	-4.3		-40.1	24	28	20 15 00	
20 29 30	---	09 24 08	34.8	99.4	-4.1		-39.7	870	56	20 15 01	
20 30 00	1324+224	09 24 38	34.9	99.5	-4.1		-39.7	24	56	20 30 00	
20 44 30	---	09 39 11	37.1	102.7	-3.8		-39.2	870	84	20 30 01	
20 45 00	1324+224	09 39 41	37.1	102.9	-3.8		-39.2	24	84	20 45 00	
21 00 00	---	09 54 43	39.3	106.3	-3.6		-38.5	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

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)	(Date)	Error (mas)
* FAKERA	11 57 21.769299 * 12 00 00.000000	12 00 54.384431	0.00
	85 16 41.77889 * 85 00 00.000000	84 54 51.54034	0.00
	fake circumpolar target for a TS to look at		
* 1324+224	13 24 37.118626 * 13 27 00.861311	13 27 45.765613	0.00
J1327+2210	22 26 22.70232 * 22 10 50.16276	22 05 58.35409	0.00
	./rk08st_sources.radioastron AGN, rfc_2013d Petrov, 2013, unpublished 36026 observations, RA-A02-12		

EFFECT OF SOLAR CORONA

The solar corona can cause unstable phases for sources too close to the Sun. SCHED provides warnings at individual scans for distances less than 10 degrees. The distance from the Sun to each source in this schedule is:

```

Source      Sun distance (deg)
1324+224    148.1

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ where F is in GHz.

For common VLBI bands, this is:

```

1.6 GHz     45. deg
2.3 GHz     36. deg
5.0 GHz     23. deg
8.4 GHz     17. deg
15.0 GHz    12. deg
22.0 GHz     9. deg

```


rk08sutr

RADIOASTRON AGN SURVEY

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Observing mode: C/L-band, dual-pol

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are LO sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Wed 18 Mar 2015 Day 77 ---

----- C-band VLBI scans -----

Next scan frequencies: 4836.00 4836.00 4836.00 4836.00
Next BBC frequencies: 736.00 736.00 736.00 736.00
Next scan bandwidths: 16.00 16.00 16.00 16.00

00 00 00	1406-076	12 55 13	26.9	159.2	-1.2		-12.4	0	0	00 00 00
00 14 30	---	13 09 45	27.6	163.2	-1.0		-10.1	870	28	00 00 01
00 15 00	1406-076	13 10 15	27.7	163.3	-1.0		-10.0	24	28	00 15 00
00 29 30	---	13 24 48	28.2	167.3	-0.7		-7.6	870	56	00 15 01
00 30 00	1406-076	13 25 18	28.2	167.5	-0.7		-7.6	24	56	00 30 00
00 44 30	---	13 39 50	28.6	171.5	-0.5		-5.1	870	84	00 30 01
00 45 00	1406-076	13 40 20	28.6	171.7	-0.5		-5.0	24	84	00 45 00
01 00 00	---	13 55 23	28.9	175.9	-0.2		-2.5	900	112	00 45 01

SETUP FILE INFORMATION:

NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

==== Setup file: ra6cm2.set

Setup group: 4 Station: TORUN Total bit rate: 256
Format: MKIV1:4 Bits per sample: 2 Sample rate: 32.000
Number of channels: 4 DBE type: Speedup factor: 1.00

Disk used to record data.

```

1st LO=  4100.00  4100.00  4100.00  4100.00
Net SB=           L           L           U           U
IF SB =           U           U           U           U
Pol.  =          RCP          LCP          RCP          LCP
BBC   =           1           2           1           2
BBC SB=           L           L           U           U
IF    =           C           A           C           A

```

The following frequency sets based on these setups were used.

```

Frequency Set:  4  Setup file default.  Used with PCAL = 1MHz
LO sum=  4836.00  4836.00  4836.00  4836.00
BBC fr=   736.00   736.00   736.00   736.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  4

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.392203	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 51.59121	0.00
	fake circumpolar target for a TS to look at			
* 1406-076	14 06 17.898821	* 14 08 56.481199	14 09 46.077425	0.00
J1408-0752	-07 38 15.91695	*-07 52 26.66668	-07 56 47.40300	0.00
	./rk08su_sources.radioastron AGN, rfc_2013d Petrov, 2013, unpublished 2135 observations, RA-A02-12			

EFFECT OF SOLAR CORONA

The solar corona can cause unstable phases for sources too close to the Sun. SCHED provides warnings at individual scans for distances less than 10 degrees. The distance from the Sun to each source in this schedule is:

Source	Sun distance (deg)
3C286	141.9
1406-076	143.8

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ where F is in GHz.

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

NATURE OF METHANOL MASER RINGS

PI: *Anna Bartkiewicz*

Observing mode: MKV, 128 Mbps

Schedule for TORUN (Code Tr)

Page 2

Nature of methanol maser rings

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Wed 18 Mar 2015 Day 77 ---										
Next scan frequencies: 6664.71 6664.71 6664.71 6664.71 6668.71 6668.71 6668.71 6668.71										
6672.71 6672.71 6672.71 6672.71 6676.71 6676.71 6676.71 6676.71										
Next BBC frequencies: 764.71 764.71 764.71 764.71 768.71 768.71 768.71 768.71										
772.71 772.71 772.71 772.71 776.71 776.71 776.71 776.71										
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										
01 45 00	3C345	14 40 30	65.3	110.1	-2.1		-47.2	0	0	01 45 00
02 00 00	---	14 55 32	67.3	115.1	-1.8		-45.0	900	14	01 45 01
02 00 40	3C345	14 56 13	67.4	115.3	-1.8		-44.9	34	14	02 00 40
02 15 40	---	15 11 15	69.4	121.0	-1.5		-42.0	900	29	02 00 41
02 16 20	3C345	15 11 55	69.5	121.3	-1.5		-41.9	33	29	02 16 20
02 31 20	---	15 26 58	71.4	127.9	-1.3		-38.0	900	43	02 16 21
02 34 56	J1834-0301	15 30 34	21.9	129.1	-3.1		-27.8	17	43	02 34 56
02 36 41	=1831-030	15 32 20	22.1	129.5	-3.0		-27.6	105	45	02 34 57
02 36 41	G28.817	15 32 20	20.8	127.8	-3.2		-28.4	-19	45	No stop
02 39 56	---	15 35 35	21.1	128.5	-3.1		-28.1	176	48	02 36 42
02 39 56	J1834-0301	15 35 35	22.5	130.3	-3.0		-27.3	-19	48	No stop
02 41 41	=1831-030	15 37 21	22.7	130.7	-3.0		-27.1	86	50	02 39 57
02 41 41	G30.400	15 37 21	21.7	127.2	-3.2		-28.6	-22	50	No stop
02 44 56	---	15 40 36	22.1	127.9	-3.1		-28.3	173	53	02 41 42
02 44 56	J1834-0301	15 40 36	23.1	131.5	-2.9		-26.8	-22	53	No stop
02 46 41	=1831-030	15 42 21	23.3	131.9	-2.9		-26.6	83	55	02 44 57
02 47 21	G31.047	15 43 01	23.3	128.3	-3.1		-28.1	18	55	02 47 21
02 50 36	---	15 46 17	23.7	129.1	-3.0		-27.8	195	58	02 47 22
02 51 16	J1834-0301	15 46 57	23.8	133.1	-2.8		-26.1	17	58	02 51 16
02 53 01	=1831-030	15 48 42	24.0	133.5	-2.8		-25.9	105	59	02 51 17
02 53 01	G28.817	15 48 42	22.6	131.7	-2.9		-26.7	-18	59	No stop
02 56 16	---	15 51 58	23.0	132.5	-2.9		-26.3	177	62	02 53 02
02 56 16	J1834-0301	15 51 58	24.3	134.3	-2.7		-25.5	-18	62	No stop
02 58 01	=1831-030	15 53 43	24.5	134.7	-2.7		-25.3	87	64	02 56 17
02 58 01	G30.400	15 53 43	23.6	131.1	-2.9		-26.9	-22	64	No stop
03 01 16	---	15 56 59	24.0	131.9	-2.9		-26.6	173	67	02 58 02

Schedule for TORUN (Code Tr)

Page 3

Nature of methanol maser rings

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Wed 18 Mar 2015 Day 77 ---										
03 01 16	J1834-0301	15 56 59	24.9	135.5	-2.6		-24.9	-22	67	No stop
03 03 01	=1831-030	15 58 44	25.1	136.0	-2.6		-24.7	83	69	03 01 17
03 03 41	G31.047	15 59 24	25.2	132.3	-2.8		-26.4	18	69	03 03 41
03 06 56	---	16 02 40	25.5	133.1	-2.7		-26.0	195	72	03 03 42
03 07 36	J1834-0301	16 03 20	25.5	137.1	-2.5		-24.1	17	72	03 07 36
03 09 21	=1831-030	16 05 05	25.7	137.6	-2.5		-23.9	105	74	03 07 37
03 09 21	G28.817	16 05 05	24.4	135.7	-2.6		-24.8	-18	74	No stop
03 12 36	---	16 08 21	24.8	136.5	-2.6		-24.5	177	77	03 09 22
03 12 36	J1834-0301	16 08 21	26.0	138.4	-2.4		-23.5	-18	77	No stop
03 14 21	=1831-030	16 10 06	26.2	138.9	-2.4		-23.3	87	79	03 12 37
03 14 21	G30.400	16 10 06	25.4	135.1	-2.6		-25.1	-22	79	No stop
03 17 36	---	16 13 21	25.7	135.9	-2.6		-24.7	173	82	03 14 22
03 17 36	J1834-0301	16 13 21	26.5	139.7	-2.4		-22.9	-23	82	No stop
03 19 21	=1831-030	16 15 07	26.7	140.1	-2.3		-22.7	82	83	03 17 37
03 20 01	G31.047	16 15 47	26.9	136.4	-2.5		-24.5	18	83	03 20 01
03 23 16	---	16 19 02	27.2	137.3	-2.5		-24.1	195	87	03 20 02
03 23 56	J1834-0301	16 19 42	27.1	141.3	-2.3		-22.1	17	87	03 23 56
03 25 41	=1831-030	16 21 28	27.3	141.8	-2.2		-21.8	105	88	03 23 57
03 25 41	G28.817	16 21 28	26.1	139.8	-2.4		-22.8	-18	88	No stop
03 28 56	---	16 24 43	26.4	140.7	-2.3		-22.4	177	91	03 25 42
03 28 56	J1834-0301	16 24 43	27.6	142.6	-2.2		-21.4	-18	91	No stop
03 30 41	=1831-030	16 26 29	27.8	143.1	-2.1		-21.2	87	93	03 28 57
03 30 41	G30.400	16 26 29	27.1	139.3	-2.4		-23.1	-22	93	No stop
03 33 56	---	16 29 44	27.4	140.1	-2.3		-22.7	173	96	03 30 42
03 33 56	J1834-0301	16 29 44	28.1	144.0	-2.1		-20.7	-23	96	No stop
03 35 41	=1831-030	16 31 29	28.2	144.4	-2.1		-20.5	82	98	03 33 57
03 36 21	G31.047	16 32 09	28.5	140.7	-2.3		-22.4	17	98	03 36 21
03 39 36	---	16 35 25	28.8	141.5	-2.2		-21.9	195	101	03 36 22
03 40 16	J1834-0301	16 36 05	28.6	145.7	-2.0		-19.8	17	101	03 40 16
03 42 01	=1831-030	16 37 50	28.7	146.1	-2.0		-19.6	105	103	03 40 17

Schedule for TORUN (Code Tr)

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Nature of methanol maser rings

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Wed 18 Mar 2015 Day 77 ---										
03 42 01	G28.817	16 37 50	27.6	144.1	-2.1		-20.7	-18	103	No stop
03 45 16	---	16 41 06	27.9	144.9	-2.0		-20.2	177	106	03 42 02
03 45 16	J1834-0301	16 41 06	29.0	147.0	-1.9		-19.1	-18	106	No stop
03 47 01	=1831-030	16 42 51	29.2	147.5	-1.9		-18.9	87	107	03 45 17
03 47 01	G30.400	16 42 51	28.6	143.6	-2.1		-20.9	-22	107	No stop
03 50 16	---	16 46 07	28.9	144.4	-2.0		-20.5	173	111	03 47 02
03 50 16	J1834-0301	16 46 07	29.4	148.4	-1.8		-18.4	-23	111	No stop
03 52 01	=1831-030	16 47 52	29.6	148.8	-1.8		-18.1	82	112	03 50 17
03 52 41	G31.047	16 48 32	30.0	145.1	-2.0		-20.1	17	112	03 52 41
03 55 56	---	16 51 48	30.3	145.9	-1.9		-19.7	195	115	03 52 42
03 56 36	J1834-0301	16 52 28	29.9	150.1	-1.7		-17.4	17	115	03 56 36
03 58 21	=1831-030	16 54 13	30.0	150.6	-1.7		-17.2	105	117	03 56 37
03 58 21	G28.817	16 54 13	29.0	148.5	-1.8		-18.3	-18	117	No stop
04 01 36	---	16 57 29	29.2	149.3	-1.8		-17.9	177	120	03 58 22
04 01 36	J1834-0301	16 57 29	30.3	151.5	-1.6		-16.7	-18	120	No stop
04 03 21	=1831-030	16 59 14	30.4	152.0	-1.6		-16.4	87	122	04 01 37
04 03 21	G30.400	16 59 14	30.0	148.0	-1.8		-18.6	-23	122	No stop
04 06 36	---	17 02 29	30.2	148.9	-1.8		-18.1	172	125	04 03 22
04 06 36	J1834-0301	17 02 29	30.6	152.9	-1.5		-15.9	-23	125	No stop
04 08 21	=1831-030	17 04 15	30.7	153.4	-1.5		-15.6	82	127	04 06 37
04 09 01	G31.047	17 04 55	31.3	149.6	-1.7		-17.7	17	127	04 09 01
04 12 16	---	17 08 10	31.6	150.5	-1.7		-17.2	195	130	04 09 02
04 12 56	J1834-0301	17 08 50	31.0	154.7	-1.4		-14.9	17	130	04 12 56
04 14 41	=1831-030	17 10 36	31.2	155.1	-1.4		-14.6	105	131	04 12 57
04 14 41	G28.817	17 10 36	30.2	152.9	-1.5		-15.9	-18	131	No stop
04 17 56	---	17 13 51	30.4	153.8	-1.5		-15.4	177	135	04 14 42
04 17 56	J1834-0301	17 13 51	31.4	156.1	-1.4		-14.1	-19	135	No stop
04 19 41	=1831-030	17 15 37	31.5	156.6	-1.3		-13.8	86	136	04 17 57
04 19 41	G30.400	17 15 37	31.2	152.5	-1.6		-16.1	-23	136	No stop
04 22 56	---	17 18 52	31.4	153.4	-1.5		-15.6	172	139	04 19 42

Schedule for TORUN (Code Tr)

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Nature of methanol maser rings

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Wed 18 Mar 2015 Day 77 ---										
04 22 56	J1834-0301	17 18 52	31.7	157.5	-1.3		-13.3	-23	139	No stop
04 24 41	=1831-030	17 20 37	31.8	158.0	-1.2		-13.0	82	141	04 22 57
04 25 21	G31.047	17 21 18	32.5	154.2	-1.4		-15.2	17	141	04 25 21
04 28 36	---	17 24 33	32.7	155.1	-1.4		-14.6	195	144	04 25 22
04 29 16	J1834-0301	17 25 13	32.0	159.3	-1.2		-12.3	17	144	04 29 16
04 31 01	=1831-030	17 26 58	32.1	159.8	-1.1		-12.0	105	146	04 29 17
04 31 01	G28.817	17 26 58	31.2	157.5	-1.3		-13.3	-18	146	No stop
04 34 16	---	17 30 14	31.4	158.5	-1.2		-12.8	177	149	04 31 02
04 34 16	J1834-0301	17 30 14	32.3	160.8	-1.1		-11.4	-19	149	No stop
04 36 01	=1831-030	17 31 59	32.4	161.3	-1.1		-11.1	86	151	04 34 17
04 36 01	G30.400	17 31 59	32.3	157.2	-1.3		-13.5	-23	151	No stop
04 39 16	---	17 35 15	32.4	158.1	-1.2		-12.9	172	154	04 36 02
04 39 16	J1834-0301	17 35 15	32.5	162.2	-1.0		-10.6	-23	154	No stop
04 41 01	=1831-030	17 37 00	32.6	162.7	-1.0		-10.3	82	156	04 39 17
04 41 41	G31.047	17 37 40	33.5	158.9	-1.2		-12.5	17	156	04 41 41
04 44 56	---	17 40 56	33.7	159.9	-1.1		-11.9	195	159	04 41 42
04 45 36	J1834-0301	17 41 36	32.8	164.1	-0.9		-9.5	17	159	04 45 36
04 47 21	=1831-030	17 43 21	32.9	164.6	-0.9		-9.2	105	160	04 45 37
04 47 21	G28.817	17 43 21	32.0	162.2	-1.0		-10.6	-19	160	No stop
04 50 36	---	17 46 37	32.2	163.2	-0.9		-10.0	176	163	04 47 22
04 50 36	J1834-0301	17 46 37	33.0	165.5	-0.8		-8.6	-19	163	No stop
04 52 21	=1831-030	17 48 22	33.0	166.1	-0.8		-8.3	86	165	04 50 37
04 52 21	G30.400	17 48 22	33.1	161.9	-1.0		-10.7	-23	165	No stop
04 55 36	---	17 51 37	33.3	162.9	-1.0		-10.2	172	168	04 52 22
04 55 36	J1834-0301	17 51 37	33.2	167.0	-0.7		-7.8	-23	168	No stop
04 57 21	=1831-030	17 53 23	33.2	167.5	-0.7		-7.5	82	170	04 55 37
04 58 01	G31.047	17 54 03	34.3	163.8	-0.9		-9.7	17	170	04 58 01
05 01 16	---	17 57 18	34.4	164.7	-0.8		-9.1	195	173	04 58 02
05 01 56	J1834-0301	17 57 59	33.4	168.9	-0.6		-6.6	17	173	05 01 56
05 03 41	=1831-030	17 59 44	33.4	169.4	-0.6		-6.3	105	175	05 01 57

Schedule for TORUN (Code Tr)

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Nature of methanol maser rings

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

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Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Wed 18 Mar 2015 Day 77 ---										
05 03 41	G28.817	17 59 44	32.7	167.0	-0.7		-7.8	-19	175	No stop
05 06 56	---	18 02 59	32.8	168.0	-0.7		-7.2	176	178	05 03 42
05 06 56	J1834-0301	18 02 59	33.5	170.4	-0.5		-5.8	-19	178	No stop
05 08 41	=1831-030	18 04 45	33.5	170.9	-0.5		-5.4	86	180	05 06 57
05 08 41	G30.400	18 04 45	33.8	166.8	-0.7		-7.9	-23	180	No stop
05 11 56	---	18 08 00	33.9	167.7	-0.7		-7.3	172	183	05 08 42
05 11 56	J1834-0301	18 08 00	33.6	171.9	-0.5		-4.9	-23	183	No stop
05 13 41	=1831-030	18 09 45	33.6	172.4	-0.4		-4.6	82	184	05 11 57
05 14 21	G31.047	18 10 26	34.9	168.7	-0.6		-6.8	17	184	05 14 21
05 17 36	---	18 13 41	34.9	169.7	-0.6		-6.2	195	187	05 14 22
05 18 16	J1834-0301	18 14 21	33.7	173.8	-0.3		-3.7	17	187	05 18 16
05 20 01	=1831-030	18 16 07	33.8	174.3	-0.3		-3.4	105	189	05 18 17
05 20 01	G28.817	18 16 07	33.1	171.9	-0.5		-4.9	-19	189	No stop
05 23 16	---	18 19 22	33.2	172.8	-0.4		-4.3	176	192	05 20 02
05 23 16	J1834-0301	18 19 22	33.8	175.3	-0.3		-2.8	-19	192	No stop
05 25 01	=1831-030	18 21 07	33.8	175.8	-0.2		-2.5	86	194	05 23 17
05 25 01	G30.400	18 21 07	34.2	171.7	-0.5		-5.0	-23	194	No stop
05 28 16	---	18 24 23	34.3	172.7	-0.4		-4.4	172	197	05 25 02
05 28 16	J1834-0301	18 24 23	33.9	176.8	-0.2		-1.9	-23	197	No stop
05 30 01	=1831-030	18 26 08	33.9	177.3	-0.1		-1.6	82	199	05 28 17
05 30 41	G31.047	18 26 48	35.2	173.7	-0.3		-3.8	18	199	05 30 41
05 33 56	---	18 30 04	35.3	174.7	-0.3		-3.2	195	202	05 30 42
05 34 36	J1834-0301	18 30 44	33.9	178.7	-0.1		-0.8	17	202	05 34 36
05 36 21	=1831-030	18 32 29	33.9	179.2	-0.0		-0.5	105	204	05 34 37
05 36 21	G28.817	18 32 29	33.4	176.7	-0.2		-2.0	-19	204	No stop
05 39 36	---	18 35 45	33.4	177.7	-0.1		-1.4	176	207	05 36 22
05 39 36	J1834-0301	18 35 45	33.9	180.2	0.0		0.1	-19	207	No stop
05 41 21	=1831-030	18 37 30	33.9	180.7	0.0		0.4	86	208	05 39 37
05 41 21	G30.400	18 37 30	34.5	176.6	-0.2		-2.0	-23	208	No stop
05 44 36	---	18 40 46	34.5	177.6	-0.1		-1.4	172	212	05 41 22

Schedule for TORUN (Code Tr)

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Nature of methanol maser rings

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TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Wed 18 Mar 2015 Day 77 ---										
05 44 36	J1834-0301	18 40 46	33.9	181.7	0.1		1.0	-23	212	No stop
05 46 21	=1831-030	18 42 31	33.9	182.3	0.1		1.4	82	213	05 44 37
05 47 01	G31.047	18 43 11	35.4	178.7	-0.1		-0.8	18	213	05 47 01
05 50 16	---	18 46 26	35.4	179.7	-0.0		-0.2	195	216	05 47 02
05 50 56	J1834-0301	18 47 07	33.8	183.6	0.2		2.2	17	216	05 50 56
05 52 41	=1831-030	18 48 52	33.8	184.2	0.2		2.5	105	218	05 50 57
05 52 41	G28.817	18 48 52	33.4	181.6	0.1		1.0	-19	218	No stop
05 55 56	---	18 52 07	33.4	182.6	0.1		1.6	176	221	05 52 42
05 55 56	J1834-0301	18 52 07	33.8	185.1	0.3		3.1	-19	221	No stop
05 57 41	=1831-030	18 53 53	33.8	185.7	0.3		3.4	86	223	05 55 57
05 57 41	G30.400	18 53 53	34.5	181.6	0.1		1.0	-23	223	No stop
06 00 56	---	18 57 08	34.5	182.6	0.1		1.5	172	226	05 57 42
06 00 56	J1834-0301	18 57 08	33.7	186.6	0.4		4.0	-23	226	No stop
06 02 41	=1831-030	18 58 54	33.7	187.2	0.4		4.3	82	228	06 00 57
06 03 21	G31.047	18 59 34	35.3	183.7	0.2		2.2	18	228	06 03 21
06 06 36	---	19 02 49	35.3	184.7	0.3		2.8	195	231	06 03 22
06 06 36	J1834-0301	19 02 49	33.6	188.3	0.5		5.0	-22	231	No stop
06 08 21	=1831-030	19 04 34	33.6	188.9	0.5		5.3	83	232	06 06 37
06 11 45	3C345	19 07 59	62.2	256.1	2.4		49.3	55	232	06 11 45
06 26 45	---	19 23 01	60.0	259.9	2.7		50.3	900	247	06 11 46
06 37 45	J1834-0301	19 34 03	32.5	197.6	1.0		10.5	515	247	06 37 45
06 39 30	=1831-030	19 35 48	32.5	198.1	1.0		10.7	105	249	06 37 46
06 39 30	G28.817	19 35 48	32.4	195.5	0.9		9.3	-19	249	No stop
06 42 45	---	19 39 04	32.2	196.5	0.9		9.8	176	252	06 39 31
06 42 45	J1834-0301	19 39 04	32.3	199.0	1.1		11.3	-19	252	No stop
06 44 30	=1831-030	19 40 49	32.2	199.5	1.1		11.6	86	253	06 42 46
06 44 30	G30.400	19 40 49	33.5	195.7	0.9		9.3	-22	253	No stop
06 47 45	---	19 44 05	33.3	196.6	0.9		9.9	173	256	06 44 31
06 47 45	J1834-0301	19 44 05	32.1	200.5	1.2		12.1	-23	256	No stop
06 49 30	=1831-030	19 45 50	32.0	201.0	1.2		12.4	82	258	06 47 46

Schedule for TORUN (Code Tr)

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Nature of methanol maser rings

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

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TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Wed 18 Mar 2015 Day 77 ---										
06 50 10	G31.047	19 46 30	34.0	197.9	1.0		10.6	18	258	06 50 10
06 53 25	---	19 49 46	33.9	198.8	1.0		11.2	195	261	06 50 11
06 54 05	J1834-0301	19 50 26	31.7	202.3	1.3		13.2	18	261	06 54 05
06 55 50	=1831-030	19 52 11	31.6	202.8	1.3		13.5	105	263	06 54 06
06 55 50	G28.817	19 52 11	31.6	200.3	1.1		12.0	-19	263	No stop
06 59 05	---	19 55 27	31.4	201.2	1.2		12.6	176	266	06 55 51
06 59 05	J1834-0301	19 55 27	31.4	203.7	1.3		14.0	-19	266	No stop
07 00 50	=1831-030	19 57 12	31.3	204.2	1.4		14.3	86	268	06 59 06
07 00 50	G30.400	19 57 12	32.7	200.5	1.1		12.1	-22	268	No stop
07 04 05	---	20 00 27	32.5	201.4	1.2		12.7	173	271	07 00 51
07 04 05	J1834-0301	20 00 27	31.1	205.1	1.4		14.8	-22	271	No stop
07 05 50	=1831-030	20 02 13	31.0	205.6	1.5		15.1	83	273	07 04 06
07 06 30	G31.047	20 02 53	33.2	202.7	1.3		13.4	18	273	07 06 30
07 09 45	---	20 06 08	33.0	203.6	1.3		13.9	195	276	07 06 31
07 10 25	J1834-0301	20 06 49	30.7	206.9	1.5		15.8	18	276	07 10 25
07 12 10	=1831-030	20 08 34	30.6	207.4	1.6		16.1	105	277	07 10 26
07 12 10	G28.817	20 08 34	30.7	204.9	1.4		14.7	-19	277	No stop
07 15 25	---	20 11 49	30.5	205.8	1.5		15.2	176	281	07 12 11
07 15 25	J1834-0301	20 11 49	30.3	208.3	1.6		16.6	-19	281	No stop
07 17 10	=1831-030	20 13 35	30.2	208.8	1.6		16.8	86	282	07 15 26
07 17 10	G30.400	20 13 35	31.7	205.2	1.4		14.8	-22	282	No stop
07 20 25	---	20 16 50	31.5	206.1	1.5		15.3	173	285	07 17 11
07 20 25	J1834-0301	20 16 50	30.0	209.7	1.7		17.3	-22	285	No stop
07 22 10	=1831-030	20 18 35	29.8	210.2	1.7		17.6	83	287	07 20 26
07 22 50	G31.047	20 19 16	32.1	207.4	1.5		16.0	17	287	07 22 50
07 26 05	---	20 22 31	31.9	208.3	1.6		16.6	195	290	07 22 51
07 26 45	J1834-0301	20 23 11	29.5	211.4	1.8		18.3	17	290	07 26 45
07 28 30	=1831-030	20 24 56	29.3	211.9	1.8		18.5	105	292	07 26 46
07 28 30	G28.817	20 24 56	29.5	209.5	1.7		17.2	-19	292	No stop
07 31 45	---	20 28 12	29.3	210.3	1.7		17.7	176	295	07 28 31

Nature of methanol maser rings

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Wed 18 Mar 2015 Day 77 ---										
07 31 45	J1834-0301	20 28 12	29.1	212.8	1.9		19.0	-19	295	No stop
07 33 30	=1831-030	20 29 57	28.9	213.3	1.9		19.3	86	297	07 31 46
07 33 30	G30.400	20 29 57	30.6	209.8	1.7		17.4	-22	297	No stop
07 36 45	---	20 33 13	30.4	210.7	1.7		17.9	173	300	07 33 31
07 36 45	J1834-0301	20 33 13	28.7	214.1	2.0		19.7	-22	300	No stop
07 38 30	=1831-030	20 34 58	28.5	214.6	2.0		20.0	83	301	07 36 46
07 39 10	G31.047	20 35 38	30.9	212.0	1.8		18.5	17	301	07 39 10
07 42 25	---	20 38 54	30.7	212.9	1.9		19.0	195	305	07 39 11
07 43 05	J1834-0301	20 39 34	28.1	215.8	2.1		20.6	17	305	07 43 05
07 44 50	=1831-030	20 41 19	28.0	216.3	2.1		20.9	105	306	07 43 06
07 44 50	G28.817	20 41 19	28.2	213.9	2.0		19.6	-19	306	No stop
07 48 05	---	20 44 35	28.0	214.8	2.0		20.1	176	309	07 44 51
07 48 05	J1834-0301	20 44 35	27.7	217.2	2.2		21.3	-19	309	No stop
07 49 50	=1831-030	20 46 20	27.5	217.6	2.2		21.5	86	311	07 48 06
07 49 50	G30.400	20 46 20	29.3	214.2	2.0		19.8	-21	311	No stop
07 53 05	---	20 49 36	29.0	215.1	2.0		20.2	174	314	07 49 51
07 53 05	J1834-0301	20 49 36	27.2	218.5	2.2		22.0	-22	314	No stop
07 54 50	=1831-030	20 51 21	27.0	218.9	2.3		22.2	83	316	07 53 06
07 55 30	G31.047	20 52 01	29.5	216.4	2.1		20.9	17	316	07 55 30
07 58 45	---	20 55 16	29.2	217.3	2.1		21.3	195	319	07 55 31
07 59 25	J1834-0301	20 55 57	26.6	220.1	2.3		22.8	16	319	07 59 25
08 01 10	=1831-030	20 57 42	26.4	220.6	2.4		23.0	105	321	07 59 26
08 01 10	G28.817	20 57 42	26.8	218.2	2.2		21.8	-19	321	No stop
08 04 25	---	21 00 57	26.5	219.0	2.3		22.3	176	324	08 01 11
08 04 25	J1834-0301	21 00 57	26.1	221.4	2.4		23.4	-19	324	No stop
08 06 10	=1831-030	21 02 43	25.9	221.8	2.5		23.6	86	325	08 04 26
08 06 10	G30.400	21 02 43	27.9	218.6	2.2		22.0	-21	325	No stop
08 09 25	---	21 05 58	27.5	219.5	2.3		22.5	174	329	08 06 11
08 09 25	J1834-0301	21 05 58	25.6	222.7	2.5		24.1	-21	329	No stop
08 11 10	=1831-030	21 07 43	25.4	223.1	2.5		24.3	84	330	08 09 26

Schedule for TORUN (Code Tr)

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Nature of methanol maser rings

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Wed 18 Mar 2015 Day 77 ---										
08 11 50	G31.047	21 08 24	28.0	220.8	2.3		23.1	16	330	08 11 50
08 15 05	---	21 11 39	27.7	221.6	2.4		23.5	195	333	08 11 51
08 15 45	J1834-0301	21 12 19	25.0	224.3	2.6		24.8	16	333	08 15 45
08 17 30	=1831-030	21 14 05	24.8	224.7	2.7		25.0	105	335	08 15 46
08 17 30	G28.817	21 14 05	25.2	222.4	2.5		23.9	-18	335	No stop
08 20 45	---	21 17 20	24.9	223.2	2.6		24.3	177	338	08 17 31
08 20 45	J1834-0301	21 17 20	24.4	225.5	2.7		25.4	-19	338	No stop
08 22 30	=1831-030	21 19 05	24.2	225.9	2.7		25.6	86	340	08 20 46
08 22 30	G30.400	21 19 05	26.2	222.8	2.5		24.1	-21	340	No stop
08 25 45	---	21 22 21	25.9	223.7	2.6		24.5	174	343	08 22 31
08 25 45	J1834-0301	21 22 21	23.9	226.7	2.8		26.0	-22	343	No stop
08 27 30	=1831-030	21 24 06	23.7	227.2	2.8		26.2	83	345	08 25 46
08 28 10	G31.047	21 24 46	26.3	225.0	2.6		25.1	16	345	08 28 10
08 31 25	---	21 28 02	26.0	225.8	2.7		25.5	195	348	08 28 11
08 32 05	J1834-0301	21 28 42	23.2	228.3	2.9		26.7	16	348	08 32 05
08 33 50	=1831-030	21 30 27	23.0	228.7	2.9		26.9	105	350	08 32 06
08 33 50	G28.817	21 30 27	23.5	226.5	2.8		25.9	-18	350	No stop
08 37 05	---	21 33 43	23.1	227.3	2.8		26.2	177	353	08 33 51
08 37 05	J1834-0301	21 33 43	22.6	229.5	3.0		27.2	-19	353	No stop
08 38 50	=1831-030	21 35 28	22.4	229.9	3.0		27.4	86	354	08 37 06
08 38 50	G30.400	21 35 28	24.5	226.9	2.8		26.0	-22	354	No stop
08 42 05	---	21 38 44	24.2	227.7	2.8		26.4	173	357	08 38 51
08 42 05	J1834-0301	21 38 44	22.0	230.7	3.1		27.7	-22	357	No stop
08 43 50	=1831-030	21 40 29	21.8	231.1	3.1		27.9	83	359	08 42 06
08 44 30	G31.047	21 41 09	24.5	229.0	2.9		27.0	16	359	08 44 30
08 47 45	---	21 44 24	24.2	229.8	2.9		27.3	195	362	08 44 31
08 48 25	J1834-0301	21 45 05	21.3	232.2	3.2		28.4	15	362	08 48 25
08 50 10	=1831-030	21 46 50	21.1	232.6	3.2		28.5	105	364	08 48 26
08 50 10	G28.817	21 46 50	21.7	230.4	3.1		27.6	-18	364	No stop
08 53 25	---	21 50 05	21.3	231.2	3.1		28.0	177	367	08 50 11

Schedule for TORUN (Code Tr)

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Nature of methanol maser rings

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

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Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Wed 18 Mar 2015 Day 77 ---										
08 53 25	J1834-0301	21 50 05	20.7	233.4	3.3		28.9	-18	367	No stop
08 55 10	=1831-030	21 51 51	20.5	233.8	3.3		29.0	87	369	08 53 26
08 55 10	G30.400	21 51 51	22.7	230.9	3.1		27.8	-22	369	No stop
08 58 25	---	21 55 06	22.3	231.7	3.1		28.1	173	372	08 55 11
08 58 25	J1834-0301	21 55 06	20.1	234.6	3.3		29.3	-22	372	No stop
09 00 10	=1831-030	21 56 52	19.9	235.0	3.4		29.5	83	374	08 58 26
09 00 50	G31.047	21 57 32	22.6	233.0	3.2		28.7	16	374	09 00 50
09 04 05	---	22 00 47	22.2	233.8	3.2		29.0	195	377	09 00 51
09 04 45	J1834-0301	22 01 27	19.3	236.0	3.4		29.9	15	377	09 04 45
09 06 30	=1831-030	22 03 13	19.1	236.4	3.5		30.1	105	378	09 04 46
09 06 30	G28.817	22 03 13	19.7	234.2	3.3		29.2	-18	378	No stop
09 09 45	---	22 06 28	19.3	235.0	3.4		29.5	177	381	09 06 31
09 09 45	J1834-0301	22 06 28	18.7	237.2	3.5		30.3	-18	381	No stop
09 11 30	=1831-030	22 08 13	18.4	237.6	3.6		30.5	87	383	09 09 46
09 11 30	G30.400	22 08 13	20.7	234.8	3.3		29.4	-22	383	No stop
09 14 45	---	22 11 29	20.3	235.5	3.4		29.7	173	386	09 11 31
09 14 45	J1834-0301	22 11 29	18.0	238.3	3.6		30.8	-23	386	No stop
09 16 30	=1831-030	22 13 14	17.8	238.7	3.6		30.9	82	388	09 14 46
09 17 10	G31.047	22 13 54	20.6	236.8	3.4		30.2	15	388	09 17 10
09 20 25	---	22 17 10	20.2	237.6	3.5		30.5	195	391	09 17 11
09 21 05	J1834-0301	22 17 50	17.2	239.7	3.7		31.3	15	391	09 21 05
09 22 50	=1831-030	22 19 35	17.0	240.1	3.7		31.4	105	393	09 21 06
09 22 50	G28.817	22 19 35	17.7	238.0	3.6		30.7	-18	393	No stop
09 26 05	---	22 22 51	17.2	238.7	3.7		30.9	177	396	09 22 51
09 26 05	J1834-0301	22 22 51	16.6	240.8	3.8		31.7	-18	396	No stop
09 27 50	=1831-030	22 24 36	16.3	241.2	3.8		31.8	87	398	09 26 06
09 27 50	G30.400	22 24 36	18.6	238.5	3.6		30.8	-22	398	No stop
09 31 05	---	22 27 52	18.2	239.3	3.7		31.1	173	401	09 27 51
09 31 05	J1834-0301	22 27 52	15.9	242.0	3.9		32.1	-23	401	No stop
09 32 50	=1831-030	22 29 37	15.7	242.3	3.9		32.2	82	402	09 31 06

Schedule for TORUN (Code Tr)

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Nature of methanol maser rings

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

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TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Wed 18 Mar 2015 Day 77 ---										
09 33 30	G31.047	22 30 17	18.5	240.5	3.7		31.5	15	402	09 33 30
09 36 45	---	22 33 33	18.1	241.3	3.8		31.8	195	406	09 33 31
09 37 25	J1834-0301	22 34 13	15.1	243.3	4.0		32.5	15	406	09 37 25
09 39 10	=1831-030	22 35 58	14.8	243.7	4.0		32.6	105	407	09 37 26
09 39 10	G28.817	22 35 58	15.5	241.6	3.9		32.0	-18	407	No stop
09 42 25	---	22 39 13	15.1	242.3	3.9		32.2	177	410	09 39 11
09 42 25	J1834-0301	22 39 13	14.4	244.4	4.1		32.8	-18	410	No stop
09 44 10	=1831-030	22 40 59	14.1	244.8	4.1		33.0	87	412	09 42 26
09 44 10	G30.400	22 40 59	16.5	242.2	3.9		32.1	-23	412	No stop
09 47 25	---	22 44 14	16.1	242.9	3.9		32.3	172	415	09 44 11
09 47 25	J1834-0301	22 44 14	13.7	245.5	4.2		33.2	-23	415	No stop
09 49 10	=1831-030	22 46 00	13.5	245.9	4.2		33.3	82	417	09 47 26
09 49 50	G31.047	22 46 40	16.3	244.2	4.0		32.7	15	417	09 49 50
09 53 05	---	22 49 55	15.9	244.9	4.0		33.0	195	420	09 49 51
09 53 45	J1834-0301	22 50 35	12.8	246.9	4.3		33.6	15	420	09 53 45
09 55 30	=1831-030	22 52 21	12.6	247.2	4.3		33.7	105	422	09 53 46
09 55 30	G28.817	22 52 21	13.3	245.2	4.1		33.1	-18	422	No stop
09 58 45	---	22 55 36	12.9	245.9	4.2		33.3	177	425	09 55 31
09 58 45	J1834-0301	22 55 36	12.1	247.9	4.3		33.9	-18	425	No stop
10 00 30	=1831-030	22 57 21	11.9	248.3	4.4		34.0	87	426	09 58 46
10 00 30	G30.400	22 57 21	14.3	245.8	4.1		33.2	-23	426	No stop
10 03 45	---	23 00 37	13.9	246.5	4.2		33.4	172	430	10 00 31
10 03 45	J1834-0301	23 00 37	11.4	249.0	4.4		34.2	-23	430	No stop
10 05 30	=1831-030	23 02 22	11.2	249.4	4.5		34.2	82	431	10 03 46
10 06 10	G31.047	23 03 02	14.1	247.7	4.3		33.8	15	431	10 06 10
10 09 25	---	23 06 18	13.6	248.4	4.3		34.0	195	434	10 06 11
10 10 05	J1834-0301	23 06 58	10.5	250.3	4.5		34.5	15	434	10 10 05
10 11 50	=1831-030	23 08 43	10.3	250.7	4.6		34.6	105	436	10 10 06
10 11 50	G28.817	23 08 43	11.1	248.7	4.4		34.1	-18	436	No stop
10 15 05	---	23 11 59	10.6	249.4	4.5		34.3	177	439	10 11 51

Schedule for TORUN (Code Tr)

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Nature of methanol maser rings

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

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Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Wed 18 Mar 2015 Day 77 ---										
10 15 05	J1834-0301	23 11 59	9.8	251.4	4.6		34.7	-18	439	No stop
10 16 50	=1831-030	23 13 44	9.6	251.7	4.6		34.8	87	441	10 15 06
10 16 50	G30.400	23 13 44	12.0	249.3	4.4		34.2	-23	441	No stop
10 20 05	---	23 17 00	11.6	249.9	4.5		34.4	172	444	10 16 51
10 20 05	J1834-0301	23 17 00	9.1	252.4	4.7		35.0	-23	444	No stop
10 21 50	=1831-030	23 18 45	8.9	252.8	4.7		35.1	82	446	10 20 06
10 22 30	G31.047	23 19 25	11.8	251.2	4.5		34.7	15	446	10 22 30
10 25 45	---	23 22 41	11.3	251.9	4.6		34.8	195	449	10 22 31
10 26 25	J1834-0301	23 23 21	8.2	253.7	4.8		35.3	15	449	10 26 25
10 28 10	=1831-030	23 25 06	7.9	254.1	4.8		35.3	105	450	10 26 26
10 28 10	G28.817	23 25 06	8.8	252.1	4.7		34.9	-18	450	No stop
10 31 25	---	23 28 22	8.3	252.8	4.7		35.1	177	454	10 28 11
10 31 25	J1834-0301	23 28 22	7.5	254.8	4.9		35.5	-18	454	No stop
10 33 10	=1831-030	23 30 07	7.2	255.1	4.9		35.5	87	455	10 31 26
10 33 10	G30.400	23 30 07	9.7	252.7	4.7		35.0	-23	455	No stop
10 36 25	---	23 33 22	9.2	253.4	4.7		35.2	172	458	10 33 11
10 36 25	J1834-0301	23 33 22	6.7	255.8	5.0		35.7	-23	458	No stop
10 38 10	=1831-030	23 35 08	6.5	256.1	5.0		35.7	82	460	10 36 26
10 38 50	G31.047	23 35 48	9.4	254.6	4.8		35.4	15	460	10 38 50
10 42 05	---	23 39 03	9.0	255.3	4.9		35.5	195	463	10 38 51
10 42 05	J1834-0301	23 39 03	5.9	256.9	5.1		35.9	-26	463	No stop
10 43 50	=1831-030	23 40 49	5.7	257.3	5.1		35.9	79	465	10 42 06

SETUP FILE INFORMATION:

NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

==== Setup file: sess115M1.EB052

Setup group: 7 Station: TORUN Total bit rate: 128
 Format: MARK5B Bits per sample: 2 Sample rate: 4.000
 Number of channels: 16 DBE type: DBBC_DDC Speedup factor: 1.00

Disk used to record data.\

1st LO=	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00
	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00
Net SB=	L	L	U	U	L	L	U	U	
	L	L	U	U	L	L	U	U	
IF SB =	U	U	U	U	U	U	U	U	
	U	U	U	U	U	U	U	U	
Pol. =	RCP	LCP	RCP	LCP	RCP	LCP	RCP	LCP	
	RCP	LCP	RCP	LCP	RCP	LCP	RCP	LCP	
BBC =	1	5	1	5	2	6	2	6	
	3	7	3	7	4	8	4	8	
BBC SB=	L	L	U	U	L	L	U	U	
	L	L	U	U	L	L	U	U	
IF =	A1	B1	A1	B1	A1	B1	A1	B1	
	A1	B1	A1	B1	A1	B1	A1	B1	

The following frequency sets based on these setups were used.

Frequency Set: 6 Based on FREQ, BW, and/or DOPPLER in schedule. Used with PCAL = off

LO sum=	6664.71	6664.71	6664.71	6664.71	6668.71	6668.71	6668.71	6668.71
	6672.71	6672.71	6672.71	6672.71	6676.71	6676.71	6676.71	6676.71
BBC fr=	764.71	764.71	764.71	764.71	768.71	768.71	768.71	768.71
	772.71	772.71	772.71	772.71	776.71	776.71	776.71	776.71
Bandwd=	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00

Matching frequency sets: 6

Track assignments are:

track1= 18, 26, 2, 10, 20, 28, 4, 12, 22, 30, 6, 14, 24, 32, 8, 16
 barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec)		(Date)	Error (mas)
	(B1950)	(J2000)		
* G28.817	18 39 59.517167	* 18 42 37.347900	18 43 25.228669	0.00
	-03 32 40.59396	*-03 29 40.92100	-03 28 42.44905	0.00
* G30.400	18 45 15.750941	* 18 47 52.299700	18 48 39.761812	0.00
	-02 26 38.30410	*-02 23 16.05300	-02 22 11.11406	0.00
* G31.047	18 44 08.303183	* 18 46 43.855000	18 47 31.021375	0.00
	-01 34 11.55375	*-01 30 54.15500	-01 29 50.98164	0.00
J1642+3948	16 41 17.606228	* 16 42 58.809965	16 43 30.006999	0.77
* 3C345	39 54 10.81496	* 39 48 36.99402	39 46 46.40286	0.52
* J1834-0301	18 31 36.772712	* 18 34 14.074653	18 35 01.843575	0.12
1831-030	-03 03 43.12343	*-03 01 19.62724	-03 00 32.29644	0.16


```

1st LO=  2400.00  2400.00  2400.00  2400.00
Net SB=      L      L      U      U
IF SB =      L      L      L      L
Pol.  =      RCP     LCP     RCP     LCP
BBC   =      1      2      1      2
BBC SB=      U      U      L      L
IF    =      C      A      C      A

```

The following frequency sets based on these setups were used.

```

Frequency Set:  4  Setup file default.  Used with PCAL = 1MHz
LO sum=  1668.00  1668.00  1668.00  1668.00
BBC fr=   732.00   732.00   732.00   732.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  4

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.415765	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 51.76455	0.00
	fake circumpolar target for a TS to look at			
* 0749+426	07 49 35.292496	* 07 53 03.337499	07 54 07.453531	0.00
J0753+4231	42 39 18.53136	* 42 31 30.76523	42 29 02.41946	0.00
	./rk08sv_sources.radioastron HIGHz, rfc_2013d Petrov, 2013, unpublished 80 observations, RA-A02-03			

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)
0749+426	112.8

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ where F is in GHz.

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk08swtr

RADIOASTRON AGN SURVEY

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Observing mode: C/L-band, dual-pol

Schedule for TORUN (Code Tr) Page 2
RadioAstron AGN Survey

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Wed 18 Mar 2015 Day 77 ---

----- L-band VLBI scans -----

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 732.00 732.00 732.00 732.00
Next scan bandwidths: 16.00 16.00 16.00 16.00

Table with 12 columns: Start UT, Stop UT, Source, LST, EL, AZ, HA, UP, ParA, Dwell, GBytes, SYNC. Contains scan data for 0605-085 and --- sources.

SETUP FILE INFORMATION:

NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

==== Setup file: ra18cm2.set

Setup group: 8 Station: TORUN Total bit rate: 256
Format: MKIV1:4 Bits per sample: 2 Sample rate: 32.000
Number of channels: 4 DBE type: Speedup factor: 1.00

Disk used to record data.

```

1st LO= 2400.00 2400.00 2400.00 2400.00
Net SB=      L      L      U      U
IF SB =      L      L      L      L
Pol.  =      RCP     LCP     RCP     LCP
BBC   =      1      2      1      2
BBC SB=      U      U      L      L
IF    =      C      A      C      A

```

The following frequency sets based on these setups were used.

```

Frequency Set: 4 Setup file default. Used with PCAL = 1MHz
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 732.00 732.00 732.00 732.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 4

```

Track assignments are:

```

track1= 2, 18, 3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.419078	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 51.79222	0.00
	fake circumpolar target for a TS to look at			
* 0605-085	06 05 36.027963	* 06 07 59.699233	06 08 43.743007	0.00
J0607-0834	-08 34 20.29746	*-08 34 49.97823	-08 35 20.53064	0.00
	./rk08sw_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 1357 observations, RA-A02-12			

EFFECT OF SOLAR CORONA

The solar corona can cause unstable phases for sources too close to the Sun. SCHED provides warnings at individual scans for distances less than 10 degrees. The distance from the Sun to each source in this schedule is:

Source	Sun distance (deg)
3C147	89.5
0605-085	94.1

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ where F is in GHz.

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk08sxtr

RADIOASTRON AGN SURVEY

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Observing mode: C/L-band, dual-pol

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Wed 18 Mar 2015 Day 77 ---

----- L-band VLBI scans -----

Table with columns: Time, Source, LST, EL, AZ, HA, UP, ParA, Dwell, GBytes, SYNC. Rows include scan frequencies and detailed scan data for source 0917+449.

SETUP FILE INFORMATION:

NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

==== Setup file: ra18cm2.set

Setup group: 7 Station: TORUN Total bit rate: 256
Format: MKIV1:4 Bits per sample: 2 Sample rate: 32.000
Number of channels: 4 DBE type: Speedup factor: 1.00

Disk used to record data.

1st LO=	2400.00	2400.00	2400.00	2400.00
Net SB=	L	L	U	U
IF SB =	L	L	L	L
Pol. =	RCP	LCP	RCP	LCP
BBC =	1	2	1	2
BBC SB=	U	U	L	L
IF =	C	A	C	A

The following frequency sets based on these setups were used.

Frequency Set: 5 Setup file default. Used with PCAL = 1MHz
 LO sum= 1668.00 1668.00 1668.00 1668.00
 BBC fr= 732.00 732.00 732.00 732.00
 Bandwd= 16.00 16.00 16.00 16.00
 Matching frequency sets: 5

Track assignments are:

track1= 2, 18, 3, 19
 barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.429640	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 51.88911	0.00
	fake circumpolar target for a TS to look at			
* 0917+449	09 17 41.919222	* 09 20 58.458485	09 21 59.320937	0.00
J0920+4441	44 54 39.62449	* 44 41 53.98501	44 37 54.73277	0.00
	./rk08sx_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 2520 observations, RA-A02-12			

EFFECT OF SOLAR CORONA

The solar corona can cause unstable phases for sources too close to the Sun. SCHED provides warnings at individual scans for distances less than 10 degrees. The distance from the Sun to each source in this schedule is:

Source	Sun distance (deg)
0917+449	125.0

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ where F is in GHz.

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg


```

1st LO= 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)	(Date)	Error (mas)
* FAKERA	11 57 21.769299 * 12 00 00.000000	12 00 54.433989	0.00
	85 16 41.77889 * 85 00 00.000000	84 54 51.93417	0.00
	fake circumpolar target for a TS to look at		
* 0925+504	09 25 51.973728 * 09 29 15.440209	09 30 18.453715	0.00
J0929+5013	50 26 44.31059 * 50 13 35.98961	50 09 30.96910	0.00
	./rk08sy_sources.radioastron AGN, MASIV, rfc_2013d Petrov, 2013, unpublished 223 observations, RA-A02-12		

EFFECT OF SOLAR CORONA

The solar corona can cause unstable phases for sources too close to the Sun. SCHED provides warnings at individual scans for distances less than 10 degrees. The distance from the Sun to each source in this schedule is:

Source	Sun distance (deg)
3C286	142.2
0925+504	122.0

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ where F is in GHz.

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

NATURE OF METHANOL MASER RINGS
PI: *Anna Bartkiewicz*

Observing mode: MKV, 128 Mbps

Schedule for TORUN (Code Tr)

Page 2

Nature of methanol maser rings

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are LO sum (band edge).

SYNC: Time correlator 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 19 Mar 2015 Day 78 ---										
Next scan frequencies: 6664.92 6664.92 6664.92 6664.92 6668.92 6668.92 6668.92 6668.92										
6672.92 6672.92 6672.92 6672.92 6676.92 6676.92 6676.92 6676.92										
Next BBC frequencies: 764.92 764.92 764.92 764.92 768.92 768.92 768.92 768.92										
772.92 772.92 772.92 772.92 776.92 776.92 776.92 776.92										
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										
01 45 00	3C345	14 44 27	65.8	111.4	-2.0		-46.7	0	0	01 45 00
02 00 00	---	14 59 29	67.9	116.5	-1.7		-44.4	900	14	01 45 01
02 00 40	3C345	15 00 09	68.0	116.8	-1.7		-44.2	34	14	02 00 40
02 15 40	---	15 15 12	69.9	122.7	-1.5		-41.1	900	29	02 00 41
02 16 20	3C345	15 15 52	70.0	123.0	-1.5		-41.0	33	29	02 16 20
02 31 20	---	15 30 54	71.8	129.8	-1.2		-36.9	900	43	02 16 21
02 34 56	J1834-0301	15 34 31	22.4	130.1	-3.0		-27.4	17	43	02 34 56
02 36 41	=1831-030	15 36 16	22.6	130.5	-3.0		-27.2	105	45	02 34 57
02 36 41	G31.581	15 36 16	22.5	126.1	-3.2		-29.0	-24	45	No stop
02 39 56	---	15 39 32	22.9	126.8	-3.2		-28.7	171	48	02 36 42
02 39 56	J1834-0301	15 39 32	23.0	131.3	-2.9		-26.9	-24	48	No stop
02 41 41	=1831-030	15 41 17	23.2	131.7	-2.9		-26.7	81	50	02 39 57
02 41 41	G31.581	15 41 17	23.1	127.3	-3.1		-28.6	-24	50	No stop
02 44 56	---	15 44 33	23.5	128.0	-3.1		-28.2	171	53	02 41 42
02 45 36	J1834-0301	15 45 13	23.6	132.6	-2.8		-26.3	16	53	02 45 36
02 47 21	=1831-030	15 46 58	23.8	133.1	-2.8		-26.1	105	55	02 45 37
02 47 21	J1907+0127	15 46 58	23.9	122.8	-3.3		-30.3	-35	55	No stop
02 49 06	=1904+013	15 48 43	24.1	123.2	-3.3		-30.2	70	56	02 47 22
02 49 06	G33.980	15 48 43	25.3	126.8	-3.1		-28.7	-22	56	No stop
02 52 21	---	15 51 59	25.7	127.6	-3.0		-28.4	173	59	02 49 07
02 52 21	J1907+0127	15 51 59	24.5	124.0	-3.3		-29.9	-22	59	No stop
02 54 06	=1904+013	15 53 44	24.7	124.4	-3.2		-29.7	83	61	02 52 22
02 54 46	G34.751	15 54 24	26.4	127.5	-3.0		-28.5	20	61	02 54 46
02 58 01	---	15 57 40	26.7	128.3	-3.0		-28.1	195	64	02 54 47
02 58 01	J1907+0127	15 57 40	25.2	125.4	-3.2		-29.3	-20	64	No stop
02 59 46	=1904+013	15 59 25	25.4	125.8	-3.1		-29.2	85	66	02 58 02

Schedule for TORUN (Code Tr)

Page 3

Nature of methanol maser rings

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Thu 19 Mar 2015 Day 78 ---										
02 59 46	G33.980	15 59 25	26.6	129.4	-2.9		-27.6	-22	66	No stop
03 03 01	---	16 02 41	26.9	130.3	-2.9		-27.3	173	69	02 59 47
03 03 01	J1907+0127	16 02 41	25.8	126.6	-3.1		-28.8	-22	69	No stop
03 04 46	=1904+013	16 04 26	26.0	127.0	-3.1		-28.7	83	71	03 03 02
03 05 26	G34.751	16 05 06	27.6	130.1	-2.8		-27.4	20	71	03 05 26
03 08 41	---	16 08 22	28.0	130.9	-2.8		-27.0	195	74	03 05 27
03 08 41	J1907+0127	16 08 22	26.5	128.0	-3.0		-28.3	-20	74	No stop
03 10 26	=1904+013	16 10 07	26.7	128.4	-3.0		-28.1	85	75	03 08 42
03 11 26	J1834-0301	16 11 07	26.3	139.1	-2.4		-23.2	24	75	03 11 26
03 13 11	=1831-030	16 12 52	26.5	139.6	-2.4		-23.0	105	77	03 11 27
03 13 11	G31.581	16 12 52	26.7	135.0	-2.6		-25.1	-24	77	No stop
03 16 26	---	16 16 08	27.1	135.9	-2.6		-24.7	171	80	03 13 12
03 16 26	J1834-0301	16 16 08	26.8	140.4	-2.3		-22.5	-24	80	No stop
03 18 11	=1831-030	16 17 53	27.0	140.9	-2.3		-22.3	81	82	03 16 27
03 18 11	G31.581	16 17 53	27.2	136.3	-2.5		-24.5	-24	82	No stop
03 21 26	---	16 21 09	27.6	137.1	-2.5		-24.1	171	85	03 18 12
03 22 06	J1834-0301	16 21 49	27.3	141.9	-2.2		-21.8	16	85	03 22 06
03 23 51	=1831-030	16 23 34	27.5	142.3	-2.2		-21.6	105	87	03 22 07
03 23 51	J1907+0127	16 23 34	28.2	131.8	-2.7		-26.6	-36	87	No stop
03 25 36	=1904+013	16 25 19	28.4	132.2	-2.7		-26.4	69	88	03 23 52
03 25 36	G33.980	16 25 19	29.4	136.0	-2.5		-24.6	-23	88	No stop
03 28 51	---	16 28 35	29.8	136.9	-2.4		-24.2	172	92	03 25 37
03 28 51	J1907+0127	16 28 35	28.8	133.0	-2.7		-26.0	-22	92	No stop
03 30 36	=1904+013	16 30 20	29.0	133.5	-2.6		-25.8	83	93	03 28 52
03 31 16	G34.751	16 31 00	30.4	136.8	-2.4		-24.3	19	93	03 31 16
03 34 31	---	16 34 16	30.8	137.6	-2.4		-23.9	195	96	03 31 17
03 34 31	J1907+0127	16 34 16	29.4	134.5	-2.6		-25.4	-21	96	No stop
03 36 16	=1904+013	16 36 01	29.6	135.0	-2.5		-25.2	84	98	03 34 32
03 36 16	G33.980	16 36 01	30.5	138.8	-2.3		-23.3	-23	98	No stop
03 39 31	---	16 39 17	30.8	139.7	-2.2		-22.8	172	101	03 36 17

Schedule for TORUN (Code Tr)

Page 4

Nature of methanol maser rings

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Thu 19 Mar 2015 Day 78 ---										
03 39 31	J1907+0127	16 39 17	29.9	135.8	-2.5		-24.7	-22	101	No stop
03 41 16	=1904+013	16 41 02	30.1	136.3	-2.4		-24.5	83	103	03 39 32
03 41 56	G34.751	16 41 42	31.5	139.6	-2.2		-22.9	19	103	03 41 56
03 45 11	---	16 44 58	31.8	140.5	-2.2		-22.5	195	106	03 41 57
03 45 11	J1907+0127	16 44 58	30.5	137.3	-2.4		-24.0	-21	106	No stop
03 46 56	=1904+013	16 46 43	30.7	137.8	-2.4		-23.8	84	108	03 45 12
03 47 56	J1834-0301	16 47 43	29.5	148.8	-1.8		-18.2	23	108	03 47 56
03 49 41	=1831-030	16 49 28	29.7	149.3	-1.8		-17.9	105	109	03 47 57
03 49 41	G31.581	16 49 28	30.3	144.6	-2.0		-20.3	-24	109	No stop
03 52 56	---	16 52 44	30.5	145.5	-1.9		-19.9	171	112	03 49 42
03 52 56	J1834-0301	16 52 44	29.9	150.2	-1.7		-17.4	-24	112	No stop
03 54 41	=1831-030	16 54 29	30.1	150.7	-1.7		-17.1	81	114	03 52 57
03 54 41	G31.581	16 54 29	30.7	146.0	-1.9		-19.6	-24	114	No stop
03 57 56	---	16 57 45	31.0	146.9	-1.9		-19.1	171	117	03 54 42
03 58 36	J1834-0301	16 58 25	30.3	151.7	-1.6		-16.5	16	117	03 58 36
04 00 21	=1831-030	17 00 10	30.5	152.2	-1.6		-16.3	105	119	03 58 37
04 00 21	J1907+0127	17 00 10	32.0	141.4	-2.1		-22.0	-36	119	No stop
04 02 06	=1904+013	17 01 55	32.2	141.9	-2.1		-21.8	69	121	04 00 22
04 02 06	G33.980	17 01 55	32.9	145.9	-1.9		-19.7	-23	121	No stop
04 05 21	---	17 05 11	33.2	146.8	-1.8		-19.2	172	124	04 02 07
04 05 21	J1907+0127	17 05 11	32.5	142.8	-2.0		-21.3	-23	124	No stop
04 07 06	=1904+013	17 06 56	32.6	143.3	-2.0		-21.1	82	125	04 05 22
04 07 46	G34.751	17 07 36	33.8	146.8	-1.8		-19.2	18	125	04 07 46
04 11 01	---	17 10 52	34.1	147.7	-1.7		-18.7	195	129	04 07 47
04 11 01	J1907+0127	17 10 52	33.0	144.4	-2.0		-20.5	-21	129	No stop
04 12 46	=1904+013	17 12 37	33.1	144.9	-1.9		-20.2	84	130	04 11 02
04 12 46	G33.980	17 12 37	33.7	149.0	-1.7		-18.0	-23	130	No stop
04 16 01	---	17 15 53	34.0	149.9	-1.6		-17.5	172	133	04 12 47
04 16 01	J1907+0127	17 15 53	33.4	145.8	-1.9		-19.8	-23	133	No stop
04 17 46	=1904+013	17 17 38	33.6	146.3	-1.8		-19.5	82	135	04 16 02

Schedule for TORUN (Code Tr)

Page 5

Nature of methanol maser rings

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart		
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC	

---	Thu 19 Mar 2015	Day	78	---							
04 18 26	G34.751	17 18 18	34.7	149.9	-1.6		-17.5	18	135	04 18 26	
04 21 41	---	17 21 34	34.9	150.8	-1.6		-17.0	195	138	04 18 27	
04 21 41	J1907+0127	17 21 34	33.9	147.4	-1.8		-18.9	-21	138	No stop	
04 23 26	=1904+013	17 23 19	34.0	147.9	-1.7		-18.6	84	140	04 21 42	
04 24 26	J1834-0301	17 24 19	32.0	159.1	-1.2		-12.4	23	140	04 24 26	
04 26 11	=1831-030	17 26 04	32.1	159.6	-1.1		-12.1	105	142	04 24 27	
04 26 11	G31.581	17 26 04	33.0	154.9	-1.4		-14.8	-24	142	No stop	
04 29 26	---	17 29 20	33.2	155.8	-1.3		-14.2	171	145	04 26 12	
04 29 26	J1834-0301	17 29 20	32.2	160.5	-1.1		-11.6	-25	145	No stop	
04 31 11	=1831-030	17 31 05	32.3	161.0	-1.1		-11.3	80	146	04 29 27	
04 31 11	G31.581	17 31 05	33.3	156.3	-1.3		-14.0	-24	146	No stop	
04 34 26	---	17 34 21	33.5	157.3	-1.3		-13.4	171	150	04 31 12	
04 35 06	J1834-0301	17 35 01	32.5	162.2	-1.0		-10.6	15	150	04 35 06	
04 36 51	=1831-030	17 36 46	32.6	162.7	-1.0		-10.3	105	151	04 35 07	
04 36 51	J1907+0127	17 36 46	35.0	151.8	-1.5		-16.5	-36	151	No stop	
04 38 36	=1904+013	17 38 31	35.2	152.3	-1.5		-16.2	69	153	04 36 52	
04 38 36	G33.980	17 38 31	35.5	156.5	-1.3		-13.8	-24	153	No stop	
04 41 51	---	17 41 47	35.7	157.5	-1.2		-13.3	171	156	04 38 37	
04 41 51	J1907+0127	17 41 47	35.4	153.2	-1.4		-15.7	-23	156	No stop	
04 43 36	=1904+013	17 43 32	35.5	153.8	-1.4		-15.4	82	158	04 41 52	
04 44 16	G34.751	17 44 12	36.4	157.5	-1.2		-13.3	18	158	04 44 16	
04 47 31	---	17 47 28	36.6	158.5	-1.1		-12.7	195	161	04 44 17	
04 47 31	J1907+0127	17 47 28	35.7	154.9	-1.3		-14.7	-22	161	No stop	
04 49 16	=1904+013	17 49 13	35.9	155.4	-1.3		-14.5	83	162	04 47 32	
04 49 16	G33.980	17 49 13	36.1	159.7	-1.1		-12.0	-24	162	No stop	
04 52 31	---	17 52 29	36.3	160.7	-1.0		-11.4	171	166	04 49 17	
04 52 31	J1907+0127	17 52 29	36.1	156.4	-1.3		-13.9	-23	166	No stop	
04 54 16	=1904+013	17 54 14	36.2	157.0	-1.2		-13.6	82	167	04 52 32	
04 54 56	G34.751	17 54 54	37.0	160.8	-1.0		-11.4	18	167	04 54 56	
04 58 11	---	17 58 10	37.1	161.8	-1.0		-10.8	195	170	04 54 57	

Schedule for TORUN (Code Tr)

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Nature of methanol maser rings

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

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TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Thu 19 Mar 2015 Day 78 ---										
04 58 11	J1907+0127	17 58 10	36.4	158.1	-1.2		-12.9	-22	170	No stop
04 59 56	=1904+013	17 59 55	36.5	158.7	-1.1		-12.6	83	172	04 58 12
05 00 56	J1834-0301	18 00 55	33.4	169.8	-0.6		-6.1	23	172	05 00 56
05 02 41	=1831-030	18 02 40	33.5	170.3	-0.5		-5.8	105	174	05 00 57
05 02 41	G31.581	18 02 40	34.9	165.7	-0.8		-8.5	-24	174	No stop
05 05 56	---	18 05 56	35.0	166.7	-0.7		-8.0	171	177	05 02 42
05 05 56	J1834-0301	18 05 56	33.6	171.3	-0.5		-5.2	-24	177	No stop
05 07 41	=1831-030	18 07 41	33.6	171.8	-0.5		-4.9	81	179	05 05 57
05 07 41	G31.581	18 07 41	35.1	167.2	-0.7		-7.6	-24	179	No stop
05 10 56	---	18 10 57	35.2	168.2	-0.6		-7.1	171	182	05 07 42
05 11 36	J1834-0301	18 11 37	33.7	173.0	-0.4		-4.2	16	182	05 11 36
05 13 21	=1831-030	18 13 22	33.7	173.5	-0.4		-3.9	105	183	05 11 37
05 13 21	J1907+0127	18 13 22	37.2	162.8	-0.9		-10.2	-36	183	No stop
05 15 06	=1904+013	18 15 07	37.2	163.3	-0.9		-9.9	69	185	05 13 22
05 15 06	G33.980	18 15 07	37.2	167.7	-0.7		-7.3	-24	185	No stop
05 18 21	---	18 18 23	37.3	168.7	-0.6		-6.7	171	188	05 15 07
05 18 21	J1907+0127	18 18 23	37.4	164.3	-0.8		-9.3	-24	188	No stop
05 20 06	=1904+013	18 20 08	37.4	164.9	-0.8		-9.0	81	190	05 18 22
05 20 46	G34.751	18 20 48	38.0	168.9	-0.6		-6.7	17	190	05 20 46
05 24 01	---	18 24 04	38.1	169.9	-0.5		-6.1	195	193	05 20 47
05 24 01	J1907+0127	18 24 04	37.6	166.1	-0.7		-8.3	-22	193	No stop
05 25 46	=1904+013	18 25 49	37.6	166.7	-0.7		-8.0	83	195	05 24 02
05 25 46	G33.980	18 25 49	37.5	171.0	-0.5		-5.4	-24	195	No stop
05 29 01	---	18 29 05	37.6	172.1	-0.4		-4.8	171	198	05 25 47
05 29 01	J1907+0127	18 29 05	37.8	167.7	-0.6		-7.4	-24	198	No stop
05 30 46	=1904+013	18 30 50	37.8	168.2	-0.6		-7.0	81	200	05 29 02
05 31 26	G34.751	18 31 30	38.3	172.2	-0.4		-4.7	17	200	05 31 26
05 34 41	---	18 34 46	38.3	173.3	-0.4		-4.0	195	203	05 31 27
05 34 41	J1907+0127	18 34 46	37.9	169.5	-0.6		-6.3	-22	203	No stop
05 36 26	=1904+013	18 36 31	38.0	170.0	-0.5		-6.0	83	204	05 34 42

Schedule for TORUN (Code Tr)

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Nature of methanol maser rings

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TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop				Early	Disk	TPStart		
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Thu 19 Mar 2015 Day 78 ---										
05 40 10	3C345	18 40 15	66.1	247.9	1.9		46.4	53	204	05 40 10
05 55 10	---	18 55 17	64.0	252.5	2.2		48.2	900	219	05 40 11
06 06 10	J1834-0301	19 06 19	33.5	189.4	0.5		5.6	513	219	06 06 10
06 07 55	=1831-030	19 08 04	33.5	189.9	0.6		5.9	105	220	06 06 11
06 07 55	G31.581	19 08 04	35.6	185.7	0.3		3.4	-23	220	No stop
06 11 10	---	19 11 20	35.6	186.7	0.4		4.0	172	224	06 07 56
06 11 10	J1834-0301	19 11 20	33.4	190.9	0.6		6.5	-23	224	No stop
06 12 55	=1831-030	19 13 05	33.3	191.4	0.6		6.8	82	225	06 11 11
06 12 55	G31.581	19 13 05	35.5	187.3	0.4		4.4	-23	225	No stop
06 16 10	---	19 16 21	35.5	188.3	0.4		4.9	172	228	06 12 56
06 16 50	J1834-0301	19 17 01	33.2	192.6	0.7		7.5	17	228	06 16 50
06 18 35	=1831-030	19 18 46	33.1	193.1	0.7		7.8	105	230	06 16 51
06 18 35	J1907+0127	19 18 46	38.3	183.4	0.2		2.1	-34	230	No stop
06 20 20	=1904+013	19 20 31	38.3	184.0	0.2		2.4	71	232	06 18 36
06 20 20	G33.980	19 20 31	37.6	188.3	0.4		5.0	-24	232	No stop
06 23 35	---	19 23 47	37.5	189.3	0.5		5.6	171	235	06 20 21
06 23 35	J1907+0127	19 23 47	38.3	185.0	0.3		3.0	-23	235	No stop
06 25 20	=1904+013	19 25 32	38.3	185.6	0.3		3.4	82	237	06 23 36
06 26 00	G34.751	19 26 12	38.1	189.7	0.5		5.8	17	237	06 26 00
06 29 15	---	19 29 28	38.0	190.7	0.6		6.4	195	240	06 26 01
06 29 15	J1907+0127	19 29 28	38.2	186.8	0.4		4.1	-22	240	No stop
06 31 00	=1904+013	19 31 13	38.2	187.4	0.4		4.4	83	241	06 29 16
06 31 00	G33.980	19 31 13	37.3	191.7	0.6		7.0	-24	241	No stop
06 34 15	---	19 34 29	37.2	192.7	0.7		7.6	171	244	06 31 01
06 34 15	J1907+0127	19 34 29	38.1	188.4	0.4		5.1	-23	244	No stop
06 36 00	=1904+013	19 36 14	38.0	189.0	0.5		5.4	82	246	06 34 16
06 36 40	G34.751	19 36 54	37.8	193.0	0.7		7.8	17	246	06 36 40
06 39 55	---	19 40 10	37.7	194.0	0.7		8.4	195	249	06 36 41
06 39 55	J1907+0127	19 40 10	38.0	190.2	0.5		6.1	-22	249	No stop
06 41 40	=1904+013	19 41 55	37.9	190.8	0.6		6.4	83	251	06 39 56

Schedule for TORUN (Code Tr)

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Nature of methanol maser rings

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Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Thu 19 Mar 2015 Day 78 ---										
06 42 40	J1834-0301	19 42 55	32.1	200.1	1.1		11.9	24	251	06 42 40
06 44 25	=1831-030	19 44 40	32.0	200.6	1.2		12.2	105	253	06 42 41
06 44 25	G31.581	19 44 40	34.5	196.8	0.9		10.0	-23	253	No stop
06 47 40	---	19 47 56	34.4	197.8	1.0		10.6	172	256	06 44 26
06 47 40	J1834-0301	19 47 56	31.8	201.6	1.2		12.8	-24	256	No stop
06 49 25	=1831-030	19 49 41	31.7	202.1	1.2		13.1	81	257	06 47 41
06 49 25	G31.581	19 49 41	34.3	198.3	1.0		10.9	-23	257	No stop
06 52 40	---	19 52 57	34.2	199.3	1.1		11.4	172	261	06 49 26
06 53 20	J1834-0301	19 53 37	31.5	203.2	1.3		13.7	16	261	06 53 20
06 55 05	=1831-030	19 55 22	31.4	203.7	1.3		14.0	105	262	06 53 21
06 55 05	J1907+0127	19 55 22	37.5	195.0	0.8		8.9	-36	262	No stop
06 56 50	=1904+013	19 57 07	37.4	195.5	0.8		9.3	69	264	06 55 06
06 56 50	G33.980	19 57 07	36.2	199.6	1.0		11.6	-23	264	No stop
07 00 05	---	20 00 23	36.1	200.6	1.1		12.2	172	267	06 56 51
07 00 05	J1907+0127	20 00 23	37.2	196.5	0.9		9.8	-23	267	No stop
07 01 50	=1904+013	20 02 08	37.2	197.1	0.9		10.2	82	269	07 00 06
07 02 30	G34.751	20 02 48	36.7	201.0	1.1		12.4	17	269	07 02 30
07 05 45	---	20 06 04	36.5	202.0	1.2		13.0	195	272	07 02 31
07 05 45	J1907+0127	20 06 04	37.0	198.3	1.0		10.9	-22	272	No stop
07 07 30	=1904+013	20 07 49	36.9	198.8	1.0		11.2	83	274	07 05 46
07 07 30	G33.980	20 07 49	35.7	202.9	1.2		13.5	-23	274	No stop
07 10 45	---	20 11 05	35.5	203.8	1.3		14.0	172	277	07 07 31
07 10 45	J1907+0127	20 11 05	36.7	199.8	1.1		11.8	-23	277	No stop
07 12 30	=1904+013	20 12 50	36.7	200.4	1.1		12.1	82	278	07 10 46
07 13 10	G34.751	20 13 30	36.0	204.3	1.3		14.3	18	278	07 13 10
07 16 25	---	20 16 46	35.8	205.2	1.3		14.8	195	281	07 13 11
07 16 25	J1907+0127	20 16 46	36.4	201.6	1.1		12.8	-22	281	No stop
07 18 10	=1904+013	20 18 31	36.3	202.1	1.2		13.1	83	283	07 16 26
07 19 10	J1834-0301	20 19 31	29.8	210.4	1.7		17.7	22	283	07 19 10
07 20 55	=1831-030	20 21 16	29.6	210.9	1.8		18.0	105	285	07 19 11

Schedule for TORUN (Code Tr)

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Nature of methanol maser rings

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

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TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart		
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC	

---	Thu 19 Mar 2015	Day	78	---							
07 20 55	G31.581	20 21 16	32.5	207.5	1.5		16.1	-24	285	No stop	
07 24 10	---	20 24 32	32.2	208.4	1.6		16.6	171	288	07 20 56	
07 24 10	J1834-0301	20 24 32	29.4	211.8	1.8		18.5	-25	288	No stop	
07 25 55	=1831-030	20 26 17	29.2	212.3	1.9		18.7	80	290	07 24 11	
07 25 55	G31.581	20 26 17	32.1	208.9	1.6		16.9	-25	290	No stop	
07 29 10	---	20 29 33	31.9	209.9	1.7		17.4	170	293	07 25 56	
07 29 50	J1834-0301	20 30 13	28.9	213.3	1.9		19.3	15	293	07 29 50	
07 31 35	=1831-030	20 31 58	28.8	213.8	1.9		19.5	105	294	07 29 51	
07 31 35	J1907+0127	20 31 58	35.5	206.1	1.4		15.3	-39	294	No stop	
07 33 20	=1904+013	20 33 43	35.4	206.6	1.4		15.6	66	296	07 31 36	
07 33 20	G33.980	20 33 43	33.9	210.5	1.7		17.7	-23	296	No stop	
07 36 35	---	20 36 59	33.7	211.4	1.7		18.2	172	299	07 33 21	
07 36 35	J1907+0127	20 36 59	35.2	207.6	1.5		16.2	-22	299	No stop	
07 38 20	=1904+013	20 38 44	35.1	208.1	1.5		16.4	83	301	07 36 36	
07 39 00	G34.751	20 39 24	34.2	211.9	1.7		18.5	18	301	07 39 00	
07 42 15	---	20 42 40	34.0	212.8	1.8		19.0	195	304	07 39 01	
07 42 15	J1907+0127	20 42 40	34.8	209.3	1.6		17.1	-22	304	No stop	
07 44 00	=1904+013	20 44 25	34.6	209.8	1.6		17.3	83	306	07 42 16	
07 44 00	G33.980	20 44 25	33.1	213.5	1.8		19.4	-22	306	No stop	
07 47 15	---	20 47 41	32.8	214.4	1.9		19.8	173	309	07 44 01	
07 47 15	J1907+0127	20 47 41	34.4	210.7	1.7		17.9	-22	309	No stop	
07 49 00	=1904+013	20 49 26	34.3	211.2	1.7		18.1	83	311	07 47 16	
07 49 40	G34.751	20 50 06	33.3	214.9	1.9		20.1	18	311	07 49 40	
07 52 55	---	20 53 22	33.0	215.8	2.0		20.6	195	314	07 49 41	
07 52 55	J1907+0127	20 53 22	34.0	212.3	1.8		18.7	-21	314	No stop	
07 54 40	=1904+013	20 55 07	33.8	212.8	1.8		19.0	84	315	07 52 56	
07 55 40	J1834-0301	20 56 07	26.6	220.2	2.4		22.8	19	315	07 55 40	
07 57 25	=1831-030	20 57 52	26.4	220.6	2.4		23.0	105	317	07 55 41	
07 57 25	G31.581	20 57 52	29.5	217.6	2.1		21.5	-25	317	No stop	
08 00 40	---	21 01 08	29.2	218.5	2.2		21.9	170	320	07 57 26	

Schedule for TORUN (Code Tr)

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Nature of methanol maser rings

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SYNC: Time correlator 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 19 Mar 2015 Day 78 ---										
08 00 40	J1834-0301	21 01 08	26.1	221.4	2.4		23.5	-26	320	No stop
08 02 25	=1831-030	21 02 53	25.9	221.9	2.5		23.7	79	322	08 00 41
08 02 25	G31.581	21 02 53	29.0	219.0	2.2		22.2	-25	322	No stop
08 05 40	---	21 06 09	28.7	219.8	2.3		22.6	170	325	08 02 26
08 06 20	J1834-0301	21 06 49	25.5	222.9	2.5		24.2	14	325	08 06 20
08 08 05	=1831-030	21 08 34	25.3	223.3	2.6		24.4	105	327	08 06 21
08 08 05	J1907+0127	21 08 34	32.7	216.6	2.0		21.0	-41	327	No stop
08 09 50	=1904+013	21 10 19	32.5	217.1	2.0		21.2	64	328	08 08 06
08 09 50	G33.980	21 10 19	30.7	220.6	2.3		23.0	-22	328	No stop
08 13 05	---	21 13 35	30.4	221.5	2.3		23.4	173	331	08 09 51
08 13 05	J1907+0127	21 13 35	32.2	218.0	2.1		21.7	-22	331	No stop
08 14 50	=1904+013	21 15 20	32.0	218.5	2.1		21.9	83	333	08 13 06
08 15 30	G34.751	21 16 00	30.9	222.0	2.3		23.7	19	333	08 15 30
08 18 45	---	21 19 16	30.6	222.8	2.4		24.1	195	336	08 15 31
08 18 45	J1907+0127	21 19 16	31.7	219.5	2.2		22.5	-21	336	No stop
08 20 30	=1904+013	21 21 01	31.5	220.0	2.2		22.7	84	338	08 18 46
08 20 30	G33.980	21 21 01	29.6	223.4	2.4		24.4	-22	338	No stop
08 23 45	---	21 24 17	29.3	224.3	2.5		24.8	173	341	08 20 31
08 23 45	J1907+0127	21 24 17	31.2	220.9	2.3		23.2	-21	341	No stop
08 25 30	=1904+013	21 26 02	31.0	221.4	2.3		23.4	84	343	08 23 46
08 26 10	G34.751	21 26 42	29.8	224.8	2.5		25.0	19	343	08 26 10
08 29 25	---	21 29 58	29.5	225.7	2.6		25.4	195	346	08 26 11
08 29 25	J1907+0127	21 29 58	30.6	222.4	2.4		23.9	-21	346	No stop
08 31 10	=1904+013	21 31 43	30.4	222.9	2.4		24.1	84	348	08 29 26
08 32 10	J1834-0301	21 32 43	22.7	229.3	3.0		27.1	17	348	08 32 10
08 33 55	=1831-030	21 34 28	22.5	229.7	3.0		27.3	105	349	08 32 11
08 33 55	G31.581	21 34 28	25.8	227.1	2.7		26.1	-26	349	No stop
08 37 10	---	21 37 44	25.4	227.9	2.8		26.5	169	352	08 33 56
08 37 10	J1834-0301	21 37 44	22.1	230.5	3.0		27.6	-26	352	No stop
08 38 55	=1831-030	21 39 29	21.9	230.9	3.1		27.8	79	354	08 37 11

Schedule for TORUN (Code Tr)

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Nature of methanol maser rings

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Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Thu 19 Mar 2015 Day 78 ---										
08 38 55	G31.581	21 39 29	25.3	228.3	2.8		26.7	-26	354	No stop
08 42 10	---	21 42 45	24.9	229.1	2.9		27.0	169	357	08 38 56
08 42 50	J1834-0301	21 43 25	21.5	231.8	3.1		28.2	14	357	08 42 50
08 44 35	=1831-030	21 45 10	21.3	232.2	3.2		28.4	105	359	08 42 51
08 44 35	J1907+0127	21 45 10	29.0	226.4	2.6		25.8	-43	359	No stop
08 46 20	=1904+013	21 46 55	28.8	226.8	2.6		26.0	62	361	08 44 36
08 46 20	G33.980	21 46 55	26.8	230.1	2.9		27.4	-22	361	No stop
08 49 35	---	21 50 11	26.4	230.9	2.9		27.8	173	364	08 46 21
08 49 35	J1907+0127	21 50 11	28.5	227.7	2.7		26.4	-21	364	No stop
08 51 20	=1904+013	21 51 56	28.3	228.1	2.7		26.6	84	365	08 49 36
08 52 00	G34.751	21 52 36	26.9	231.4	2.9		28.0	19	365	08 52 00
08 55 15	---	21 55 52	26.5	232.2	3.0		28.3	195	369	08 52 01
08 55 15	J1907+0127	21 55 52	27.8	229.1	2.8		27.0	-21	369	No stop
08 57 00	=1904+013	21 57 37	27.6	229.6	2.8		27.2	84	370	08 55 16
08 57 00	G33.980	21 57 37	25.6	232.7	3.1		28.5	-22	370	No stop
09 00 15	---	22 00 53	25.2	233.5	3.1		28.9	173	373	08 57 01
09 00 15	J1907+0127	22 00 53	27.3	230.4	2.9		27.6	-22	373	No stop
09 02 00	=1904+013	22 02 38	27.1	230.8	2.9		27.7	83	375	09 00 16
09 02 40	G34.751	22 03 18	25.6	234.0	3.1		29.1	19	375	09 02 40
09 05 55	---	22 06 34	25.2	234.8	3.2		29.4	195	378	09 02 41
09 05 55	J1907+0127	22 06 34	26.6	231.8	3.0		28.2	-20	378	No stop
09 07 40	=1904+013	22 08 19	26.4	232.2	3.0		28.3	85	380	09 05 56
09 08 40	J1834-0301	22 09 19	18.3	237.8	3.6		30.6	16	380	09 08 40
09 10 25	=1831-030	22 11 04	18.1	238.2	3.6		30.7	105	381	09 08 41
09 10 25	G31.581	22 11 04	21.5	235.9	3.4		29.8	-27	381	No stop
09 13 40	---	22 14 20	21.1	236.7	3.4		30.1	168	385	09 10 26
09 13 40	J1834-0301	22 14 20	17.7	238.9	3.7		31.0	-27	385	No stop
09 15 25	=1831-030	22 16 05	17.4	239.3	3.7		31.1	78	386	09 13 41
09 15 25	G31.581	22 16 05	20.9	237.1	3.4		30.3	-27	386	No stop
09 18 40	---	22 19 21	20.5	237.8	3.5		30.5	168	389	09 15 26

Schedule for TORUN (Code Tr)

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Nature of methanol maser rings

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart		
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC	

---	Thu 19 Mar 2015	Day	78	---							
09 19 20	J1834-0301	22 20 01	16.9	240.2	3.7		31.5	13	389	09 19 20	
09 21 05	=1831-030	22 21 46	16.7	240.6	3.8		31.6	105	391	09 19 21	
09 21 05	J1907+0127	22 21 46	24.8	235.5	3.2		29.7	-44	391	No stop	
09 22 50	=1904+013	22 23 31	24.5	235.9	3.3		29.8	61	393	09 21 06	
09 22 50	G33.980	22 23 31	22.3	238.8	3.5		30.9	-22	393	No stop	
09 26 05	---	22 26 47	21.9	239.6	3.5		31.2	173	396	09 22 51	
09 26 05	J1907+0127	22 26 47	24.1	236.7	3.3		30.1	-22	396	No stop	
09 27 50	=1904+013	22 28 32	23.9	237.1	3.3		30.3	83	398	09 26 06	
09 28 30	G34.751	22 29 12	22.4	240.1	3.6		31.4	20	398	09 28 30	
09 31 45	---	22 32 28	22.0	240.9	3.6		31.7	195	401	09 28 31	
09 31 45	J1907+0127	22 32 28	23.4	238.0	3.4		30.6	-20	401	No stop	
09 33 30	=1904+013	22 34 13	23.2	238.4	3.4		30.8	85	402	09 31 46	
09 33 30	G33.980	22 34 13	20.9	241.3	3.7		31.8	-22	402	No stop	
09 36 45	---	22 37 29	20.5	242.0	3.7		32.0	173	406	09 33 31	
09 36 45	J1907+0127	22 37 29	22.8	239.2	3.5		31.1	-22	406	No stop	
09 38 30	=1904+013	22 39 14	22.5	239.6	3.5		31.2	83	407	09 36 46	
09 39 10	G34.751	22 39 54	21.0	242.6	3.7		32.2	20	407	09 39 10	
09 42 25	---	22 43 10	20.5	243.3	3.8		32.5	195	410	09 39 11	
09 42 25	J1907+0127	22 43 10	22.0	240.5	3.6		31.5	-20	410	No stop	
09 44 10	=1904+013	22 44 55	21.8	240.9	3.6		31.7	85	412	09 42 26	
09 45 10	J1834-0301	22 45 55	13.5	245.9	4.2		33.3	15	412	09 45 10	
09 46 55	=1831-030	22 47 40	13.2	246.3	4.2		33.4	105	414	09 45 11	
09 46 55	G31.581	22 47 40	16.8	244.2	4.0		32.7	-27	414	No stop	
09 50 10	---	22 50 56	16.3	244.9	4.0		32.9	168	417	09 46 56	
09 50 10	J1834-0301	22 50 56	12.8	246.9	4.3		33.6	-27	417	No stop	
09 51 55	=1831-030	22 52 41	12.5	247.3	4.3		33.7	78	419	09 50 11	
09 51 55	G31.581	22 52 41	16.1	245.3	4.1		33.1	-27	419	No stop	
09 55 10	---	22 55 57	15.6	246.0	4.1		33.3	168	422	09 51 56	
09 55 50	J1834-0301	22 56 37	12.0	248.2	4.4		33.9	13	422	09 55 50	
09 57 35	=1831-030	22 58 22	11.7	248.5	4.4		34.0	105	423	09 55 51	

Schedule for TORUN (Code Tr)

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Nature of methanol maser rings

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop				Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA UP	ParA	Dwell	GBytes	SYNC

--- Thu 19 Mar 2015 Day 78 ---									
09 57 35	J1907+0127	22 58 22	20.0	243.9	3.8	32.7	-45	423	No stop
09 59 20	=1904+013	23 00 07	19.8	244.3	3.9	32.8	60	425	09 57 36
09 59 20	G33.980	23 00 07	17.4	247.1	4.1	33.6	-23	425	No stop
10 02 35	---	23 03 23	17.0	247.8	4.2	33.8	172	428	09 59 21
10 02 35	J1907+0127	23 03 23	19.3	245.1	3.9	33.0	-23	428	No stop
10 04 20	=1904+013	23 05 08	19.1	245.4	4.0	33.1	82	430	10 02 36
10 05 00	G34.751	23 05 48	17.4	248.3	4.2	33.9	20	430	10 05 00
10 08 15	---	23 09 04	17.0	249.0	4.2	34.1	195	433	10 05 01
10 08 15	J1907+0127	23 09 04	18.6	246.3	4.0	33.4	-20	433	No stop
10 10 00	=1904+013	23 10 49	18.3	246.7	4.0	33.5	85	435	10 08 16
10 10 00	G33.980	23 10 49	16.0	249.4	4.3	34.2	-23	435	No stop
10 13 15	---	23 14 05	15.5	250.1	4.3	34.4	172	438	10 10 01
10 13 15	J1907+0127	23 14 05	17.9	247.4	4.1	33.7	-23	438	No stop
10 15 00	=1904+013	23 15 50	17.6	247.8	4.1	33.8	82	439	10 13 16
10 15 40	G34.751	23 16 30	15.9	250.6	4.3	34.5	20	439	10 15 40
10 18 55	---	23 19 46	15.5	251.3	4.4	34.7	195	443	10 15 41
10 18 55	J1907+0127	23 19 46	17.1	248.6	4.2	34.0	-19	443	No stop
10 20 40	=1904+013	23 21 31	16.8	249.0	4.2	34.1	86	444	10 18 56
10 20 40	G33.980	23 21 31	14.4	251.7	4.5	34.8	-23	444	No stop
10 23 55	---	23 24 46	14.0	252.4	4.5	34.9	172	447	10 20 41
10 23 55	J1907+0127	23 24 46	16.4	249.7	4.3	34.3	-23	447	No stop
10 25 40	=1904+013	23 26 32	16.1	250.1	4.3	34.4	82	449	10 23 56
10 26 20	G34.751	23 27 12	14.4	252.9	4.5	35.0	20	449	10 26 20
10 29 35	---	23 30 27	13.9	253.6	4.6	35.2	195	452	10 26 21
10 29 35	J1907+0127	23 30 27	15.6	250.9	4.4	34.6	-20	452	No stop
10 31 20	=1904+013	23 32 13	15.3	251.3	4.4	34.7	85	454	10 29 36
10 31 20	G33.980	23 32 13	12.9	253.9	4.6	35.2	-23	454	No stop
10 34 35	---	23 35 28	12.4	254.6	4.7	35.4	172	457	10 31 21
10 34 35	J1907+0127	23 35 28	14.9	252.0	4.5	34.8	-23	457	No stop
10 36 20	=1904+013	23 37 13	14.6	252.4	4.5	34.9	82	459	10 34 36

Schedule for TORUN (Code Tr)

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Nature of methanol maser rings

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Thu 19 Mar 2015 Day 78 ---										
10 37 00	G34.751	23 37 54	12.9	255.1	4.7		35.5	20	459	10 37 00
10 40 15	---	23 41 09	12.4	255.8	4.8		35.6	195	462	10 37 01
10 40 15	J1907+0127	23 41 09	14.0	253.2	4.6		35.1	-20	462	No stop
10 42 00	=1904+013	23 42 54	13.8	253.6	4.6		35.2	85	463	10 40 16
10 43 00	J1834-0301	23 43 55	5.2	257.9	5.1		36.0	14	463	10 43 00
10 44 45	=1831-030	23 45 40	4.9	258.3	5.2		36.1	105	465	10 43 01
10 44 45	G31.581	23 45 40	8.6	256.4	4.9		35.7	-27	465	No stop
10 48 00	---	23 48 55	8.1	257.1	5.0		35.8	168	468	10 44 46
10 48 00	J1834-0301	23 48 55	4.5	258.9	5.2		36.2	-28	468	No stop
10 49 45	=1831-030	23 50 41	4.2	259.3	5.3		36.2	77	470	10 48 01
10 49 45	G31.581	23 50 41	7.8	257.5	5.0		35.9	-27	470	No stop
10 53 00	---	23 53 56	7.4	258.1	5.1		36.0	168	473	10 49 46
10 53 40	J1834-0301	23 54 36	3.6	260.1	5.3		36.3	12	473	10 53 40
10 55 25	=1831-030	23 56 22	3.4	260.4	5.4		36.4	105	475	10 53 41
10 56 20	J1907+0127	23 57 17	11.7	256.6	4.8		35.8	10	475	10 56 20
10 58 05	=1904+013	23 59 02	11.4	256.9	4.9		35.8	105	476	10 56 21
10 58 05	G33.980	23 59 02	9.0	259.5	5.1		36.2	-23	476	No stop
11 01 20	---	00 02 18	8.5	260.1	5.1		36.3	172	480	10 58 06
11 01 20	J1907+0127	00 02 18	11.0	257.6	4.9		35.9	-23	480	No stop
11 03 05	=1904+013	00 04 03	10.7	258.0	4.9		36.0	82	481	11 01 21
11 03 45	G34.751	00 04 43	8.9	260.7	5.1		36.4	20	481	11 03 45
11 07 00	---	00 07 59	8.4	261.3	5.2		36.4	195	484	11 03 46
11 07 00	J1907+0127	00 07 59	10.1	258.8	5.0		36.1	-20	484	No stop
11 08 45	=1904+013	00 09 44	9.9	259.1	5.0		36.2	85	486	11 07 01

SETUP FILE INFORMATION:

NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

==== Setup file: sess115M1.EB052

Setup group: 7 Station: TORUN Total bit rate: 128
 Format: MARK5B Bits per sample: 2 Sample rate: 4.000
 Number of channels: 16 DBE type: DBBC_DDC Speedup factor: 1.00

Disk used to record data.

1st LO=	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00
	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00	5900.00
Net SB=	L	L	U	U	L	L	U	U	U
	L	L	U	U	L	L	U	U	U
IF SB =	U	U	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	LCP
	RCP	LCP	RCP	LCP	RCP	LCP	RCP	LCP	LCP
BBC =	1	5	1	5	2	6	2	6	6
	3	7	3	7	4	8	4	8	8
BBC SB=	L	L	U	U	L	L	U	U	U
	L	L	U	U	L	L	U	U	U
IF =	A1	B1	A1	B1	A1	B1	A1	B1	B1
	A1	B1	A1	B1	A1	B1	A1	B1	B1

The following frequency sets based on these setups were used.

Frequency Set: 6 Based on FREQ, BW, and/or DOPPLER in schedule. Used with PCAL = off

LO sum=	6664.92	6664.92	6664.92	6664.92	6668.92	6668.92	6668.92	6668.92
	6672.92	6672.92	6672.92	6672.92	6676.92	6676.92	6676.92	6676.92
BBC fr=	764.92	764.92	764.92	764.92	768.92	768.92	768.92	768.92
	772.92	772.92	772.92	772.92	776.92	776.92	776.92	776.92
Bandwd=	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00

Matching frequency sets: 6

Track assignments are:

track1= 18, 26, 2, 10, 20, 28, 4, 12, 22, 30, 6, 14, 24, 32, 8, 16
 barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	Source position (RA/Dec) (J2000)	(Date)	Error (mas)
* G31.581	18 46 06.787946 -01 13 28.37087	* 18 48 41.941000 *-01 10 02.52800	18 49 29.000535 -01 08 56.94730	0.00 0.00
* G33.980	18 50 52.244185 00 51 39.90379	* 18 53 25.018300 * 00 55 25.97600	18 54 11.330498 00 56 36.99242	0.00 0.00
* G34.751	18 52 33.186719 01 30 43.05444	* 18 55 05.223000 * 01 34 36.26100	18 55 51.302431 01 35 49.22579	0.00 0.00
J1642+3948	16 41 17.606228	* 16 42 58.809965	16 43 30.038651	0.77
* 3C345	39 54 10.81496	* 39 48 36.99402	39 46 46.42700	0.52
* J1834-0301	18 31 36.772712	* 18 34 14.074653	18 35 01.869070	0.12
1831-030	-03 03 43.12343	*-03 01 19.62724	-03 00 32.33166	0.16
* J1907+0127	19 04 39.788400	* 19 07 11.996158	19 07 58.062482	0.24
1904+013	01 22 24.59956	* 01 27 08.96154	01 28 37.45882	0.31

rk08sztr

RADIOASTRON AGN SURVEY

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Observing mode: C/L-band, dual-pol

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
 Early: Seconds between end of slew and start. Dwell: On source seconds.
 Disk: GBytes recorded to this point.
 TPStart: Recording start time. Frequencies are LO sum (band edge).
 SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Thu 19 Mar 2015 Day 78 ---										
----- L-band VLBI scans -----										
Next scan frequencies: 1668.00 1668.00 1668.00 1668.00										
Next BBC frequencies: 732.00 732.00 732.00 732.00										
Next scan bandwidths: 16.00 16.00 16.00 16.00										
13 00 00	0716+714	02 01 17	52.1	31.0	-5.4		-74.6	0	0	13 00 00
13 14 30	---	02 15 50	53.2	31.4	-5.1		-77.7	870	28	13 00 01
13 15 00	0716+714	02 16 20	53.3	31.4	-5.1		-77.8	24	28	13 15 00
13 29 30	---	02 30 52	54.4	31.8	-4.9		-80.9	870	56	13 15 01
13 30 00	0716+714	02 31 22	54.4	31.8	-4.9		-81.0	24	56	13 30 00
13 44 30	---	02 45 55	55.6	32.1	-4.6		-84.3	870	84	13 30 01
13 45 00	0716+714	02 46 25	55.6	32.1	-4.6		-84.4	24	84	13 45 00
14 00 00	---	03 01 27	56.8	32.2	-4.4		-87.8	900	112	13 45 01

SETUP FILE INFORMATION:

NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

=====
Setup file: ra18cm2.set

Setup group: 3	Station: TORUN	Total bit rate: 256
Format: MKIV1:4	Bits per sample: 2	Sample rate: 32.000
Number of channels: 4	DBE type:	Speedup factor: 1.00

Disk used to record data.

1st LO=	2400.00	2400.00	2400.00	2400.00
Net SB=	L	L	U	U
IF SB =	L	L	L	L
Pol. =	RCP	LCP	RCP	LCP
BBC =	1	2	1	2
BBC SB=	U	U	L	L
IF =	C	A	C	A

The following frequency sets based on these setups were used.

Frequency Set: 2 Setup file default. Used with PCAL = 1MHz
 LO sum= 1668.00 1668.00 1668.00 1668.00
 BBC fr= 732.00 732.00 732.00 732.00
 Bandwd= 16.00 16.00 16.00 16.00
 Matching frequency sets: 2

Track assignments are:

track1= 2, 18, 3, 19
 barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.448489	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 52.12785	0.00
	fake circumpolar target for a TS to look at			
* 0716+714	07 16 13.029739	* 07 21 53.448474	07 23 37.935924	0.00
J0721+7120	71 26 15.17406	* 71 20 36.36340	71 18 54.04583	0.00
	./rk08sz_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 42370 observations, RA-A02-10, RA-A02-1			

EFFECT OF SOLAR CORONA

The solar corona can cause unstable phases for sources too close to the Sun. SCHED provides warnings at individual scans for distances less than 10 degrees. The distance from the Sun to each source in this schedule is:

Source	Sun distance (deg)
0716+714	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 $60 \text{ deg } F^{-0.6}$ where F is in GHz.

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg


```

1st LO= 21500.00 21500.00 21500.00 21500.00
Net SB=      L      L      U      U
IF SB =      U      U      U      U
Pol.  =      RCP     LCP     RCP     LCP
BBC   =      1      2      1      2
BBC SB=      L      L      U      U
IF    =      C      A      C      A

```

The following frequency sets based on these setups were used.

```

Frequency Set:  3  Setup file default.  Used with PCAL = 1MHz
LO sum=  22236.00 22236.00 22236.00 22236.00
BBC fr=   736.00  736.00  736.00  736.00
Bandwd=   16.00  16.00  16.00  16.00
Matching frequency sets:  3

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

==== Setup file: ra6cm2.set

```

Setup group:  2      Station: TORUN      Total bit rate:  256
Format: MKIV1:4      Bits per sample:  2      Sample rate: 32.000
Number of channels:  4  DBE type:      Speedup factor:  1.00

```

Disk used to record data.

```

1st LO=  4100.00  4100.00  4100.00  4100.00
Net SB=      L      L      U      U
IF SB =      U      U      U      U
Pol.  =      RCP     LCP     RCP     LCP
BBC   =      1      2      1      2
BBC SB=      L      L      U      U
IF    =      C      A      C      A

```

The following frequency sets based on these setups were used.

```

Frequency Set:  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)	Source position (RA/Dec) (J2000)	(Date)	Error (mas)
* 0716+714	07 16 13.029739	* 07 21 53.448474	07 23 37.907362	0.00
J0721+7120	71 26 15.17406	* 71 20 36.36340	71 18 54.10340	0.00

rk08tbtr

RADIOASTRON AGN SURVEY

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Observing mode: C/L-band, dual-pol

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Fri 20 Mar 2015 Day 79 ---

----- C-band VLBI scans -----

Next scan frequencies: 4836.00 4836.00 4836.00 4836.00
Next BBC frequencies: 736.00 736.00 736.00 736.00
Next scan bandwidths: 16.00 16.00 16.00 16.00

03 00 00 1442+101 16 03 35 44.1 207.1 1.3 16.1 0 0 03 00 00
03 12 00 --- 16 15 37 43.2 211.0 1.5 18.3 720 23 03 00 01
03 12 30 1442+101 16 16 07 43.2 211.2 1.5 18.4 24 23 03 12 30
03 20 00 --- 16 23 39 42.6 213.5 1.6 19.7 450 37 03 12 31

----- L-band VLBI scans -----

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 732.00 732.00 732.00 732.00

03 25 00 1442+101 16 28 40 42.1 215.1 1.7 20.5 293 37 03 25 00
03 37 00 --- 16 40 41 41.0 218.8 1.9 22.5 720 60 03 25 01
03 37 30 1442+101 16 41 12 41.0 218.9 1.9 22.5 24 60 03 37 30
03 50 00 --- 16 53 44 39.8 222.7 2.1 24.4 750 84 03 37 31

SETUP FILE INFORMATION:

NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

==== Setup file: ra6cm2.set

Setup group: 2 Station: TORUN Total bit rate: 256
Format: MKIV1:4 Bits per sample: 2 Sample rate: 32.000
Number of channels: 4 DBE type: Speedup factor: 1.00

Disk used to record data.

```

1st LO=  4100.00  4100.00  4100.00  4100.00
Net SB=           L           L           U           U
IF SB =           U           U           U           U
Pol.  =          RCP          LCP          RCP          LCP
BBC   =           1           2           1           2
BBC SB=          L           L           U           U
IF    =           C           A           C           A

```

The following frequency sets based on these setups were used.

```

Frequency Set:  1  Setup file default.  Used with PCAL = 1MHz
LO sum=  4836.00  4836.00  4836.00  4836.00
BBC fr=   736.00  736.00  736.00  736.00
Bandwd=   16.00  16.00  16.00  16.00
Matching frequency sets:  1

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

==== Setup file: ra18cm2.set

```

Setup group:  5          Station: TORUN          Total bit rate:  256
Format: MKIV1:4          Bits per sample:  2          Sample rate: 32.000
Number of channels:  4    DBE type:              Speedup factor:  1.00

```

Disk used to record data.

```

1st LO=  2400.00  2400.00  2400.00  2400.00
Net SB=           L           L           U           U
IF SB =           L           L           L           L
Pol.  =          RCP          LCP          RCP          LCP
BBC   =           1           2           1           2
BBC SB=          U           U           L           L
IF    =           C           A           C           A

```

The following frequency sets based on these setups were used.

```

Frequency Set:  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)	Source position (RA/Dec) (J2000)	(Date)	Error (mas)
* 1442+101	14 42 50.483804	* 14 45 16.465253	14 46 01.945200	0.00
J1445+0958	10 11 12.14439	* 09 58 36.07265	09 54 41.68391	0.00

rk08tctr

RADIOASTRON AGN SURVEY

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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 20 Mar 2015 Day 79 ---

----- L-band VLBI scans -----

Next scan frequencies:	1668.00	1668.00	1668.00	1668.00							
Next BBC frequencies:	732.00	732.00	732.00	732.00							
Next scan bandwidths:	16.00	16.00	16.00	16.00							
20 10 00	0917+449	09 16 25	81.5	173.3	-0.1		-5.7	0	0	20 10 00	
20 22 00	---	09 28 27	81.5	187.8	0.1		6.5	720	23	20 10 01	
20 22 30	0917+449	09 28 57	81.5	188.4	0.1		7.0	22	23	20 22 30	
20 34 30	---	09 40 59	81.0	202.1	0.3		18.5	720	46	20 22 31	
20 35 00	0917+449	09 41 29	81.0	202.6	0.3		18.9	22	46	20 35 00	
20 47 00	---	09 53 31	80.1	214.5	0.5		28.6	720	69	20 35 01	
20 47 30	0917+449	09 54 01	80.0	215.0	0.5		28.9	22	69	20 47 30	
21 00 00	---	10 06 33	78.8	225.2	0.7		36.8	750	93	20 47 31	

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:	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=  2400.00  2400.00  2400.00  2400.00
Net SB=           L           L           U           U
IF SB =           L           L           L           L
Pol.  =          RCP          LCP          RCP          LCP
BBC   =           1           2           1           2
BBC SB=           U           U           L           L
IF    =           C           A           C           A

```

The following frequency sets based on these setups were used.

```

Frequency Set:  1  Setup file default.  Used with PCAL = 1MHz
LO sum=  1668.00  1668.00  1668.00  1668.00
BBC fr=   732.00   732.00   732.00   732.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  1

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(Date)	Error (mas)	
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.455369	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 52.59495	0.00
	fake circumpolar target for a TS to look at			
* 0917+449	09 17 41.919222	* 09 20 58.458485	09 21 59.280103	0.00
J0920+4441	44 54 39.62449	* 44 41 53.98501	44 37 55.13214	0.00
	./rk08tc_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 2520 observations, RA-A02-12			

EFFECT OF SOLAR CORONA

The solar corona can cause unstable phases for sources too close to the Sun. SCHED provides warnings at individual scans for distances less than 10 degrees. The distance from the Sun to each source in this schedule is:

```

Source      Sun distance (deg)
0917+449    123.4

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ where F is in GHz.

For common VLBI bands, this is:

```

1.6 GHz      45. deg
2.3 GHz      36. deg
5.0 GHz      23. deg
8.4 GHz      17. deg
15.0 GHz     12. deg
22.0 GHz     9. deg

```

rk08tdtr

RADIOASTRON AGN SURVEY

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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

--- Fri 20 Mar 2015 Day 79 ---

----- K-band VLBI scans -----

Table with columns: Next scan frequencies, Next BBC frequencies, Next scan bandwidths, and a main table with columns: Start UT, Source, Start / Stop (LST, EL, AZ, HA, UP), ParA, Early Dwell, Disk GBytes, TPStart SYNC.

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 ./rk08td_freq.dat:
tr1cm

Setup group: 2 Station: TORUN Total bit rate: 256
Format: MKIV1:4 Bits per sample: 2 Sample rate: 32.000
Number of channels: 4 DBE type: Speedup factor: 1.00

Disk used to record data.

```

1st LO= 21500.00 21500.00 21500.00 21500.00
Net SB=      L      L      U      U
IF SB =      U      U      U      U
Pol.  =      RCP     LCP     RCP     LCP
BBC   =      1      2      1      2
BBC SB=      L      L      U      U
IF    =      C      A      C      A

```

The following frequency sets based on these setups were used.

```

Frequency Set:  2  Setup file default.  Used with PCAL = 1MHz
LO sum= 22236.00 22236.00 22236.00 22236.00
BBC fr=  736.00  736.00  736.00  736.00
Bandwd=  16.00  16.00  16.00  16.00
Matching frequency sets:  2

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.454129	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 52.63689	0.00
	fake circumpolar target for a TS to look at			
* 0716+714	07 16 13.029739	* 07 21 53.448474	07 23 37.836197	0.00
J0721+7120	71 26 15.17406	* 71 20 36.36340	71 18 54.22394	0.00
	./rk08td_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 42370 observations, RA-A02-10, RA-A02-1			

EFFECT OF SOLAR CORONA

The solar corona can cause unstable phases for sources too close to the Sun. SCHED provides warnings at individual scans for distances less than 10 degrees. The distance from the Sun to each source in this schedule is:

```

Source      Sun distance (deg)
0716+714    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 $60 \text{ deg } F^{-0.6}$ where F is in GHz.

For common VLBI bands, this is:

```

1.6 GHz      45. deg
2.3 GHz      36. deg
5.0 GHz      23. deg
8.4 GHz      17. deg
15.0 GHz     12. deg
22.0 GHz     9. deg

```



```

1st LO= 2400.00 2400.00 2400.00 2400.00
Net SB=      L      L      U      U
IF SB =      L      L      L      L
Pol.  =      RCP     LCP     RCP     LCP
BBC   =      1      2      1      2
BBC SB=      U      U      L      L
IF    =      C      A      C      A

```

The following frequency sets based on these setups were used.

```

Frequency Set: 1 Setup file default. Used with PCAL = 1MHz
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 732.00 732.00 732.00 732.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 1

```

Track assignments are:

```

track1= 2, 18, 3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(Date)	Error (mas)	
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.449772	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 52.74239	0.00
	fake circumpolar target for a TS to look at			
* 1327+321	13 27 34.876201	* 13 29 52.864906	13 30 36.025393	0.00
J1329+3154	32 09 38.80938	* 31 54 11.05448	31 49 20.58184	0.00
	./rk08te_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 617 observations, RA-A02-12			

EFFECT OF SOLAR CORONA

The solar corona can cause unstable phases for sources too close to the Sun. SCHED provides warnings at individual scans for distances less than 10 degrees. The distance from the Sun to each source in this schedule is:

Source	Sun distance (deg)
1327+321	141.7

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ where F is in GHz.

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

1st LO=	2400.00	2400.00	2400.00	2400.00
Net SB=	L	L	U	U
IF SB =	L	L	L	L
Pol. =	RCP	LCP	RCP	LCP
BBC =	1	2	1	2
BBC SB=	U	U	L	L
IF =	C	A	C	A

The following frequency sets based on these setups were used.

Frequency Set: 1 Setup file default. Used with PCAL = 1MHz
 LO sum= 1668.00 1668.00 1668.00 1668.00
 BBC fr= 732.00 732.00 732.00 732.00
 Bandwd= 16.00 16.00 16.00 16.00
 Matching frequency sets: 1

Track assignments are:

track1= 2, 18, 3, 19
 barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(Date)	Error (mas)	
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.446578	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 52.80166	0.00
	fake circumpolar target for a TS to look at			
* 1717+178	17 17 00.324732	* 17 19 13.048481	17 19 53.796125	0.00
J1719+1745	17 48 08.51592	* 17 45 06.43714	17 44 07.55159	0.00
	./rk08tf_sources.radioastron AGN, MASIV, rfc_2013d Petrov, 2013, unpublished 2632 observations, RA-A02-12			

EFFECT OF SOLAR CORONA

The solar corona can cause unstable phases for sources too close to the Sun. SCHED provides warnings at individual scans for distances less than 10 degrees. The distance from the Sun to each source in this schedule is:

Source	Sun distance (deg)
1717+178	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 $60 \text{ deg } F^{-0.6}$ where F is in GHz.

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg


```

1st LO=  2400.00  2400.00  2400.00  2400.00
Net SB=           L           L           U           U
IF SB =           L           L           L           L
Pol.  =          RCP          LCP          RCP          LCP
BBC   =           1           2           1           2
BBC SB=           U           U           L           L
IF    =           C           A           C           A

```

The following frequency sets based on these setups were used.

```

Frequency Set:  1  Setup file default.  Used with PCAL = 1MHz
LO sum=  1668.00  1668.00  1668.00  1668.00
BBC fr=   732.00   732.00   732.00   732.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  1

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.419855	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 53.13607	0.00
	fake circumpolar target for a TS to look at			
* 1655+077	16 55 43.951808	* 16 58 09.011465	16 58 53.676473	0.00
J1658+0741	07 45 59.75697	* 07 41 27.54032	07 40 04.03946	0.00
	./rk08tg_sources.radioastron AGN, rfc_2013d Petrov, 2013, unpublished 1094 observations, RA-A02-12			

EFFECT OF SOLAR CORONA

The solar corona can cause unstable phases for sources too close to the Sun. SCHED provides warnings at individual scans for distances less than 10 degrees. The distance from the Sun to each source in this schedule is:

Source	Sun distance (deg)
1655+077	106.4

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ where F is in GHz.

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk08thtr

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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 22 Mar 2015 Day 81 ---

----- L-band VLBI scans -----

Table with columns: Time, Source, LST, EL, AZ, HA, UP, ParA, Dwell, Disk, GBytes, SYNC. Rows include scan frequencies and detailed scan data for source 0954+658.

SETUP FILE INFORMATION:

NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

==== Setup file: ra18cm2.set

Setup group: 1 Station: TORUN Total bit rate: 256
Format: MKIV1:4 Bits per sample: 2 Sample rate: 32.000
Number of channels: 4 DBE type: Speedup factor: 1.00

Disk used to record data.

```

1st LO= 2400.00 2400.00 2400.00 2400.00
Net SB=      L      L      U      U
IF SB =      L      L      L      L
Pol.  =      RCP     LCP     RCP     LCP
BBC   =      1      2      1      2
BBC SB=      U      U      L      L
IF    =      C      A      C      A

```

The following frequency sets based on these setups were used.

```

Frequency Set: 1 Setup file default. Used with PCAL = 1MHz
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 732.00 732.00 732.00 732.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 1

```

Track assignments are:

```

track1= 2, 18, 3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(Date)	Error (mas)	
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.415711	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 53.17722	0.00
	fake circumpolar target for a TS to look at			
* 0954+658	09 54 57.847936	* 09 58 47.245116	09 59 58.308066	0.00
J0958+6533	65 48 15.53882	* 65 33 54.81801	65 29 31.10490	0.00
	./rk08th_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 13350 observations, RA-A02-12			

EFFECT OF SOLAR CORONA

The solar corona can cause unstable phases for sources too close to the Sun. SCHED provides warnings at individual scans for distances less than 10 degrees. The distance from the Sun to each source in this schedule is:

Source	Sun distance (deg)
0954+658	110.1

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ where F is in GHz.

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk08titr

RADIOASTRON AGN SURVEY

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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 22 Mar 2015 Day 81 ---

----- L-band VLBI scans -----

Next scan frequencies:	1668.00	1668.00	1668.00	1668.00						
Next BBC frequencies:	732.00	732.00	732.00	732.00						
Next scan bandwidths:	16.00	16.00	16.00	16.00						
17 00 00	1324+574	06 13 46	34.6	38.8	-7.2		-43.8	0	0	17 00 00
17 14 30	---	06 28 19	36.0	40.5	-7.0		-45.9	870	28	17 00 01
17 15 00	1324+574	06 28 49	36.1	40.5	-7.0		-46.0	24	28	17 15 00
17 29 30	---	06 43 21	37.5	42.2	-6.7		-48.0	870	56	17 15 01
17 30 00	1324+574	06 43 51	37.6	42.3	-6.7		-48.1	24	56	17 30 00
17 44 30	---	06 58 24	39.1	43.9	-6.5		-50.1	870	84	17 30 01
17 45 00	1324+574	06 58 54	39.1	44.0	-6.5		-50.2	24	84	17 45 00
18 00 00	---	07 13 56	40.7	45.6	-6.2		-52.3	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

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=	2400.00	2400.00	2400.00	2400.00
Net SB=	L	L	U	U
IF SB =	L	L	L	L
Pol. =	RCP	LCP	RCP	LCP
BBC =	1	2	1	2
BBC SB=	U	U	L	L
IF =	C	A	C	A

The following frequency sets based on these setups were used.

Frequency Set: 2 Setup file default. Used with PCAL = 1MHz
 LO sum= 1668.00 1668.00 1668.00 1668.00
 BBC fr= 732.00 732.00 732.00 732.00
 Bandwd= 16.00 16.00 16.00 16.00
 Matching frequency sets: 2

Track assignments are:

track1= 2, 18, 3, 19
 barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.408704	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 53.24376	0.00
	fake circumpolar target for a TS to look at			
* 1324+574	13 24 54.934679	* 13 26 50.572337	13 27 27.173547	0.00
J1326+5712	57 27 39.04145	* 57 12 06.74540	57 07 15.39408	0.00
	./rk08ti_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 319 observations, RA-A02-12			

EFFECT OF SOLAR CORONA

The solar corona can cause unstable phases for sources too close to the Sun. SCHED provides warnings at individual scans for distances less than 10 degrees. The distance from the Sun to each source in this schedule is:

Source	Sun distance (deg)
1324+574	119.9

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ where F is in GHz.

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk08tjtr

RADIOASTRON AGN SURVEY

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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 L0 sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Sun 22 Mar 2015 Day 81 ---

----- L-band VLBI scans -----

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 732.00 732.00 732.00 732.00
Next scan bandwidths: 16.00 16.00 16.00 16.00

Table with columns: Start UT, Stop UT, Source, LST, EL, AZ, HA, UP, ParA, Dwell, Disk GBytes, TPStart SYNC. Contains scan data for 20:00:00 to 20:59:00.

SETUP FILE INFORMATION:

NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

==== Setup file: ra18cm2.set

Setup group: 4 Station: TORUN Total bit rate: 256
Format: MKIV1:4 Bits per sample: 2 Sample rate: 32.000
Number of channels: 4 DBE type: Speedup factor: 1.00

Disk used to record data.

```

1st LO= 2400.00 2400.00 2400.00 2400.00
Net SB=      L      L      U      U
IF SB =      L      L      L      L
Pol.  =      RCP     LCP     RCP     LCP
BBC   =      1      2      1      2
BBC SB=      U      U      L      L
IF    =      C      A      C      A

```

The following frequency sets based on these setups were used.

```

Frequency Set:  1  Setup file default.  Used with PCAL = 1MHz
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr=  732.00 732.00 732.00 732.00
Bandwd=  16.00 16.00 16.00 16.00
Matching frequency sets:  1

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(Date)	Error (mas)
* FAKERA	11 57 21.769299 * 12 00 00.000000	12 00 54.403785	0.00
	85 16 41.77889 * 85 00 00.000000	84 54 53.28867	0.00
	fake circumpolar target for a TS to look at		
* 1413+135	14 13 33.910857 * 14 15 58.817509	14 16 44.077725	0.00
J1415+1320	13 34 17.40450 * 13 20 23.71274	13 16 04.51054	0.00
	./rk08tj_sources.radioastron AGN, rfc_2013d Petrov, 2013, unpublished 1895 observations, RA-A02-12		

EFFECT OF SOLAR CORONA

The solar corona can cause unstable phases for sources too close to the Sun. SCHED provides warnings at individual scans for distances less than 10 degrees. The distance from the Sun to each source in this schedule is:

```

Source      Sun distance (deg)
1413+135    144.9

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ where F is in GHz.

For common VLBI bands, this is:

```

1.6 GHz      45. deg
2.3 GHz      36. deg
5.0 GHz      23. deg
8.4 GHz      17. deg
15.0 GHz     12. deg
22.0 GHz     9. deg

```

rk08tktr

RADIOASTRON AGN SURVEY

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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 23 Mar 2015 Day 82 ---

----- L-band VLBI scans -----

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 732.00 732.00 732.00 732.00
Next scan bandwidths: 16.00 16.00 16.00 16.00

01 00 00	1656-075	14 15 05	20.0	136.1	-2.7		-24.8	0	0	01 00 00
01 12 00	---	14 27 07	21.2	139.0	-2.5		-23.4	720	23	01 00 01
01 12 30	1656-075	14 27 37	21.2	139.1	-2.5		-23.4	24	23	01 12 30
01 24 30	---	14 39 39	22.4	142.1	-2.3		-21.9	720	46	01 12 31
01 25 00	1656-075	14 40 09	22.4	142.2	-2.3		-21.8	24	46	01 25 00
01 37 00	---	14 52 11	23.5	145.2	-2.1		-20.2	720	69	01 25 01
01 37 30	1656-075	14 52 42	23.5	145.4	-2.1		-20.1	24	69	01 37 30
01 50 00	---	15 05 14	24.6	148.6	-1.9		-18.4	750	93	01 37 31

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: 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=	2400.00	2400.00	2400.00	2400.00
Net SB=	L	L	U	U
IF SB =	L	L	L	L
Pol. =	RCP	LCP	RCP	LCP
BBC =	1	2	1	2
BBC SB=	U	U	L	L
IF =	C	A	C	A

The following frequency sets based on these setups were used.

```

Frequency Set:  1  Setup file default.  Used with PCAL = 1MHz
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr=  732.00 732.00 732.00 732.00
Bandwd=  16.00 16.00 16.00 16.00
Matching frequency sets:  1

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(Date)	Error (mas)	
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.396090	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 53.35669	0.00
	fake circumpolar target for a TS to look at			
* 1656-075	16 56 01.672906	* 16 58 44.061993	16 59 34.088187	0.00
J1658-0739	-07 34 47.28706	*-07 39 17.69432	-07 40 35.51082	0.00
	./rk08tk_sources.radioastron			
	AGN, HIGHz, rfc_2013d Petrov, 2013, unpublished 1558 observations, RA-A02-03, RA			

EFFECT OF SOLAR CORONA

The solar corona can cause unstable phases for sources too close to the Sun. SCHED provides warnings at individual scans for distances less than 10 degrees. The distance from the Sun to each source in this schedule is:

Source	Sun distance (deg)
1656-075	107.0

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ where F is in GHz.

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk08tltr

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Observing mode: C/L-band, dual-pol

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Mon 23 Mar 2015 Day 82 ---

----- C-band VLBI scans -----

Next scan frequencies:	4836.00	4836.00	4836.00	4836.00						
Next BBC frequencies:	736.00	736.00	736.00	736.00						
Next scan bandwidths:	16.00	16.00	16.00	16.00						
03 10 00	1514-241	16 25 27	11.1	195.5	1.1	10.1	0	0	03 10 00	
03 22 00	---	16 37 29	10.6	198.2	1.3	11.9	720	23	03 10 01	
03 22 30	1514-241	16 37 59	10.6	198.3	1.3	12.0	24	23	03 22 30	
03 34 30	---	16 50 01	10.0	201.0	1.5	13.7	720	46	03 22 31	
03 35 00	1514-241	16 50 31	9.9	201.1	1.5	13.8	24	46	03 35 00	
03 47 00	---	17 02 33	9.3	203.8	1.7	15.5	720	69	03 35 01	
03 47 30	1514-241	17 03 03	9.2	203.9	1.7	15.5	24	69	03 47 30	
04 00 00	---	17 15 35	8.4	206.7	1.9	17.2	750	93	03 47 31	

SETUP FILE INFORMATION:

NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

=====
Setup file: ra6cm2.set

Setup group:	2	Station:	TORUN	Total bit rate:	256
Format:	MKIV1:4	Bits per sample:	2	Sample rate:	32.000
Number of channels:	4	DBE type:		Speedup factor:	1.00

Disk used to record data.

```

1st LO=  4100.00  4100.00  4100.00  4100.00
Net SB=           L           L           U           U
IF SB =           U           U           U           U
Pol.  =          RCP          LCP          RCP          LCP
BBC   =           1           2           1           2
BBC SB=           L           L           U           U
IF    =           C           A           C           A

```

The following frequency sets based on these setups were used.

```

Frequency Set:  1  Setup file default.  Used with PCAL = 1MHz
LO sum=  4836.00  4836.00  4836.00  4836.00
BBC fr=   736.00   736.00   736.00   736.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  1

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.392679	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 53.38616	0.00
	fake circumpolar target for a TS to look at			
* 1514-241	15 14 45.267383	* 15 17 41.813131	15 18 36.943793	0.00
J1517-2422	-24 11 22.67822	*-24 22 19.47616	-24 25 33.36392	0.00
	./rk08tl_sources.radioastron AGN, rfc_2013d Petrov, 2013, unpublished 7724 observations, RA-A02-12			

EFFECT OF SOLAR CORONA

The solar corona can cause unstable phases for sources too close to the Sun. SCHED provides warnings at individual scans for distances less than 10 degrees. The distance from the Sun to each source in this schedule is:

Source	Sun distance (deg)
1514-241	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 $60 \text{ deg } F^{-0.6}$ where F is in GHz.

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg


```

1st LO= 21500.00 21500.00 21500.00 21500.00
Net SB=      L      L      U      U
IF SB =      U      U      U      U
Pol.  =      RCP     LCP     RCP     LCP
BBC   =      1      2      1      2
BBC SB=      L      L      U      U
IF    =      C      A      C      A

```

The following frequency sets based on these setups were used.

```

Frequency Set:  2  Setup file default.  Used with PCAL = 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:  2

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.387153	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 53.43321	0.00
	fake circumpolar target for a TS to look at			
IRAS15193+31	15 19 21.526559	* 15 21 23.956080	15 22 02.113389	0.00
* IRAS1519	31 32 45.29719	* 31 22 02.57300	31 18 39.65560	0.00
VS_CRB	./rg11aj_sources.radioastron			
IRAS15193+31	H2O WF maser; positions from Simbad, RA-A02-13			
* 1604+315	16 04 10.611566	* 16 06 08.518385	16 06 45.121187	0.00
J1606+3124	31 32 47.72177	* 31 24 46.45776	31 22 12.84745	0.00
	./rg11aj_sources.radioastron			
	AGN, HIGHz, rfc_2013d Petrov, 2013, unpublished 90 observations, RA-A02-03, RA-A			


```

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)	(Date)	Error (mas)
* FAKERA	11 57 21.769299 * 12 00 00.000000	12 00 54.282162	0.00
	85 16 41.77889 * 85 00 00.000000	84 54 54.44855	0.00
	fake circumpolar target for a TS to look at		
* 0749+426	07 49 35.292496 * 07 53 03.337499	07 54 07.258811	0.00
J0753+4231	42 39 18.53136 * 42 31 30.76523	42 29 03.10025	0.00
	./rk08tm_sources.radioastron HIGHz, rfc_2013d Petrov, 2013, unpublished 80 observations, RA-A02-03		

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	82.3
0749+426	105.4

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ where F is in GHz.

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk08tntr

RADIOASTRON AGN SURVEY

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Observing mode: C/L-band, dual-pol

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Thu 26 Mar 2015 Day 85 ---

----- C-band VLBI scans -----

Next scan frequencies: 4836.00 4836.00 4836.00 4836.00
Next BBC frequencies: 736.00 736.00 736.00 736.00
Next scan bandwidths: 16.00 16.00 16.00 16.00

20 00 00 0917+449 09 30 02 81.4 189.7 0.1 8.1 0 0 20 00 00
20 14 30 --- 09 44 35 80.8 205.9 0.4 21.6 870 28 20 00 01
20 15 00 0917+449 09 45 05 80.7 206.4 0.4 22.0 22 28 20 15 00
20 25 00 --- 09 55 06 80.0 216.0 0.6 29.7 600 47 20 15 01

----- L-band VLBI scans -----

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 732.00 732.00 732.00 732.00

20 30 00 0917+449 10 00 07 79.5 220.2 0.6 33.0 290 47 20 30 00
20 44 30 --- 10 14 40 77.9 230.8 0.9 40.8 870 75 20 30 01
20 45 00 0917+449 10 15 10 77.9 231.1 0.9 41.1 23 75 20 45 00
21 00 00 --- 10 30 12 76.0 239.7 1.1 46.7 900 104 20 45 01

SETUP FILE INFORMATION:

NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

==== Setup file: ra6cm2.set

Setup group: 2 Station: TORUN Total bit rate: 256
Format: MKIV1:4 Bits per sample: 2 Sample rate: 32.000
Number of channels: 4 DBE type: Speedup factor: 1.00

Disk used to record data.

```

1st LO= 4100.00 4100.00 4100.00 4100.00
Net SB=      L      L      U      U
IF SB =      U      U      U      U
Pol.  =      RCP     LCP     RCP     LCP
BBC   =      1      2      1      2
BBC SB=      L      L      U      U
IF    =      C      A      C      A

```

The following frequency sets based on these setups were used.

```

Frequency Set: 3 Setup file default. Used with PCAL = 1MHz
LO sum= 4836.00 4836.00 4836.00 4836.00
BBC fr= 736.00 736.00 736.00 736.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 3

```

Track assignments are:

```

track1= 2, 18, 3, 19
barrel=roll_off

```

==== 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)	Source position (RA/Dec) (J2000)	(Date)	Error (mas)
* 0917+449	09 17 41.919222	* 09 20 58.458485	09 21 59.179689	0.00
J0920+4441	44 54 39.62449	* 44 41 53.98501	44 37 55.98295	0.00

rk08totr

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Observing mode: C/K-band, dual-pol

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Fri 27 Mar 2015 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 10 00 0851+202 13 40 43 27.1 267.7 4.8 39.7 0 0 00 10 00
00 22 00 --- 13 52 45 25.3 270.1 5.0 39.7 720 23 00 10 01
00 22 30 0851+202 13 53 15 25.2 270.2 5.0 39.7 24 23 00 22 30
00 30 00 --- 14 00 47 24.1 271.7 5.1 39.7 450 37 00 22 31

----- 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 35 00 0851+202 14 05 47 23.3 272.7 5.2 39.7 293 37 00 35 00
00 47 00 --- 14 17 49 21.5 275.1 5.4 39.5 720 60 00 35 01
00 47 30 0851+202 14 18 20 21.5 275.2 5.4 39.5 24 60 00 47 30
01 00 00 --- 14 30 52 19.6 277.6 5.6 39.3 750 84 00 47 31

SETUP FILE INFORMATION:

NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

==== Setup file: ra1cm2.set

Matching groups in ./rk08to_freq.dat:
tr1cm

Setup group: 4 Station: TORUN Total bit rate: 256
Format: MKIV1:4 Bits per sample: 2 Sample rate: 32.000
Number of channels: 4 DBE type: Speedup factor: 1.00

Disk used to record data.

```

1st LO= 21500.00 21500.00 21500.00 21500.00
Net SB=          L          L          U          U
IF SB =          U          U          U          U
Pol.  =          RCP          LCP          RCP          LCP
BBC   =           1           2           1           2
BBC SB=          L          L          U          U
IF    =           C          A          C          A

```

The following frequency sets based on these setups were used.

```

Frequency Set:  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

```

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:  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)		(Date)	Error (mas)
	(B1950)	(J2000)		
* 0851+202	08 51 57.250618	* 08 54 48.874930	08 55 41.977594	0.00
J0854+2006	20 17 58.41733	* 20 06 30.64078	20 02 49.63731	0.00


```

1st LO= 2400.00 2400.00 2400.00 2400.00
Net SB=      L      L      U      U
IF SB =      L      L      L      L
Pol.  =      RCP     LCP     RCP     LCP
BBC   =      1      2      1      2
BBC SB=      U      U      L      L
IF    =      C      A      C      A

```

The following frequency sets based on these setups were used.

```

Frequency Set: 2 Setup file default. Used with PCAL = 1MHz
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 732.00 732.00 732.00 732.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 2

```

Track assignments are:

```

track1= 2, 18, 3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.274490	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 54.57025	0.00
	fake circumpolar target for a TS to look at			
* 0954+658	09 54 57.847936	* 09 58 47.245116	09 59 58.197466	0.00
J0958+6533	65 48 15.53882	* 65 33 54.81801	65 29 32.08947	0.00
	./rk08tp_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 13350 observations, RA-A02-12			

EFFECT OF SOLAR CORONA

The solar corona can cause unstable phases for sources too close to the Sun. SCHED provides warnings at individual scans for distances less than 10 degrees. The distance from the Sun to each source in this schedule is:

Source	Sun distance (deg)
0954+658	107.4

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ where F is in GHz.

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk08tqtr

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Observing mode: C/K-band, dual-pol

Schedule for TORUN (Code Tr) Page 2
RadioAstron AGN Survey

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Fri 27 Mar 2015 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

18 00 00 1308+326 07 33 39 28.5 73.2 -5.6 -42.8 0 0 18 00 00
18 12 00 --- 07 45 41 30.2 75.3 -5.4 -43.4 720 23 18 00 01
18 12 30 1308+326 07 46 11 30.3 75.4 -5.4 -43.4 24 23 18 12 30
18 20 00 --- 07 53 42 31.4 76.7 -5.3 -43.7 450 37 18 12 31

----- 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

18 25 00 1308+326 07 58 43 32.1 77.6 -5.2 -43.9 293 37 18 25 00
18 37 00 --- 08 10 45 33.9 79.8 -5.0 -44.3 720 60 18 25 01
18 37 30 1308+326 08 11 15 33.9 79.9 -5.0 -44.4 24 60 18 37 30
18 50 00 --- 08 23 47 35.8 82.2 -4.8 -44.7 750 84 18 37 31

SETUP FILE INFORMATION:

NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

==== Setup file: ra1cm2.set
Matching groups in ./rk08tq_freq.dat:
tr1cm

Setup group: 4 Station: TORUN Total bit rate: 256
Format: MKIV1:4 Bits per sample: 2 Sample rate: 32.000
Number of channels: 4 DBE type: Speedup factor: 1.00

Disk used to record data.

```

1st LO= 21500.00 21500.00 21500.00 21500.00
Net SB=          L          L          U          U
IF SB =          U          U          U          U
Pol.  =          RCP         LCP         RCP         LCP
BBC   =           1           2           1           2
BBC SB=          L          L          U          U
IF    =           C          A          C          A

```

The following frequency sets based on these setups were used.

```

Frequency Set:  2  Setup file default.  Used with PCAL = 1MHz
LO sum= 22236.00 22236.00 22236.00 22236.00
BBC fr=  736.00  736.00  736.00  736.00
Bandwd=  16.00  16.00  16.00  16.00
Matching frequency sets:  2

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

==== Setup file: ra6cm2.set

```

Setup group:  2          Station: TORUN          Total bit rate:  256
Format: MKIV1:4          Bits per sample:  2          Sample rate: 32.000
Number of channels:  4  DBE type:          Speedup factor:  1.00

```

Disk used to record data.

```

1st LO=  4100.00  4100.00  4100.00  4100.00
Net SB=          L          L          U          U
IF SB =          U          U          U          U
Pol.  =          RCP         LCP         RCP         LCP
BBC   =           1           2           1           2
BBC SB=          L          L          U          U
IF    =           C          A          C          A

```

The following frequency sets based on these setups were used.

```

Frequency Set:  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)	Source position (RA/Dec) (J2000)	(Date)	Error (mas)
* 1308+326	13 08 07.560133	* 13 10 28.663852	13 11 12.878426	0.00
J1310+3220	32 36 40.23870	* 32 20 43.78277	32 15 45.53337	0.00

rk08tstr

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Observing mode: C/L-band, dual-pol

Schedule for TORUN (Code Tr) Page 2
 RadioAstron AGN Survey

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

```
-----  
Start UT  Source                    Start / Stop                    Early    Disk  TPStart  
Stop UT                            LST      EL    AZ  HA  UP    ParA Dwell    GBytes  SYNC  
-----
```

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----- C-band VLBI scans -----

```
Next scan frequencies: 4836.00 4836.00 4836.00 4836.00  
Next BBC frequencies:    736.00    736.00    736.00    736.00  
Next scan bandwidths:    16.00    16.00    16.00    16.00
```

```
01 00 00  1547+507        14 34 48  78.2  94.7 -1.2        -70.5     0        0    01 00 00  
01 12 00  ---            14 46 50  80.0  98.2 -1.0        -69.4    720       23    01 00 01  
  
01 12 30  1547+507        14 47 20  80.1  98.4 -1.0        -69.3     24       23    01 12 30  
01 20 00  ---            14 54 51  81.2 101.0 -0.9       -68.2    450       37    01 12 31
```

----- L-band VLBI scans -----

```
Next scan frequencies: 1668.00 1668.00 1668.00 1668.00  
Next BBC frequencies:    732.00    732.00    732.00    732.00
```

```
01 25 00  1547+507        14 59 52  81.9 103.1 -0.8       -67.1    292       37    01 25 00  
01 37 00  ---            15 11 54  83.6 109.5 -0.6       -63.1    720       60    01 25 01  
  
01 37 30  1547+507        15 12 24  83.7 109.8 -0.6       -62.9     23       60    01 37 30  
01 50 00  ---            15 24 56  85.4 120.8 -0.4       -54.4    750       84    01 37 31
```

SETUP FILE INFORMATION:

NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

===== Setup file: ra6cm2.set

```
Setup group:     1                    Station: TORUN                    Total bit rate:    256  
Format: MKIV1:4                    Bits per sample:  2                    Sample rate: 32.000  
Number of channels: 4                    DBE type:                    Speedup factor:    1.00
```

Disk used to record data.

```

1st LO=  4100.00  4100.00  4100.00  4100.00
Net SB=           L           L           U           U
IF SB =           U           U           U           U
Pol.  =          RCP          LCP          RCP          LCP
BBC   =           1           2           1           2
BBC SB=           L           L           U           U
IF    =           C           A           C           A

```

The following frequency sets based on these setups were used.

```

Frequency Set:  3  Setup file default.  Used with PCAL = 1MHz
LO sum=  4836.00  4836.00  4836.00  4836.00
BBC fr=   736.00   736.00   736.00   736.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  3

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

==== Setup file: ra18cm2.set

```

Setup group:    5           Station: TORUN           Total bit rate:  256
Format: MKIV1:4           Bits per sample: 2           Sample rate: 32.000
Number of channels: 4     DBE type:                   Speedup factor:  1.00

```

Disk used to record data.

```

1st LO=  2400.00  2400.00  2400.00  2400.00
Net SB=           L           L           U           U
IF SB =           L           L           L           L
Pol.  =          RCP          LCP          RCP          LCP
BBC   =           1           2           1           2
BBC SB=           U           U           L           L
IF    =           C           A           C           A

```

The following frequency sets based on these setups were used.

```

Frequency Set:  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)	Source position (RA/Dec) (J2000)	(Date)	Error (mas)
* 1547+507	15 47 52.271615	* 15 49 17.468556	15 49 44.415505	0.00
J1549+5038	50 47 09.25434	* 50 38 05.78805	50 35 11.36183	0.00

rk08tttr

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Observing mode: C/L-band, dual-pol

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Sat 28 Mar 2015 Day 87 ---

----- C-band VLBI scans -----

Next scan frequencies: 4836.00 4836.00 4836.00 4836.00
Next BBC frequencies: 736.00 736.00 736.00 736.00
Next scan bandwidths: 16.00 16.00 16.00 16.00

05 00 00	1502+106	18 35 28	30.2	244.7	3.5	33.5	0	0	05 00 00
05 14 30	---	18 50 00	28.2	248.1	3.7	34.5	870	28	05 00 01
05 15 00	1502+106	18 50 30	28.2	248.2	3.8	34.5	24	28	05 15 00
05 25 00	---	19 00 32	26.8	250.5	3.9	35.1	600	47	05 15 01

----- L-band VLBI scans -----

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 732.00 732.00 732.00 732.00

05 30 00	1502+106	19 05 32	26.1	251.6	4.0	35.4	293	47	05 30 00
05 44 30	---	19 20 05	24.0	254.8	4.2	36.1	870	75	05 30 01
05 45 00	1502+106	19 20 35	23.9	254.9	4.3	36.1	24	75	05 45 00
06 00 00	---	19 35 37	21.7	258.2	4.5	36.7	900	104	05 45 01

SETUP FILE INFORMATION:

NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

==== Setup file: ra6cm2.set

Setup group: 1	Station: TORUN	Total bit rate: 256
Format: MKIV1:4	Bits per sample: 2	Sample rate: 32.000
Number of channels: 4	DBE type:	Speedup factor: 1.00

Disk used to record data.

```

1st LO=  4100.00  4100.00  4100.00  4100.00
Net SB=           L           L           U           U
IF SB =           U           U           U           U
Pol.  =          RCP          LCP          RCP          LCP
BBC   =           1           2           1           2
BBC SB=           L           L           U           U
IF    =           C           A           C           A

```

The following frequency sets based on these setups were used.

```

Frequency Set:  3  Setup file default.  Used with PCAL = 1MHz
LO sum=  4836.00  4836.00  4836.00  4836.00
BBC fr=   736.00   736.00   736.00   736.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  3

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

==== Setup file: ra18cm2.set

```

Setup group:  5           Station: TORUN           Total bit rate:  256
Format: MKIV1:4           Bits per sample:  2           Sample rate: 32.000
Number of channels:  4    DBE type:                Speedup factor:  1.00

```

Disk used to record data.

```

1st LO=  2400.00  2400.00  2400.00  2400.00
Net SB=           L           L           U           U
IF SB =           L           L           L           L
Pol.  =          RCP          LCP          RCP          LCP
BBC   =           1           2           1           2
BBC SB=           U           U           L           L
IF    =           C           A           C           A

```

The following frequency sets based on these setups were used.

```

Frequency Set:  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)	Source position (RA/Dec) (J2000)	(Date)	Error (mas)
* 1502+106	15 02 00.157714	* 15 04 24.979783	15 05 10.207754	0.00
J1504+1029	10 41 17.73982	* 10 29 39.19840	10 26 03.08458	0.00

rk08twtr

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Observing mode: C/L-band, dual-pol

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Sat 28 Mar 2015 Day 87 ---

----- C-band VLBI scans -----

Next scan frequencies: 4836.00 4836.00 4836.00 4836.00
Next BBC frequencies: 736.00 736.00 736.00 736.00
Next scan bandwidths: 16.00 16.00 16.00 16.00
20 00 00 1357+769 09 37 55 56.8 22.5 -4.3 -96.5 0 0 20 00 00
20 14 30 --- 09 52 28 57.6 22.2 -4.1 -100.2 870 28 20 00 01
20 15 00 1357+769 09 52 58 57.6 22.2 -4.1 -100.3 25 28 20 15 00
20 25 00 --- 10 03 00 58.2 22.0 -3.9 -103.0 600 47 20 15 01

----- L-band VLBI scans -----

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 732.00 732.00 732.00 732.00
20 30 00 1357+769 10 08 00 58.5 21.9 -3.8 -104.3 294 47 20 30 00
20 44 30 --- 10 22 33 59.3 21.4 -3.6 -108.2 870 75 20 30 01
20 45 00 1357+769 10 23 03 59.3 21.4 -3.6 -108.4 25 75 20 45 00
21 00 00 --- 10 38 05 60.1 20.8 -3.3 -112.5 900 104 20 45 01

SETUP FILE INFORMATION:

NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

==== Setup file: ra6cm2.set

Setup group: 1 Station: TORUN Total bit rate: 256
Format: MKIV1:4 Bits per sample: 2 Sample rate: 32.000
Number of channels: 4 DBE type: Speedup factor: 1.00

Disk used to record data.


```

1st LO=  4100.00  4100.00  4100.00  4100.00
Net SB=           L           L           U           U
IF SB =           U           U           U           U
Pol.  =           RCP          LCP          RCP          LCP
BBC   =           1           2           1           2
BBC SB=           L           L           U           U
IF    =           C           A           C           A

```

The following frequency sets based on these setups were used.

```

Frequency Set:  3  Setup file default.  Used with PCAL = 1MHz
LO sum=  4836.00  4836.00  4836.00  4836.00
BBC fr=   736.00   736.00   736.00   736.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  3

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

==== 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)	Source position (RA/Dec) (J2000)	(Date)	Error (mas)
* 1357+769	13 57 42.117007	* 13 57 55.371538	13 58 02.833238	0.00
J1357+7643	76 57 53.35418	* 76 43 21.05098	76 38 49.67687	0.00

rk08tytr

RADIOASTRON AGN SURVEY

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Observing mode: C/K-band, dual-pol

Schedule for TORUN (Code Tr) Page 2
RadioAstron AGN Survey

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Sun 29 Mar 2015 Day 88 ---

----- C-band VLBI scans -----

Next scan frequencies: 4836.00 4836.00 4836.00 4836.00
Next BBC frequencies: 736.00 736.00 736.00 736.00
Next scan bandwidths: 16.00 16.00 16.00 16.00

Table with columns: Start UT, Stop UT, Source, LST, EL, AZ, HA, UP, ParA, Dwell, GBytes, TPStart, SYNC. Contains scan data for 1606+106 source.

SETUP FILE INFORMATION:

NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

==== Setup file: ra6cm2.set

Setup group: 3 Station: TORUN Total bit rate: 256
Format: MKIV1:4 Bits per sample: 2 Sample rate: 32.000
Number of channels: 4 DBE type: Speedup factor: 1.00

Disk used to record data.

```

1st LO=  4100.00  4100.00  4100.00  4100.00
Net SB=           L           L           U           U
IF SB =           U           U           U           U
Pol.  =          RCP          LCP          RCP          LCP
BBC   =           1           2           1           2
BBC SB=           L           L           U           U
IF    =           C           A           C           A

```

The following frequency sets based on these setups were used.

```

Frequency Set:  1  Setup file default.  Used with PCAL = 1MHz
LO sum=  4836.00  4836.00  4836.00  4836.00
BBC fr=   736.00   736.00   736.00   736.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  1

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(Date)	Error (mas)
* FAKERA	11 57 21.769299 * 12 00 00.000000	12 00 54.245194	0.00
	85 16 41.77889 * 85 00 00.000000	84 54 55.20933	0.00
	fake circumpolar target for a TS to look at		
* 1606+106	16 06 23.396622 * 16 08 46.203185	16 09 30.600474	0.00
J1608+1029	10 36 59.80094 * 10 29 07.77564	10 26 42.06360	0.00
	./rk08ty_sources.radioastron AGN, rfc_2013d Petrov, 2013, unpublished 128489 observations, RA-A02-12		

EFFECT OF SOLAR CORONA

The solar corona can cause unstable phases for sources too close to the Sun. SCHED provides warnings at individual scans for distances less than 10 degrees. The distance from the Sun to each source in this schedule is:

```

Source          Sun distance (deg)
1606+106        123.7

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ where F is in GHz.

For common VLBI bands, this is:

```

1.6 GHz        45. deg
2.3 GHz        36. deg
5.0 GHz        23. deg
8.4 GHz        17. deg
15.0 GHz       12. deg
22.0 GHz        9. deg

```

rk08tztr

RADIOASTRON AGN SURVEY

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Observing mode: C/L-band, dual-pol

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are L0 sum (band edge).

SYNC: Time correlator is expected to sync up.

 Start UT Source Start / Stop Early Disk TPStart
 Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Sun 29 Mar 2015 Day 88 ---

----- L-band VLBI scans -----

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
 Next BBC frequencies: 732.00 732.00 732.00 732.00
 Next scan bandwidths: 16.00 16.00 16.00 16.00

Start UT	Source	LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
11 00 00	0917+624	00 40 23	31.7	24.6	-8.7	-32.4	0	0	0	11 00 00
11 14 30	---	00 54 56	32.6	26.3	-8.5	-34.7	870	28	28	11 00 01
11 15 00	0917+624	00 55 26	32.6	26.3	-8.5	-34.8	24	28	28	11 15 00
11 29 30	---	01 09 58	33.6	27.9	-8.2	-37.1	870	56	56	11 15 01
11 30 00	0917+624	01 10 28	33.7	28.0	-8.2	-37.2	24	56	56	11 30 00
11 44 30	---	01 25 01	34.7	29.6	-8.0	-39.5	870	84	84	11 30 01
11 45 00	0917+624	01 25 31	34.8	29.7	-8.0	-39.6	24	84	84	11 45 00
12 00 00	---	01 40 33	35.9	31.3	-7.7	-42.0	900	112	112	11 45 01

SETUP FILE INFORMATION:

NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

==== Setup file: ra18cm2.set

Setup group: 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) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.242049	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 55.28205	0.00
	fake circumpolar target for a TS to look at			
* 0917+624	09 17 40.306860	* 09 21 36.231074	09 22 48.925652	0.00
J0921+6215	62 28 38.64009	* 62 15 52.18031	62 11 58.46076	0.00
	./rk08tz_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 7902 observations, RA-A02-12			

EFFECT OF SOLAR CORONA

The solar corona can cause unstable phases for sources too close to the Sun. SCHED provides warnings at individual scans for distances less than 10 degrees. The distance from the Sun to each source in this schedule is:

Source	Sun distance (deg)
0917+624	105.4

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ where F is in GHz.

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk08uatr

RADIOASTRON AGN SURVEY

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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 29 Mar 2015 Day 88 ---

----- L-band VLBI scans -----

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 732.00 732.00 732.00 732.00
Next scan bandwidths: 16.00 16.00 16.00 16.00

```
14 10 00 1800+440 03 50 54 11.2 -23.4 9.8 19.3 0 0 14 10 00  
14 22 00 --- 04 02 56 10.5 -21.3 10.0 17.6 720 23 14 10 01  
  
14 22 30 1800+440 04 03 27 10.4 -21.2 10.0 17.6 24 23 14 22 30  
14 34 30 --- 04 15 28 9.8 -19.1 10.2 15.9 720 46 14 22 31  
  
14 35 00 1800+440 04 15 59 9.8 -19.0 10.2 15.8 24 46 14 35 00  
14 47 00 --- 04 28 01 9.2 -16.9 10.4 14.0 720 69 14 35 01  
  
14 47 30 1800+440 04 28 31 9.2 -16.8 10.4 14.0 24 69 14 47 30  
15 00 00 --- 04 41 03 8.7 -14.6 10.7 12.1 750 93 14 47 31
```

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: 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= 2400.00 2400.00 2400.00 2400.00
Net SB=      L      L      U      U
IF SB =      L      L      L      L
Pol.  =      RCP     LCP     RCP     LCP
BBC   =      1      2      1      2
BBC SB=      U      U      L      L
IF    =      C      A      C      A

```

The following frequency sets based on these setups were used.

```

Frequency Set: 2 Setup file default. Used with PCAL = 1MHz
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 732.00 732.00 732.00 732.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 2

```

Track assignments are:

```

track1= 2, 18, 3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.240208	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 55.32319	0.00
	fake circumpolar target for a TS to look at			
* 1800+440	18 00 03.197727	* 18 01 32.314821	18 01 59.814683	0.00
J1801+4404	44 04 18.35293	* 44 04 21.90023	44 04 14.07498	0.00
	./rk08ua_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 5984 observations, RA-A02-12			

EFFECT OF SOLAR CORONA

The solar corona can cause unstable phases for sources too close to the Sun. SCHED provides warnings at individual scans for distances less than 10 degrees. The distance from the Sun to each source in this schedule is:

Source	Sun distance (deg)
1800+440	92.9

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ where F is in GHz.

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk08ubtr

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Observing mode: C/L-band, dual-pol

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Sun 29 Mar 2015 Day 88 ---

----- L-band VLBI scans -----

Next scan frequencies:	1668.00	1668.00	1668.00	1668.00						
Next BBC frequencies:	732.00	732.00	732.00	732.00						
Next scan bandwidths:	16.00	16.00	16.00	16.00						
20 00 00	0917+624	09 41 52	80.6	-13.6	0.3	162.3	0	0	20 00 00	
20 14 30	---	09 56 24	79.9	-22.8	0.6	150.1	870	28	20 00 01	
20 15 00	0917+624	09 56 54	79.8	-23.1	0.6	149.7	23	28	20 15 00	
20 29 30	---	10 11 27	78.8	-30.5	0.8	139.2	870	56	20 15 01	
20 30 00	0917+624	10 11 57	78.8	-30.8	0.8	138.8	23	56	20 30 00	
20 44 30	---	10 26 29	77.6	-36.6	1.1	129.9	870	84	20 30 01	
20 45 00	0917+624	10 26 59	77.6	-36.7	1.1	129.7	24	84	20 45 00	
21 00 00	---	10 42 02	76.1	-41.2	1.3	121.9	900	112	20 45 01	

SETUP FILE INFORMATION:

NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

==== Setup file: ra18cm2.set

Setup group: 6	Station: TORUN	Total bit rate: 256
Format: MKIV1:4	Bits per sample: 2	Sample rate: 32.000
Number of channels: 4	DBE type:	Speedup factor: 1.00

Disk used to record data.


```

1st LO= 2400.00 2400.00 2400.00 2400.00
Net SB=      L      L      U      U
IF SB =      L      L      L      L
Pol.  =      RCP     LCP     RCP     LCP
BBC   =      1      2      1      2
BBC SB=      U      U      L      L
IF    =      C      A      C      A

```

The following frequency sets based on these setups were used.

```

Frequency Set: 4 Setup file default. Used with PCAL = 1MHz
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 732.00 732.00 732.00 732.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 4

```

Track assignments are:

```

track1= 2, 18, 3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.236642	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 55.39950	0.00
	fake circumpolar target for a TS to look at			
* 0917+624	09 17 40.306860	* 09 21 36.231074	09 22 48.915716	0.00
J0921+6215	62 28 38.64009	* 62 15 52.18031	62 11 58.53835	0.00
	./rk08sub_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 7902 observations, RA-A02-12			

EFFECT OF SOLAR CORONA

The solar corona can cause unstable phases for sources too close to the Sun. SCHED provides warnings at individual scans for distances less than 10 degrees. The distance from the Sun to each source in this schedule is:

Source	Sun distance (deg)
0917+624	105.1

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ where F is in GHz.

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk08uctr

RADIOASTRON AGN SURVEY

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Observing mode: C/L-band, dual-pol

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Sun 29 Mar 2015 Day 88 ---

----- C-band VLBI scans -----

Next scan frequencies: 4836.00 4836.00 4836.00 4836.00
Next BBC frequencies: 736.00 736.00 736.00 736.00
Next scan bandwidths: 16.00 16.00 16.00 16.00

23 10 00	1751+288	12 52 23	31.1	82.4	-5.0	-42.8	0	0	23 10 00
23 22 00	---	13 04 25	32.9	84.7	-4.8	-43.0	720	23	23 10 01
23 22 30	1751+288	13 04 55	33.0	84.7	-4.8	-43.0	24	23	23 22 30
23 30 00	---	13 12 26	34.1	86.2	-4.7	-43.1	450	37	23 22 31

----- L-band VLBI scans -----

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 732.00 732.00 732.00 732.00

23 35 00	1751+288	13 17 27	34.9	87.2	-4.6	-43.2	293	37	23 35 00
23 47 00	---	13 29 29	36.7	89.5	-4.4	-43.3	720	60	23 35 01
23 47 30	1751+288	13 29 59	36.8	89.6	-4.4	-43.3	24	60	23 47 30
23 59 59	---	13 42 31	38.6	92.2	-4.2	-43.2	749	84	23 47 31

SETUP FILE INFORMATION:

NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

=====
Setup file: ra6cm2.set

Setup group: 1	Station: TORUN	Total bit rate: 256
Format: MKIV1:4	Bits per sample: 2	Sample rate: 32.000
Number of channels: 4	DBE type:	Speedup factor: 1.00

Disk used to record data.

```

1st LO=  4100.00  4100.00  4100.00  4100.00
Net SB=           L           L           U           U
IF SB =           U           U           U           U
Pol.  =          RCP          LCP          RCP          LCP
BBC   =           1           2           1           2
BBC SB=           L           L           U           U
IF    =           C           A           C           A

```

The following frequency sets based on these setups were used.

```

Frequency Set:  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

```

==== Setup file: ra18cm2.set

```

Setup group:  7           Station: TORUN           Total bit rate:  256
Format: MKIV1:4           Bits per sample:  2           Sample rate: 32.000
Number of channels:  4     DBE type:                Speedup factor:  1.00

```

Disk used to record data.

```

1st LO=  2400.00  2400.00  2400.00  2400.00
Net SB=           L           L           U           U
IF SB =           L           L           L           L
Pol.  =          RCP          LCP          RCP          LCP
BBC   =           1           2           1           2
BBC SB=           U           U           L           L
IF    =           C           A           C           A

```

The following frequency sets based on these setups were used.

```

Frequency Set:  5  Setup file default.  Used with PCAL = 1MHz
LO sum=  1668.00  1668.00  1668.00  1668.00
BBC fr=   732.00   732.00   732.00   732.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  5

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	Source position (RA/Dec) (J2000)	(Date)	Error (mas)
* 1751+288	17 51 45.401873	* 17 53 42.473645	17 54 18.533594	0.00
J1753+2848	28 48 36.64948	* 28 48 04.93876	28 47 49.50377	0.00

rk08uetr

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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 30 Mar 2015 Day 89 ---

----- L-band VLBI scans -----

Next scan frequencies:	1668.00	1668.00	1668.00	1668.00							
Next BBC frequencies:	732.00	732.00	732.00	732.00							
Next scan bandwidths:	16.00	16.00	16.00	16.00							
11 00 00	1751+441	00 44 20	27.6	-52.2	6.8		41.4	0	0	11 00 00	
11 14 30	---	00 58 52	25.9	-50.0	7.1		39.8	870	28	11 00 01	
11 15 00	1751+441	00 59 22	25.8	-49.9	7.1		39.8	24	28	11 15 00	
11 29 30	---	01 13 55	24.2	-47.6	7.3		38.2	870	56	11 15 01	
11 30 00	1751+441	01 14 25	24.1	-47.6	7.3		38.1	24	56	11 30 00	
11 44 30	---	01 28 57	22.5	-45.3	7.6		36.5	870	84	11 30 01	
11 45 00	1751+441	01 29 27	22.5	-45.2	7.6		36.5	24	84	11 45 00	
12 00 00	---	01 44 30	20.9	-42.9	7.8		34.7	900	112	11 45 01	

SETUP FILE INFORMATION:

NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

=====
Setup file: ra18cm2.set

Setup group:	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=  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)	(Date)	Error (mas)	
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.226093	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 55.59879	0.00
	fake circumpolar target for a TS to look at			
* 1751+441	17 51 53.712584	* 17 53 22.647889	17 53 50.166240	0.00
J1753+4409	44 10 17.80399	* 44 09 45.68615	44 09 27.02984	0.00
	./rk08ue_sources.radioastron			
	AGN, MASIV, rfc_2013d Petrov, 2013, unpublished 1851 observations, RA-A02-12			

EFFECT OF SOLAR CORONA

The solar corona can cause unstable phases for sources too close to the Sun. SCHED provides warnings at individual scans for distances less than 10 degrees. The distance from the Sun to each source in this schedule is:

```

Source      Sun distance (deg)
1751+441    94.7

```

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ where F is in GHz.

For common VLBI bands, this is:

```

1.6 GHz      45. deg
2.3 GHz      36. deg
5.0 GHz      23. deg
8.4 GHz      17. deg
15.0 GHz     12. deg
22.0 GHz     9. deg

```

rk08ugtr

RADIOASTRON AGN SURVEY

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Observing mode: C/L-band, dual-pol

Schedule for TORUN (Code Tr) Page 2
 RadioAstron AGN Survey

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC

--- Tue 31 Mar 2015 Day 90 ---

----- L-band VLBI scans -----

Next scan frequencies:	1668.00	1668.00	1668.00	1668.00						
Next BBC frequencies:	732.00	732.00	732.00	732.00						
Next scan bandwidths:	16.00	16.00	16.00	16.00						
00 00 00	1656-075	13 46 28	16.8	129.4	-3.2		-27.9	0	0	00 00 00
00 19 30	---	14 06 01	19.0	133.9	-2.9		-25.9	1170	37	00 00 01
00 20 00	1656-075	14 06 31	19.1	134.1	-2.9		-25.8	24	37	00 20 00
00 40 00	---	14 26 35	21.1	138.9	-2.5		-23.5	1200	76	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: ra18cm2.set

Setup group: 8	Station: TORUN	Total bit rate: 256
Format: MKIV1:4	Bits per sample: 2	Sample rate: 32.000
Number of channels: 4	DBE type:	Speedup factor: 1.00

Disk used to record data.

```

1st LO= 2400.00 2400.00 2400.00 2400.00
Net SB=      L      L      U      U
IF SB =      L      L      L      L
Pol.  =      RCP     LCP     RCP     LCP
BBC   =      1      2      1      2
BBC SB=      U      U      L      L
IF    =      C      A      C      A

```

The following frequency sets based on these setups were used.

```

Frequency Set:  4  Setup file default.  Used with PCAL = 1MHz
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr=  732.00 732.00 732.00 732.00
Bandwd=  16.00 16.00 16.00 16.00
Matching frequency sets:  4

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(Date)	Error (mas)	
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.214992	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 55.77229	0.00
	fake circumpolar target for a TS to look at			
* 1656-075	16 56 01.672906	* 16 58 44.061993	16 59 34.326503	0.00
J1658-0739	-07 34 47.28706	*-07 39 17.69432	-07 40 35.57991	0.00
	./rk08ug_sources.radioastron			
	AGN, HIGHz, rfc_2013d Petrov, 2013, unpublished 1558 observations, RA-A02-03, RA			

EFFECT OF SOLAR CORONA

The solar corona can cause unstable phases for sources too close to the Sun. SCHED provides warnings at individual scans for distances less than 10 degrees. The distance from the Sun to each source in this schedule is:

Source	Sun distance (deg)
3C286	143.2
1656-075	114.6

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ where F is in GHz.

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk08uhr

RADIOASTRON AGN SURVEY

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Observing mode: C/K-band, dual-pol

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
Early: Seconds between end of slew and start. Dwell: On source seconds.
Disk: GBytes recorded to this point.
TPStart: Recording start time. Frequencies are LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Tue 31 Mar 2015 Day 90 ---

----- C-band VLBI scans -----

Next scan frequencies:	4836.00	4836.00	4836.00	4836.00						
Next BBC frequencies:	736.00	736.00	736.00	736.00						
Next scan bandwidths:	16.00	16.00	16.00	16.00						
05 10 00	1741-038	18 57 19	31.1	201.2	1.2		12.6	0	0	05 10 00
05 22 00	---	19 09 21	30.3	204.6	1.4		14.5	720	23	05 10 01
05 22 30	1741-038	19 09 51	30.3	204.8	1.4		14.6	24	23	05 22 30
05 34 30	---	19 21 53	29.5	208.1	1.6		16.5	720	46	05 22 31
05 35 00	1741-038	19 22 23	29.5	208.3	1.6		16.6	24	46	05 35 00
05 47 00	---	19 34 25	28.6	211.5	1.8		18.3	720	69	05 35 01
05 47 30	1741-038	19 34 55	28.5	211.7	1.8		18.4	24	69	05 47 30
06 00 00	---	19 47 27	27.5	215.0	2.0		20.2	750	93	05 47 31

SETUP FILE INFORMATION:

NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

=====
Setup file: ra6cm2.set

Setup group:	4	Station:	TORUN	Total bit rate:	256
Format:	MKIV1:4	Bits per sample:	2	Sample rate:	32.000
Number of channels:	4	DBE type:		Speedup factor:	1.00

Disk used to record data.


```

1st LO=  4100.00  4100.00  4100.00  4100.00
Net SB=           L           L           U           U
IF SB =           U           U           U           U
Pol.  =      RCP      LCP      RCP      LCP
BBC   =           1           2           1           2
BBC SB=           L           L           U           U
IF    =           C           A           C           A

```

The following frequency sets based on these setups were used.

```

Frequency Set:  2  Setup file default.  Used with PCAL = 1MHz
LO sum=  4836.00  4836.00  4836.00  4836.00
BBC fr=   736.00   736.00   736.00   736.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  2

```

Track assignments are:

```

track1=  2, 18,  3, 19
barrel=roll_off

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(Date)	Error (mas)	
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 54.209698	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 55.84501	0.00
	fake circumpolar target for a TS to look at			
* 1741-038	17 41 20.616010	* 17 43 58.856134	17 44 47.583498	0.00
J1743-0350	-03 48 48.90004	*-03 50 04.61684	-03 50 23.74145	0.00
	./rk08uh_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 173236 observations, RA-A02-12			

EFFECT OF SOLAR CORONA

The solar corona can cause unstable phases for sources too close to the Sun. SCHED provides warnings at individual scans for distances less than 10 degrees. The distance from the Sun to each source in this schedule is:

Source	Sun distance (deg)
3C286	143.2
1741-038	103.4

Barry Clark estimates from predictions by Ketan Desai of IPM scattering sizes that the Sun will cause amplitude reductions on the longest VLBA baselines at a solar distance of $60 \text{ deg } F^{-0.6}$ where F is in GHz.

For common VLBI bands, this is:

1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg

rk08ultr

RADIOASTRON AGN SURVEY

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Fax: +7-495-3332378 Phone during observation: +7-903-6614865

Observing mode: C/K-band, dual-pol

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.

Early: Seconds between end of slew and start. Dwell: On source seconds.

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are LO sum (band edge).

SYNC: Time correlator is expected to sync up.

Start UT Source Start / Stop Early Disk TPStart
Stop UT LST EL AZ HA UP ParA Dwell GBytes SYNC

--- Tue 31 Mar 2015 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

19 10 00	1357+769	08 59 37	54.6	22.6	-5.0	-87.1	0	0	19 10 00
19 22 00	---	09 11 39	55.3	22.6	-4.8	-90.0	720	23	19 10 01
19 22 30	1357+769	09 12 09	55.3	22.6	-4.8	-90.1	24	23	19 22 30
19 30 00	---	09 19 40	55.7	22.6	-4.6	-91.9	450	37	19 22 31

----- 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

19 35 00	1357+769	09 24 41	56.0	22.6	-4.6	-93.2	294	37	19 35 00
19 47 00	---	09 36 43	56.7	22.5	-4.4	-96.2	720	60	19 35 01
19 47 30	1357+769	09 37 13	56.7	22.5	-4.3	-96.3	24	60	19 47 30
20 00 00	---	09 49 45	57.5	22.3	-4.1	-99.5	750	84	19 47 31

SETUP FILE INFORMATION:

NOTE: If DOPPLER, FREQ, or BW were used, see the individual scans for the final BBC settings.

=====
Setup file: ra1cm2.set

Matching groups in ./rk08ul_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

```

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:  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)	Source position (RA/Dec) (J2000)	(Date)	Error (mas)
* 1357+769	13 57 42.117007	* 13 57 55.371538	13 58 02.956010	0.00
J1357+7643	76 57 53.35418	* 76 43 21.05098	76 38 50.53532	0.00

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