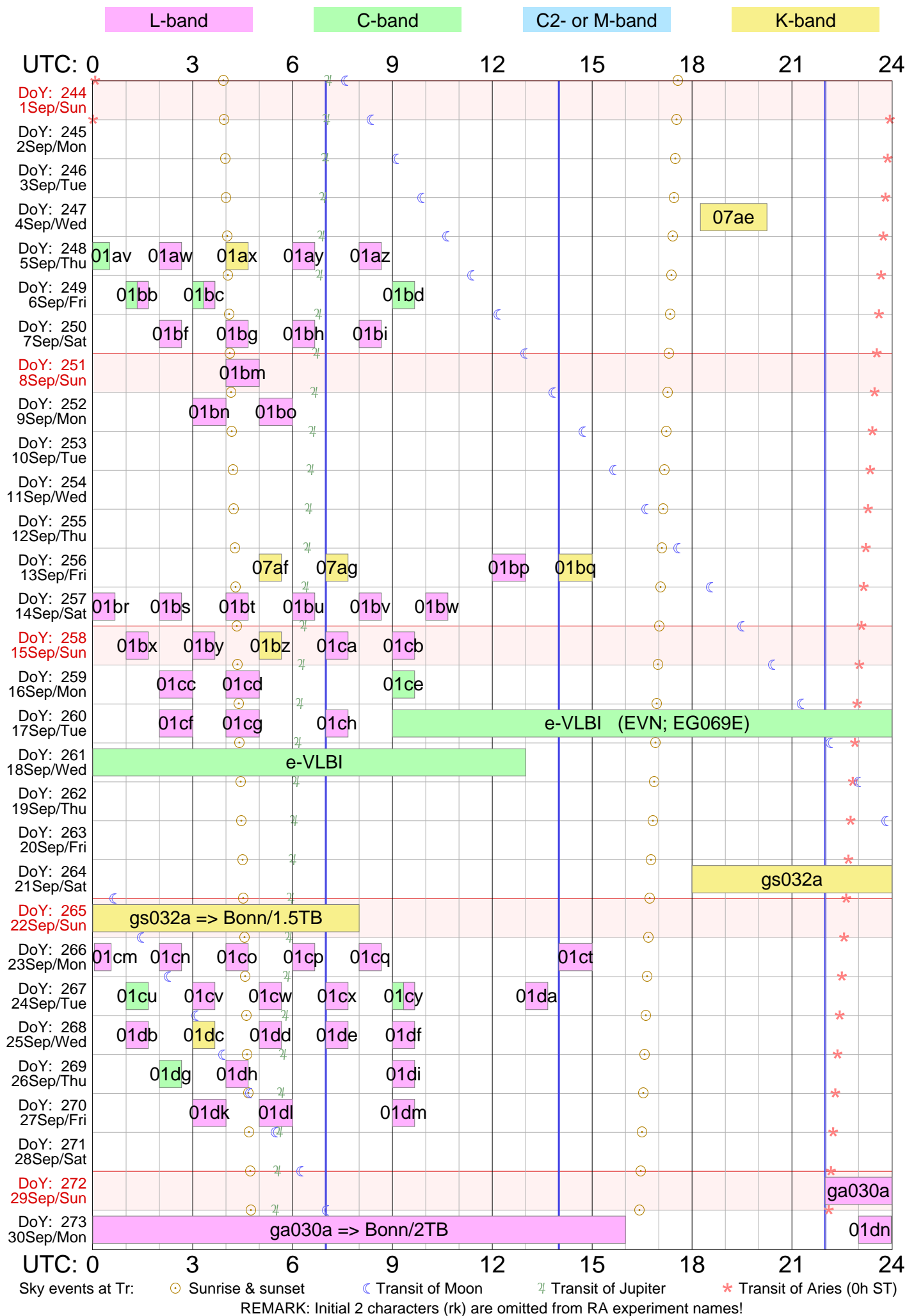


# Tr VLBI schedule for Sep 2013



# RadioAstron and EVN Experiments

## September 2013

Użytkownik i hasło ftp dla logów i schedulów: grt K0&th%

ftp://webinet.asc.rssi.ru

Przykład dla log files: cd GRT\_log\_files/2013\_08/2013\_08\_01\_raks02aa

Przykład dla sched files: cd schedule/grtsched/RAKS/rk02aa

Name	Band	DoY	D	M/WD	UT_Start	UT_Stop	Disk_space
					h m	h m	_required
rk07ae	K	247	4	09/Sro	18 15	20 15	220 GB
rk01av	C	248	5	09/Czw	0 00	0 30	56 GB
rk01aw	L	248	5	09/Czw	2 00	2 40	74 GB
rk01ax	K	248	5	09/Czw	4 00	4 40	74 GB
rk01ay	L	248	5	09/Czw	6 00	6 40	74 GB
rk01az	L	248	5	09/Czw	8 00	8 40	74 GB
rk01bb	C&L	249	6	09/Pia	1 00	1 40	65 GB
rk01bc	C&L	249	6	09/Pia	3 00	3 40	65 GB
rk01bd	C	249	6	09/Pia	9 00	9 40	74 GB
rk01bf	L	250	7	09/Sob	2 00	2 40	74 GB
rk01bg	L	250	7	09/Sob	4 00	4 40	74 GB
rk01bh	L	250	7	09/Sob	6 00	6 40	74 GB
rk01bi	L	250	7	09/Sob	8 00	8 40	74 GB
rk01bm	L	251	8	09/Nie	4 00	5 00	110 GB
rk01bn	L	252	9	09/Pon	3 00	4 00	110 GB
rk01bo	L	252	9	09/Pon	5 00	6 00	110 GB
rk07af	K	256	13	09/Pia	5 00	5 40	74 GB
rk07ag	K	256	13	09/Pia	7 00	7 40	74 GB
rk01bp	L	256	13	09/Pia	12 00	13 00	110 GB
rk01bq	K	256	13	09/Pia	14 00	15 00	110 GB
rk01br	L	257	14	09/Sob	0 00	0 40	74 GB
rk01bs	L	257	14	09/Sob	2 00	2 40	74 GB
rk01bt	L	257	14	09/Sob	4 00	4 40	74 GB
rk01bu	L	257	14	09/Sob	6 00	6 40	74 GB
rk01bv	L	257	14	09/Sob	8 00	8 40	74 GB
rk01bw	L	257	14	09/Sob	10 00	10 40	74 GB
rk01bx	L	258	15	09/Nie	1 00	1 40	74 GB
rk01by	L	258	15	09/Nie	3 00	3 40	74 GB
rk01bz	K	258	15	09/Nie	5 00	5 40	74 GB
rk01ca	L	258	15	09/Nie	7 00	7 40	74 GB
rk01cb	L	258	15	09/Nie	9 00	9 40	74 GB
rk01cc	L	259	16	09/Pon	2 00	3 00	110 GB

Name	Band	DoY	D	M/WD	UT_Start	UT_Stop	Disk_space	
					h m	h m	_required	
rk01cd	L	259	16.09/Pon		4 00	5 00	110 GB	
rk01ce	C	259	16.09/Pon		9 00	9 40	74 GB	
rk01cf	L	260	17.09/Wto		2 00	3 00	110 GB	
rk01cg	L	260	17.09/Wto		4 00	5 00	110 GB	
rk01ch	L	260	17.09/Wto		7 00	7 40	74 GB	
eg069e	C	260-61	17.09/Wto+		9 00	13 00	0 GB	e-VLBI
gs032a	K	264-65	21.09/Nie+		18 00	8 00	1311 GB	=> Bonn
rk01cm	L	266	23.09/Pon		0 03	0 33	56 GB	
rk01cn	L	266	23.09/Pon		2 00	2 40	74 GB	
rk01co	L	266	23.09/Pon		4 00	4 40	74 GB	
rk01cp	L	266	23.09/Pon		6 00	6 40	74 GB	
rk01cq	L	266	23.09/Pon		8 00	8 40	74 GB	
rk01ct	L	266	23.09/Pon		14 00	15 00	110 GB	
rk01cu	C	267	24.09/Wto		1 00	1 40	74 GB	
rk01cv	L	267	24.09/Wto		3 00	3 40	74 GB	
rk01cw	L	267	24.09/Wto		5 00	5 40	74 GB	
rk01cx	L	267	24.09/Wto		7 00	7 40	74 GB	
rk01cy	C&L	267	24.09/Wto		9 00	9 40	65 GB	
rk01da	L	267	24.09/Wto		13 00	13 40	74 GB	
rk01db	L	268	25.09/Sro		1 00	1 40	74 GB	
rk01dc	K	268	25.09/Sro		3 00	3 40	74 GB	
rk01dd	L	268	25.09/Sro		5 00	5 40	74 GB	
rk01de	L	268	25.09/Sro		7 00	7 40	74 GB	
rk01df	L	268	25.09/Sro		9 00	9 40	74 GB	
rk01dg	C	269	26.09/Czw		2 00	2 40	74 GB	
rk01dh	L	269	26.09/Czw		4 00	4 40	74 GB	
rk01di	L	269	26.09/Czw		9 00	9 40	74 GB	
rk01dk	L	270	27.09/Pia		3 00	4 00	110 GB	
rk01dl	L	270	27.09/Pia		5 00	6 00	110 GB	
rk01dm	L	270	27.09/Pia		9 00	9 40	74 GB	
ga030a	L	272-73	29.09/Nie+		22 00	16 00	1430 GB	=> Bonn
rk01dn	L	273	30.09/Pon		23 00	23 30	56 GB	
Sum (64 experiments):							7752 GB	

Do zapisu obserwacji RadioAstronu dedykowany jest dyskpak

TR-00002/1600

montowany w banku A.

---

NT0-0005/2000 — dla gs032a

TR-00011/2000 — dla ga030a

RADIOASTRON MASER OBSERVATIONS

PI: *Alexei Alakoz*

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

Notes:    K-band, Radioastron-compatible frequency setup

Schedule for TORUN                      (Code Tr )    Page    2

RadioAstron Maser observations

UP:    D => Below limits;    H => Below horizon mask;    W => still slewing at end;    blank => Up.  
 Early: Seconds between end of slew and start.    Dwell: On source seconds.  
 Disk: GBytes recorded to this point.  
 TPStart: Recording start time.    Frequencies are 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 Sep 2013    Day 247 ---

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 15 00	W51_E8_H20	18 25 22	49.7	157.6	-1.0		-13.7	0	0	18 15 00
18 24 30	---	18 34 53	50.2	161.1	-0.8		-11.6	570	18	18 15 01
18 25 00	W51_E8_H20	18 35 23	50.2	161.3	-0.8		-11.5	24	18	18 25 00
18 34 30	---	18 44 55	50.7	164.8	-0.7		-9.3	570	36	18 25 01
18 35 00	W51_E8_H20	18 45 25	50.7	165.0	-0.6		-9.2	24	36	18 35 00
18 44 30	---	18 54 56	51.0	168.6	-0.5		-7.0	570	55	18 35 01
18 45 00	W51_E8_H20	18 55 27	51.0	168.8	-0.5		-6.9	24	55	18 45 00
18 54 30	---	19 04 58	51.3	172.5	-0.3		-4.7	570	73	18 45 01
18 55 00	W51_E8_H20	19 05 28	51.3	172.7	-0.3		-4.5	24	73	18 55 00
19 04 30	---	19 15 00	51.4	176.4	-0.2		-2.3	570	91	18 55 01
19 05 00	W51_E8_H20	19 15 30	51.4	176.6	-0.1		-2.1	24	91	19 05 00
19 14 30	---	19 25 01	51.4	180.2	0.0		0.2	570	109	19 05 01
19 15 00	W51_E8_H20	19 25 31	51.4	180.4	0.0		0.3	24	109	19 15 00
19 24 30	---	19 35 03	51.4	184.1	0.2		2.6	570	128	19 15 01
19 25 00	W51_E8_H20	19 35 33	51.4	184.3	0.2		2.7	24	128	19 25 00
19 34 30	---	19 45 05	51.2	188.0	0.3		5.0	570	146	19 25 01
19 35 00	W51_E8_H20	19 45 35	51.2	188.2	0.4		5.1	24	146	19 35 00
19 44 30	---	19 55 06	51.0	191.9	0.5		7.3	570	164	19 35 01
19 45 00	W51_E8_H20	19 55 36	51.0	192.0	0.5		7.4	24	164	19 45 00
19 54 30	---	20 05 08	50.6	195.7	0.7		9.6	570	182	19 45 01
19 55 00	W51_E8_H20	20 05 38	50.6	195.8	0.7		9.7	24	182	19 55 00
20 04 30	---	20 15 10	50.2	199.4	0.8		11.9	570	201	19 55 01
20 05 00	W51_E8_H20	20 15 40	50.1	199.6	0.9		12.0	24	201	20 05 00
20 15 00	---	20 25 41	49.6	203.2	1.0		14.2	600	220	20 05 01

## SETUP FILE INFORMATION:

```

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

```

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  3  Setup file default.  Used pcal sets:  1
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

```

The following pulse cal sets were used with this setup:

```

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

```

Track assignments are:

```

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

```

## POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec)		(Date)	Error (mas)
	(B1950)	(J2000)		
* W51_E8_H20	19 21 26.205840	* 19 23 43.873630	19 24 23.030056	0.00
	14 24 36.09430	* 14 30 29.45360	14 32 26.65973	0.00
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 24.147509	0.00
	85 16 41.77889	* 85 00 00.00000	84 55 27.71804	0.00

## EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
W51_E8_H20  123.5
FAKERA      78.2

```

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
22.0 GHz     9. deg

```

rk01avtr

RADIOASTRON AGN SURVEY

PI: Yuri Kovalev

Address: ASC Lebedev Profsoyuznaya 84/32 117997 Moscow, Russia
Phone: +7-495-3332167 EMAIL: yyk@asc.rssi.ru
Fax: +7-495-3332378 Phone during observation: +7-915-1546281

Notes: C-band, Radioastron-compatible frequency setup

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 5 Sep 2013 Day 248 ---

Next scan frequencies: 4836.00 4836.00 4836.00 4836.00
Next BBC frequencies: 636.00 636.00 636.00 636.00
Next scan bandwidths: 16.00 16.00 16.00 16.00
00 00 00 2134+004 00 11 18 28.7 225.2 2.6 25.2 0 0 00 00 00
00 09 30 --- 00 20 50 27.7 227.6 2.7 26.3 570 18 00 00 01
00 10 00 2134+004 00 21 20 27.6 227.8 2.7 26.4 24 18 00 10 00
00 19 30 --- 00 30 51 26.6 230.1 2.9 27.5 570 36 00 10 01
00 20 00 2134+004 00 31 22 26.5 230.3 2.9 27.5 24 36 00 20 00
00 30 00 --- 00 41 23 25.3 232.7 3.1 28.5 600 56 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: ra6cm2.set

Matching groups in /home/kirx/sched/catalogs/freq.dat:
tr6cm E-mail Borkowski 23Apr03 (CR 1May03)

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= 4200.00 4200.00 4200.00 4200.00
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 pcal sets:  1
LO sum=   4836.00  4836.00  4836.00  4836.00
BBC fr=    636.00   636.00   636.00   636.00
Bandwd=    16.00   16.00   16.00   16.00
Matching frequency sets:  2

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1  S3  S1  S3  S1  S2  S3  S4
PCALXB2=  S2  S4  S2  S4  M1  M2  M3  M4
PCALFR1= 1000 1000 13000 13000  0  0  0  0
PCALFR2= 1000 1000 13000 13000  0  0  0  0

```

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 24.135497	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 27.63793	0.00
J2136+0041	21 34 05.207371	* 21 36 38.586306	21 37 22.438183	0.74
* 2134+004	00 28 25.08000	* 00 41 54.21282	00 45 52.16073	1.25

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	78.3
2134+004	159.0

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

**rk01awtr**

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
 Phone: +7-495-3332167                      EMAIL:     yyk@asc.rssi.ru  
 Fax:     +7-495-3332378                      Phone during observation: +7-915-1546281

Notes:     L-band, Radioastron-compatible frequency setup

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    5 Sep 2013    Day 248 ---

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

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00  
 Next BBC frequencies: 632.00 632.00 632.00 632.00  
 Next scan bandwidths: 16.00 16.00 16.00 16.00

02 00 00	0307+380	02 11 38	71.9	139.0	-1.0	-30.1	0	0	02 00 00
02 09 30	---	02 21 10	72.8	144.4	-0.8	-26.4	570	18	02 00 01
02 10 00	0307+380	02 21 40	72.9	144.7	-0.8	-26.2	23	18	02 10 00
02 19 30	---	02 31 11	73.6	150.6	-0.7	-22.0	570	36	02 10 01
02 20 00	0307+380	02 31 41	73.7	151.0	-0.7	-21.8	23	36	02 20 00
02 29 30	---	02 41 13	74.3	157.4	-0.5	-17.1	570	55	02 20 01
02 30 00	0307+380	02 41 43	74.3	157.7	-0.5	-16.9	23	55	02 30 00
02 40 00	---	02 51 45	74.8	164.9	-0.3	-11.5	600	74	02 30 01

SETUP FILE INFORMATION:

==== Setup file: ra18cm2.set

Matching groups in /home/kirx/sched/catalogs/freq.dat:  
 tr18cm                      E-mail Borkowski 12Mar98, preferred alternative

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=	2300.00	2300.00	2300.00	2300.00
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 pcal sets: 1
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 632.00 632.00 632.00 632.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 6

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set: 1 PCAL = 1MHZ
PCALXB1= S1 S3 S1 S3 S1 S2 S3 S4
PCALXB2= S2 S4 S2 S4 M1 M2 M3 M4
PCALFR1= 1000 1000 13000 13000 0 0 0 0
PCALFR2= 1000 1000 13000 13000 0 0 0 0

```

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)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 24.131230	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 27.61017	0.00
J0310+3814	03 07 37.554068	* 03 10 49.879926	03 11 44.425062	0.13
* 0307+380	38 03 34.47086	* 38 14 53.83785	38 17 51.74523	0.10

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	78.3
0307+380	105.7

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

**rk01axtr**

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
 Phone:    +7-495-3332167                      EMAIL:    yyk@asc.rssi.ru  
 Fax:       +7-495-3332378                      Phone during observation: +7-915-1546281

Notes:    K-band, Radioastron-compatible frequency setup

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    5 Sep 2013    Day 248 ---

----- 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

Start UT	Source	LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
04 00 00	0333+321	04 11 58	68.3	200.1	0.6		14.2	0	0	04 00 00
04 09 30	---	04 21 29	67.8	205.3	0.7		17.7	570	18	04 00 01
04 10 00	0333+321	04 21 59	67.8	205.6	0.7		17.9	23	18	04 10 00
04 19 30	---	04 31 31	67.1	210.5	0.9		21.2	570	36	04 10 01
04 20 00	0333+321	04 32 01	67.0	210.8	0.9		21.3	23	36	04 20 00
04 29 30	---	04 41 33	66.3	215.4	1.1		24.3	570	55	04 20 01
04 30 00	0333+321	04 42 03	66.2	215.7	1.1		24.5	23	55	04 30 00
04 40 00	---	04 52 04	65.3	220.3	1.2		27.4	600	74	04 30 01

SETUP FILE INFORMATION:

==== Setup file: ra1cm2.set

Matching groups in /home/kirx/sched/catalogs/freq.dat:  
 tricm                      Values from Bob Campbell by email (23-04-2013)

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

```

Frequency Set: 7 Setup file default. Used pcal sets: 1
LO sum= 22236.00 22236.00 22236.00 22236.00
BBC fr= 736.00 736.00 736.00 736.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 7

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set: 1 PCAL = 1MHZ
PCALXB1= S1 S3 S1 S3 S1 S2 S3 S4
PCALXB2= S2 S4 S2 S4 M1 M2 M3 M4
PCALFR1= 1000 1000 13000 13000 0 0 0 0
PCALFR2= 1000 1000 13000 13000 0 0 0 0

```

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 24.127258	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 27.58464	0.00
J0336+3218	03 33 22.404691	* 03 36 30.107610	03 37 23.061762	0.12
* 0333+321	32 08 36.66042	* 32 18 29.34219	32 21 04.05523	0.10

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	78.4
0333+321	102.8

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

For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

rk01aytr

RADIOASTRON AGN SURVEY

PI: Yuri Kovalev

Address: ASC Lebedev Profsoyuznaya 84/32 117997 Moscow, Russia
Phone: +7-495-3332167 EMAIL: yyk@asc.rssi.ru
Fax: +7-495-3332378 Phone during observation: +7-915-1546281

Notes: L-band, Radioastron-compatible frequency setup

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 5 Sep 2013 Day 248 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 632.00 632.00 632.00 632.00
Next scan bandwidths: 16.00 16.00 16.00 16.00

Table with columns: Start UT, Stop UT, Source, LST, EL, AZ, HA, UP, ParA, Dwell, GBytes, TPStart, SYNC. Contains observation schedule data for 06:00:00 to 06:40:00.

SETUP FILE INFORMATION:

==== Setup file: rai8cm2.set
Matching groups in /home/kirx/sched/catalogs/freq.dat:
tri8cm E-mail Borkowski 12Mar98, preferred alternative

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= 2300.00 2300.00 2300.00 2300.00
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 pcal sets: 1
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 632.00 632.00 632.00 632.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 7

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set: 1 PCAL = 1MHZ
PCALXB1= S1 S3 S1 S3 S1 S2 S3 S4
PCALXB2= S2 S4 S2 S4 M1 M2 M3 M4
PCALFR1= 1000 1000 13000 13000 0 0 0 0
PCALFR2= 1000 1000 13000 13000 0 0 0 0

```

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)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 24.122896	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 27.55697	0.00
J0303+4716	03 00 10.111206	* 03 03 35.242224	03 04 33.669612	0.15
* 0300+470	47 04 33.67711	* 47 16 16.27545	47 19 18.13416	0.10

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	78.4
0300+470	103.3

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

For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

rk01aztr

RADIOASTRON AGN SURVEY

PI: Yuri Kovalev

Address: ASC Lebedev Profsoyuznaya 84/32 117997 Moscow, Russia
Phone: +7-495-3332167 EMAIL: yyk@asc.rssi.ru
Fax: +7-495-3332378 Phone during observation: +7-915-1546281

Notes: L-band, Radioastron-compatible frequency setup

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 5 Sep 2013 Day 248 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 632.00 632.00 632.00 632.00
Next scan bandwidths: 16.00 16.00 16.00 16.00

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 0340+362.

SETUP FILE INFORMATION:

==== Setup file: ra18cm2.set
Matching groups in /home/kirx/sched/catalogs/freq.dat:
tr18cm E-mail Borkowski 12Mar98, preferred alternative

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= 2300.00 2300.00 2300.00 2300.00
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 pcal sets: 1
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 632.00 632.00 632.00 632.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 5

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set: 1 PCAL = 1MHZ
PCALXB1= S1 S3 S1 S3 S1 S2 S3 S4
PCALXB2= S2 S4 S2 S4 M1 M2 M3 M4
PCALFR1= 1000 1000 13000 13000 0 0 0 0
PCALFR2= 1000 1000 13000 13000 0 0 0 0

```

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)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 24.118482	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 27.52934	0.00
J0343+3622	03 40 14.791318	* 03 43 28.952407	03 44 23.716371	0.13
* 0340+362	36 12 44.44787	* 36 22 12.42957	36 24 38.61055	0.11

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	78.4
0340+362	100.4

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

rk01bbtr

RADIOASTRON AGN SURVEY

PI: Yuri Kovalev

Address: ASC Lebedev Profsoyuznaya 84/32 117997 Moscow, Russia
Phone: +7-495-3332167 EMAIL: yyk@asc.rssi.ru
Fax: +7-495-3332378 Phone during observation: +7-915-1546281

UWAGA: C i L !!!

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

--- Fri 6 Sep 2013 Day 249 ---

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

Next scan frequencies: 4836.00 4836.00 4836.00 4836.00
Next BBC frequencies: 636.00 636.00 636.00 636.00
Next scan bandwidths: 16.00 16.00 16.00 16.00

01 00 00 0406+121 01 15 25 36.5 122.9 -2.9 -31.1 0 0 01 00 00
01 09 30 --- 01 24 56 37.7 125.4 -2.8 -30.1 570 18 01 00 01
01 10 00 0406+121 01 25 26 37.8 125.6 -2.7 -30.0 24 18 01 10 00
01 15 00 --- 01 30 27 38.4 126.9 -2.7 -29.4 300 28 01 10 01

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

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 632.00 632.00 632.00 632.00

01 20 00 0406+121 01 35 28 39.0 128.3 -2.6 -28.8 293 28 01 20 00
01 29 30 --- 01 45 00 40.1 130.9 -2.4 -27.7 570 46 01 20 01
01 30 00 0406+121 01 45 30 40.1 131.1 -2.4 -27.6 24 46 01 30 00
01 40 00 --- 01 55 31 41.2 134.0 -2.2 -26.3 600 65 01 30 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

Matching groups in /home/kirx/sched/catalogs/freq.dat:
tr6cm E-mail Borkowski 23Apr03 (CR 1May03)

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=	4200.00	4200.00	4200.00	4200.00
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 pcal sets: 1  
 LO sum= 4836.00 4836.00 4836.00 4836.00  
 BBC fr= 636.00 636.00 636.00 636.00  
 Bandwd= 16.00 16.00 16.00 16.00  
 Matching frequency sets: 3

The following pulse cal sets were used with this setup:

Pulse cal detection set: 1 PCAL = 1MHZ  
 PCALXB1= S1 S3 S1 S3 S1 S2 S3 S4  
 PCALXB2= S2 S4 S2 S4 M1 M2 M3 M4  
 PCALFR1= 1000 1000 13000 13000 0 0 0 0  
 PCALFR2= 1000 1000 13000 13000 0 0 0 0

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=	2300.00	2300.00	2300.00	2300.00
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 pcal sets: 1  
 LO sum= 1668.00 1668.00 1668.00 1668.00  
 BBC fr= 632.00 632.00 632.00 632.00  
 Bandwd= 16.00 16.00 16.00 16.00  
 Matching frequency sets: 4

The following pulse cal sets were used with this setup:

```
Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1   S3   S1   S3   S1   S2   S3   S4
PCALXB2=  S2   S4   S2   S4   M1   M2   M3   M4
PCALFR1= 1000 1000 13000 13000   0   0   0   0
PCALFR2= 1000 1000 13000 13000   0   0   0   0
```

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)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 24.078294	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 27.29360	0.00
J0409+1217	04 06 35.476886	* 04 09 22.008712	04 10 08.676721	0.11
* 0406+121	12 09 49.31039	* 12 17 39.84765	12 19 46.82357	0.11

#### SOURCE SCAN SUMMARY FOR SOURCES LISTED ABOVE

Scan hours are for recording scans only.

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

Source	Setup file	Frequency sets (duplicates not shown)	Observing hours	
			Scan	Baseline
FAKERA	ra6cm2.set	5	0.642	0.000
0406+121	ra6cm2.set	1 3	0.883	0.000
	ra18cm2.set	2 4	0.967	0.000

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	78.7
0406+121	100.6

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

rk01bctr

RADIOASTRON AGN SURVEY

PI: Yuri Kovalev

Address: ASC Lebedev Profsoyuznaya 84/32 117997 Moscow, Russia
Phone: +7-495-3332167 EMAIL: yyk@asc.rssi.ru
Fax: +7-495-3332378 Phone during observation: +7-915-1546281

UWAGA: C i L !!!

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 6 Sep 2013 Day 249 ---

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

Next scan frequencies: 4836.00 4836.00 4836.00 4836.00
Next BBC frequencies: 636.00 636.00 636.00 636.00
Next scan bandwidths: 16.00 16.00 16.00 16.00

03 00 00 0420+022 03 15 44 37.4 158.5 -1.1 -12.7 0 0 03 00 00
03 09 30 --- 03 25 16 37.8 161.4 -1.0 -11.0 570 18 03 00 01
03 10 00 0420+022 03 25 46 37.9 161.6 -1.0 -10.9 24 18 03 10 00
03 15 00 --- 03 30 47 38.1 163.1 -0.9 -10.0 300 28 03 10 01

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

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 632.00 632.00 632.00 632.00

03 20 00 0420+022 03 35 48 38.3 164.7 -0.8 -9.1 293 28 03 20 00
03 29 30 --- 03 45 19 38.6 167.7 -0.6 -7.3 570 46 03 20 01
03 30 00 0420+022 03 45 49 38.7 167.9 -0.6 -7.2 24 46 03 30 00
03 40 00 --- 03 55 51 38.9 171.1 -0.5 -5.4 600 65 03 30 01

SETUP FILE INFORMATION:

==== Setup file: ra6cm2.set

Matching groups in /home/kirx/sched/catalogs/freq.dat:
tr6cm E-mail Borkowski 23Apr03 (CR 1May03)

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=	4200.00	4200.00	4200.00	4200.00
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 pcal sets: 1  
 LO sum= 4836.00 4836.00 4836.00 4836.00  
 BBC fr= 636.00 636.00 636.00 636.00  
 Bandwd= 16.00 16.00 16.00 16.00  
 Matching frequency sets: 3

The following pulse cal sets were used with this setup:

Pulse cal detection set: 1 PCAL = 1MHZ  
 PCALXB1= S1 S3 S1 S3 S1 S2 S3 S4  
 PCALXB2= S2 S4 S2 S4 M1 M2 M3 M4  
 PCALFR1= 1000 1000 13000 13000 0 0 0 0  
 PCALFR2= 1000 1000 13000 13000 0 0 0 0

Track assignments are:

track1= 2, 18, 3, 19  
 barrel=roll\_off

==== Setup file: ra18cm2.set

Matching groups in /home/kirx/sched/catalogs/freq.dat:

tr18cm E-mail Borkowski 12Mar98, preferred alternative

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=	2300.00	2300.00	2300.00	2300.00
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 pcal sets: 1  
 LO sum= 1668.00 1668.00 1668.00 1668.00  
 BBC fr= 632.00 632.00 632.00 632.00  
 Bandwd= 16.00 16.00 16.00 16.00  
 Matching frequency sets: 4

The following pulse cal sets were used with this setup:

```
Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1   S3   S1   S3   S1   S2   S3   S4
PCALXB2=  S2   S4   S2   S4   M1   M2   M3   M4
PCALFR1= 1000 1000 13000 13000   0   0   0   0
PCALFR2= 1000 1000 13000 13000   0   0   0   0
```

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 24.073322	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 27.26621	0.00
J0422+0219	04 20 16.064039	* 04 22 52.214653	04 23 35.865895	0.10
* 0420+022	02 12 29.61655	* 02 19 26.93073	02 21 22.34059	0.10

#### SOURCE SCAN SUMMARY FOR SOURCES LISTED ABOVE

Scan hours are for recording scans only.

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

Source	Setup file	Frequency sets (duplicates not shown)	Observing hours	
			Scan	Baseline
FAKERA	ra6cm2.set	5	0.642	0.000
0420+022	ra6cm2.set	1 3	0.883	0.000
	ra18cm2.set	2 4	0.967	0.000

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	78.7
0420+022	98.8

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

rk01bdtr

RADIOASTRON AGN SURVEY

PI: Yuri Kovalev

Address: ASC Lebedev Profsoyuznaya 84/32 117997 Moscow, Russia
Phone: +7-495-3332167 EMAIL: yyk@asc.rssi.ru
Fax: +7-495-3332378 Phone during observation: +7-915-1546281

Observing mode: C-band, dual-pol

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

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

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

--- Fri 6 Sep 2013 Day 249 ---

Next scan frequencies: 4836.00 4836.00 4836.00 4836.00
Next BBC frequencies: 636.00 636.00 636.00 636.00
Next scan bandwidths: 16.00 16.00 16.00 16.00

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 0406+121.

SETUP FILE INFORMATION:

==== Setup file: ra6cm2.set

Matching groups in /home/kirx/sched/catalogs/freq.dat:
tr6cm E-mail Borkowski 23Apr03 (CR 1May03)

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= 4200.00 4200.00 4200.00 4200.00
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 pcal sets:  1
LO sum=  4836.00  4836.00  4836.00  4836.00
BBC fr=   636.00   636.00   636.00   636.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  2

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1  S3  S1  S3  S1  S2  S3  S4
PCALXB2=  S2  S4  S2  S4  M1  M2  M3  M4
PCALFR1= 1000 1000 13000 13000  0  0  0  0
PCALFR2= 1000 1000 13000 13000  0  0  0  0

```

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 24.058442	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 27.18627	0.00
	From catalog imbedded in main SCHED input file.			
	fake circumpolar target for the TS to look at			
J0409+1217	04 06 35.476886	* 04 09 22.008712	04 10 08.684148	0.11
* 0406+121	12 09 49.31039	* 12 17 39.84765	12 19 46.84367	0.11
J0409+12	/home/kirx/sched/catalogs/sources.vlba			
	rfc_2012b Petrov, 2012, unpublished 1295 observations			

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	78.8
0406+121	100.9

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

For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

rk01bfr

RADIOASTRON AGN SURVEY

PI: Yuri Kovalev

Address: ASC Lebedev Profsoyuznaya 84/32 117997 Moscow, Russia
Phone: +7-495-3332167 EMAIL: yyk@asc.rssi.ru
Fax: +7-495-3332378 Phone during observation: +7-915-1546281

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

--- Sat 7 Sep 2013 Day 250 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 632.00 632.00 632.00 632.00
Next scan bandwidths: 16.00 16.00 16.00 16.00

Table with 11 columns: Start UT, Source, LST, EL, AZ, HA, UP, ParA, Dwell, GBytes, SYNC. It lists observation times and parameters for source 0422+004.

SETUP FILE INFORMATION:

==== Setup file: ra18cm2.set
Matching groups in /home/kirx/sched/catalogs/freq.dat:
tr18cm E-mail Borkowski 12Mar98, preferred alternative

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= 2300.00 2300.00 2300.00 2300.00
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 pcal sets:  1
LO sum=    1668.00  1668.00  1668.00  1668.00
BBC fr=     632.00  632.00  632.00  632.00
Bandwd=     16.00   16.00   16.00   16.00
Matching frequency sets:  3

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1  S3  S1  S3  S1  S2  S3  S4
PCALXB2=  S2  S4  S2  S4  M1  M2  M3  M4
PCALFR1= 1000 1000 13000 13000  0  0  0  0
PCALFR2= 1000 1000 13000 13000  0  0  0  0

```

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 24.011651	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 26.95086	0.00
J0424+0036	04 22 12.515417	* 04 24 46.842063	04 25 29.989482	0.10
* 0422+004	00 29 16.67917	* 00 36 06.32935	00 38 00.20191	0.11

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	79.0
0422+004	99.4

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

For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

rk01bgtr

RADIOASTRON AGN SURVEY

PI: Yuri Kovalev

Address: ASC Lebedev Profsoyuznaya 84/32 117997 Moscow, Russia
Phone: +7-495-3332167 EMAIL: yyk@asc.rssi.ru
Fax: +7-495-3332378 Phone during observation: +7-915-1546281

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

--- Sat 7 Sep 2013 Day 250 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 632.00 632.00 632.00 632.00
Next scan bandwidths: 16.00 16.00 16.00 16.00

Table with columns: Start UT, Stop UT, Source, LST, EL, AZ, HA, UP, ParA, Early Dwell, Disk GBytes, TPStart SYNC. Contains observation schedule data for 04:00:00 to 04:40:00.

SETUP FILE INFORMATION:

==== Setup file: rai8cm2.set
Matching groups in /home/kirx/sched/catalogs/freq.dat:
tri8cm E-mail Borkowski 12Mar98, preferred alternative

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= 2300.00 2300.00 2300.00 2300.00
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 pcal sets: 1
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 632.00 632.00 632.00 632.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 3

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set: 1 PCAL = 1MHZ
PCALXB1= S1 S3 S1 S3 S1 S2 S3 S4
PCALXB2= S2 S4 S2 S4 M1 M2 M3 M4
PCALFR1= 1000 1000 13000 13000 0 0 0 0
PCALFR2= 1000 1000 13000 13000 0 0 0 0

```

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 24.005906	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 26.92329	0.00
J0453-2807	04 51 15.126316	* 04 53 14.646797	04 53 47.874458	0.26
* 0451-282	-28 12 29.38813	*-28 07 37.32662	-28 06 07.99925	0.63

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	79.1
0451-282	95.0

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

**rk01bhtr**

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
 Phone:    +7-495-3332167                      EMAIL:    yyk@asc.rssi.ru  
 Fax:       +7-495-3332378                      Phone during observation: +7-915-1546281

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
-----
```

--- Sat    7 Sep 2013    Day 250 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00  
 Next BBC frequencies:  632.00  632.00  632.00  632.00  
 Next scan bandwidths:  16.00  16.00  16.00  16.00

06 00 00	0430+052	06 20 11	37.6	214.2	1.8		19.8	0	0	06 00 00
06 09 30	---	06 29 42	36.7	217.0	1.9		21.3	570	18	06 00 01
06 10 00	0430+052	06 30 12	36.7	217.1	1.9		21.3	24	18	06 10 00
06 19 30	---	06 39 44	35.8	219.8	2.1		22.7	570	36	06 10 01
06 20 00	0430+052	06 40 14	35.8	220.0	2.1		22.8	24	36	06 20 00
06 29 30	---	06 49 45	34.8	222.6	2.3		24.1	570	55	06 20 01
06 30 00	0430+052	06 50 15	34.8	222.8	2.3		24.2	24	55	06 30 00
06 40 00	---	07 00 17	33.7	225.5	2.4		25.5	600	74	06 30 01

SETUP FILE INFORMATION:

=====  
Setup file: ra18cm2.set

Matching groups in /home/kirx/sched/catalogs/freq.dat:  
 tr18cm                      E-mail Borkowski 12Mar98, preferred alternative

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=	2300.00	2300.00	2300.00	2300.00
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 pcal sets:  1
LO sum=    1668.00  1668.00  1668.00  1668.00
BBC fr=     632.00   632.00   632.00   632.00
Bandwd=     16.00   16.00   16.00   16.00
Matching frequency sets:  5

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1  S3  S1  S3  S1  S2  S3  S4
PCALXB2=  S2  S4  S2  S4  M1  M2  M3  M4
PCALFR1= 1000 1000 13000 13000  0  0  0  0
PCALFR2= 1000 1000 13000 13000  0  0  0  0

```

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 24.000566	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 26.89785	0.00
J0433+0521	04 30 31.602058	* 04 33 11.095527	04 33 55.655424	0.47
* 0430+052	05 14 59.61643	* 05 21 15.61921	05 22 58.37436	0.35

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	79.1
0430+052	96.9

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
 Phone:    +7-495-3332167                      EMAIL:    yyk@asc.rssi.ru  
 Fax:       +7-495-3332378                      Phone during observation: +7-915-1546281

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
--- Sat    7 Sep 2013    Day 250 ---										
Next scan frequencies:		1668.00	1668.00	1668.00	1668.00					
Next BBC frequencies:		632.00	632.00	632.00	632.00					
Next scan bandwidths:		16.00	16.00	16.00	16.00					
08 00 00	0422+004	08 20 30	18.7	244.5	3.9		32.8	0	0	08 00 00
08 09 30	---	08 30 02	17.4	246.6	4.1		33.4	570	18	08 00 01
08 10 00	0422+004	08 30 32	17.3	246.7	4.1		33.5	24	18	08 10 00
08 19 30	---	08 40 03	16.0	248.8	4.2		34.0	570	36	08 10 01
08 20 00	0422+004	08 40 34	15.9	248.9	4.3		34.1	24	36	08 20 00
08 29 30	---	08 50 05	14.6	250.9	4.4		34.6	570	55	08 20 01
08 30 00	0422+004	08 50 35	14.5	251.0	4.4		34.6	24	55	08 30 00
08 40 00	---	09 00 37	13.1	253.1	4.6		35.1	600	74	08 30 01

SETUP FILE INFORMATION:

=====  
 Setup file: ra18cm2.set

Matching groups in /home/kirx/sched/catalogs/freq.dat:

tr18cm                      E-mail Borkowski 12Mar98, preferred alternative

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=	2300.00	2300.00	2300.00	2300.00
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 pcal sets:  1
LO sum=    1668.00  1668.00  1668.00  1668.00
BBC fr=     632.00  632.00  632.00  632.00
Bandwd=     16.00   16.00   16.00   16.00
Matching frequency sets:  4

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1   S3   S1   S3   S1   S2   S3   S4
PCALXB2=  S2   S4   S2   S4   M1   M2   M3   M4
PCALFR1= 1000 1000 13000 13000   0   0   0   0
PCALFR2= 1000 1000 13000 13000   0   0   0   0

```

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 23.994712	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 26.87019	0.00
J0424+0036	04 22 12.515417	* 04 24 46.842063	04 25 29.995003	0.10
* 0422+004	00 29 16.67917	* 00 36 06.32935	00 38 00.20904	0.11

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	79.1
0422+004	99.6

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

For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

**rk01bmtr**

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
 Phone:    +7-495-3332167                      EMAIL:    yyk@asc.rssi.ru  
 Fax:       +7-495-3332378                      Phone during observation: +7-915-1546281

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    8 Sep 2013    Day 251 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00  
 Next BBC frequencies:    632.00    632.00    632.00    632.00  
 Next scan bandwidths:    16.00    16.00    16.00    16.00

04 00 00	0451-282	04 23 47	8.5	173.3	-0.5	-4.5	0	0	04 00 00
04 09 30	---	04 33 19	8.7	175.4	-0.3	-3.1	570	18	04 00 01
04 10 00	0451-282	04 33 49	8.7	175.5	-0.3	-3.0	24	18	04 10 00
04 19 30	---	04 43 21	8.8	177.7	-0.2	-1.6	570	36	04 10 01
04 20 00	0451-282	04 43 51	8.8	177.8	-0.2	-1.5	24	36	04 20 00
04 29 30	---	04 53 22	8.8	179.9	-0.0	-0.1	570	55	04 20 01
04 30 00	0451-282	04 53 52	8.8	180.0	0.0	0.0	24	55	04 30 00
04 39 30	---	05 03 24	8.8	182.1	0.2	1.5	570	73	04 30 01
04 40 00	0451-282	05 03 54	8.8	182.3	0.2	1.5	24	73	04 40 00
04 49 30	---	05 13 25	8.7	184.4	0.3	3.0	570	91	04 40 01
04 50 00	0451-282	05 13 56	8.7	184.5	0.3	3.1	24	91	04 50 00
05 00 00	---	05 23 57	8.5	186.7	0.5	4.6	600	110	04 50 01

SETUP FILE INFORMATION:

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=	2300.00	2300.00	2300.00	2300.00
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 pcal sets:  1
LO sum=    1668.00  1668.00  1668.00  1668.00
BBC fr=     632.00  632.00  632.00  632.00
Bandwd=     16.00   16.00   16.00   16.00
Matching frequency sets:  4

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1   S3   S1   S3   S1   S2   S3   S4
PCALXB2=  S2   S4   S2   S4   M1   M2   M3   M4
PCALFR1= 1000 1000 13000 13000   0   0   0   0
PCALFR2= 1000 1000 13000 13000   0   0   0   0

```

```

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 23.932964	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 26.58773	0.00
J0453-2807	04 51 15.126316	* 04 53 14.646797	04 53 47.900789	0.26
* 0451-282	-28 12 29.38813	*-28 07 37.32662	-28 06 07.99127	0.63

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	79.4
0451-282	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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

**rk01bntr**

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
 Phone:    +7-495-3332167                  EMAIL:    yyk@asc.rssi.ru  
 Fax:       +7-495-3332378                  Phone during observation: +7-915-1546281

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    9 Sep 2013    Day 252 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00  
 Next BBC frequencies:  632.00  632.00  632.00  632.00  
 Next scan bandwidths:  16.00  16.00  16.00  16.00

03 00 00	0454-234	03 27 34	11.0	159.0	-1.5		-13.6	0	0	03 00 00
03 09 30	---	03 37 06	11.5	161.2	-1.3		-12.2	570	18	03 00 01
03 10 00	0454-234	03 37 36	11.6	161.3	-1.3		-12.1	24	18	03 10 00
03 19 30	---	03 47 07	12.0	163.5	-1.2		-10.7	570	36	03 10 01
03 20 00	0454-234	03 47 37	12.0	163.6	-1.2		-10.6	24	36	03 20 00
03 29 30	---	03 57 09	12.4	165.8	-1.0		-9.2	570	55	03 20 01
03 30 00	0454-234	03 57 39	12.4	165.9	-1.0		-9.2	24	55	03 30 00
03 39 30	---	04 07 11	12.7	168.1	-0.8		-7.7	570	73	03 30 01
03 40 00	0454-234	04 07 41	12.7	168.3	-0.8		-7.7	24	73	03 40 00
03 49 30	---	04 17 12	13.0	170.5	-0.7		-6.2	570	91	03 40 01
03 50 00	0454-234	04 17 42	13.0	170.6	-0.7		-6.1	24	91	03 50 00
04 00 00	---	04 27 44	13.2	173.0	-0.5		-4.6	600	110	03 50 01

SETUP FILE INFORMATION:

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=	2300.00	2300.00	2300.00	2300.00
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 pcal sets:  1
LO sum=    1668.00  1668.00  1668.00  1668.00
BBC fr=     632.00  632.00  632.00  632.00
Bandwd=     16.00   16.00   16.00   16.00
Matching frequency sets:  5

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1   S3   S1   S3   S1   S2   S3   S4
PCALXB2=  S2   S4   S2   S4   M1   M2   M3   M4
PCALFR1= 1000 1000 13000 13000   0   0   0   0
PCALFR2= 1000 1000 13000 13000   0   0   0   0

```

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 23.858698	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 26.25381	0.00
J0457-2324	04 54 57.297216	* 04 57 03.179228	04 57 38.220388	0.11
* 0454-234	-23 29 28.31965	*-23 24 52.02024	-23 23 28.29087	0.10

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	79.8
0454-234	95.1

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
 Phone:    +7-495-3332167                      EMAIL:    yyk@asc.rssi.ru  
 Fax:       +7-495-3332378                      Phone during observation: +7-915-1546281

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    9 Sep 2013    Day 252 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00  
 Next BBC frequencies:  632.00  632.00  632.00  632.00  
 Next scan bandwidths:  16.00  16.00  16.00  16.00

05 00 00	0454-234	05 27 54	13.2	187.1	0.5		4.7	0	0	05 00 00
05 09 30	---	05 37 25	13.0	189.4	0.7		6.1	570	18	05 00 01
05 10 00	0454-234	05 37 55	13.0	189.5	0.7		6.2	24	18	05 10 00
05 19 30	---	05 47 27	12.8	191.7	0.8		7.6	570	36	05 10 01
05 20 00	0454-234	05 47 57	12.7	191.8	0.8		7.7	24	36	05 20 00
05 29 30	---	05 57 29	12.4	194.0	1.0		9.1	570	55	05 20 01
05 30 00	0454-234	05 57 59	12.4	194.2	1.0		9.2	24	55	05 30 00
05 39 30	---	06 07 30	12.0	196.4	1.2		10.6	570	73	05 30 01
05 40 00	0454-234	06 08 00	12.0	196.5	1.2		10.7	24	73	05 40 00
05 49 30	---	06 17 32	11.6	198.7	1.3		12.1	570	91	05 40 01
05 50 00	0454-234	06 18 02	11.5	198.8	1.3		12.2	24	91	05 50 00
06 00 00	---	06 28 04	11.0	201.1	1.5		13.6	600	110	05 50 01

SETUP FILE INFORMATION:

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=	2300.00	2300.00	2300.00	2300.00
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 pcal sets:  1
LO sum=    1668.00  1668.00  1668.00  1668.00
BBC fr=     632.00  632.00  632.00  632.00
Bandwd=     16.00   16.00   16.00   16.00
Matching frequency sets:  5

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1   S3   S1   S3   S1   S2   S3   S4
PCALXB2=  S2   S4   S2   S4   M1   M2   M3   M4
PCALFR1= 1000 1000 13000 13000   0   0   0   0
PCALFR2= 1000 1000 13000 13000   0   0   0   0

```

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 23.852194	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 26.22403	0.00
J0457-2324	04 54 57.297216	* 04 57 03.179228	04 57 38.222693	0.11
* 0454-234	-23 29 28.31965	*-23 24 52.02024	-23 23 28.29147	0.10

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	79.8
0454-234	95.2

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

RADIOASTRON MASER OBSERVATIONS

PI: *Alexei Alakoz*

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

Observing mode: K-band, dual-pol

Schedule for TORUN                      (Code Tr )    Page    2

RadioAstron Maser observations

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

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

--- Fri 13 Sep 2013 Day 256 ---

----- Please, make sure PCAL is OFF for NGC7538 maser observations. -----

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

05 00 00	NGC7538	05 43 40	41.8	-39.3	6.5	53.0	0	0	05 00 00
05 09 30	---	05 53 12	40.9	-38.4	6.6	51.6	570	18	05 00 01
05 10 00	NGC7538	05 53 42	40.9	-38.4	6.7	51.5	24	18	05 10 00
05 19 30	---	06 03 13	40.0	-37.4	6.8	50.0	570	36	05 10 01
05 20 00	NGC7538	06 03 43	39.9	-37.4	6.8	49.9	24	36	05 20 00
05 29 30	---	06 13 15	39.1	-36.4	7.0	48.4	570	55	05 20 01
05 30 00	NGC7538	06 13 45	39.0	-36.4	7.0	48.4	24	55	05 30 00
05 40 00	---	06 23 47	38.2	-35.3	7.2	46.8	600	74	05 30 01

SETUP FILE INFORMATION:

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

=====  
 Setup file: ra1cm2.set

Matching groups in /home/kirx/sched/catalogs/freq.dat:  
 tr1cm                      Values from Bob Campbell by email (23-04-2013)

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

```

Frequency Set: 3 Setup file default. Used pcal sets: 1
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: 3

```

The following pulse cal sets were used with this setup:

```

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

```

Track assignments are:

```

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

```

#### POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec)		(Date)	Error (mas)
	(B1950)	(J2000)		
* NGC7538	23 11 36.628132	* 23 13 45.362200	23 14 24.780128	0.00
	61 11 49.91881	* 61 28 10.50700	61 32 49.78506	0.00
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 23.620212	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 24.64637	0.00

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
NGC7538	114.7
FAKERA	81.3

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

rk07agtr

RADIOASTRON MASER OBSERVATIONS

PI: Alexei Alakoz

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

Observing mode: K-band, dual-pol

Schedule for TORUN (Code Tr ) Page 2

RadioAstron Maser observations

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

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

--- Fri 13 Sep 2013 Day 256 ---

----- Please, make sure PCAL is OFF for NGC7538 maser observations. -----

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

Table with 11 columns: Start UT, Stop UT, Source, LST, EL, AZ, HA, UP, ParA, Dwell, GBytes, SYNC. Contains observation data for NGC7538.

SETUP FILE INFORMATION:

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

Disk used to record data.

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



The following frequency sets based on these setups were used.

```

Frequency Set:  3  Setup file default.  Used pcal sets:  1
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:  3

```

The following pulse cal sets were used with this setup:

```

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

```

Track assignments are:

```

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

```

#### POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec)		(Date)	Error (mas)
	(B1950)	(J2000)		
* NGC7538	23 11 36.628132	* 23 13 45.362200	23 14 24.780717	0.00
	61 11 49.91881	* 61 28 10.50700	61 32 49.81767	0.00
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 23.618231	0.00
	85 16 41.77889	* 85 00 00.00000	84 55 24.61149	0.00

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
NGC7538	114.7
FAKERA	81.3

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg



The following frequency sets based on these setups were used.

```

Frequency Set:  5  Setup file default.  Used pcal sets:  1
LO sum=    1668.00  1668.00  1668.00  1668.00
BBC fr=     632.00  632.00  632.00  632.00
Bandwd=     16.00   16.00   16.00   16.00
Matching frequency sets:  5

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1   S3   S1   S3   S1   S2   S3   S4
PCALXB2=  S2   S4   S2   S4   M1   M2   M3   M4
PCALFR1= 1000 1000 13000 13000   0   0   0   0
PCALFR2= 1000 1000 13000 13000   0   0   0   0

```

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 23.613873	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 24.52431	0.00
J0217+7349	02 12 49.921893	* 02 17 30.813373	02 18 54.612229	1.24
* 0212+735	73 35 40.08541	* 73 49 32.62174	73 53 08.59224	0.26

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	81.4
0212+735	98.1

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg



The following frequency sets based on these setups were used.

```

Frequency Set:  2  Setup file default.  Used pcal sets:  1
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

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1  S3  S1  S3  S1  S2  S3  S4
PCALXB2=  S2  S4  S2  S4  M1  M2  M3  M4
PCALFR1= 1000 1000 13000 13000  0  0  0  0
PCALFR2= 1000 1000 13000 13000  0  0  0  0

```

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 23.612363	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 24.48946	0.00
J0359+5057	03 55 45.261370	* 03 59 29.747271	04 00 33.453990	0.16
* 0355+508	50 49 20.28582	* 50 57 50.16177	50 59 55.44676	0.10

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	81.4
0355+508	100.5

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

rk01brtr

RADIOASTRON AGN SURVEY

PI: Yuri Kovalev

Address: ASC Lebedev Profsoyuznaya 84/32 117997 Moscow, Russia
Phone: +7-495-3332167 EMAIL: yyk@asc.rssi.ru
Fax: +7-495-3332378 Phone during observation: +7-915-1546281

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

--- Sat 14 Sep 2013 Day 257 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 632.00 632.00 632.00 632.00
Next scan bandwidths: 16.00 16.00 16.00 16.00

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 0415+379.

SETUP FILE INFORMATION:

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

==== Setup file: ra18cm2.set

Matching groups in /home/kirx/sched/catalogs/freq.dat:
tr18cm E-mail Borkowski 12Mar98, preferred alternative

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= 2300.00 2300.00 2300.00 2300.00
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 pcal sets:  1
LO sum=    1668.00  1668.00  1668.00  1668.00
BBC fr=     632.00  632.00  632.00  632.00
Bandwd=     16.00   16.00   16.00   16.00
Matching frequency sets:  5

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1   S3   S1   S3   S1   S2   S3   S4
PCALXB2=  S2   S4   S2   S4   M1   M2   M3   M4
PCALFR1= 1000 1000 13000 13000   0   0   0   0
PCALFR2= 1000 1000 13000 13000   0   0   0   0

```

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 23.606745	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 24.31562	0.00
J0418+3801	04 15 00.610264	* 04 18 21.277237	04 19 17.886473	0.15
* 0415+379	37 54 19.28071	* 38 01 35.80018	38 03 24.38024	0.13

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	81.6
0415+379	101.3

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

**rk01bstr**

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
 Phone:    +7-495-3332167                EMAIL:    yyk@asc.rssi.ru  
 Fax:       +7-495-3332378                Phone during observation: +7-915-1546281

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
-----
```

--- Sat 14 Sep 2013 Day 257 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00  
 Next BBC frequencies: 632.00 632.00 632.00 632.00  
 Next scan bandwidths: 16.00 16.00 16.00 16.00

Start UT	Source	LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
02 00 00	0422+004	02 47 07	33.7	150.0	-1.6		-17.5	0	0	02 00 00
02 09 30	---	02 56 39	34.4	152.7	-1.5		-16.0	570	18	02 00 01
02 10 00	0422+004	02 57 09	34.4	152.9	-1.5		-15.9	24	18	02 10 00
02 19 30	---	03 06 40	35.0	155.7	-1.3		-14.3	570	36	02 10 01
02 20 00	0422+004	03 07 10	35.1	155.8	-1.3		-14.2	24	36	02 20 00
02 29 30	---	03 16 42	35.6	158.7	-1.1		-12.6	570	55	02 20 01
02 30 00	0422+004	03 17 12	35.6	158.8	-1.1		-12.5	24	55	02 30 00
02 40 00	---	03 27 14	36.2	161.8	-1.0		-10.8	600	74	02 30 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

Matching groups in /home/kirx/sched/catalogs/freq.dat:

tr18cm                      E-mail Borkowski 12Mar98, preferred alternative

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=	2300.00	2300.00	2300.00	2300.00
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 pcal sets: 1
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 632.00 632.00 632.00 632.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 5

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set: 1 PCAL = 1MHZ
PCALXB1= S1 S3 S1 S3 S1 S2 S3 S4
PCALXB2= S2 S4 S2 S4 M1 M2 M3 M4
PCALFR1= 1000 1000 13000 13000 0 0 0 0
PCALFR2= 1000 1000 13000 13000 0 0 0 0

```

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 23.605991	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 24.28098	0.00
J0424+0036	04 22 12.515417	* 04 24 46.842063	04 25 30.195235	0.10
* 0422+004	00 29 16.67917	* 00 36 06.32935	00 38 00.39753	0.11

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	81.6
0422+004	105.7

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
 Phone:    +7-495-3332167                  EMAIL:    yyk@asc.rssi.ru  
 Fax:       +7-495-3332378                  Phone during observation: +7-915-1546281

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
-----
```

--- Sat 14 Sep 2013 Day 257 ---

```
Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies:  632.00  632.00  632.00  632.00
Next scan bandwidths:  16.00  16.00  16.00  16.00
```

04 00 00	0454-234	04 47 27	13.5	177.6	-0.2	-1.6	0	0	04 00 00
04 09 30	---	04 56 58	13.5	179.8	-0.0	-0.1	570	18	04 00 01
04 10 00	0454-234	04 57 28	13.5	180.0	-0.0	-0.0	24	18	04 10 00
04 19 30	---	05 07 00	13.5	182.2	0.2	1.4	570	36	04 10 01
04 20 00	0454-234	05 07 30	13.5	182.3	0.2	1.5	24	36	04 20 00
04 29 30	---	05 17 02	13.4	184.6	0.3	3.0	570	55	04 20 01
04 30 00	0454-234	05 17 32	13.4	184.7	0.3	3.1	24	55	04 30 00
04 40 00	---	05 27 33	13.2	187.0	0.5	4.6	600	74	04 30 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

Matching groups in /home/kirx/sched/catalogs/freq.dat:

tr18cm                      E-mail Borkowski 12Mar98, preferred alternative

```
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=    2300.00    2300.00    2300.00    2300.00
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 pcal sets:  1
LO sum=    1668.00  1668.00  1668.00  1668.00
BBC fr=     632.00  632.00  632.00  632.00
Bandwd=     16.00   16.00   16.00   16.00
Matching frequency sets:  4

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1  S3  S1  S3  S1  S2  S3  S4
PCALXB2=  S2  S4  S2  S4  M1  M2  M3  M4
PCALFR1= 1000 1000 13000 13000  0  0  0  0
PCALFR2= 1000 1000 13000 13000  0  0  0  0

```

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 23.605354	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 24.24639	0.00
J0457-2324	04 54 57.297216	* 04 57 03.179228	04 57 38.383943	0.11
* 0454-234	-23 29 28.31965	*-23 24 52.02024	-23 23 28.25592	0.10

#### SOURCE SCAN SUMMARY FOR SOURCES LISTED ABOVE

Scan hours are for recording scans only.

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

Source	Setup file	Frequency sets (duplicates not shown)	Observing hours	
			Scan	Baseline
FAKERA	ra6cm2.set	5	0.642	0.000
0454-234	ra6cm2.set	1 2	0.642	0.642
	ra18cm2.set	3 4	0.642	0.642

Barry Clark estimates from predictions 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:

```

327 MHz      117. deg
610 MHz      81. deg
1.6 GHz      45. deg
2.3 GHz      36. deg
5.0 GHz      23. deg
8.4 GHz      17. deg
15.0 GHz     12. deg
22.0 GHz      9. deg
43.0 GHz      6. deg

```



The following frequency sets based on these setups were used.

```

Frequency Set:  4  Setup file default.  Used pcal sets:  1
LO sum=    1668.00  1668.00  1668.00  1668.00
BBC fr=     632.00  632.00  632.00  632.00
Bandwd=     16.00   16.00   16.00   16.00
Matching frequency sets:  4

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1   S3   S1   S3   S1   S2   S3   S4
PCALXB2=  S2   S4   S2   S4   M1   M2   M3   M4
PCALFR1= 1000 1000 13000 13000   0   0   0   0
PCALFR2= 1000 1000 13000 13000   0   0   0   0

```

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 23.604832	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 24.21187	0.00
J0422+0219	04 20 16.064039	* 04 22 52.214653	04 23 36.099323	0.10
* 0420+022	02 12 29.61655	* 02 19 26.93073	02 21 22.60811	0.10

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	81.6
0420+022	106.2

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

rk01bvtr

RADIOASTRON AGN SURVEY

PI: Yuri Kovalev

Address: ASC Lebedev Profsoyuznaya 84/32 117997 Moscow, Russia
Phone: +7-495-3332167 EMAIL: yyk@asc.rssi.ru
Fax: +7-495-3332378 Phone during observation: +7-915-1546281

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

--- Sat 14 Sep 2013 Day 257 ---

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

Table with columns: Time, Source, LST, EL, AZ, HA, UP, ParA, Dwell, GBytes, SYNC. Rows include scan frequencies and scan data for 0406+121.

SETUP FILE INFORMATION:

==== Setup file: ra18cm2.set
Matching groups in /home/kirx/sched/catalogs/freq.dat:
tr18cm E-mail Borkowski 12Mar98, preferred alternative
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.

Table with columns: LO, Net SB, IF SB, Pol., BBC, BBC SB, IF. Rows show parameters for four different channels.

The following frequency sets based on these setups were used.

```

Frequency Set:  4  Setup file default.  Used pcal sets:  1
LO sum=    1668.00  1668.00  1668.00  1668.00
BBC fr=     632.00   632.00   632.00   632.00
Bandwd=     16.00   16.00   16.00   16.00
Matching frequency sets:  4

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1   S3   S1   S3   S1   S2   S3   S4
PCALXB2=  S2   S4   S2   S4   M1   M2   M3   M4
PCALFR1= 1000 1000 13000 13000   0   0   0   0
PCALFR2= 1000 1000 13000 13000   0   0   0   0

```

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 23.604420	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 24.17741	0.00
J0409+1217	04 06 35.476886	* 04 09 22.008712	04 10 08.920313	0.11
* 0406+121	12 09 49.31039	* 12 17 39.84765	12 19 47.26314	0.11

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	81.7
0406+121	108.6

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

For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

**rk01bwtr**

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
 Phone:    +7-495-3332167                  EMAIL:    yyk@asc.rssi.ru  
 Fax:       +7-495-3332378                  Phone during observation: +7-915-1546281

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
-----
```

--- Sat 14 Sep 2013 Day 257 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00  
 Next BBC frequencies: 632.00 632.00 632.00 632.00  
 Next scan bandwidths: 16.00 16.00 16.00 16.00

Start UT	Source	LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
10 00 00	0459+135	10 48 26	13.1	275.4	5.8		38.0	0	0	10 00 00
10 09 30	---	10 57 57	11.7	277.2	5.9		37.8	570	18	10 00 01
10 10 00	0459+135	10 58 27	11.6	277.3	5.9		37.8	24	18	10 10 00
10 19 30	---	11 07 59	10.2	279.2	6.1		37.6	570	36	10 10 01
10 20 00	0459+135	11 08 29	10.1	279.3	6.1		37.6	24	36	10 20 00
10 29 30	---	11 18 01	8.7	281.2	6.2		37.3	570	55	10 20 01
10 30 00	0459+135	11 18 31	8.6	281.3	6.3		37.3	24	55	10 30 00
10 40 00	---	11 28 32	7.2	283.2	6.4		37.0	600	74	10 30 01

SETUP FILE INFORMATION:

=====  
 Setup file: ra18cm2.set  
 Matching groups in /home/kirx/sched/catalogs/freq.dat:  
 tr18cm                      E-mail Borkowski 12Mar98, preferred alternative

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=	2300.00	2300.00	2300.00	2300.00
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 pcal sets: 1
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 632.00 632.00 632.00 632.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 3

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set: 1 PCAL = 1MHZ
PCALXB1= S1 S3 S1 S3 S1 S2 S3 S4
PCALXB2= S2 S4 S2 S4 M1 M2 M3 M4
PCALFR1= 1000 1000 13000 13000 0 0 0 0
PCALFR2= 1000 1000 13000 13000 0 0 0 0

```

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 23.604115	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 24.14303	0.00
J0502+1338	04 59 43.841322	* 05 02 33.219517	05 03 20.606040	0.12
* 0459+135	13 33 56.42101	* 13 38 10.95886	13 39 16.76998	0.14

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	81.7
0459+135	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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

rk01bxtr

RADIOASTRON AGN SURVEY

PI: Yuri Kovalev

Address: ASC Lebedev Profsoyuznaya 84/32 117997 Moscow, Russia
Phone: +7-495-3332167 EMAIL: yyk@asc.rssi.ru
Fax: +7-495-3332378 Phone during observation: +7-915-1546281

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 15 Sep 2013 Day 258 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 632.00 632.00 632.00 632.00
Next scan bandwidths: 16.00 16.00 16.00 16.00

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 0420+022.

SETUP FILE INFORMATION:

==== Setup file: ra18cm2.set
Matching groups in /home/kirx/sched/catalogs/freq.dat:
tr18cm E-mail Borkowski 12Mar98, preferred alternative

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= 2300.00 2300.00 2300.00 2300.00
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 pcal sets: 1
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 632.00 632.00 632.00 632.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 7

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set: 1 PCAL = 1MHZ
PCALXB1= S1 S3 S1 S3 S1 S2 S3 S4
PCALXB2= S2 S4 S2 S4 M1 M2 M3 M4
PCALFR1= 1000 1000 13000 13000 0 0 0 0
PCALFR2= 1000 1000 13000 13000 0 0 0 0

```

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 23.604869	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 23.88801	0.00
J0422+0219	04 20 16.064039	* 04 22 52.214653	04 23 36.125182	0.10
* 0420+022	02 12 29.61655	* 02 19 26.93073	02 21 22.66960	0.10

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	81.9
0420+022	106.9

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

For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg



The following frequency sets based on these setups were used.

```

Frequency Set: 7 Setup file default. Used pcal sets: 1
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 632.00 632.00 632.00 632.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 7

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set: 1 PCAL = 1MHZ
PCALXB1= S1 S3 S1 S3 S1 S2 S3 S4
PCALXB2= S2 S4 S2 S4 M1 M2 M3 M4
PCALFR1= 1000 1000 13000 13000 0 0 0 0
PCALFR2= 1000 1000 13000 13000 0 0 0 0

```

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 23.605317	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 23.85446	0.00
J0509+0541	05 06 45.765584	* 05 09 25.964476	05 10 10.751896	0.13
* 0506+056	05 37 50.30295	* 05 41 35.33360	05 42 35.74385	0.24

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	82.0
0506+056	95.2

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

rk01bztr

RADIOASTRON AGN SURVEY

PI: Yuri Kovalev

Address: ASC Lebedev Profsoyuznaya 84/32 117997 Moscow, Russia
Phone: +7-495-3332167 EMAIL: yyk@asc.rssi.ru
Fax: +7-495-3332378 Phone during observation: +7-915-1546281

Observing mode: K-band, dual-pol

Schedule for TORUN (Code Tr ) Page 2

RadioAstron AGN Survey

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

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

--- Sun 15 Sep 2013 Day 258 ---

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

Table with 11 columns: Start UT, Stop UT, Source, LST, EL, AZ, HA, UP, ParA, Dwell, GBytes, SYNC. It lists observation times for source 0420-014 on Sep 15, 2013.

SETUP FILE INFORMATION:

==== Setup file: ra1cm2.set

Matching groups in /home/kirx/sched/catalogs/freq.dat:
tricm Values from Bob Campbell by email (23-04-2013)

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

```

Frequency Set:  8  Setup file default.  Used pcal sets:  1
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:  8

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1   S3   S1   S3   S1   S2   S3   S4
PCALXB2=  S2   S4   S2   S4   M1   M2   M3   M4
PCALFR1= 1000 1000 13000 13000   0   0   0   0
PCALFR2= 1000 1000 13000 13000   0   0   0   0

```

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 23.605790	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 23.82366	0.00
J0423-0120	04 20 43.539850	* 04 23 15.800727	04 23 58.615061	0.10
* 0420-014	-01 27 28.70025	*-01 20 33.06555	-01 18 36.59482	0.10

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	82.0
0420-014	107.2

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

For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

**rk01catr**

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
 Phone:    +7-495-3332167                  EMAIL:    yyk@asc.rssi.ru  
 Fax:       +7-495-3332378                  Phone during observation: +7-915-1546281

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 15 Sep 2013 Day 258 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00  
 Next BBC frequencies: 632.00 632.00 632.00 632.00  
 Next scan bandwidths: 16.00 16.00 16.00 16.00

Start UT	Source	LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
07 00 00	0459+135	07 51 53	38.4	236.3	2.8		30.9	0	0	07 00 00
07 09 30	---	08 01 24	37.2	238.8	3.0		31.9	570	18	07 00 01
07 10 00	0459+135	08 01 54	37.2	238.9	3.0		32.0	24	18	07 10 00
07 19 30	---	08 11 26	35.9	241.4	3.1		32.8	570	36	07 10 01
07 20 00	0459+135	08 11 56	35.8	241.5	3.1		32.9	24	36	07 20 00
07 29 30	---	08 21 28	34.6	243.9	3.3		33.7	570	55	07 20 01
07 30 00	0459+135	08 21 58	34.5	244.0	3.3		33.7	24	55	07 30 00
07 40 00	---	08 31 59	33.1	246.4	3.5		34.5	600	74	07 30 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

Matching groups in /home/kirx/sched/catalogs/freq.dat:  
 tr18cm                      E-mail Borkowski 12Mar98, preferred alternative

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= 2300.00 2300.00 2300.00 2300.00
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 pcal sets: 1
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 632.00 632.00 632.00 632.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 7

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set: 1 PCAL = 1MHZ
PCALXB1= S1 S3 S1 S3 S1 S2 S3 S4
PCALXB2= S2 S4 S2 S4 M1 M2 M3 M4
PCALFR1= 1000 1000 13000 13000 0 0 0 0
PCALFR2= 1000 1000 13000 13000 0 0 0 0

```

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 23.606413	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 23.78770	0.00
J0502+1338	04 59 43.841322	* 05 02 33.219517	05 03 20.636145	0.12
* 0459+135	13 33 56.42101	* 13 38 10.95886	13 39 16.83618	0.14

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	82.0
0459+135	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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

rk01cbtr

RADIOASTRON AGN SURVEY

PI: Yuri Kovalev

Address: ASC Lebedev Profsoyuznaya 84/32 117997 Moscow, Russia
Phone: +7-495-3332167 EMAIL: yyk@asc.rssi.ru
Fax: +7-495-3332378 Phone during observation: +7-915-1546281

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 15 Sep 2013 Day 258 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 632.00 632.00 632.00 632.00
Next scan bandwidths: 16.00 16.00 16.00 16.00

Table with 11 columns: Start UT, Source, LST, EL, AZ, HA, UP, ParA, Dwell, GBytes, SYNC. It lists observation times and parameters for source 0446+112.

SETUP FILE INFORMATION:

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

==== Setup file: ra18cm2.set

Matching groups in /home/kirx/sched/catalogs/freq.dat:
tr18cm E-mail Borkowski 12Mar98, preferred alternative

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= 2300.00 2300.00 2300.00 2300.00
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 pcal sets: 1
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 632.00 632.00 632.00 632.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 6

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set: 1 PCAL = 1MHZ
PCALXB1= S1 S3 S1 S3 S1 S2 S3 S4
PCALXB2= S2 S4 S2 S4 M1 M2 M3 M4
PCALFR1= 1000 1000 13000 13000 0 0 0 0
PCALFR2= 1000 1000 13000 13000 0 0 0 0

```

```

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 23.607049	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 23.75451	0.00
J0449+1121	04 46 21.217284	* 04 49 07.671104	04 49 54.350771	0.10
* 0446+112	11 16 17.84557	* 11 21 28.59636	11 22 51.14474	0.10

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	82.1
0446+112	100.0

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

For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
 Phone:    +7-495-3332167                  EMAIL:    yk@asc.rssi.ru  
 Fax:       +7-495-3332378                  Phone during observation: +7-915-1546281

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 16 Sep 2013 Day 259 ---										
Next scan frequencies:		1668.00	1668.00	1668.00	1668.00	1668.00				
Next BBC frequencies:		632.00	632.00	632.00	632.00	632.00				
Next scan bandwidths:		16.00	16.00	16.00	16.00	16.00				
02 00 00	0507+179	02 55 00	46.1	129.9	-2.3		-29.0	0	0	02 00 00
02 09 30	---	03 04 32	47.2	132.8	-2.1		-27.6	570	18	02 00 01
02 10 00	0507+179	03 05 02	47.3	133.0	-2.1		-27.5	24	18	02 10 00
02 19 30	---	03 14 33	48.3	136.0	-1.9		-26.0	570	36	02 10 01
02 20 00	0507+179	03 15 03	48.3	136.2	-1.9		-25.9	24	36	02 20 00
02 29 30	---	03 24 35	49.3	139.3	-1.8		-24.3	570	55	02 20 01
02 30 00	0507+179	03 25 05	49.4	139.5	-1.8		-24.2	24	55	02 30 00
02 39 30	---	03 34 37	50.3	142.7	-1.6		-22.5	570	73	02 30 01
02 40 00	0507+179	03 35 07	50.3	142.8	-1.6		-22.4	24	73	02 40 00
02 49 30	---	03 44 38	51.1	146.2	-1.4		-20.6	570	91	02 40 01
02 50 00	0507+179	03 45 08	51.2	146.4	-1.4		-20.5	24	91	02 50 00
03 00 00	---	03 55 10	52.0	150.0	-1.3		-18.4	600	110	02 50 01

SETUP FILE INFORMATION:

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=	2300.00	2300.00	2300.00	2300.00
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 pcal sets: 1
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 632.00 632.00 632.00 632.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 6

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set: 1 PCAL = 1MHZ
PCALXB1= S1 S3 S1 S3 S1 S2 S3 S4
PCALXB2= S2 S4 S2 S4 M1 M2 M3 M4
PCALFR1= 1000 1000 13000 13000 0 0 0 0
PCALFR2= 1000 1000 13000 13000 0 0 0 0

```

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 23.614077	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 23.47779	0.00
J0510+1800	05 07 07.486545	* 05 10 02.369131	05 10 51.311470	0.11
* 0507+179	17 56 58.64617	* 18 00 41.58162	18 01 37.02838	0.10

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	82.3
0507+179	95.1

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
 Phone:    +7-495-3332167                      EMAIL:    yk@asc.rssi.ru  
 Fax:       +7-495-3332378                      Phone during observation: +7-915-1546281

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 16 Sep 2013 Day 259 ---										
Next scan frequencies:		1668.00	1668.00	1668.00	1668.00					
Next BBC frequencies:		632.00	632.00	632.00	632.00					
Next scan bandwidths:		16.00	16.00	16.00	16.00					
04 00 00	0506+056	04 55 20	42.5	175.0	-0.2		-3.0	0	0	04 00 00
04 09 30	---	05 04 51	42.6	178.2	-0.1		-1.1	570	18	04 00 01
04 10 00	0506+056	05 05 21	42.6	178.4	-0.1		-1.0	24	18	04 10 00
04 19 30	---	05 14 53	42.6	181.6	0.1		1.0	570	36	04 10 01
04 20 00	0506+056	05 15 23	42.6	181.8	0.1		1.1	24	36	04 20 00
04 29 30	---	05 24 55	42.5	185.0	0.2		3.0	570	55	04 20 01
04 30 00	0506+056	05 25 25	42.5	185.1	0.3		3.1	24	55	04 30 00
04 39 30	---	05 34 56	42.3	188.3	0.4		5.0	570	73	04 30 01
04 40 00	0506+056	05 35 26	42.3	188.5	0.4		5.1	24	73	04 40 00
04 49 30	---	05 44 58	42.1	191.7	0.6		7.0	570	91	04 40 01
04 50 00	0506+056	05 45 28	42.1	191.9	0.6		7.1	24	91	04 50 00
05 00 00	---	05 55 30	41.7	195.2	0.8		9.1	600	110	04 50 01

SETUP FILE INFORMATION:

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=	2300.00	2300.00	2300.00	2300.00
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 pcal sets: 1
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 632.00 632.00 632.00 632.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 6

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set: 1 PCAL = 1MHZ
PCALXB1= S1 S3 S1 S3 S1 S2 S3 S4
PCALXB2= S2 S4 S2 S4 M1 M2 M3 M4
PCALFR1= 1000 1000 13000 13000 0 0 0 0
PCALFR2= 1000 1000 13000 13000 0 0 0 0

```

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 23.615008	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 23.44590	0.00
J0509+0541	05 06 45.765584	* 05 09 25.964476	05 10 10.784250	0.13
* 0506+056	05 37 50.30295	* 05 41 35.33360	05 42 35.81728	0.24

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	82.4
0506+056	96.2

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg





The following frequency sets based on these setups were used.

```

Frequency Set:  2  Setup file default.  Used pcal sets:  1
LO sum=   4836.00  4836.00  4836.00  4836.00
BBC fr=    636.00   636.00   636.00   636.00
Bandwd=    16.00   16.00   16.00   16.00
Matching frequency sets:  2

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1   S3   S1   S3   S1   S2   S3   S4
PCALXB2=  S2   S4   S2   S4   M1   M2   M3   M4
PCALFR1= 1000 1000 13000 13000   0   0   0   0
PCALFR2= 1000 1000 13000 13000   0   0   0   0

```

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 23.617341	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 23.36683	0.00
J0449+1121	04 46 21.217284	* 04 49 07.671104	04 49 54.381266	0.10
* 0446+112	11 16 17.84557	* 11 21 28.59636	11 22 51.22737	0.10

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	82.4
0446+112	101.0

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
 Phone:    +7-495-3332167                      EMAIL:    yyk@asc.rssi.ru  
 Fax:       +7-495-3332378                      Phone during observation: +7-915-1546281

Observing mode: L-band, dual-pol

Schedule for TORUN                      (Code Tr )    Page    2

RadioAstron AGN Survey

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

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

--- Tue 17 Sep 2013    Day 260 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00  
 Next BBC frequencies: 632.00 632.00 632.00 632.00  
 Next scan bandwidths: 16.00 16.00 16.00 16.00

02 00 00	0459+135	02 58 57	43.5	136.2	-2.1	-25.3	0	0	02 00 00
02 09 30	---	03 08 28	44.5	139.1	-1.9	-23.8	570	18	02 00 01
02 10 00	0459+135	03 08 58	44.5	139.3	-1.9	-23.8	24	18	02 10 00
02 19 30	---	03 18 30	45.4	142.3	-1.7	-22.2	570	36	02 10 01
02 20 00	0459+135	03 19 00	45.5	142.5	-1.7	-22.1	24	36	02 20 00
02 29 30	---	03 28 31	46.3	145.6	-1.6	-20.5	570	55	02 20 01
02 30 00	0459+135	03 29 02	46.3	145.7	-1.6	-20.4	24	55	02 30 00
02 39 30	---	03 38 33	47.1	148.9	-1.4	-18.6	570	73	02 30 01
02 40 00	0459+135	03 39 03	47.2	149.1	-1.4	-18.5	24	73	02 40 00
02 49 30	---	03 48 35	47.9	152.3	-1.2	-16.7	570	91	02 40 01
02 50 00	0459+135	03 49 05	47.9	152.5	-1.2	-16.6	24	91	02 50 00
03 00 00	---	03 59 06	48.5	156.0	-1.1	-14.5	600	110	02 50 01

SETUP FILE INFORMATION:

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=	2300.00	2300.00	2300.00	2300.00
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 pcal sets: 1
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 632.00 632.00 632.00 632.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 3

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set: 1 PCAL = 1MHZ
PCALXB1= S1 S3 S1 S3 S1 S2 S3 S4
PCALXB2= S2 S4 S2 S4 M1 M2 M3 M4
PCALFR1= 1000 1000 13000 13000 0 0 0 0
PCALFR2= 1000 1000 13000 13000 0 0 0 0

```

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 23.624414	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 23.10465	0.00
J0502+1338	04 59 43.841322	* 05 02 33.219517	05 03 20.689774	0.12
* 0459+135	13 33 56.42101	* 13 38 10.95886	13 39 16.97251	0.14

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	82.7
0459+135	98.2

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

For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

rk01cgtr

RADIOASTRON AGN SURVEY

PI: Yuri Kovalev

Address: ASC Lebedev Profsoyuznaya 84/32 117997 Moscow, Russia
Phone: +7-495-3332167 EMAIL: yyk@asc.rssi.ru
Fax: +7-495-3332378 Phone during observation: +7-915-1546281

Observing mode: L-band, dual-pol

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

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

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

--- Tue 17 Sep 2013 Day 260 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 632.00 632.00 632.00 632.00
Next scan bandwidths: 16.00 16.00 16.00 16.00

Table with columns: Start UT, Stop UT, Source, LST, EL, AZ, HA, UP, ParA, Early Dwell, Disk GBytes, TPStart SYNC. It lists observation times and parameters for source 0506+056.

SETUP FILE INFORMATION:

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= 2300.00 2300.00 2300.00 2300.00
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 pcal sets: 1
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 632.00 632.00 632.00 632.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 3

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set: 1 PCAL = 1MHZ
PCALXB1= S1 S3 S1 S3 S1 S2 S3 S4
PCALXB2= S2 S4 S2 S4 M1 M2 M3 M4
PCALFR1= 1000 1000 13000 13000 0 0 0 0
PCALFR2= 1000 1000 13000 13000 0 0 0 0

```

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 23.625071	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 23.07445	0.00
J0509+0541	05 06 45.765584	* 05 09 25.964476	05 10 10.811830	0.13
* 0506+056	05 37 50.30295	* 05 41 35.33360	05 42 35.88158	0.24

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	82.7
0506+056	97.1

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

For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

**rk01chtr**

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
 Phone:    +7-495-3332167                  EMAIL:    yyk@asc.rssi.ru  
 Fax:       +7-495-3332378                  Phone during observation: +7-915-1546281

Observing mode: L-band, dual-pol

Schedule for TORUN                      (Code Tr )    Page    2

RadioAstron AGN Survey

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

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

--- Tue 17 Sep 2013 Day 260 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00  
 Next BBC frequencies: 632.00 632.00 632.00 632.00  
 Next scan bandwidths: 16.00 16.00 16.00 16.00

Start UT	Source	LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
07 00 00	0458-020	07 59 46	23.6	229.8	3.0		27.3	0	0	07 00 00
07 09 30	---	08 09 17	22.5	232.1	3.1		28.3	570	18	07 00 01
07 10 00	0458-020	08 09 48	22.5	232.2	3.1		28.4	24	18	07 10 00
07 19 30	---	08 19 19	21.3	234.5	3.3		29.3	570	36	07 10 01
07 20 00	0458-020	08 19 49	21.3	234.6	3.3		29.3	24	36	07 20 00
07 29 30	---	08 29 21	20.1	236.8	3.5		30.2	570	55	07 20 01
07 30 00	0458-020	08 29 51	20.0	236.9	3.5		30.2	24	55	07 30 00
07 40 00	---	08 39 52	18.7	239.2	3.6		31.1	600	74	07 30 01

SETUP FILE INFORMATION:

==== Setup file: ra18cm2.set

Matching groups in /home/kirx/sched/catalogs/freq.dat:  
 tr18cm                      E-mail Borkowski 12Mar98, preferred alternative

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=	2300.00	2300.00	2300.00	2300.00
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 pcal sets:  1
LO sum=    1668.00  1668.00  1668.00  1668.00
BBC fr=     632.00  632.00  632.00  632.00
Bandwd=     16.00   16.00   16.00   16.00
Matching frequency sets:  3

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1   S3   S1   S3   S1   S2   S3   S4
PCALXB2=  S2   S4   S2   S4   M1   M2   M3   M4
PCALFR1= 1000 1000 13000 13000   0   0   0   0
PCALFR2= 1000 1000 13000 13000   0   0   0   0

```

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 23.625959	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 23.02940	0.00
J0501-0159	04 58 41.344688	* 05 01 12.809884	05 01 55.253950	0.10
* 0458-020	-02 03 33.86890	*-01 59 14.25635	-01 58 01.37008	0.10

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	82.8
0458-020	99.6

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

For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

eg069etr

E-EVN RUN: EG069E, EM101D, EY021A

PI: Gawronski, Miller-Jones, Yang

Address: JIVE Oude Hoogeveensedijk 4 Dwingeloo Netherlands
Phone: +31 521 596 536 EMAIL: zparagi@jive.nl
Fax: +31 521 596 539 Phone during observation: +31 521 596 530

Observing mode: realtime e-vlbi

Schedule for TORUN (Code Tr) Page 2

e-EVN run: EG069E, EM101D, EY021A

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

Table with columns: Start UT, Source, Start / Stop (LST, EL, AZ, HA, UP), ParA, Early Dwell, Disk GBytes, TPStart SYNC

--- Tue 17 Sep 2013 Day 260 ---

Table with columns: Next scan frequencies, Next BBC frequencies, Next scan bandwidths, and a main observation schedule table with columns: Start UT, Source, Start / Stop, ParA, Early Dwell, Disk GBytes, TPStart SYNC.



Schedule for TORUN (Code Tr )

Page 3

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 260 ---										
11 03 00	1156+295	12 03 26	66.1	181.7	0.1		1.2	37	893	11 03 00
11 15 00	---	12 15 28	65.9	188.2	0.3		5.6	720	986	11 03 01
11 15 40	1156+295	12 16 08	65.9	188.5	0.3		5.9	33	986	11 15 40
11 30 00	---	12 30 30	65.4	196.1	0.5		11.0	860	1097	11 15 41
11 30 40	1156+295	12 31 10	65.4	196.4	0.5		11.2	33	1097	11 30 40
11 45 00	---	12 45 33	64.7	203.6	0.8		16.0	860	1208	11 30 41
11 48 00	1308+326	12 48 33	68.8	166.7	-0.4		-9.4	89	1208	11 48 00
12 00 00	---	13 00 35	69.1	173.8	-0.2		-4.4	720	1301	11 48 01
----- fringe finder -----										
12 00 20	1308+326	13 00 55	69.1	174.0	-0.2		-4.3	13	1301	12 00 20
12 06 00	---	13 06 36	69.2	177.3	-0.1		-1.9	340	1344	12 00 21
12 10 50	J1818+5017	13 11 27	44.6	60.9	-5.1		-55.2	42	1344	12 10 50
12 12 20	=1817+502	13 12 57	44.8	61.1	-5.1		-55.4	90	1356	12 10 51
12 12 20	J1809+5007	13 12 57	46.0	62.5	-4.9		-56.2	-17	1356	No stop
12 15 50	---	13 16 28	46.4	62.9	-4.9		-56.5	193	1383	12 12 21
12 16 20	J1818+5017	13 16 58	45.4	61.6	-5.0		-55.8	13	1383	12 16 20
12 17 20	=1817+502	13 17 58	45.5	61.8	-5.0		-55.9	60	1391	12 16 21
12 17 20	AMHER	13 17 58	45.6	62.5	-5.0		-55.8	-13	1391	No stop
12 20 50	---	13 21 29	46.0	63.0	-4.9		-56.1	197	1418	12 17 21
12 20 50	J1818+5017	13 21 29	46.0	62.2	-5.0		-56.3	-13	1418	No stop
12 22 20	=1817+502	13 22 59	46.2	62.4	-4.9		-56.4	77	1430	12 20 51
12 22 20	AMHER	13 22 59	46.2	63.2	-4.9		-56.3	-13	1430	No stop
12 25 50	---	13 26 29	46.7	63.7	-4.8		-56.6	197	1457	12 22 21
12 26 20	J1818+5017	13 27 00	46.7	62.9	-4.9		-56.8	17	1457	12 26 20
12 27 20	=1817+502	13 28 00	46.8	63.0	-4.8		-56.9	60	1464	12 26 21
12 27 20	AMHER	13 28 00	46.9	63.8	-4.8		-56.8	-13	1464	No stop
12 30 50	---	13 31 30	47.4	64.3	-4.8		-57.1	197	1492	12 27 21
12 30 50	J1818+5017	13 31 30	47.3	63.5	-4.8		-57.3	-13	1492	No stop
12 32 20	=1817+502	13 33 01	47.5	63.7	-4.8		-57.4	77	1503	12 30 51
12 32 20	AMHER	13 33 01	47.6	64.5	-4.7		-57.3	-13	1503	No stop
12 35 50	---	13 36 31	48.1	64.9	-4.7		-57.6	197	1530	12 32 21

Schedule for TORUN (Code Tr )

Page 4

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 260 ---										
12 35 50	J1818+5017	13 36 31	48.0	64.1	-4.7		-57.8	-13	1530	No stop
12 37 20	=1817+502	13 38 01	48.2	64.3	-4.7		-57.9	77	1542	12 35 51
12 37 20	J1809+5007	13 38 01	49.3	65.7	-4.5		-58.6	-18	1542	No stop
12 40 50	---	13 41 32	49.8	66.2	-4.5		-59.0	192	1569	12 37 21
12 41 20	J1818+5017	13 42 02	48.7	64.8	-4.6		-58.3	13	1569	12 41 20
12 42 20	=1817+502	13 43 02	48.9	64.9	-4.6		-58.4	60	1577	12 41 21
12 42 20	AMHER	13 43 02	48.9	65.8	-4.6		-58.2	-13	1577	No stop
12 45 50	---	13 46 33	49.4	66.2	-4.5		-58.5	197	1604	12 42 21
12 45 50	J1818+5017	13 46 33	49.3	65.4	-4.5		-58.7	-13	1604	No stop
12 47 20	=1817+502	13 48 03	49.5	65.6	-4.5		-58.9	77	1615	12 45 51
12 47 20	AMHER	13 48 03	49.6	66.4	-4.5		-58.7	-13	1615	No stop
12 50 50	---	13 51 34	50.1	66.9	-4.4		-59.0	197	1642	12 47 21
12 51 20	J1818+5017	13 52 04	50.1	66.1	-4.4		-59.3	17	1642	12 51 20
12 52 20	=1817+502	13 53 04	50.2	66.2	-4.4		-59.4	60	1650	12 51 21
12 52 20	AMHER	13 53 04	50.3	67.1	-4.4		-59.1	-13	1650	No stop
12 55 50	---	13 56 34	50.8	67.5	-4.3		-59.5	197	1677	12 52 21
12 55 50	J1818+5017	13 56 34	50.7	66.7	-4.4		-59.7	-13	1677	No stop
12 57 20	=1817+502	13 58 05	50.9	66.9	-4.3		-59.8	77	1689	12 55 51
12 57 20	AMHER	13 58 05	51.0	67.7	-4.3		-59.6	-13	1689	No stop
13 00 50	---	14 01 35	51.5	68.2	-4.2		-59.9	197	1716	12 57 21
13 00 50	J1818+5017	14 01 35	51.4	67.3	-4.3		-60.2	-13	1716	No stop
13 02 20	=1817+502	14 03 05	51.6	67.5	-4.3		-60.3	77	1728	13 00 51
13 02 20	J1809+5007	14 03 05	52.8	68.9	-4.1		-60.9	-18	1728	No stop
13 05 50	---	14 06 36	53.3	69.4	-4.0		-61.3	192	1755	13 02 21
13 06 20	J1818+5017	14 07 06	52.2	68.0	-4.2		-60.7	12	1755	13 06 20
13 07 20	=1817+502	14 08 06	52.3	68.1	-4.2		-60.8	60	1762	13 06 21
13 07 20	AMHER	14 08 06	52.4	69.0	-4.1		-60.5	-14	1762	No stop
13 10 50	---	14 11 37	52.9	69.5	-4.1		-60.8	196	1790	13 07 21
13 10 50	J1818+5017	14 11 37	52.8	68.6	-4.1		-61.1	-13	1790	No stop
13 12 20	=1817+502	14 13 07	53.0	68.8	-4.1		-61.2	77	1801	13 10 51
13 12 20	AMHER	14 13 07	53.1	69.7	-4.1		-60.9	-14	1801	No stop
13 15 50	---	14 16 38	53.6	70.1	-4.0		-61.2	196	1828	13 12 21

Schedule for TORUN (Code Tr )

Page 5

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 260 ---										
13 16 20	J1818+5017	14 17 08	53.6	69.3	-4.0		-61.6	17	1828	13 16 20
13 17 20	=1817+502	14 18 08	53.7	69.4	-4.0		-61.7	60	1836	13 16 21
13 17 20	AMHER	14 18 08	53.8	70.3	-4.0		-61.4	-14	1836	No stop
13 20 50	---	14 21 38	54.3	70.8	-3.9		-61.7	196	1863	13 17 21
13 20 50	J1818+5017	14 21 38	54.2	69.9	-4.0		-62.0	-14	1863	No stop
13 22 20	=1817+502	14 23 09	54.4	70.1	-3.9		-62.1	76	1875	13 20 51
13 22 20	AMHER	14 23 09	54.5	71.0	-3.9		-61.8	-14	1875	No stop
13 25 50	---	14 26 39	55.0	71.5	-3.8		-62.1	196	1902	13 22 21
13 25 50	J1818+5017	14 26 39	54.9	70.5	-3.9		-62.4	-14	1902	No stop
13 27 20	=1817+502	14 28 10	55.1	70.7	-3.8		-62.5	76	1913	13 25 51
13 27 20	J1809+5007	14 28 10	56.4	72.2	-3.7		-63.1	-18	1913	No stop
13 30 50	---	14 31 40	56.9	72.6	-3.6		-63.4	192	1941	13 27 21
13 31 20	J1818+5017	14 32 10	55.7	71.2	-3.8		-62.9	12	1941	13 31 20
13 32 20	=1817+502	14 33 10	55.8	71.4	-3.8		-63.0	60	1948	13 31 21
13 32 20	AMHER	14 33 10	56.0	72.3	-3.7		-62.6	-14	1948	No stop
13 35 50	---	14 36 41	56.5	72.8	-3.7		-62.9	196	1975	13 32 21
13 35 50	J1818+5017	14 36 41	56.3	71.8	-3.7		-63.3	-14	1975	No stop
13 37 20	=1817+502	14 38 11	56.5	72.0	-3.7		-63.4	76	1987	13 35 51
13 37 20	AMHER	14 38 11	56.7	73.0	-3.6		-63.0	-14	1987	No stop
13 40 50	---	14 41 42	57.2	73.5	-3.6		-63.3	196	2014	13 37 21
13 41 20	J1818+5017	14 42 12	57.1	72.5	-3.6		-63.7	16	2014	13 41 20
13 42 20	=1817+502	14 43 12	57.3	72.7	-3.6		-63.8	60	2022	13 41 21
13 42 20	AMHER	14 43 12	57.4	73.7	-3.6		-63.4	-14	2022	No stop
13 45 50	---	14 46 43	57.9	74.1	-3.5		-63.7	196	2049	13 42 21
13 45 50	J1818+5017	14 46 43	57.8	73.1	-3.5		-64.1	-14	2049	No stop
13 47 20	=1817+502	14 48 13	58.0	73.3	-3.5		-64.2	76	2061	13 45 51
13 47 20	AMHER	14 48 13	58.1	74.3	-3.5		-63.8	-14	2061	No stop
13 50 50	---	14 51 43	58.6	74.8	-3.4		-64.1	196	2088	13 47 21
13 50 50	J1818+5017	14 51 43	58.5	73.8	-3.5		-64.5	-14	2088	No stop
13 52 20	=1817+502	14 53 14	58.7	74.0	-3.4		-64.6	76	2099	13 50 51
13 52 20	J1809+5007	14 53 14	60.0	75.5	-3.3		-65.1	-18	2099	No stop
13 55 50	---	14 56 44	60.5	76.0	-3.2		-65.4	192	2126	13 52 21

Schedule for TORUN (Code Tr )

Page 6

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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-----
Start UT  Source          Start / Stop          Early  Disk  TPStart
Stop UT   LST      EL  AZ  HA  UP  ParA Dwell  GBytes  SYNC
-----
--- Tue 17 Sep 2013  Day 260 ---

13 56 20  J1818+5017  14 57 14  59.3  74.5 -3.4   -64.9  12   2126  13 56 20
13 57 20  =1817+502    14 58 14  59.4  74.6 -3.3   -65.0  60   2134  13 56 21

----- Effelsberg pointing check -----

14 04 20  3C286        15 05 16  61.7 226.2  1.6    30.2  103   2134  14 04 20
14 14 20  ---          15 15 17  60.6 230.0  1.7    32.2  600   2211  14 04 21

14 18 20  J1743-0350    15 19 18  25.4 139.1 -2.4   -23.2  43   2211  14 18 20
14 28 20  =1741-038    15 29 20  26.4 141.7 -2.3   -21.9  600   2289  14 18 21

14 29 10  J1743-0350    15 30 10  26.4 141.9 -2.2   -21.8  44   2289  14 29 10
14 30 10  =1741-038    15 31 10  26.5 142.1 -2.2   -21.7  60   2297  14 29 11

14 30 10  J1752-0147    15 31 10  27.6 139.1 -2.4   -23.2  -20   2297  No stop
14 31 30  ---          15 32 30  27.8 139.5 -2.3   -23.0  60   2307  14 30 11

14 31 30  J17535       15 32 30  28.0 139.0 -2.4   -23.2  -11   2307  No stop
14 33 50  ---          15 34 50  28.2 139.6 -2.3   -22.9  129   2325  14 31 31

14 33 50  J1752-0147    15 34 50  28.0 140.1 -2.3   -22.7  -11   2325  No stop
14 35 00  ---          15 36 01  28.1 140.4 -2.3   -22.5  59   2334  14 33 51

14 35 00  J17535       15 36 01  28.3 139.9 -2.3   -22.8  -11   2334  No stop
14 37 20  ---          15 38 21  28.5 140.5 -2.3   -22.4  129   2352  14 35 01

14 37 20  J1752-0147    15 38 21  28.3 141.0 -2.2   -22.2  -11   2352  No stop
14 38 30  ---          15 39 31  28.4 141.3 -2.2   -22.1  59   2361  14 37 21

14 38 30  J17535       15 39 31  28.6 140.8 -2.2   -22.3  -11   2361  No stop
14 40 50  ---          15 41 52  28.9 141.5 -2.2   -22.0  129   2379  14 38 31

14 40 50  J1752-0147    15 41 52  28.7 141.9 -2.2   -21.8  -11   2379  No stop
14 42 00  ---          15 43 02  28.8 142.2 -2.2   -21.6  59   2388  14 40 51

14 42 00  J17535       15 43 02  29.0 141.8 -2.2   -21.8  -11   2388  No stop
14 44 20  ---          15 45 22  29.2 142.4 -2.1   -21.5  129   2406  14 42 01

14 44 20  J1752-0147    15 45 22  29.0 142.8 -2.1   -21.3  -11   2406  No stop
14 45 30  ---          15 46 32  29.1 143.2 -2.1   -21.1  59   2415  14 44 21

14 46 20  J1743-0350    15 47 23  28.0 146.4 -2.0   -19.5  29   2415  14 46 20
14 47 20  =1741-038    15 48 23  28.0 146.7 -1.9   -19.3  60   2423  14 46 21

14 47 20  J1752-0147    15 48 23  29.3 143.6 -2.1   -20.9  -20   2423  No stop
14 48 40  ---          15 49 43  29.4 144.0 -2.1   -20.7  60   2433  14 47 21

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Schedule for TORUN (Code Tr )

Page 7

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 260 ---										
14 48 40	J17535	15 49 43	29.6	143.6	-2.1		-20.9	-11	2433	No stop
14 51 00	---	15 52 03	29.8	144.2	-2.0		-20.6	129	2451	14 48 41
14 51 00	J1752-0147	15 52 03	29.6	144.6	-2.0		-20.4	-11	2451	No stop
14 52 10	---	15 53 13	29.7	144.9	-2.0		-20.2	59	2460	14 51 01
14 52 10	J17535	15 53 13	29.9	144.5	-2.0		-20.4	-11	2460	No stop
14 54 30	---	15 55 34	30.1	145.1	-2.0		-20.1	129	2479	14 52 11
14 54 30	J1752-0147	15 55 34	29.9	145.6	-2.0		-19.9	-11	2479	No stop
14 55 40	---	15 56 44	30.0	145.9	-1.9		-19.7	59	2488	14 54 31
14 55 40	J17535	15 56 44	30.2	145.4	-2.0		-19.9	-11	2488	No stop
14 58 00	---	15 59 04	30.4	146.1	-1.9		-19.6	129	2506	14 55 41
14 58 00	J1752-0147	15 59 04	30.2	146.5	-1.9		-19.3	-11	2506	No stop
14 59 10	---	16 00 15	30.3	146.9	-1.9		-19.2	59	2515	14 58 01
14 59 10	J17535	16 00 15	30.5	146.4	-1.9		-19.4	-11	2515	No stop
15 01 30	---	16 02 35	30.7	147.0	-1.9		-19.1	129	2533	14 59 11
15 01 30	J1752-0147	16 02 35	30.5	147.5	-1.8		-18.8	-11	2533	No stop
15 02 40	---	16 03 45	30.6	147.8	-1.8		-18.7	59	2542	15 01 31
15 03 30	J1743-0350	16 04 35	29.3	151.0	-1.7		-16.9	29	2542	15 03 30
15 04 30	=1741-038	16 05 36	29.4	151.3	-1.7		-16.8	60	2550	15 03 31
15 04 30	J1752-0147	16 05 36	30.7	148.3	-1.8		-18.4	-20	2550	No stop
15 05 50	---	16 06 56	30.8	148.7	-1.8		-18.2	60	2560	15 04 31
15 05 50	J17535	16 06 56	31.0	148.2	-1.8		-18.4	-11	2560	No stop
15 08 10	---	16 09 16	31.2	148.9	-1.7		-18.1	129	2578	15 05 51
15 08 10	J1752-0147	16 09 16	31.0	149.3	-1.7		-17.8	-11	2578	No stop
15 09 20	---	16 10 26	31.1	149.7	-1.7		-17.7	59	2587	15 08 11
15 09 20	J17535	16 10 26	31.3	149.2	-1.7		-17.9	-11	2587	No stop
15 11 40	---	16 12 47	31.5	149.9	-1.7		-17.5	129	2605	15 09 21
15 11 40	J1752-0147	16 12 47	31.2	150.3	-1.7		-17.3	-11	2605	No stop
15 12 50	---	16 13 57	31.3	150.6	-1.7		-17.1	59	2614	15 11 41
15 12 50	J17535	16 13 57	31.6	150.2	-1.7		-17.4	-11	2614	No stop
15 15 10	---	16 16 17	31.7	150.9	-1.6		-17.0	129	2632	15 12 51

Schedule for TORUN (Code Tr )

Page 8

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 260 ---										
15 15 10	J1752-0147	16 16 17	31.5	151.3	-1.6		-16.8	-11	2632	No stop
15 16 20	---	16 17 27	31.6	151.6	-1.6		-16.6	59	2641	15 15 11
15 16 20	J17535	16 17 27	31.8	151.2	-1.6		-16.8	-11	2641	No stop
15 18 40	---	16 19 48	32.0	151.8	-1.6		-16.5	129	2659	15 16 21
15 18 40	J1752-0147	16 19 48	31.8	152.3	-1.6		-16.2	-11	2659	No stop
15 19 50	---	16 20 58	31.8	152.6	-1.5		-16.0	59	2668	15 18 41
15 19 50	J1753-0102	16 20 58	32.5	152.1	-1.5		-16.3	-14	2668	No stop
15 21 00	---	16 22 08	32.6	152.5	-1.5		-16.1	56	2677	15 19 51
15 21 00	J1752-0147	16 22 08	31.9	152.9	-1.5		-15.9	-14	2677	No stop
15 22 10	---	16 23 18	32.0	153.3	-1.5		-15.7	56	2686	15 21 01
15 23 00	J1743-0350	16 24 09	30.6	156.5	-1.3		-13.9	29	2686	15 23 00
15 24 00	=1741-038	16 25 09	30.7	156.8	-1.3		-13.7	60	2694	15 23 01
15 24 00	J1752-0147	16 25 09	32.1	153.8	-1.5		-15.4	-20	2694	No stop
15 25 20	---	16 26 29	32.2	154.2	-1.4		-15.2	60	2704	15 24 01
15 25 20	J17535	16 26 29	32.5	153.7	-1.5		-15.4	-11	2704	No stop
15 27 40	---	16 28 49	32.6	154.4	-1.4		-15.0	129	2722	15 25 21
15 27 40	J1752-0147	16 28 49	32.4	154.8	-1.4		-14.8	-11	2722	No stop
15 28 50	---	16 30 00	32.4	155.2	-1.4		-14.6	59	2731	15 27 41
15 28 50	J17535	16 30 00	32.7	154.7	-1.4		-14.8	-11	2731	No stop
15 31 10	---	16 32 20	32.8	155.4	-1.4		-14.5	129	2750	15 28 51
15 31 10	J1752-0147	16 32 20	32.6	155.9	-1.3		-14.2	-11	2750	No stop
15 32 20	---	16 33 30	32.6	156.2	-1.3		-14.0	59	2759	15 31 11
15 32 20	J17535	16 33 30	32.9	155.8	-1.3		-14.3	-11	2759	No stop
15 34 40	---	16 35 50	33.0	156.4	-1.3		-13.9	129	2777	15 32 21
15 34 40	J1752-0147	16 35 50	32.8	156.9	-1.3		-13.7	-11	2777	No stop
15 35 50	---	16 37 01	32.9	157.2	-1.3		-13.5	59	2786	15 34 41
15 35 50	J17535	16 37 01	33.1	156.8	-1.3		-13.7	-11	2786	No stop
15 38 10	---	16 39 21	33.3	157.5	-1.2		-13.3	129	2804	15 35 51
15 38 10	J1752-0147	16 39 21	33.0	157.9	-1.2		-13.1	-11	2804	No stop
15 39 20	---	16 40 31	33.1	158.2	-1.2		-12.9	59	2813	15 38 11

Schedule for TORUN (Code Tr )

Page 9

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 260 ---										
15 40 10	J1743-0350	16 41 21	31.5	161.4	-1.1		-11.1	30	2813	15 40 10
15 41 10	=1741-038	16 42 22	31.6	161.7	-1.0		-10.9	60	2820	15 40 11
15 41 10	J1752-0147	16 42 22	33.2	158.8	-1.2		-12.6	-20	2820	No stop
15 42 30	---	16 43 42	33.2	159.1	-1.2		-12.3	60	2831	15 41 11
15 42 30	J17535	16 43 42	33.5	158.7	-1.2		-12.6	-11	2831	No stop
15 44 50	---	16 46 02	33.6	159.4	-1.1		-12.2	129	2849	15 42 31
15 44 50	J1752-0147	16 46 02	33.4	159.8	-1.1		-12.0	-11	2849	No stop
15 46 00	---	16 47 12	33.4	160.2	-1.1		-11.8	59	2858	15 44 51
15 46 00	J17535	16 47 12	33.7	159.7	-1.1		-12.0	-11	2858	No stop
15 48 20	---	16 49 33	33.8	160.4	-1.1		-11.6	129	2876	15 46 01
15 48 20	J1752-0147	16 49 33	33.5	160.9	-1.1		-11.4	-11	2876	No stop
15 49 30	---	16 50 43	33.6	161.2	-1.0		-11.2	59	2885	15 48 21
15 49 30	J17535	16 50 43	33.9	160.8	-1.1		-11.4	-11	2885	No stop
15 51 50	---	16 53 03	34.0	161.5	-1.0		-11.0	129	2903	15 49 31
15 51 50	J1752-0147	16 53 03	33.7	161.9	-1.0		-10.8	-11	2903	No stop
15 53 00	---	16 54 13	33.8	162.2	-1.0		-10.6	59	2912	15 51 51
15 53 00	J17535	16 54 13	34.0	161.8	-1.0		-10.8	-11	2912	No stop
15 55 20	---	16 56 34	34.1	162.5	-1.0		-10.4	129	2930	15 53 01
15 55 20	J1752-0147	16 56 34	33.9	162.9	-0.9		-10.2	-11	2930	No stop
15 56 30	---	16 57 44	33.9	163.3	-0.9		-10.0	59	2939	15 55 21
15 57 20	J1743-0350	16 58 34	32.2	166.4	-0.8		-8.2	30	2939	15 57 20
15 58 20	=1741-038	16 59 34	32.3	166.6	-0.8		-8.0	60	2947	15 57 21
15 58 20	J1752-0147	16 59 34	34.0	163.8	-0.9		-9.6	-20	2947	No stop
15 59 40	---	17 00 55	34.0	164.2	-0.9		-9.4	60	2957	15 58 21
15 59 40	J17535	17 00 55	34.3	163.8	-0.9		-9.6	-11	2957	No stop
16 02 00	---	17 03 15	34.4	164.5	-0.8		-9.2	129	2975	15 59 41
16 02 00	J1752-0147	17 03 15	34.1	164.9	-0.8		-9.0	-11	2975	No stop
16 03 10	---	17 04 25	34.2	165.3	-0.8		-8.8	59	2984	16 02 01
16 03 10	J17535	17 04 25	34.5	164.9	-0.8		-9.0	-11	2984	No stop
16 05 30	---	17 06 46	34.6	165.6	-0.8		-8.6	129	3002	16 03 11

Schedule for TORUN (Code Tr )

Page 10

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 260 ---										
16 05 30	J1752-0147	17 06 46	34.3	166.0	-0.8		-8.4	-11	3002	No stop
16 06 40	---	17 07 56	34.3	166.3	-0.8		-8.2	59	3011	16 05 31
16 06 40	J17535	17 07 56	34.6	165.9	-0.8		-8.4	-11	3011	No stop
16 09 00	---	17 10 16	34.7	166.6	-0.7		-8.0	129	3029	16 06 41
16 09 00	J1752-0147	17 10 16	34.4	167.0	-0.7		-7.8	-11	3029	No stop
16 10 10	---	17 11 26	34.4	167.4	-0.7		-7.6	59	3039	16 09 01
16 10 10	J17535	17 11 26	34.7	167.0	-0.7		-7.8	-11	3039	No stop
16 12 30	---	17 13 47	34.8	167.7	-0.7		-7.4	129	3057	16 10 11
16 12 30	J1752-0147	17 13 47	34.5	168.1	-0.7		-7.1	-11	3057	No stop
16 13 40	---	17 14 57	34.5	168.4	-0.6		-6.9	59	3066	16 12 31
16 13 40	J1753-0102	17 14 57	35.3	168.0	-0.6		-7.1	-15	3066	No stop
16 14 50	---	17 16 07	35.3	168.4	-0.6		-6.9	55	3075	16 13 41
16 14 50	J1752-0147	17 16 07	34.6	168.8	-0.6		-6.7	-15	3075	No stop
16 16 00	---	17 17 17	34.6	169.1	-0.6		-6.5	55	3084	16 14 51
16 16 50	J1743-0350	17 18 07	32.8	172.1	-0.4		-4.7	29	3084	16 16 50
16 17 50	=1741-038	17 19 08	32.8	172.4	-0.4		-4.6	60	3091	16 16 51
16 17 50	J1752-0147	17 19 08	34.7	169.7	-0.6		-6.2	-21	3091	No stop
16 19 10	---	17 20 28	34.7	170.1	-0.5		-5.9	59	3102	16 17 51
16 19 10	J17535	17 20 28	35.0	169.7	-0.6		-6.2	-11	3102	No stop
16 21 30	---	17 22 48	35.1	170.4	-0.5		-5.7	129	3120	16 19 11
16 21 30	J1752-0147	17 22 48	34.8	170.8	-0.5		-5.5	-11	3120	No stop
16 22 40	---	17 23 58	34.8	171.1	-0.5		-5.3	59	3129	16 21 31
16 22 40	J17535	17 23 58	35.1	170.8	-0.5		-5.5	-11	3129	No stop
16 25 00	---	17 26 19	35.1	171.5	-0.5		-5.1	129	3147	16 22 41
16 25 00	J1752-0147	17 26 19	34.8	171.9	-0.4		-4.9	-11	3147	No stop
16 26 10	---	17 27 29	34.9	172.2	-0.4		-4.7	59	3156	16 25 01
16 26 10	J17535	17 27 29	35.2	171.8	-0.4		-4.9	-11	3156	No stop
16 28 30	---	17 29 49	35.2	172.5	-0.4		-4.5	129	3174	16 26 11
16 28 30	J1752-0147	17 29 49	34.9	172.9	-0.4		-4.2	-11	3174	No stop
16 29 40	---	17 31 00	34.9	173.3	-0.4		-4.0	59	3183	16 28 31



Schedule for TORUN (Code Tr )

Page 11

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 260 ---										
16 29 40	J17535	17 31 00	35.2	172.9	-0.4		-4.3	-11	3183	No stop
16 32 00	---	17 33 20	35.3	173.6	-0.3		-3.8	129	3201	16 29 41
16 32 00	J1752-0147	17 33 20	35.0	174.0	-0.3		-3.6	-11	3201	No stop
16 33 10	---	17 34 30	35.0	174.3	-0.3		-3.4	59	3210	16 32 01
16 34 00	J1743-0350	17 35 20	33.0	177.2	-0.2		-1.7	29	3210	16 34 00
16 35 00	=1741-038	17 36 20	33.0	177.5	-0.1		-1.5	60	3218	16 34 01
16 35 00	J1752-0147	17 36 20	35.0	174.9	-0.3		-3.1	-21	3218	No stop
16 36 20	---	17 37 41	35.0	175.3	-0.3		-2.8	59	3228	16 35 01
16 36 20	J17535	17 37 41	35.3	174.9	-0.3		-3.0	-12	3228	No stop
16 38 40	---	17 40 01	35.4	175.7	-0.2		-2.6	128	3246	16 36 21
16 38 40	J1752-0147	17 40 01	35.1	176.0	-0.2		-2.4	-12	3246	No stop
16 39 50	---	17 41 11	35.1	176.4	-0.2		-2.2	58	3255	16 38 41
16 39 50	J17535	17 41 11	35.4	176.0	-0.2		-2.4	-12	3255	No stop
16 42 10	---	17 43 32	35.4	176.7	-0.2		-2.0	128	3273	16 39 51
16 42 10	J1752-0147	17 43 32	35.1	177.1	-0.2		-1.7	-12	3273	No stop
16 43 20	---	17 44 42	35.1	177.5	-0.1		-1.5	58	3282	16 42 11
16 43 20	J17535	17 44 42	35.4	177.1	-0.2		-1.7	-12	3282	No stop
16 45 40	---	17 47 02	35.4	177.8	-0.1		-1.3	128	3300	16 43 21
16 45 40	J1752-0147	17 47 02	35.1	178.2	-0.1		-1.1	-12	3300	No stop
16 46 50	---	17 48 12	35.1	178.5	-0.1		-0.9	58	3309	16 45 41
16 46 50	J17535	17 48 12	35.4	178.2	-0.1		-1.1	-12	3309	No stop
16 49 10	---	17 50 33	35.4	178.9	-0.1		-0.7	128	3328	16 46 51
16 49 10	J1752-0147	17 50 33	35.1	179.2	-0.0		-0.5	-12	3328	No stop
16 50 20	---	17 51 43	35.1	179.6	-0.0		-0.2	58	3337	16 49 11
16 51 10	J1743-0350	17 52 33	33.0	182.3	0.1		1.4	28	3337	16 51 10
16 52 10	=1741-038	17 53 33	33.0	182.6	0.1		1.6	60	3344	16 51 11
16 52 10	J1752-0147	17 53 33	35.1	180.2	0.0		0.1	-22	3344	No stop
16 53 30	---	17 54 53	35.1	180.6	0.0		0.3	58	3355	16 52 11
16 53 30	J17535	17 54 53	35.5	180.2	0.0		0.1	-12	3355	No stop
16 55 50	---	17 57 14	35.5	180.9	0.1		0.6	128	3373	16 53 31

Schedule for TORUN (Code Tr )

Page 12

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 260 ---										
16 55 50	J1752-0147	17 57 14	35.1	181.3	0.1		0.8	-12	3373	No stop
16 57 00	---	17 58 24	35.1	181.6	0.1		1.0	58	3382	16 55 51
16 57 00	J17535	17 58 24	35.4	181.3	0.1		0.8	-12	3382	No stop
16 59 20	---	18 00 44	35.4	182.0	0.1		1.2	128	3400	16 57 01
16 59 20	J1752-0147	18 00 44	35.1	182.4	0.1		1.4	-12	3400	No stop
17 00 30	---	18 01 55	35.1	182.7	0.1		1.6	58	3409	16 59 21
17 00 30	J17535	18 01 55	35.4	182.4	0.1		1.4	-12	3409	No stop
17 02 50	---	18 04 15	35.4	183.1	0.2		1.9	128	3427	17 00 31
17 02 50	J1752-0147	18 04 15	35.1	183.4	0.2		2.1	-12	3427	No stop
17 04 00	---	18 05 25	35.1	183.8	0.2		2.3	58	3436	17 02 51
17 04 00	J17535	18 05 25	35.4	183.4	0.2		2.1	-12	3436	No stop
17 06 20	---	18 07 46	35.4	184.2	0.2		2.5	128	3454	17 04 01
17 06 20	J1752-0147	18 07 46	35.0	184.5	0.2		2.7	-12	3454	No stop
17 07 30	---	18 08 56	35.0	184.9	0.3		2.9	58	3463	17 06 21
17 07 30	J1753-0102	18 08 56	35.8	184.6	0.3		2.8	-15	3463	No stop
17 08 40	---	18 10 06	35.8	185.0	0.3		3.0	55	3472	17 07 31
17 08 40	J1752-0147	18 10 06	35.0	185.2	0.3		3.1	-15	3472	No stop
17 09 50	---	18 11 16	35.0	185.6	0.3		3.3	55	3481	17 08 41
17 10 40	J1743-0350	18 12 06	32.8	188.1	0.5		4.9	28	3481	17 10 40
17 11 40	=1741-038	18 13 06	32.8	188.4	0.5		5.1	60	3489	17 10 41
17 11 40	J1752-0147	18 13 06	35.0	186.1	0.3		3.7	-22	3489	No stop
17 13 00	---	18 14 27	34.9	186.5	0.4		3.9	58	3499	17 11 41
17 13 00	J17535	18 14 27	35.3	186.2	0.3		3.7	-12	3499	No stop
17 15 20	---	18 16 47	35.2	186.9	0.4		4.1	128	3517	17 13 01
17 15 20	J1752-0147	18 16 47	34.9	187.2	0.4		4.3	-12	3517	No stop
17 16 30	---	18 17 57	34.9	187.6	0.4		4.6	58	3526	17 15 21
17 16 30	J17535	18 17 57	35.2	187.3	0.4		4.4	-12	3526	No stop
17 18 50	---	18 20 18	35.2	188.0	0.4		4.8	128	3544	17 16 31
17 18 50	J1752-0147	18 20 18	34.8	188.3	0.5		5.0	-12	3544	No stop
17 20 00	---	18 21 28	34.8	188.7	0.5		5.2	58	3553	17 18 51

Schedule for TORUN (Code Tr )

Page 13

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 260 ---										
17 20 00	J17535	18 21 28	35.2	188.3	0.5		5.0	-12	3553	No stop
17 22 20	---	18 23 48	35.1	189.1	0.5		5.4	128	3571	17 20 01
17 22 20	J1752-0147	18 23 48	34.7	189.4	0.5		5.6	-12	3571	No stop
17 23 30	---	18 24 58	34.7	189.7	0.5		5.8	58	3580	17 22 21
17 23 30	J17535	18 24 58	35.1	189.4	0.5		5.6	-12	3580	No stop
17 25 50	---	18 27 19	35.0	190.1	0.6		6.1	128	3598	17 23 31
17 25 50	J1752-0147	18 27 19	34.6	190.4	0.6		6.2	-12	3598	No stop
17 27 00	---	18 28 29	34.6	190.8	0.6		6.5	58	3608	17 25 51
17 27 50	J1743-0350	18 29 19	32.3	193.2	0.7		7.9	27	3608	17 27 50
17 28 50	=1741-038	18 30 19	32.3	193.5	0.8		8.1	60	3615	17 27 51
17 28 50	J1752-0147	18 30 19	34.6	191.3	0.6		6.8	-22	3615	No stop
17 30 10	---	18 31 39	34.5	191.7	0.6		7.0	58	3626	17 28 51
17 30 10	J17535	18 31 39	34.9	191.4	0.6		6.8	-12	3626	No stop
17 32 30	---	18 34 00	34.8	192.1	0.7		7.3	128	3644	17 30 11
17 32 30	J1752-0147	18 34 00	34.5	192.4	0.7		7.4	-12	3644	No stop
17 33 40	---	18 35 10	34.4	192.8	0.7		7.6	58	3653	17 32 31
17 33 40	J17535	18 35 10	34.8	192.5	0.7		7.5	-12	3653	No stop
17 36 00	---	18 37 30	34.7	193.2	0.7		7.9	128	3671	17 33 41
17 36 00	J1752-0147	18 37 30	34.3	193.5	0.7		8.1	-12	3671	No stop
17 37 10	---	18 38 41	34.3	193.8	0.8		8.3	58	3680	17 36 01
17 37 10	J17535	18 38 41	34.7	193.6	0.7		8.1	-12	3680	No stop
17 39 30	---	18 41 01	34.6	194.3	0.8		8.5	128	3698	17 37 11
17 39 30	J1752-0147	18 41 01	34.2	194.5	0.8		8.7	-12	3698	No stop
17 40 40	---	18 42 11	34.2	194.9	0.8		8.9	58	3707	17 39 31
17 40 40	J17535	18 42 11	34.5	194.6	0.8		8.7	-12	3707	No stop
17 43 00	---	18 44 32	34.4	195.3	0.8		9.1	128	3725	17 40 41
17 43 00	J1752-0147	18 44 32	34.1	195.6	0.9		9.3	-12	3725	No stop
17 44 10	---	18 45 42	34.0	195.9	0.9		9.5	58	3734	17 43 01
17 45 00	J1743-0350	18 46 32	31.6	198.2	1.0		10.8	27	3734	17 45 00
17 46 00	=1741-038	18 47 32	31.6	198.5	1.0		11.0	60	3742	17 45 01

Schedule for TORUN (Code Tr )

Page 14

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 260 ---										
17 46 00	J1752-0147	18 47 32	33.9	196.5	0.9		9.8	-23	3742	No stop
17 47 20	---	18 48 52	33.9	196.9	0.9		10.0	57	3752	17 46 01
17 47 20	J17535	18 48 52	34.3	196.6	0.9		9.9	-12	3752	No stop
17 49 40	---	18 51 13	34.2	197.3	1.0		10.3	128	3770	17 47 21
17 49 40	J1752-0147	18 51 13	33.8	197.6	1.0		10.5	-12	3770	No stop
17 50 50	---	18 52 23	33.7	197.9	1.0		10.7	58	3779	17 49 41
17 50 50	J17535	18 52 23	34.1	197.7	1.0		10.5	-12	3779	No stop
17 53 10	---	18 54 43	34.0	198.3	1.0		10.9	128	3797	17 50 51
17 53 10	J1752-0147	18 54 43	33.6	198.6	1.0		11.1	-12	3797	No stop
17 54 20	---	18 55 53	33.6	199.0	1.0		11.3	58	3806	17 53 11
17 54 20	J17535	18 55 53	33.9	198.7	1.0		11.1	-12	3806	No stop
17 56 40	---	18 58 14	33.8	199.4	1.1		11.5	128	3824	17 54 21
17 56 40	J1752-0147	18 58 14	33.4	199.6	1.1		11.7	-12	3824	No stop
17 57 50	---	18 59 24	33.4	200.0	1.1		11.9	58	3833	17 56 41
17 57 50	J17535	18 59 24	33.8	199.7	1.1		11.7	-12	3833	No stop
18 00 10	---	19 01 44	33.7	200.4	1.1		12.1	128	3851	17 57 51
18 00 10	J1752-0147	19 01 44	33.3	200.7	1.1		12.2	-12	3851	No stop
18 01 20	---	19 02 55	33.2	201.0	1.2		12.4	58	3860	18 00 11
18 01 20	J1753-0102	19 02 55	34.0	201.0	1.2		12.4	-15	3860	No stop
18 02 30	---	19 04 05	33.9	201.3	1.2		12.6	55	3869	18 01 21
18 02 30	J1752-0147	19 04 05	33.1	201.4	1.2		12.6	-15	3869	No stop
18 03 40	---	19 05 15	33.1	201.7	1.2		12.8	55	3878	18 02 31
18 04 30	J1743-0350	19 06 05	30.5	203.8	1.4		14.0	27	3878	18 04 30
18 05 30	=1741-038	19 07 05	30.5	204.0	1.4		14.2	60	3886	18 04 31
18 05 30	J1752-0147	19 07 05	33.0	202.2	1.2		13.1	-23	3886	No stop
18 06 50	---	19 08 25	32.9	202.6	1.3		13.4	57	3897	18 05 31
18 06 50	J17535	19 08 25	33.3	202.4	1.2		13.2	-12	3897	No stop
18 09 10	---	19 10 46	33.2	203.1	1.3		13.6	128	3915	18 06 51
18 09 10	J1752-0147	19 10 46	32.8	203.3	1.3		13.7	-12	3915	No stop
18 10 20	---	19 11 56	32.7	203.6	1.3		13.9	58	3924	18 09 11

Schedule for TORUN (Code Tr )

Page 15

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 260 ---										
18 10 20	J17535	19 11 56	33.1	203.4	1.3		13.8	-12	3924	No stop
18 12 40	---	19 14 16	32.9	204.1	1.3		14.2	128	3942	18 10 21
18 12 40	J1752-0147	19 14 16	32.5	204.3	1.4		14.3	-12	3942	No stop
18 13 50	---	19 15 27	32.5	204.6	1.4		14.5	58	3951	18 12 41
18 13 50	J17535	19 15 27	32.9	204.4	1.4		14.4	-12	3951	No stop
18 16 10	---	19 17 47	32.7	205.1	1.4		14.7	128	3969	18 13 51
18 16 10	J1752-0147	19 17 47	32.3	205.3	1.4		14.9	-12	3969	No stop
18 17 20	---	19 18 57	32.2	205.6	1.4		15.1	58	3978	18 16 11
18 17 20	J17535	19 18 57	32.6	205.4	1.4		14.9	-12	3978	No stop
18 19 40	---	19 21 18	32.5	206.1	1.5		15.3	128	3996	18 17 21
18 19 40	J1752-0147	19 21 18	32.1	206.3	1.5		15.4	-12	3996	No stop
18 20 50	---	19 22 28	32.0	206.6	1.5		15.6	58	4005	18 19 41
18 21 40	J1743-0350	19 23 18	29.4	208.5	1.6		16.7	26	4005	18 21 40
18 22 40	=1741-038	19 24 18	29.3	208.8	1.7		16.9	60	4013	18 21 41
18 22 40	J1752-0147	19 24 18	31.9	207.2	1.5		15.9	-23	4013	No stop
18 24 00	---	19 25 38	31.8	207.5	1.5		16.1	57	4023	18 22 41
18 24 00	J17535	19 25 38	32.2	207.3	1.5		16.0	-12	4023	No stop
18 26 20	---	19 27 59	32.0	208.0	1.6		16.4	128	4041	18 24 01
18 26 20	J1752-0147	19 27 59	31.6	208.2	1.6		16.5	-12	4041	No stop
18 27 30	---	19 29 09	31.6	208.5	1.6		16.7	58	4050	18 26 21
18 27 30	J17535	19 29 09	32.0	208.3	1.6		16.6	-12	4050	No stop
18 29 50	---	19 31 29	31.8	209.0	1.6		16.9	128	4068	18 27 31
18 29 50	J1752-0147	19 31 29	31.4	209.2	1.6		17.0	-12	4068	No stop
18 31 00	---	19 32 39	31.3	209.5	1.7		17.2	58	4077	18 29 51
18 31 00	J17535	19 32 39	31.7	209.3	1.6		17.1	-12	4077	No stop
18 33 20	---	19 35 00	31.5	210.0	1.7		17.5	128	4095	18 31 01
18 33 20	J1752-0147	19 35 00	31.1	210.2	1.7		17.6	-12	4095	No stop
18 34 30	---	19 36 10	31.0	210.5	1.7		17.7	58	4104	18 33 21
18 34 30	J17535	19 36 10	31.4	210.3	1.7		17.6	-12	4104	No stop
18 36 50	---	19 38 30	31.3	210.9	1.7		18.0	128	4122	18 34 31

Schedule for TORUN (Code Tr )

Page 16

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 260 ---										
18 36 50	J1752-0147	19 38 30	30.9	211.1	1.8		18.1	-12	4122	No stop
18 38 00	---	19 39 41	30.8	211.5	1.8		18.3	58	4131	18 36 51
18 38 50	J1743-0350	19 40 31	28.1	213.2	1.9		19.2	26	4131	18 38 50
18 39 50	=1741-038	19 41 31	28.0	213.5	1.9		19.4	60	4139	18 38 51
18 39 50	J1752-0147	19 41 31	30.6	212.0	1.8		18.5	-24	4139	No stop
18 41 10	---	19 42 51	30.5	212.3	1.8		18.7	56	4149	18 39 51
18 41 10	J17535	19 42 51	30.9	212.1	1.8		18.6	-12	4149	No stop
18 43 30	---	19 45 11	30.7	212.8	1.8		19.0	128	4167	18 41 11
18 43 30	J1752-0147	19 45 11	30.3	213.0	1.9		19.1	-13	4167	No stop
18 44 40	---	19 46 22	30.2	213.3	1.9		19.3	57	4177	18 43 31
18 44 40	J17535	19 46 22	30.6	213.1	1.9		19.2	-12	4177	No stop
18 47 00	---	19 48 42	30.4	213.7	1.9		19.5	128	4195	18 44 41
18 47 00	J1752-0147	19 48 42	30.0	213.9	1.9		19.6	-13	4195	No stop
18 48 10	---	19 49 52	29.9	214.3	1.9		19.8	57	4204	18 47 01
18 48 10	J17535	19 49 52	30.3	214.1	1.9		19.7	-12	4204	No stop
18 50 30	---	19 52 13	30.1	214.7	2.0		20.0	128	4222	18 48 11
18 50 30	J1752-0147	19 52 13	29.7	214.9	2.0		20.1	-13	4222	No stop
18 51 40	---	19 53 23	29.6	215.2	2.0		20.3	57	4231	18 50 31
18 51 40	J17535	19 53 23	30.0	215.0	2.0		20.2	-12	4231	No stop
18 54 00	---	19 55 43	29.8	215.7	2.0		20.5	128	4249	18 51 41
18 54 00	J1752-0147	19 55 43	29.4	215.8	2.0		20.6	-13	4249	No stop
18 55 10	---	19 56 53	29.3	216.1	2.1		20.8	57	4258	18 54 01
18 55 10	J1753-0102	19 56 53	30.1	216.2	2.0		20.8	-15	4258	No stop
18 56 20	---	19 58 04	30.0	216.5	2.1		20.9	55	4267	18 55 11
18 56 20	J1752-0147	19 58 04	29.2	216.5	2.1		20.9	-15	4267	No stop
18 57 30	---	19 59 14	29.1	216.8	2.1		21.1	55	4276	18 56 21
18 58 20	J1743-0350	20 00 04	26.4	218.3	2.3		21.9	26	4276	18 58 20
18 59 20	=1741-038	20 01 04	26.3	218.6	2.3		22.0	60	4284	18 58 21
18 59 20	J1752-0147	20 01 04	28.9	217.3	2.1		21.3	-24	4284	No stop
19 00 40	---	20 02 24	28.8	217.6	2.2		21.5	56	4294	18 59 21

Schedule for TORUN (Code Tr )

Page 17

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 260 ---										
19 00 40	J17535	20 02 24	29.2	217.4	2.1		21.4	-12	4294	No stop
19 03 00	---	20 04 45	29.0	218.1	2.2		21.7	128	4312	19 00 41
19 03 00	J1752-0147	20 04 45	28.6	218.2	2.2		21.8	-13	4312	No stop
19 04 10	---	20 05 55	28.5	218.5	2.2		22.0	57	4321	19 03 01
19 04 10	J17535	20 05 55	28.9	218.4	2.2		21.9	-12	4321	No stop
19 06 30	---	20 08 15	28.7	219.0	2.2		22.2	128	4339	19 04 11
19 06 30	J1752-0147	20 08 15	28.3	219.2	2.3		22.3	-13	4339	No stop
19 07 40	---	20 09 25	28.2	219.5	2.3		22.4	57	4348	19 06 31
19 07 40	J17535	20 09 25	28.6	219.3	2.3		22.4	-12	4348	No stop
19 10 00	---	20 11 46	28.4	219.9	2.3		22.7	128	4366	19 07 41
19 10 00	J1752-0147	20 11 46	27.9	220.1	2.3		22.8	-13	4366	No stop
19 11 10	---	20 12 56	27.8	220.4	2.3		22.9	57	4375	19 10 01
19 11 10	J17535	20 12 56	28.3	220.2	2.3		22.8	-12	4375	No stop
19 13 30	---	20 15 16	28.0	220.8	2.4		23.1	128	4393	19 11 11
19 13 30	J1752-0147	20 15 16	27.6	221.0	2.4		23.2	-13	4393	No stop
19 14 40	---	20 16 27	27.5	221.3	2.4		23.4	57	4402	19 13 31
19 15 30	J1743-0350	20 17 17	24.7	222.7	2.5		24.1	26	4402	19 15 30
19 16 30	=1741-038	20 18 17	24.6	223.0	2.6		24.2	60	4410	19 15 31
19 16 30	J1752-0147	20 18 17	27.3	221.8	2.4		23.6	-24	4410	No stop
19 17 50	---	20 19 37	27.2	222.1	2.4		23.8	56	4420	19 16 31
19 17 50	J17535	20 19 37	27.6	222.0	2.4		23.7	-12	4420	No stop
19 20 10	---	20 21 58	27.4	222.6	2.5		24.0	128	4438	19 17 51
19 20 10	J1752-0147	20 21 58	26.9	222.7	2.5		24.0	-13	4438	No stop
19 21 20	---	20 23 08	26.8	223.0	2.5		24.2	57	4447	19 20 11
19 21 20	J17535	20 23 08	27.2	222.9	2.5		24.1	-12	4447	No stop
19 23 40	---	20 25 28	27.0	223.5	2.5		24.4	128	4466	19 21 21
19 23 40	J1752-0147	20 25 28	26.6	223.6	2.5		24.5	-13	4466	No stop
19 24 50	---	20 26 38	26.5	223.9	2.6		24.6	57	4475	19 23 41
19 24 50	J17535	20 26 38	26.9	223.8	2.5		24.6	-12	4475	No stop
19 27 10	---	20 28 59	26.6	224.4	2.6		24.8	128	4493	19 24 51

Schedule for TORUN (Code Tr )

Page 18

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 260 ---										
19 27 10	J1752-0147	20 28 59	26.2	224.5	2.6		24.9	-13	4493	No stop
19 28 20	---	20 30 09	26.1	224.8	2.6		25.0	57	4502	19 27 11
19 28 20	J17535	20 30 09	26.5	224.7	2.6		25.0	-12	4502	No stop
19 30 40	---	20 32 29	26.3	225.2	2.6		25.3	128	4520	19 28 21
19 30 40	J1752-0147	20 32 29	25.8	225.4	2.7		25.3	-13	4520	No stop
19 31 50	---	20 33 39	25.7	225.7	2.7		25.5	57	4529	19 30 41
19 32 40	J1743-0350	20 34 30	22.9	227.0	2.8		26.1	26	4529	19 32 40
19 33 40	=1741-038	20 35 30	22.8	227.2	2.8		26.2	60	4536	19 32 41
19 33 40	J1752-0147	20 35 30	25.5	226.1	2.7		25.7	-24	4536	No stop
19 35 00	---	20 36 50	25.4	226.5	2.7		25.8	56	4547	19 33 41
19 35 00	J17535	20 36 50	25.8	226.3	2.7		25.8	-12	4547	No stop
19 37 20	---	20 39 10	25.5	226.9	2.7		26.0	128	4565	19 35 01
19 37 20	J1752-0147	20 39 10	25.1	227.0	2.8		26.1	-13	4565	No stop
19 38 30	---	20 40 21	25.0	227.3	2.8		26.2	57	4574	19 37 21
19 38 30	J17535	20 40 21	25.4	227.2	2.8		26.2	-12	4574	No stop
19 40 50	---	20 42 41	25.2	227.8	2.8		26.4	128	4592	19 38 31
19 40 50	J1752-0147	20 42 41	24.7	227.9	2.8		26.5	-13	4592	No stop
19 42 00	---	20 43 51	24.6	228.2	2.8		26.6	57	4601	19 40 51
19 42 00	J17535	20 43 51	25.0	228.1	2.8		26.5	-12	4601	No stop
19 44 20	---	20 46 11	24.8	228.7	2.9		26.8	128	4619	19 42 01
19 44 20	J1752-0147	20 46 11	24.3	228.8	2.9		26.9	-13	4619	No stop
19 45 30	---	20 47 22	24.2	229.1	2.9		27.0	57	4628	19 44 21
19 45 30	J17535	20 47 22	24.6	228.9	2.9		26.9	-12	4628	No stop
19 47 50	---	20 49 42	24.4	229.5	2.9		27.2	128	4646	19 45 31
19 47 50	J1752-0147	20 49 42	23.9	229.6	2.9		27.2	-13	4646	No stop
19 49 00	---	20 50 52	23.8	229.9	3.0		27.4	57	4655	19 47 51
19 49 00	J1753-0102	20 50 52	24.6	230.1	2.9		27.4	-15	4655	No stop
19 50 10	---	20 52 02	24.4	230.4	3.0		27.6	55	4664	19 49 01
19 50 10	J1752-0147	20 52 02	23.7	230.2	3.0		27.5	-15	4664	No stop
19 51 20	---	20 53 13	23.5	230.5	3.0		27.6	55	4673	19 50 11



Schedule for TORUN (Code Tr )

Page 19

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 260 ---										
19 52 10	J1743-0350	20 54 03	20.6	231.6	3.2		28.2	26	4673	19 52 10
19 53 10	=1741-038	20 55 03	20.5	231.9	3.2		28.3	60	4681	19 52 11
19 53 10	J1752-0147	20 55 03	23.3	230.9	3.0		27.8	-24	4681	No stop
19 54 30	---	20 56 23	23.2	231.2	3.1		27.9	56	4691	19 53 11
19 54 30	J17535	20 56 23	23.6	231.1	3.0		27.9	-12	4691	No stop
19 56 50	---	20 58 44	23.3	231.7	3.1		28.1	128	4709	19 54 31
19 56 50	J1752-0147	20 58 44	22.9	231.8	3.1		28.2	-13	4709	No stop
19 58 00	---	20 59 54	22.7	232.1	3.1		28.3	57	4718	19 56 51
19 58 00	J17535	20 59 54	23.2	232.0	3.1		28.2	-12	4718	No stop
20 00 20	---	21 02 14	22.9	232.5	3.1		28.5	128	4736	19 58 01
20 00 20	J1752-0147	21 02 14	22.5	232.6	3.2		28.5	-13	4736	No stop
20 01 30	---	21 03 24	22.3	232.9	3.2		28.6	57	4746	20 00 21
20 01 30	J17535	21 03 24	22.8	232.8	3.2		28.6	-12	4746	No stop
20 03 50	---	21 05 45	22.5	233.4	3.2		28.8	128	4764	20 01 31
20 03 50	J1752-0147	21 05 45	22.0	233.5	3.2		28.9	-13	4764	No stop
20 05 00	---	21 06 55	21.9	233.8	3.2		29.0	57	4773	20 03 51
20 05 00	J17535	21 06 55	22.3	233.7	3.2		28.9	-12	4773	No stop
20 07 20	---	21 09 15	22.1	234.2	3.3		29.2	128	4791	20 05 01
20 07 20	J1752-0147	21 09 15	21.6	234.3	3.3		29.2	-13	4791	No stop
20 08 30	---	21 10 25	21.5	234.6	3.3		29.3	57	4800	20 07 21
20 09 20	J1743-0350	21 11 16	18.6	235.6	3.4		29.8	25	4800	20 09 20
20 10 20	=1741-038	21 12 16	18.4	235.8	3.5		29.9	60	4807	20 09 21
20 10 20	J1752-0147	21 12 16	21.2	235.0	3.3		29.5	-24	4807	No stop
20 11 40	---	21 13 36	21.1	235.3	3.3		29.6	56	4818	20 10 21
20 11 40	J17535	21 13 36	21.5	235.2	3.3		29.6	-12	4818	No stop
20 14 00	---	21 15 56	21.2	235.8	3.4		29.8	128	4836	20 11 41
20 14 00	J1752-0147	21 15 56	20.8	235.9	3.4		29.8	-13	4836	No stop
20 15 10	---	21 17 07	20.6	236.1	3.4		29.9	57	4845	20 14 01
20 15 10	J17535	21 17 07	21.1	236.0	3.4		29.9	-12	4845	No stop
20 17 30	---	21 19 27	20.8	236.6	3.4		30.1	128	4863	20 15 11

Schedule for TORUN (Code Tr )

Page 20

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 260 ---										
20 17 30	J1752-0147	21 19 27	20.4	236.7	3.4		30.1	-13	4863	No stop
20 18 40	---	21 20 37	20.2	236.9	3.5		30.2	57	4872	20 17 31
20 18 40	J17535	21 20 37	20.6	236.9	3.4		30.2	-12	4872	No stop
20 21 00	---	21 22 58	20.4	237.4	3.5		30.4	128	4890	20 18 41
20 21 00	J1752-0147	21 22 58	19.9	237.5	3.5		30.4	-13	4890	No stop
20 22 10	---	21 24 08	19.8	237.7	3.5		30.5	57	4899	20 21 01
20 22 10	J17535	21 24 08	20.2	237.7	3.5		30.5	-12	4899	No stop
20 24 30	---	21 26 28	19.9	238.2	3.5		30.7	128	4917	20 22 11
20 24 30	J1752-0147	21 26 28	19.5	238.3	3.6		30.7	-13	4917	No stop
20 25 40	---	21 27 38	19.3	238.5	3.6		30.8	57	4926	20 24 31
20 26 30	J1743-0350	21 28 28	16.4	239.5	3.7		31.2	25	4926	20 26 30
20 27 30	=1741-038	21 29 29	16.3	239.7	3.7		31.3	60	4934	20 26 31
20 27 30	J1752-0147	21 29 29	19.1	239.0	3.6		31.0	-24	4934	No stop
20 28 50	---	21 30 49	18.9	239.3	3.6		31.1	56	4944	20 27 31
20 28 50	J17535	21 30 49	19.3	239.2	3.6		31.1	-13	4944	No stop
20 31 10	---	21 33 09	19.0	239.7	3.6		31.2	127	4962	20 28 51
20 31 10	J1752-0147	21 33 09	18.6	239.8	3.7		31.3	-13	4962	No stop
20 32 20	---	21 34 19	18.5	240.1	3.7		31.4	57	4971	20 31 11
20 32 20	J17535	21 34 19	18.9	240.0	3.7		31.3	-13	4971	No stop
20 34 40	---	21 36 40	18.6	240.5	3.7		31.5	127	4989	20 32 21
20 34 40	J1752-0147	21 36 40	18.1	240.6	3.7		31.6	-13	4989	No stop
20 35 50	---	21 37 50	18.0	240.8	3.7		31.6	57	4998	20 34 41
20 35 50	J17535	21 37 50	18.4	240.8	3.7		31.6	-13	4998	No stop
20 38 10	---	21 40 10	18.1	241.3	3.8		31.8	127	5016	20 35 51
20 38 10	J1752-0147	21 40 10	17.7	241.4	3.8		31.8	-13	5016	No stop
20 39 20	---	21 41 21	17.5	241.6	3.8		31.9	57	5026	20 38 11
20 39 20	J17535	21 41 21	18.0	241.6	3.8		31.9	-13	5026	No stop
20 41 40	---	21 43 41	17.7	242.1	3.8		32.1	127	5044	20 39 21
20 41 40	J1752-0147	21 43 41	17.2	242.1	3.8		32.1	-13	5044	No stop
20 42 50	---	21 44 51	17.1	242.4	3.9		32.2	57	5053	20 41 41

Schedule for TORUN (Code Tr )

Page 21

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 260 ---										
20 42 50	J1753-0102	21 44 51	17.8	242.6	3.8		32.2	-15	5053	No stop
20 44 00	---	21 46 01	17.7	242.9	3.9		32.3	55	5062	20 42 51
20 44 00	J1752-0147	21 46 01	16.9	242.7	3.9		32.3	-15	5062	No stop
20 45 10	---	21 47 11	16.8	242.9	3.9		32.3	55	5071	20 44 01
20 46 00	J1743-0350	21 48 02	13.8	243.8	4.1		32.7	25	5071	20 46 00
20 47 00	=1741-038	21 49 02	13.7	244.0	4.1		32.7	60	5078	20 46 01
20 47 00	J1752-0147	21 49 02	16.5	243.3	3.9		32.5	-24	5078	No stop
20 48 20	---	21 50 22	16.3	243.6	4.0		32.6	56	5089	20 47 01
20 48 20	J17535	21 50 22	16.8	243.6	3.9		32.5	-13	5089	No stop
20 50 40	---	21 52 42	16.5	244.1	4.0		32.7	127	5107	20 48 21
20 50 40	J1752-0147	21 52 42	16.0	244.1	4.0		32.7	-13	5107	No stop
20 51 50	---	21 53 53	15.9	244.4	4.0		32.8	57	5116	20 50 41
20 51 50	J17535	21 53 53	16.3	244.3	4.0		32.8	-13	5116	No stop
20 54 10	---	21 56 13	16.0	244.8	4.0		32.9	127	5134	20 51 51
20 54 10	J1752-0147	21 56 13	15.5	244.9	4.1		33.0	-13	5134	No stop
20 55 20	---	21 57 23	15.4	245.2	4.1		33.0	57	5143	20 54 11
20 55 20	J1753-0102	21 57 23	16.1	245.4	4.1		33.1	-15	5143	No stop
20 56 30	---	21 58 33	16.0	245.6	4.1		33.2	55	5152	20 55 21
20 56 30	J1752-0147	21 58 33	15.2	245.4	4.1		33.1	-15	5152	No stop
20 57 40	---	21 59 44	15.1	245.7	4.1		33.2	55	5161	20 56 31
21 02 40	J1818+5017	22 04 44	55.8	288.7	3.8		63.0	132	5161	21 02 40
21 05 40	=1817+502	22 07 45	55.4	289.1	3.8		62.7	180	5184	21 02 41
21 05 40	J1809+5007	22 07 45	54.0	290.0	4.0		61.7	-19	5184	No stop
21 09 10	---	22 11 15	53.5	290.4	4.0		61.4	191	5211	21 05 41
21 09 40	J1818+5017	22 11 46	54.8	289.6	3.9		62.3	12	5211	21 09 40
21 10 40	=1817+502	22 12 46	54.7	289.7	3.9		62.3	60	5219	21 09 41
21 10 40	AMHER	22 12 46	54.1	289.4	3.9		61.5	-13	5219	No stop
21 14 10	---	22 16 16	53.6	289.8	4.0		61.2	197	5246	21 10 41
21 14 10	J1818+5017	22 16 16	54.2	290.2	4.0		62.0	-13	5246	No stop
21 15 40	=1817+502	22 17 46	54.0	290.3	4.0		61.8	77	5258	21 14 11

Schedule for TORUN (Code Tr )

Page 22

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 260 ---										
21 15 40	AMHER	22 17 46	53.4	290.0	4.0		61.1	-14	5258	No stop
21 19 10	---	22 21 17	52.9	290.5	4.1		60.8	196	5285	21 15 41
21 19 40	J1818+5017	22 21 47	53.4	290.9	4.0		61.5	17	5285	21 19 40
21 20 40	=1817+502	22 22 47	53.3	291.0	4.1		61.4	60	5293	21 19 41
21 20 40	AMHER	22 22 47	52.7	290.7	4.1		60.7	-14	5293	No stop
21 24 10	---	22 26 18	52.2	291.1	4.2		60.4	196	5320	21 20 41
21 24 10	J1818+5017	22 26 18	52.8	291.4	4.1		61.1	-13	5320	No stop
21 25 40	=1817+502	22 27 48	52.6	291.6	4.1		60.9	77	5331	21 24 11
21 25 40	AMHER	22 27 48	52.0	291.3	4.2		60.2	-14	5331	No stop
21 29 10	---	22 31 19	51.5	291.8	4.2		59.9	196	5358	21 25 41
21 29 10	J1818+5017	22 31 19	52.1	292.1	4.2		60.6	-13	5358	No stop
21 30 40	=1817+502	22 32 49	51.9	292.3	4.2		60.5	77	5370	21 29 11
21 30 40	J1809+5007	22 32 49	50.5	293.2	4.4		59.4	-19	5370	No stop
21 34 10	---	22 36 20	50.0	293.7	4.4		59.1	191	5397	21 30 41
21 34 40	J1818+5017	22 36 50	51.3	292.8	4.3		60.1	12	5397	21 34 40
21 35 40	=1817+502	22 37 50	51.2	292.9	4.3		60.0	60	5405	21 34 41
21 35 40	AMHER	22 37 50	50.6	292.6	4.4		59.3	-14	5405	No stop
21 39 10	---	22 41 20	50.1	293.1	4.4		59.0	196	5432	21 35 41
21 39 10	J1818+5017	22 41 20	50.7	293.4	4.4		59.7	-13	5432	No stop
21 40 40	=1817+502	22 42 51	50.5	293.5	4.4		59.5	77	5444	21 39 11
21 40 40	AMHER	22 42 51	49.9	293.3	4.4		58.9	-14	5444	No stop
21 44 10	---	22 46 21	49.5	293.7	4.5		58.6	196	5471	21 40 41
21 44 40	J1818+5017	22 46 51	49.9	294.1	4.5		59.1	17	5471	21 44 40
21 45 40	=1817+502	22 47 51	49.8	294.2	4.5		59.0	60	5478	21 44 41
21 45 40	AMHER	22 47 51	49.2	293.9	4.5		58.4	-14	5478	No stop
21 49 10	---	22 51 22	48.8	294.4	4.6		58.1	196	5505	21 45 41
21 49 10	J1818+5017	22 51 22	49.3	294.6	4.5		58.7	-13	5505	No stop
21 50 40	=1817+502	22 52 52	49.1	294.8	4.6		58.6	77	5517	21 49 11
21 50 40	AMHER	22 52 52	48.6	294.6	4.6		57.9	-14	5517	No stop
21 54 10	---	22 56 23	48.1	295.0	4.7		57.6	196	5544	21 50 41

Schedule for TORUN (Code Tr )

Page 23

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 260 ---										
21 54 10	J1818+5017	22 56 23	48.6	295.3	4.6		58.2	-13	5544	No stop
21 55 40	=1817+502	22 57 53	48.4	295.5	4.7		58.1	77	5556	21 54 11
21 55 40	J1809+5007	22 57 53	47.1	296.4	4.8		57.0	-19	5556	No stop
21 59 10	---	23 01 24	46.6	296.9	4.9		56.7	191	5583	21 55 41
21 59 40	J1818+5017	23 01 54	47.9	296.0	4.7		57.7	12	5583	21 59 40
22 00 40	=1817+502	23 02 54	47.7	296.1	4.7		57.6	60	5591	21 59 41
22 00 40	AMHER	23 02 54	47.2	295.9	4.8		57.0	-14	5591	No stop
22 04 10	---	23 06 24	46.7	296.3	4.8		56.6	196	5618	22 00 41
22 04 10	J1818+5017	23 06 24	47.3	296.5	4.8		57.2	-13	5618	No stop
22 05 40	=1817+502	23 07 55	47.1	296.7	4.8		57.1	77	5629	22 04 11
22 05 40	AMHER	23 07 55	46.5	296.5	4.9		56.5	-14	5629	No stop
22 09 10	---	23 11 25	46.1	297.0	4.9		56.2	196	5656	22 05 41
22 09 40	J1818+5017	23 11 55	46.5	297.2	4.9		56.7	17	5656	22 09 40
22 10 40	=1817+502	23 12 56	46.4	297.4	4.9		56.6	60	5664	22 09 41
22 10 40	AMHER	23 12 56	45.9	297.2	4.9		56.0	-14	5664	No stop
22 14 10	---	23 16 26	45.4	297.6	5.0		55.7	196	5691	22 10 41
22 14 10	J1818+5017	23 16 26	45.9	297.8	5.0		56.2	-13	5691	No stop
22 15 40	=1817+502	23 17 56	45.7	298.0	5.0		56.1	77	5703	22 14 11
22 15 40	AMHER	23 17 56	45.2	297.8	5.0		55.5	-14	5703	No stop
22 19 10	---	23 21 27	44.7	298.3	5.1		55.2	196	5730	22 15 41
22 19 10	J1818+5017	23 21 27	45.3	298.5	5.0		55.7	-13	5730	No stop
22 20 40	=1817+502	23 22 57	45.1	298.7	5.1		55.6	77	5742	22 19 11
22 20 40	J1809+5007	23 22 57	43.8	299.6	5.2		54.5	-18	5742	No stop
22 24 10	---	23 26 28	43.3	300.1	5.3		54.1	192	5769	22 20 41
22 24 40	J1818+5017	23 26 58	44.5	299.2	5.1		55.2	12	5769	22 24 40
22 25 40	=1817+502	23 27 58	44.4	299.3	5.2		55.1	60	5776	22 24 41
22 25 40	AMHER	23 27 58	43.9	299.1	5.2		54.5	-14	5776	No stop
22 29 10	---	23 31 29	43.4	299.6	5.2		54.2	196	5804	22 25 41
22 29 10	J1818+5017	23 31 29	43.9	299.7	5.2		54.7	-13	5804	No stop
22 30 40	=1817+502	23 32 59	43.8	299.9	5.2		54.6	77	5815	22 29 11

Schedule for TORUN (Code Tr )

Page 24

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 260 ---										
22 30 40	AMHER	23 32 59	43.2	299.8	5.3		54.0	-14	5815	No stop
22 34 10	---	23 36 29	42.8	300.2	5.3		53.6	196	5842	22 30 41
22 34 40	J1818+5017	23 36 59	43.2	300.4	5.3		54.1	17	5842	22 34 40
22 35 40	=1817+502	23 38 00	43.1	300.6	5.3		54.0	60	5850	22 34 41
22 35 40	AMHER	23 38 00	42.6	300.4	5.4		53.5	-14	5850	No stop
22 39 10	---	23 41 30	42.1	300.9	5.4		53.1	196	5877	22 35 41
22 39 10	J1818+5017	23 41 30	42.6	301.0	5.4		53.7	-13	5877	No stop
22 40 40	=1817+502	23 43 00	42.5	301.2	5.4		53.5	77	5889	22 39 11
22 40 40	AMHER	23 43 00	41.9	301.1	5.4		53.0	-14	5889	No stop
22 44 10	---	23 46 31	41.5	301.5	5.5		52.6	196	5916	22 40 41
22 44 10	J1818+5017	23 46 31	42.0	301.7	5.5		53.1	-13	5916	No stop
22 45 40	=1817+502	23 48 01	41.8	301.9	5.5		53.0	77	5927	22 44 11
22 45 40	J1809+5007	23 48 01	40.5	302.9	5.6		51.9	-18	5927	No stop
22 49 10	---	23 51 32	40.1	303.4	5.7		51.5	192	5954	22 45 41
22 49 40	J1818+5017	23 52 02	41.3	302.4	5.6		52.5	12	5954	22 49 40
22 50 40	=1817+502	23 53 02	41.2	302.5	5.6		52.4	60	5962	22 49 41
22 50 40	AMHER	23 53 02	40.6	302.4	5.6		51.9	-14	5962	No stop
22 54 10	---	23 56 33	40.2	302.8	5.7		51.5	196	5989	22 50 41
22 54 10	J1818+5017	23 56 33	40.7	303.0	5.6		52.1	-13	5989	No stop
22 55 40	=1817+502	23 58 03	40.5	303.2	5.7		51.9	77	6001	22 54 11
22 55 40	AMHER	23 58 03	40.0	303.0	5.7		51.4	-14	6001	No stop
22 59 10	---	00 01 33	39.6	303.5	5.7		51.0	196	6028	22 55 41
22 59 40	J1818+5017	00 02 04	40.0	303.7	5.7		51.5	17	6028	22 59 40
23 00 40	=1817+502	00 03 04	39.9	303.8	5.7		51.4	60	6036	22 59 41
23 00 40	AMHER	00 03 04	39.4	303.7	5.8		50.8	-14	6036	No stop
23 04 10	---	00 06 34	38.9	304.2	5.8		50.5	196	6063	23 00 41
23 04 10	J1818+5017	00 06 34	39.5	304.3	5.8		51.0	-13	6063	No stop
23 05 40	=1817+502	00 08 05	39.3	304.5	5.8		50.8	77	6074	23 04 11
23 05 40	AMHER	00 08 05	38.7	304.4	5.9		50.3	-14	6074	No stop
23 09 10	---	00 11 35	38.3	304.8	5.9		49.9	196	6102	23 05 41

Schedule for TORUN (Code Tr )

Page 25

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 260 ---										
23 09 10	J1818+5017	00 11 35	38.9	304.9	5.9		50.4	-13	6102	No stop
23 10 40	=1817+502	00 13 05	38.7	305.1	5.9		50.3	77	6113	23 09 11
23 10 40	J1809+5007	00 13 05	37.4	306.2	6.1		49.1	-18	6113	No stop
23 14 10	---	00 16 36	37.0	306.6	6.1		48.7	192	6140	23 10 41
23 14 40	J1818+5017	00 17 06	38.2	305.6	6.0		49.8	12	6140	23 14 40
23 15 40	=1817+502	00 18 06	38.1	305.8	6.0		49.7	60	6148	23 14 41
23 15 40	AMHER	00 18 06	37.5	305.7	6.0		49.2	-14	6148	No stop
23 19 10	---	00 21 37	37.1	306.1	6.1		48.8	196	6175	23 15 41
23 19 10	J1818+5017	00 21 37	37.6	306.2	6.0		49.3	-13	6175	No stop
23 20 40	=1817+502	00 23 07	37.5	306.4	6.1		49.1	77	6187	23 19 11
23 20 40	AMHER	00 23 07	36.9	306.3	6.1		48.6	-14	6187	No stop
23 24 10	---	00 26 38	36.5	306.8	6.2		48.3	196	6214	23 20 41
23 24 40	J1818+5017	00 27 08	37.0	307.0	6.1		48.7	17	6214	23 24 40
23 25 40	=1817+502	00 28 08	36.9	307.1	6.2		48.6	60	6222	23 24 41
23 25 40	AMHER	00 28 08	36.3	307.0	6.2		48.1	-14	6222	No stop
23 29 10	---	00 31 38	35.9	307.5	6.3		47.7	196	6249	23 25 41
23 29 10	J1818+5017	00 31 38	36.4	307.6	6.2		48.2	-13	6249	No stop
23 30 40	=1817+502	00 33 09	36.3	307.8	6.2		48.0	77	6260	23 29 11
23 30 40	AMHER	00 33 09	35.7	307.7	6.3		47.5	-14	6260	No stop
23 34 10	---	00 36 39	35.3	308.2	6.3		47.1	196	6287	23 30 41
23 34 10	J1818+5017	00 36 39	35.8	308.2	6.3		47.6	-13	6287	No stop
23 35 40	=1817+502	00 38 09	35.7	308.4	6.3		47.4	77	6299	23 34 11
23 35 40	J1809+5007	00 38 09	34.5	309.5	6.5		46.3	-18	6299	No stop
23 39 10	---	00 41 40	34.1	310.0	6.5		45.9	192	6326	23 35 41
23 39 40	J1818+5017	00 42 10	35.2	309.0	6.4		47.0	13	6326	23 39 40
23 40 40	=1817+502	00 43 10	35.1	309.1	6.4		46.9	60	6334	23 39 41
23 40 40	AMHER	00 43 10	34.5	309.0	6.4		46.4	-14	6334	No stop
23 44 10	---	00 46 41	34.1	309.5	6.5		46.0	196	6361	23 40 41
23 44 10	J1818+5017	00 46 41	34.7	309.6	6.5		46.4	-13	6361	No stop
23 45 40	=1817+502	00 48 11	34.5	309.8	6.5		46.3	77	6373	23 44 11

Schedule for TORUN (Code Tr )

Page 26

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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-----
Start UT  Source          Start / Stop          Early  Disk  TPStart
Stop UT          LST      EL  AZ  HA  UP  ParA  Dwell  GBytes  SYNC
-----
--- Tue 17 Sep 2013  Day 260 ---

23 45 40  AMHER          00 48 11  33.9 309.7  6.5      45.8  -14   6373  No stop
23 49 10  ---              00 51 42  33.5 310.2  6.6      45.4  196   6400  23 45 41

23 49 40  J1818+5017         00 52 12  34.0 310.3  6.6      45.8   17   6400  23 49 40
23 50 40  =1817+502          00 53 12  33.9 310.4  6.6      45.7   60   6407  23 49 41

23 50 40  J1809+5007         00 53 12  32.8 311.5  6.7      44.5  -18   6407  No stop
23 54 10  ---              00 56 43  32.4 312.0  6.8      44.1  192   6434  23 50 41

23 54 10  J1818+5017         00 56 43  33.5 310.9  6.6      45.3  -17   6434  No stop
23 55 40  =1817+502          00 58 13  33.3 311.1  6.7      45.1   73   6446  23 54 11

--- Start: Tue 17 Sep 2013  Day 260 -- Stop: Wed 18 Sep 2013  Day 261 ---

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

23 56 40  1823+568          00 59 13  38.3 316.5  6.6      49.2   27   6446  23 56 40
00 03 40  ---              01 06 14  37.6 317.3  6.7      48.2  420   6500  23 56 41

----- Ef pointing check -----

00 14 10  0234+285          01 16 46  61.5 140.1 -1.4     -26.1  257   6500  00 14 10
00 25 00  ---              01 27 38  62.5 144.7 -1.2     -23.4  650   6584  00 14 11

00 25 30  0234+285          01 28 08  62.5 144.9 -1.2     -23.2   23   6584  00 25 30
00 30 00  ---              01 32 38  62.9 146.9 -1.1     -22.0  270   6619  00 25 31

00 30 40  0234+285          01 33 19  62.9 147.2 -1.1     -21.8   33   6619  00 30 40
00 45 00  ---              01 47 41  64.0 153.8 -0.9     -17.6  860   6730  00 30 41

00 45 40  0234+285          01 48 21  64.1 154.1 -0.8     -17.4   33   6730  00 45 40
01 00 00  ---              02 02 43  64.9 161.2 -0.6     -12.8  860   6841  00 45 41

01 00 40  0234+285          02 03 23  64.9 161.5 -0.6     -12.6   33   6841  01 00 40
01 15 00  ---              02 17 46  65.5 168.9 -0.3     -7.6   860   6952  01 00 41

01 15 40  0234+285          02 18 26  65.5 169.2 -0.3     -7.3   33   6952  01 15 40
01 30 00  ---              02 32 48  65.7 176.8 -0.1     -2.2   860   7063  01 15 41

01 30 40  0234+285          02 33 28  65.7 177.2 -0.1     -1.9   33   7063  01 30 40
01 45 00  ---              02 47 51  65.7 184.9  0.2       3.3   860   7174  01 30 41

01 45 40  0234+285          02 48 31  65.7 185.2  0.2       3.6   33   7174  01 45 40
02 00 00  ---              03 02 53  65.4 192.8  0.4       8.7   860   7285  01 45 41

```



Schedule for TORUN (Code Tr )

Page 27

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 261 ---										
02 00 40	0234+285	03 03 33	65.3	193.1	0.4		9.0	33	7285	02 00 40
02 15 00	---	03 17 56	64.7	200.4	0.7		13.8	860	7396	02 00 41
02 15 40	0234+285	03 18 36	64.7	200.8	0.7		14.1	33	7396	02 15 40
02 30 00	---	03 32 58	63.8	207.7	0.9		18.6	860	7507	02 15 41
02 30 40	0234+285	03 33 38	63.7	208.0	0.9		18.8	33	7507	02 30 40
02 45 00	---	03 48 01	62.6	214.6	1.2		22.9	860	7618	02 30 41
02 45 40	0234+285	03 48 41	62.6	214.8	1.2		23.1	33	7618	02 45 40
03 00 00	---	04 03 03	61.2	220.9	1.4		26.7	860	7729	02 45 41
03 00 40	0234+285	04 03 43	61.2	221.2	1.4		26.8	33	7729	03 00 40
03 15 00	---	04 18 06	59.7	226.8	1.7		30.0	860	7840	03 00 41
03 15 40	0234+285	04 18 46	59.6	227.0	1.7		30.1	34	7840	03 15 40
03 30 00	---	04 33 08	58.0	232.2	1.9		32.8	860	7950	03 15 41
03 30 40	0234+285	04 33 48	57.9	232.5	1.9		32.9	34	7950	03 30 40
03 45 00	---	04 48 10	56.1	237.2	2.2		35.2	860	8061	03 30 41
03 45 40	0234+285	04 48 51	56.0	237.5	2.2		35.3	34	8061	03 45 40
04 00 00	---	05 03 13	54.2	241.9	2.4		37.2	860	8172	03 45 41
04 00 40	0234+285	05 03 53	54.1	242.1	2.4		37.3	34	8172	04 00 40
04 15 00	---	05 18 15	52.1	246.2	2.7		38.9	860	8283	04 00 41
04 15 40	0234+285	05 18 55	52.0	246.4	2.7		38.9	34	8283	04 15 40
04 30 00	---	05 33 18	50.0	250.3	2.9		40.2	860	8394	04 15 41
04 34 00	0528+134	05 37 18	50.4	182.1	0.1		1.3	88	8394	04 34 00
04 45 00	---	05 48 20	50.3	186.3	0.3		3.9	660	8479	04 34 01
04 57 00	0845-051	06 00 22	21.6	134.1	-2.8		-25.6	594	8479	04 57 00
05 00 00	---	06 03 23	22.0	134.9	-2.8		-25.3	180	8503	04 57 01
05 00 10	J0834-0417	06 03 33	24.3	137.7	-2.5		-23.9	-13	8503	05 00 10
05 01 10	---	06 04 33	24.4	137.9	-2.5		-23.8	47	8510	05 00 11
05 01 20	NGC2617	06 04 43	24.5	137.7	-2.5		-23.9	0	8510	05 01 20
05 04 00	---	06 07 23	24.8	138.3	-2.5		-23.6	160	8531	05 01 21
05 04 10	J0834-0417	06 07 33	24.7	138.7	-2.5		-23.4	0	8531	05 04 10
05 05 10	---	06 08 34	24.8	138.9	-2.5		-23.3	60	8539	05 04 11

Schedule for TORUN (Code Tr )

Page 28

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 261 ---										
05 05 20	NGC2617	06 08 44	24.9	138.7	-2.5		-23.4	0	8539	05 05 20
05 08 00	---	06 11 24	25.2	139.4	-2.4		-23.1	160	8559	05 05 21
05 08 10	J0834-0417	06 11 34	25.1	139.7	-2.4		-22.9	0	8559	05 08 10
05 09 10	---	06 12 34	25.2	139.9	-2.4		-22.8	60	8567	05 08 11
05 09 20	NGC2617	06 12 44	25.3	139.7	-2.4		-22.9	0	8567	05 09 20
05 12 00	---	06 15 25	25.6	140.4	-2.3		-22.6	160	8588	05 09 21
05 12 40	0845-051	06 16 05	23.3	138.0	-2.5		-23.8	17	8588	05 12 40
05 14 00	---	06 17 25	23.4	138.3	-2.5		-23.6	80	8598	05 12 41
05 14 10	J0834-0417	06 17 35	25.7	141.2	-2.3		-22.2	-12	8598	05 14 10
05 15 10	---	06 18 35	25.8	141.5	-2.3		-22.0	48	8606	05 14 11
05 15 20	NGC2617	06 18 45	25.9	141.2	-2.3		-22.1	0	8606	05 15 20
05 18 00	---	06 21 26	26.1	141.9	-2.2		-21.8	160	8627	05 15 21
05 18 10	J0834-0417	06 21 36	26.0	142.2	-2.2		-21.6	0	8627	05 18 10
05 19 10	---	06 22 36	26.1	142.5	-2.2		-21.5	60	8634	05 18 11
05 19 20	NGC2617	06 22 46	26.3	142.3	-2.2		-21.6	0	8634	05 19 20
05 22 00	---	06 25 26	26.5	143.0	-2.2		-21.3	160	8655	05 19 21
05 22 10	J0834-0417	06 25 36	26.4	143.3	-2.2		-21.1	0	8655	05 22 10
05 23 10	---	06 26 37	26.5	143.5	-2.1		-21.0	60	8663	05 22 11
05 23 20	NGC2617	06 26 47	26.6	143.3	-2.2		-21.1	0	8663	05 23 20
05 26 00	---	06 29 27	26.9	144.0	-2.1		-20.7	160	8683	05 23 21
05 26 40	0845-051	06 30 07	24.6	141.5	-2.3		-22.1	18	8683	05 26 40
05 28 00	---	06 31 27	24.8	141.8	-2.3		-21.9	80	8694	05 26 41
05 28 10	J0834-0417	06 31 37	26.9	144.8	-2.1		-20.3	-12	8694	05 28 10
05 29 10	---	06 32 38	27.0	145.1	-2.0		-20.2	48	8701	05 28 11
05 29 20	NGC2617	06 32 48	27.2	144.9	-2.1		-20.3	0	8701	05 29 20
05 32 00	---	06 35 28	27.4	145.6	-2.0		-19.9	160	8722	05 29 21
05 32 10	J0834-0417	06 35 38	27.3	145.9	-2.0		-19.7	0	8722	05 32 10
05 33 10	---	06 36 38	27.4	146.2	-2.0		-19.6	60	8730	05 32 11
05 33 20	NGC2617	06 36 48	27.5	145.9	-2.0		-19.7	0	8730	05 33 20
05 36 00	---	06 39 29	27.7	146.6	-1.9		-19.3	160	8750	05 33 21

Schedule for TORUN (Code Tr )

Page 29

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 261 ---										
05 36 10	J0834-0417	06 39 39	27.6	147.0	-1.9		-19.2	0	8750	05 36 10
05 37 10	---	06 40 39	27.7	147.2	-1.9		-19.0	60	8758	05 36 11
05 37 20	NGC2617	06 40 49	27.8	147.0	-1.9		-19.1	0	8758	05 37 20
05 40 00	---	06 43 29	28.0	147.7	-1.9		-18.8	160	8779	05 37 21
05 40 40	0845-051	06 44 09	25.9	145.1	-2.1		-20.2	18	8779	05 40 40
05 42 00	---	06 45 30	26.0	145.5	-2.1		-20.0	80	8789	05 40 41
05 42 10	J0834-0417	06 45 40	28.1	148.6	-1.8		-18.3	-12	8789	05 42 10
05 43 10	---	06 46 40	28.2	148.8	-1.8		-18.2	48	8797	05 42 11
05 43 20	NGC2617	06 46 50	28.3	148.6	-1.8		-18.3	0	8797	05 43 20
05 46 00	---	06 49 30	28.5	149.3	-1.8		-17.9	160	8818	05 43 21
05 46 10	J0834-0417	06 49 40	28.4	149.6	-1.8		-17.7	0	8818	05 46 10
05 47 10	---	06 50 41	28.5	149.9	-1.7		-17.6	60	8825	05 46 11
05 47 20	NGC2617	06 50 51	28.6	149.7	-1.8		-17.7	1	8825	05 47 20
05 50 00	---	06 53 31	28.8	150.4	-1.7		-17.3	160	8846	05 47 21
05 50 10	J0834-0417	06 53 41	28.7	150.7	-1.7		-17.1	0	8846	05 50 10
05 51 10	---	06 54 41	28.8	151.0	-1.7		-17.0	60	8854	05 50 11
05 51 20	NGC2617	06 54 51	28.9	150.8	-1.7		-17.1	1	8854	05 51 20
05 54 00	---	06 57 32	29.1	151.5	-1.6		-16.7	160	8874	05 51 21
05 54 40	0845-051	06 58 12	27.0	148.8	-1.8		-18.2	18	8874	05 54 40
05 56 00	---	06 59 32	27.1	149.2	-1.8		-18.0	80	8885	05 54 41
05 56 10	J0834-0417	06 59 42	29.1	152.4	-1.6		-16.2	-11	8885	05 56 10
05 57 10	---	07 00 42	29.2	152.6	-1.6		-16.1	49	8892	05 56 11
05 57 20	NGC2617	07 00 52	29.3	152.4	-1.6		-16.2	1	8892	05 57 20
06 00 00	---	07 03 33	29.5	153.2	-1.5		-15.8	160	8913	05 57 21
06 00 10	J0834-0417	07 03 43	29.4	153.5	-1.5		-15.6	0	8913	06 00 10
06 01 10	---	07 04 43	29.5	153.8	-1.5		-15.4	60	8921	06 00 11
06 01 20	NGC2617	07 04 53	29.6	153.5	-1.5		-15.6	1	8921	06 01 20
06 04 00	---	07 07 33	29.8	154.3	-1.5		-15.2	160	8941	06 01 21
06 04 10	J0834-0417	07 07 43	29.7	154.6	-1.5		-15.0	0	8941	06 04 10
06 05 10	---	07 08 43	29.7	154.9	-1.4		-14.8	60	8949	06 04 11

Schedule for TORUN (Code Tr )

Page 30

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 261 ---										
06 05 20	NGC2617	07 08 53	29.9	154.6	-1.5		-14.9	1	8949	06 05 20
06 08 00	---	07 11 34	30.0	155.4	-1.4		-14.5	160	8970	06 05 21
06 08 40	0845-051	07 12 14	28.1	152.6	-1.6		-16.1	19	8970	06 08 40
06 10 00	---	07 13 34	28.2	152.9	-1.6		-15.9	80	8980	06 08 41
06 10 10	J0834-0417	07 13 44	30.0	156.3	-1.4		-14.0	-11	8980	06 10 10
06 11 10	---	07 14 44	30.1	156.5	-1.3		-13.9	49	8988	06 10 11
06 11 20	NGC2617	07 14 54	30.3	156.3	-1.4		-14.0	1	8988	06 11 20
06 14 00	---	07 17 35	30.4	157.1	-1.3		-13.6	160	9008	06 11 21
06 14 10	J0834-0417	07 17 45	30.3	157.4	-1.3		-13.4	0	9008	06 14 10
06 15 10	---	07 18 45	30.3	157.7	-1.3		-13.2	60	9016	06 14 11
06 15 20	NGC2617	07 18 55	30.5	157.4	-1.3		-13.4	0	9016	06 15 20
06 18 00	---	07 21 36	30.6	158.2	-1.2		-12.9	160	9037	06 15 21
06 18 10	J0834-0417	07 21 46	30.5	158.5	-1.2		-12.7	0	9037	06 18 10
06 19 10	---	07 22 46	30.6	158.8	-1.2		-12.6	60	9045	06 18 11
06 19 20	NGC2617	07 22 56	30.7	158.6	-1.2		-12.7	0	9045	06 19 20
06 22 00	---	07 25 36	30.9	159.3	-1.2		-12.3	160	9065	06 19 21
06 22 40	0845-051	07 26 16	29.0	156.4	-1.4		-14.0	19	9065	06 22 40
06 24 00	---	07 27 37	29.1	156.8	-1.4		-13.8	80	9076	06 22 41
06 24 10	J0834-0417	07 27 47	30.8	160.2	-1.1		-11.8	-12	9076	06 24 10
06 25 10	---	07 28 47	30.9	160.5	-1.1		-11.6	48	9083	06 24 11
06 25 20	NGC2617	07 28 57	31.0	160.3	-1.1		-11.7	0	9083	06 25 20
06 28 00	---	07 31 37	31.2	161.0	-1.1		-11.3	160	9104	06 25 21
06 28 10	J0834-0417	07 31 47	31.0	161.4	-1.1		-11.1	0	9104	06 28 10
06 29 10	---	07 32 47	31.1	161.6	-1.0		-10.9	60	9112	06 28 11
06 29 20	NGC2617	07 32 57	31.2	161.4	-1.1		-11.1	0	9112	06 29 20
06 32 00	---	07 35 38	31.4	162.2	-1.0		-10.6	160	9132	06 29 21
06 32 10	J0834-0417	07 35 48	31.2	162.5	-1.0		-10.4	0	9132	06 32 10
06 33 10	---	07 36 48	31.2	162.8	-1.0		-10.3	60	9140	06 32 11
06 33 20	NGC2617	07 36 58	31.4	162.6	-1.0		-10.4	0	9140	06 33 20
06 36 00	---	07 39 39	31.5	163.4	-0.9		-9.9	160	9161	06 33 21

Schedule for TORUN (Code Tr )

Page 31

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 261 ---										
06 36 40	0845-051	07 40 19	29.8	160.3	-1.1		-11.7	19	9161	06 36 40
06 38 00	---	07 41 39	29.8	160.7	-1.1		-11.5	80	9171	06 36 41
06 38 10	J0834-0417	07 41 49	31.5	164.2	-0.9		-9.4	-12	9171	06 38 10
06 39 10	---	07 42 49	31.5	164.5	-0.9		-9.2	48	9179	06 38 11
06 39 20	NGC2617	07 42 59	31.7	164.3	-0.9		-9.4	0	9179	06 39 20
06 42 00	---	07 45 40	31.8	165.1	-0.8		-8.9	160	9199	06 39 21
06 42 10	J0834-0417	07 45 50	31.6	165.4	-0.8		-8.7	0	9199	06 42 10
06 43 10	---	07 46 50	31.7	165.7	-0.8		-8.6	60	9207	06 42 11
06 43 20	NGC2617	07 47 00	31.8	165.5	-0.8		-8.7	0	9207	06 43 20
06 46 00	---	07 49 40	31.9	166.3	-0.8		-8.2	160	9228	06 43 21
06 46 10	J0834-0417	07 49 50	31.8	166.6	-0.8		-8.0	0	9228	06 46 10
06 47 10	---	07 50 50	31.8	166.8	-0.7		-7.9	60	9236	06 46 11
06 47 20	NGC2617	07 51 00	32.0	166.6	-0.8		-8.0	0	9236	06 47 20
06 50 00	---	07 53 41	32.1	167.4	-0.7		-7.5	160	9256	06 47 21
06 50 40	0845-051	07 54 21	30.4	164.3	-0.9		-9.4	19	9256	06 50 40
06 52 00	---	07 55 41	30.4	164.7	-0.9		-9.2	80	9267	06 50 41
06 55 00	4C39.25	07 58 42	69.2	123.8	-1.5		-39.9	21	9267	06 55 00
07 01 00	---	08 04 43	69.9	126.4	-1.4		-38.4	360	9313	06 55 01
07 04 00	0845-051	08 07 43	30.9	168.1	-0.7		-7.1	20	9313	07 04 00
07 07 00	---	08 10 44	31.0	169.0	-0.6		-6.6	180	9336	07 04 01
07 07 10	J0834-0417	08 10 54	32.3	172.7	-0.4		-4.4	-12	9336	07 07 10
07 08 10	---	08 11 54	32.4	173.0	-0.4		-4.2	48	9344	07 07 11
07 08 20	NGC2617	08 12 04	32.5	172.8	-0.4		-4.3	0	9344	07 08 20
07 11 00	---	08 14 44	32.6	173.6	-0.4		-3.8	160	9365	07 08 21
07 11 10	J0834-0417	08 14 54	32.4	173.9	-0.3		-3.7	0	9365	07 11 10
07 12 10	---	08 15 54	32.4	174.2	-0.3		-3.5	60	9372	07 11 11
07 12 20	NGC2617	08 16 05	32.6	174.0	-0.3		-3.6	0	9372	07 12 20
07 15 00	---	08 18 45	32.6	174.8	-0.3		-3.1	160	9393	07 12 21
07 15 10	J0834-0417	08 18 55	32.5	175.1	-0.3		-3.0	0	9393	07 15 10
07 16 10	---	08 19 55	32.5	175.4	-0.3		-2.8	60	9401	07 15 11

Schedule for TORUN (Code Tr )

Page 32

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 261 ---										
07 16 20	NGC2617	08 20 05	32.7	175.2	-0.3		-2.9	0	9401	07 16 20
07 19 00	---	08 22 46	32.7	176.0	-0.2		-2.4	160	9421	07 16 21
07 19 40	0845-051	08 23 26	31.3	172.6	-0.4		-4.4	18	9421	07 19 40
07 21 00	---	08 24 46	31.3	173.0	-0.4		-4.2	80	9432	07 19 41
07 21 10	J0834-0417	08 24 56	32.5	176.9	-0.2		-1.9	-13	9432	07 21 10
07 22 10	---	08 25 56	32.5	177.1	-0.2		-1.7	47	9439	07 21 11
07 22 20	NGC2617	08 26 06	32.7	177.0	-0.2		-1.8	0	9439	07 22 20
07 25 00	---	08 28 47	32.7	177.8	-0.1		-1.3	160	9460	07 22 21
07 25 10	J0834-0417	08 28 57	32.6	178.0	-0.1		-1.2	0	9460	07 25 10
07 26 10	---	08 29 57	32.6	178.3	-0.1		-1.0	60	9468	07 25 11
07 26 20	NGC2617	08 30 07	32.8	178.2	-0.1		-1.1	0	9468	07 26 20
07 29 00	---	08 32 47	32.8	178.9	-0.1		-0.6	160	9488	07 26 21
07 29 10	J0834-0417	08 32 57	32.6	179.2	-0.0		-0.5	0	9488	07 29 10
07 30 10	---	08 33 57	32.6	179.5	-0.0		-0.3	60	9496	07 29 11
07 30 20	NGC2617	08 34 07	32.8	179.3	-0.0		-0.4	0	9496	07 30 20
07 33 00	---	08 36 48	32.8	180.1	0.0		0.1	160	9517	07 30 21
07 33 40	0845-051	08 37 28	31.5	176.7	-0.2		-2.0	18	9517	07 33 40
07 35 00	---	08 38 48	31.5	177.1	-0.2		-1.7	80	9527	07 33 41
07 35 10	J0834-0417	08 38 58	32.6	181.0	0.1		0.6	-13	9527	07 35 10
07 36 10	---	08 39 58	32.6	181.3	0.1		0.8	47	9535	07 35 11
07 36 20	NGC2617	08 40 08	32.8	181.1	0.1		0.7	0	9535	07 36 20
07 39 00	---	08 42 49	32.8	181.9	0.1		1.2	160	9556	07 36 21
07 39 10	J0834-0417	08 42 59	32.5	182.2	0.1		1.3	0	9556	07 39 10
07 40 10	---	08 43 59	32.5	182.5	0.1		1.5	60	9563	07 39 11
07 40 20	NGC2617	08 44 09	32.7	182.3	0.1		1.4	0	9563	07 40 20
07 43 00	---	08 46 50	32.7	183.1	0.2		1.9	160	9584	07 40 21
07 43 10	J0834-0417	08 47 00	32.5	183.4	0.2		2.0	0	9584	07 43 10
07 44 10	---	08 48 00	32.5	183.7	0.2		2.2	60	9592	07 43 11
07 44 20	NGC2617	08 48 10	32.7	183.5	0.2		2.1	0	9592	07 44 20
07 47 00	---	08 50 50	32.7	184.3	0.2		2.6	160	9612	07 44 21

Schedule for TORUN (Code Tr )

Page 33

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 261 ---										
07 47 40	0845-051	08 51 30	31.5	180.8	0.0		0.5	18	9612	07 47 40
07 49 00	---	08 52 51	31.5	181.2	0.1		0.7	80	9623	07 47 41
07 49 10	J0834-0417	08 53 01	32.5	185.2	0.3		3.1	-13	9623	07 49 10
07 50 10	---	08 54 01	32.4	185.4	0.3		3.3	47	9630	07 49 11
07 50 20	NGC2617	08 54 11	32.6	185.3	0.3		3.2	0	9630	07 50 20
07 53 00	---	08 56 51	32.6	186.1	0.3		3.7	160	9651	07 50 21
07 53 10	J0834-0417	08 57 01	32.4	186.3	0.4		3.8	0	9651	07 53 10
07 54 10	---	08 58 01	32.4	186.6	0.4		4.0	60	9659	07 53 11
07 54 20	NGC2617	08 58 11	32.6	186.5	0.4		3.9	0	9659	07 54 20
07 57 00	---	09 00 52	32.5	187.3	0.4		4.4	160	9679	07 54 21
07 57 10	J0834-0417	09 01 02	32.3	187.5	0.4		4.5	0	9679	07 57 10
07 58 10	---	09 02 02	32.3	187.8	0.4		4.7	60	9687	07 57 11
07 58 20	NGC2617	09 02 12	32.5	187.7	0.4		4.6	0	9687	07 58 20
08 01 00	---	09 04 53	32.5	188.4	0.5		5.1	160	9708	07 58 21
08 01 40	0845-051	09 05 33	31.4	184.9	0.3		3.0	18	9708	08 01 40
08 03 00	---	09 06 53	31.4	185.3	0.3		3.2	80	9718	08 01 41
08 03 10	J0834-0417	09 07 03	32.2	189.3	0.5		5.6	-13	9718	08 03 10
08 04 10	---	09 08 03	32.2	189.6	0.5		5.7	47	9726	08 03 11
08 04 20	NGC2617	09 08 13	32.4	189.4	0.5		5.7	0	9726	08 04 20
08 07 00	---	09 10 53	32.3	190.2	0.6		6.1	160	9746	08 04 21
08 07 10	J0834-0417	09 11 04	32.1	190.5	0.6		6.3	0	9746	08 07 10
08 08 10	---	09 12 04	32.1	190.8	0.6		6.4	60	9754	08 07 11
08 08 20	NGC2617	09 12 14	32.3	190.6	0.6		6.4	0	9754	08 08 20
08 11 00	---	09 14 54	32.2	191.4	0.6		6.8	160	9775	08 08 21
08 11 10	J0834-0417	09 15 04	32.0	191.6	0.7		7.0	0	9775	08 11 10
08 12 10	---	09 16 04	31.9	191.9	0.7		7.1	60	9783	08 11 11
08 12 20	NGC2617	09 16 14	32.2	191.8	0.7		7.1	0	9783	08 12 20
08 15 00	---	09 18 55	32.1	192.6	0.7		7.5	160	9803	08 12 21
08 15 40	0845-051	09 19 35	31.1	189.0	0.5		5.4	18	9803	08 15 40
08 17 00	---	09 20 55	31.1	189.4	0.5		5.6	80	9814	08 15 41

Schedule for TORUN (Code Tr )

Page 34

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 261 ---										
08 17 10	J0834-0417	09 21 05	31.8	193.4	0.8		8.0	-13	9814	08 17 10
08 18 10	---	09 22 05	31.7	193.7	0.8		8.2	47	9821	08 17 11
08 18 20	NGC2617	09 22 15	32.0	193.5	0.8		8.1	0	9821	08 18 20
08 21 00	---	09 24 56	31.9	194.3	0.8		8.6	160	9842	08 18 21
08 21 10	J0834-0417	09 25 06	31.6	194.5	0.8		8.7	-1	9842	08 21 10
08 22 10	---	09 26 06	31.6	194.8	0.8		8.9	59	9850	08 21 11
08 22 20	NGC2617	09 26 16	31.8	194.7	0.8		8.8	0	9850	08 22 20
08 25 00	---	09 28 56	31.7	195.5	0.9		9.2	160	9870	08 22 21
08 25 10	J0834-0417	09 29 06	31.5	195.7	0.9		9.4	-1	9870	08 25 10
08 26 10	---	09 30 07	31.4	196.0	0.9		9.5	59	9878	08 25 11
08 26 20	NGC2617	09 30 17	31.7	195.9	0.9		9.5	0	9878	08 26 20
08 29 00	---	09 32 57	31.5	196.6	0.9		9.9	160	9899	08 26 21
08 29 40	0845-051	09 33 37	30.7	193.1	0.7		7.8	18	9899	08 29 40
08 31 00	---	09 34 57	30.7	193.4	0.8		8.1	80	9909	08 29 41
08 31 10	J0834-0417	09 35 07	31.2	197.4	1.0		10.4	-13	9909	08 31 10
08 32 10	---	09 36 08	31.2	197.7	1.0		10.6	47	9917	08 31 11
08 32 20	NGC2617	09 36 18	31.4	197.6	1.0		10.5	0	9917	08 32 20
08 35 00	---	09 38 58	31.3	198.4	1.0		10.9	160	9937	08 32 21
08 35 10	J0834-0417	09 39 08	31.0	198.6	1.1		11.1	-1	9937	08 35 10
08 36 10	---	09 40 08	31.0	198.9	1.1		11.2	59	9945	08 35 11
08 36 20	NGC2617	09 40 18	31.2	198.7	1.1		11.2	0	9945	08 36 20
08 39 00	---	09 42 59	31.1	199.5	1.1		11.6	160	9966	08 36 21
08 39 10	J0834-0417	09 43 09	30.8	199.7	1.1		11.7	-1	9966	08 39 10
08 40 10	---	09 44 09	30.8	200.0	1.1		11.9	59	9974	08 39 11
08 40 20	NGC2617	09 44 19	31.0	199.9	1.1		11.8	-1	9974	08 40 20
08 43 00	---	09 46 59	30.9	200.6	1.2		12.3	159	9994	08 40 21
08 43 40	0845-051	09 47 40	30.2	197.1	1.0		10.2	18	9994	08 43 40
08 45 00	---	09 49 00	30.1	197.4	1.0		10.4	80	10005	08 43 41
08 45 10	J0834-0417	09 49 10	30.5	201.4	1.2		12.7	-13	10005	08 45 10
08 46 10	---	09 50 10	30.5	201.7	1.2		12.9	47	10012	08 45 11



Schedule for TORUN (Code Tr )

Page 35

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 261 ---										
08 46 20	NGC2617	09 50 20	30.7	201.6	1.2		12.8	-1	10012	08 46 20
08 49 00	---	09 53 00	30.5	202.3	1.3		13.2	159	10033	08 46 21
08 49 10	J0834-0417	09 53 10	30.3	202.6	1.3		13.4	-1	10033	08 49 10
08 50 10	---	09 54 11	30.2	202.8	1.3		13.5	59	10041	08 49 11
08 50 20	NGC2617	09 54 21	30.5	202.7	1.3		13.4	-1	10041	08 50 20
08 53 00	---	09 57 01	30.3	203.5	1.3		13.9	159	10061	08 50 21
08 53 10	J0834-0417	09 57 11	30.1	203.7	1.4		14.0	-1	10061	08 53 10
08 54 10	---	09 58 11	30.0	204.0	1.4		14.2	59	10069	08 53 11
08 54 20	NGC2617	09 58 21	30.2	203.8	1.4		14.1	-1	10069	08 54 20
08 57 00	---	10 01 02	30.1	204.6	1.4		14.5	159	10090	08 54 21
08 57 40	0845-051	10 01 42	29.5	201.0	1.2		12.5	18	10090	08 57 40
08 59 00	---	10 03 02	29.4	201.4	1.2		12.7	80	10100	08 57 41
08 59 10	J0834-0417	10 03 12	29.7	205.4	1.5		14.9	-13	10100	08 59 10
09 00 10	---	10 04 12	29.6	205.6	1.5		15.1	47	10108	08 59 11
09 00 20	NGC2617	10 04 22	29.8	205.5	1.5		15.0	-1	10108	09 00 20
09 03 00	---	10 07 03	29.7	206.3	1.5		15.5	159	10128	09 00 21
09 03 10	J0834-0417	10 07 13	29.4	206.5	1.5		15.6	-1	10128	09 03 10
09 04 10	---	10 08 13	29.3	206.7	1.5		15.7	59	10136	09 03 11
09 04 20	NGC2617	10 08 23	29.6	206.6	1.5		15.7	-1	10136	09 04 20
09 07 00	---	10 11 03	29.4	207.4	1.6		16.1	159	10157	09 04 21
09 07 10	J0834-0417	10 11 13	29.1	207.6	1.6		16.2	-1	10157	09 07 10
09 08 10	---	10 12 14	29.1	207.8	1.6		16.3	59	10165	09 07 11
09 08 20	NGC2617	10 12 24	29.3	207.7	1.6		16.3	-1	10165	09 08 20
09 11 00	---	10 15 04	29.1	208.5	1.6		16.7	159	10185	09 08 21
09 11 40	0845-051	10 15 44	28.7	204.9	1.5		14.7	18	10185	09 11 40
09 13 00	---	10 17 04	28.6	205.3	1.5		14.9	80	10195	09 11 41
09 13 10	J0834-0417	10 17 14	28.7	209.2	1.7		17.1	-13	10195	09 13 10
09 14 10	---	10 18 15	28.6	209.5	1.7		17.2	47	10203	09 13 11
09 14 20	NGC2617	10 18 25	28.9	209.4	1.7		17.2	-1	10203	09 14 20
09 17 00	---	10 21 05	28.7	210.1	1.7		17.6	159	10224	09 14 21

Schedule for TORUN (Code Tr )

Page 36

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 261 ---										
09 17 10	J0834-0417	10 21 15	28.4	210.3	1.8		17.7	-1	10224	09 17 10
09 18 10	---	10 22 15	28.3	210.6	1.8		17.8	59	10232	09 17 11
09 18 20	NGC2617	10 22 25	28.6	210.5	1.8		17.8	-1	10232	09 18 20
09 21 00	---	10 25 06	28.4	211.2	1.8		18.2	159	10252	09 18 21
09 21 10	J0834-0417	10 25 16	28.1	211.4	1.8		18.3	-1	10252	09 21 10
09 22 10	---	10 26 16	28.0	211.6	1.8		18.4	59	10260	09 21 11
09 22 20	NGC2617	10 26 26	28.3	211.6	1.8		18.4	-1	10260	09 22 20
09 25 00	---	10 29 06	28.0	212.3	1.9		18.8	159	10281	09 22 21
09 25 40	0845-051	10 29 46	27.7	208.7	1.7		16.8	18	10281	09 25 40
09 27 00	---	10 31 07	27.6	209.1	1.7		17.0	80	10291	09 25 41
09 27 10	J0834-0417	10 31 17	27.6	213.0	1.9		19.1	-13	10291	09 27 10
09 28 10	---	10 32 17	27.5	213.2	1.9		19.3	47	10299	09 27 11
09 28 20	NGC2617	10 32 27	27.8	213.2	1.9		19.2	-1	10299	09 28 20
09 31 00	---	10 35 07	27.6	213.9	2.0		19.6	159	10319	09 28 21
09 31 10	J0834-0417	10 35 17	27.3	214.0	2.0		19.7	-1	10319	09 31 10
09 32 10	---	10 36 17	27.2	214.3	2.0		19.8	59	10327	09 31 11
09 32 20	NGC2617	10 36 28	27.4	214.2	2.0		19.8	-1	10327	09 32 20
09 35 00	---	10 39 08	27.2	214.9	2.0		20.2	159	10348	09 32 21
09 35 10	J0834-0417	10 39 18	26.9	215.1	2.1		20.3	-1	10348	09 35 10
09 36 10	---	10 40 18	26.9	215.4	2.1		20.4	59	10355	09 35 11
09 36 20	NGC2617	10 40 28	27.1	215.3	2.1		20.4	-1	10355	09 36 20
09 39 00	---	10 43 09	26.9	216.0	2.1		20.7	159	10376	09 36 21
09 39 40	0845-051	10 43 49	26.7	212.4	1.9		18.9	18	10376	09 39 40
09 41 00	---	10 45 09	26.6	212.8	1.9		19.1	80	10386	09 39 41
09 41 10	J0834-0417	10 45 19	26.4	216.7	2.2		21.1	-13	10386	09 41 10
09 42 10	---	10 46 19	26.3	216.9	2.2		21.2	47	10394	09 41 11
09 42 20	NGC2617	10 46 29	26.6	216.9	2.2		21.2	-1	10394	09 42 20
09 45 00	---	10 49 10	26.3	217.5	2.2		21.5	159	10415	09 42 21
09 45 10	J0834-0417	10 49 20	26.1	217.7	2.2		21.6	-1	10415	09 45 10
09 46 10	---	10 50 20	26.0	218.0	2.2		21.7	59	10423	09 45 11

Schedule for TORUN (Code Tr )

Page 37

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 261 ---										
09 46 20	NGC2617	10 50 30	26.2	217.9	2.2		21.7	-1	10423	09 46 20
09 49 00	---	10 53 10	26.0	218.6	2.3		22.1	159	10443	09 46 21
09 49 10	J0834-0417	10 53 20	25.7	218.7	2.3		22.1	-1	10443	09 49 10
09 50 10	---	10 54 20	25.6	219.0	2.3		22.3	59	10451	09 49 11
09 50 20	NGC2617	10 54 30	25.8	218.9	2.3		22.2	-1	10451	09 50 20
09 53 00	---	10 57 11	25.6	219.6	2.3		22.6	159	10472	09 50 21
09 53 40	0845-051	10 57 51	25.5	216.1	2.2		20.8	18	10472	09 53 40
09 55 00	---	10 59 11	25.4	216.4	2.2		21.0	80	10482	09 53 41
09 55 10	J0834-0417	10 59 21	25.1	220.3	2.4		22.9	-13	10482	09 55 10
09 56 10	---	11 00 21	25.0	220.5	2.4		23.0	47	10490	09 55 11
09 56 20	NGC2617	11 00 31	25.2	220.5	2.4		23.0	-1	10490	09 56 20
09 59 00	---	11 03 12	25.0	221.1	2.4		23.3	159	10510	09 56 21
09 59 10	J0834-0417	11 03 22	24.7	221.3	2.5		23.4	-1	10510	09 59 10
10 00 10	---	11 04 22	24.6	221.5	2.5		23.5	59	10518	09 59 11
10 00 20	NGC2617	11 04 32	24.9	221.5	2.5		23.5	-1	10518	10 00 20
10 03 00	---	11 07 13	24.6	222.1	2.5		23.8	159	10539	10 00 21
10 03 10	J0834-0417	11 07 23	24.3	222.3	2.5		23.9	-1	10539	10 03 10
10 04 10	---	11 08 23	24.2	222.5	2.5		24.0	59	10546	10 03 11
10 04 20	NGC2617	11 08 33	24.5	222.5	2.5		24.0	-1	10546	10 04 20
10 07 00	---	11 11 13	24.2	223.2	2.6		24.3	159	10567	10 04 21
10 07 40	0845-051	11 11 53	24.2	219.7	2.4		22.7	18	10567	10 07 40
10 09 00	---	11 13 14	24.1	220.0	2.4		22.8	80	10577	10 07 41
10 09 10	J0834-0417	11 13 24	23.7	223.8	2.6		24.6	-12	10577	10 09 10
10 10 10	---	11 14 24	23.6	224.0	2.6		24.7	48	10585	10 09 11
10 10 20	NGC2617	11 14 34	23.8	224.0	2.6		24.7	-1	10585	10 10 20
10 13 00	---	11 17 14	23.6	224.6	2.7		25.0	159	10606	10 10 21
10 13 10	J0834-0417	11 17 24	23.3	224.8	2.7		25.1	-1	10606	10 13 10
10 14 10	---	11 18 24	23.2	225.0	2.7		25.2	59	10614	10 13 11
10 14 20	NGC2617	11 18 34	23.4	225.0	2.7		25.2	-1	10614	10 14 20
10 17 00	---	11 21 15	23.1	225.6	2.7		25.5	159	10634	10 14 21

Schedule for TORUN (Code Tr )

Page 38

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 261 ---										
10 17 10	J0834-0417	11 21 25	22.8	225.8	2.8		25.6	-1	10634	10 17 10
10 18 10	---	11 22 25	22.7	226.0	2.8		25.7	59	10642	10 17 11
10 18 20	NGC2617	11 22 35	23.0	226.0	2.8		25.6	-1	10642	10 18 20
10 21 00	---	11 25 15	22.7	226.6	2.8		25.9	159	10663	10 18 21
10 21 40	0845-051	11 25 56	22.8	223.2	2.6		24.4	18	10663	10 21 40
10 23 00	---	11 27 16	22.7	223.5	2.6		24.5	80	10673	10 21 41
10 23 10	J0834-0417	11 27 26	22.2	227.2	2.9		26.2	-12	10673	10 23 10
10 24 10	---	11 28 26	22.1	227.5	2.9		26.3	48	10681	10 23 11
10 24 20	NGC2617	11 28 36	22.3	227.4	2.9		26.3	-1	10681	10 24 20
10 27 00	---	11 31 16	22.0	228.1	2.9		26.6	159	10701	10 24 21
10 27 10	J0834-0417	11 31 27	21.7	228.2	2.9		26.7	-1	10701	10 27 10
10 28 10	---	11 32 27	21.6	228.4	2.9		26.8	59	10709	10 27 11
10 28 20	NGC2617	11 32 37	21.9	228.4	2.9		26.7	-1	10709	10 28 20
10 31 00	---	11 35 17	21.6	229.0	3.0		27.0	159	10730	10 28 21
10 31 10	J0834-0417	11 35 27	21.3	229.1	3.0		27.1	-1	10730	10 31 10
10 32 10	---	11 36 27	21.2	229.4	3.0		27.2	59	10737	10 31 11
10 32 20	NGC2617	11 36 37	21.4	229.3	3.0		27.2	-1	10737	10 32 20
10 35 00	---	11 39 18	21.1	230.0	3.0		27.5	159	10758	10 32 21
10 35 40	0845-051	11 39 58	21.3	226.6	2.9		26.0	18	10758	10 35 40
10 37 00	---	11 41 18	21.2	226.9	2.9		26.1	80	10768	10 35 41
10 37 10	J0834-0417	11 41 28	20.6	230.6	3.1		27.7	-12	10768	10 37 10
10 38 10	---	11 42 28	20.5	230.8	3.1		27.8	48	10776	10 37 11
10 38 20	NGC2617	11 42 38	20.7	230.8	3.1		27.8	-1	10776	10 38 20
10 41 00	---	11 45 19	20.4	231.4	3.1		28.1	159	10797	10 38 21
10 41 10	J0834-0417	11 45 29	20.1	231.5	3.2		28.1	-1	10797	10 41 10
10 42 10	---	11 46 29	20.0	231.7	3.2		28.2	59	10804	10 41 11
10 42 20	NGC2617	11 46 39	20.3	231.7	3.2		28.2	-1	10804	10 42 20
10 45 00	---	11 49 19	19.9	232.3	3.2		28.5	159	10825	10 42 21
10 45 10	J0834-0417	11 49 29	19.7	232.4	3.2		28.5	-1	10825	10 45 10
10 46 10	---	11 50 30	19.5	232.7	3.2		28.6	59	10833	10 45 11
10 46 20	NGC2617	11 50 40	19.8	232.6	3.2		28.6	-1	10833	10 46 20
10 49 00	---	11 53 20	19.5	233.3	3.3		28.8	159	10853	10 46 21

Schedule for TORUN (Code Tr )

Page 39

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 261 ---										
10 49 40	0845-051	11 54 00	19.7	229.9	3.1		27.5	18	10853	10 49 40
10 51 00	---	11 55 20	19.6	230.2	3.1		27.6	80	10864	10 49 41
10 51 10	J0834-0417	11 55 30	18.9	233.8	3.3		29.1	-12	10864	10 51 10
10 52 10	---	11 56 31	18.8	234.1	3.3		29.2	48	10872	10 51 11
10 52 20	NGC2617	11 56 41	19.1	234.0	3.3		29.2	-1	10872	10 52 20
10 55 00	---	11 59 21	18.7	234.7	3.4		29.4	159	10892	10 52 21
10 55 10	J0834-0417	11 59 31	18.5	234.8	3.4		29.5	-1	10892	10 55 10
10 56 10	---	12 00 31	18.3	235.0	3.4		29.6	59	10900	10 55 11
10 56 20	NGC2617	12 00 41	18.6	235.0	3.4		29.5	-1	10900	10 56 20
10 59 00	---	12 03 22	18.2	235.6	3.5		29.8	159	10921	10 56 21
10 59 10	J0834-0417	12 03 32	18.0	235.7	3.5		29.8	-1	10921	10 59 10
11 00 10	---	12 04 32	17.8	235.9	3.5		29.9	59	10928	10 59 11
11 00 20	NGC2617	12 04 42	18.1	235.9	3.5		29.9	-1	10928	11 00 20
11 03 00	---	12 07 22	17.7	236.5	3.5		30.1	159	10949	11 00 21
11 03 40	0845-051	12 08 03	18.1	233.2	3.3		28.9	19	10949	11 03 40
11 05 00	---	12 09 23	17.9	233.5	3.3		29.0	80	10959	11 03 41
11 05 10	J0834-0417	12 09 33	17.2	237.0	3.6		30.3	-12	10959	11 05 10
11 06 10	---	12 10 33	17.1	237.3	3.6		30.4	48	10967	11 05 11
11 06 20	NGC2617	12 10 43	17.3	237.2	3.6		30.4	-1	10967	11 06 20
11 09 00	---	12 13 23	17.0	237.8	3.6		30.6	159	10988	11 06 21
11 09 10	J0834-0417	12 13 33	16.7	237.9	3.6		30.7	-1	10988	11 09 10
11 10 10	---	12 14 34	16.6	238.2	3.6		30.8	59	10995	11 09 11
11 10 20	NGC2617	12 14 44	16.8	238.1	3.6		30.8	-1	10995	11 10 20
11 13 00	---	12 17 24	16.5	238.7	3.7		31.0	159	11016	11 10 21
11 13 10	J0834-0417	12 17 34	16.2	238.8	3.7		31.0	-1	11016	11 13 10
11 14 10	---	12 18 34	16.1	239.1	3.7		31.1	59	11024	11 13 11
11 14 20	NGC2617	12 18 44	16.3	239.0	3.7		31.1	-1	11024	11 14 20
11 17 00	---	12 21 25	16.0	239.6	3.8		31.3	159	11044	11 14 21
11 17 40	0845-051	12 22 05	16.4	236.4	3.6		30.1	19	11044	11 17 40
11 19 00	---	12 23 25	16.2	236.7	3.6		30.3	80	11055	11 17 41
11 19 10	J0834-0417	12 23 35	15.4	240.2	3.8		31.5	-12	11055	11 19 10
11 20 10	---	12 24 35	15.3	240.4	3.8		31.6	48	11063	11 19 11

Schedule for TORUN (Code Tr )

Page 40

e-EVN run: EG069E, EM101D, EY021A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 261 ---										
11 20 20	NGC2617	12 24 45	15.5	240.4	3.8		31.6	-1	11063	11 20 20
11 23 00	---	12 27 26	15.2	241.0	3.9		31.8	159	11083	11 20 21
11 23 10	J0834-0417	12 27 36	14.9	241.0	3.9		31.8	-1	11083	11 23 10
11 24 10	---	12 28 36	14.7	241.3	3.9		31.9	59	11091	11 23 11
11 24 20	NGC2617	12 28 46	15.0	241.2	3.9		31.9	-1	11091	11 24 20
11 27 00	---	12 31 26	14.6	241.8	3.9		32.1	159	11112	11 24 21
11 27 10	J0834-0417	12 31 36	14.4	241.9	3.9		32.1	-1	11112	11 27 10
11 28 10	---	12 32 37	14.2	242.1	4.0		32.2	59	11119	11 27 11
11 28 20	NGC2617	12 32 47	14.5	242.1	3.9		32.2	-1	11119	11 28 20
11 31 00	---	12 35 27	14.1	242.7	4.0		32.3	159	11140	11 28 21
11 31 40	0845-051	12 36 07	14.6	239.5	3.8		31.3	19	11140	11 31 40
11 33 00	---	12 37 27	14.4	239.8	3.8		31.4	80	11150	11 31 41
11 33 10	J0834-0417	12 37 37	13.6	243.2	4.0		32.5	-12	11150	11 33 10
11 34 10	---	12 38 38	13.4	243.4	4.1		32.6	48	11158	11 33 11
11 34 20	NGC2617	12 38 48	13.7	243.4	4.0		32.6	-1	11158	11 34 20
11 37 00	---	12 41 28	13.3	244.0	4.1		32.8	159	11179	11 34 21
11 37 10	J0834-0417	12 41 38	13.0	244.1	4.1		32.8	-1	11179	11 37 10
11 38 10	---	12 42 38	12.9	244.3	4.1		32.9	59	11186	11 37 11
11 38 20	NGC2617	12 42 48	13.1	244.3	4.1		32.9	-1	11186	11 38 20
11 41 00	---	12 45 29	12.8	244.9	4.2		33.0	159	11207	11 38 21
11 41 10	J0834-0417	12 45 39	12.5	245.0	4.2		33.1	-1	11207	11 41 10
11 42 10	---	12 46 39	12.3	245.2	4.2		33.1	59	11215	11 41 11
11 42 20	NGC2617	12 46 49	12.6	245.2	4.2		33.1	-1	11215	11 42 20
11 45 00	---	12 49 29	12.2	245.7	4.2		33.3	159	11235	11 42 21
11 45 40	0845-051	12 50 09	12.7	242.5	4.0		32.4	19	11235	11 45 40
11 47 00	---	12 51 30	12.6	242.8	4.0		32.4	80	11246	11 45 41
11 47 10	NGC2617	12 51 40	11.9	246.2	4.3		33.4	-11	11246	11 47 10
11 49 50	---	12 54 20	11.5	246.8	4.3		33.6	149	11266	11 47 11
11 50 30	0845-051	12 55 00	12.1	243.6	4.1		32.7	19	11266	11 50 30
11 51 50	---	12 56 20	11.9	243.9	4.1		32.8	80	11277	11 50 31
11 55 40	1156+295	13 00 11	63.7	210.6	1.0		20.5	22	11277	11 55 40
12 00 00	---	13 04 32	63.3	212.6	1.1		21.7	260	11310	11 55 41

## SETUP FILE INFORMATION:

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

=====  
Setup file: sess313.C1024

Matching groups in /aps3/opt/share/sched\_10.2/catalogs/freq.dat:

tr6cm                   E-mail Borkowski 23Apr03 (CR 1May03)

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

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

The following pulse cal sets were used with this setup:

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

Track assignments are:

track1= 2, 10, 18, 26, 3, 11, 19, 27, 66, 74, 82, 90, 67, 75, 83, 91  
barrel=roll\_off

## SOURCES USED IN RECORDING SCANS --

e-EVN run: EG069E, EM101D, EY021A

Catalog positions marked with \*.

Precession of date coordinates is based on stop time of first scan.

Names used in schedule marked with \*.

Short names used in VLA and SNAP files marked with +.

Observation date used in B1950/J2000 coordinate conversion (PRECDATE): 1979.900

No adjustments are made for rates (DRA, DDEC).

Scan hours are for recording scans only.

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

Source	Source position (RA/Dec)		(Date)	Error (mas)
	(B1950)	(J2000)		
* AMHER	18 14 58.431105 49 50 56.91227	* 18 16 13.192800 * 49 52 05.11200	18 16 34.360637 49 52 50.87793	0.00 0.00
* J1809+5007	18 08 01.170607 50 06 50.37595	* 18 09 15.070500 * 50 07 28.18700	18 09 35.927505 50 08 05.56716	0.00 0.00
* J17535	17 50 52.816542 -01 26 32.11338	* 17 53 28.290600 *-01 27 06.29200	17 54 11.705114 -01 26 59.73134	0.00 0.00
* J1743-0350 1741-038	17 41 20.616009 -03 48 48.89990	* 17 43 58.856133 *-03 50 04.61670	17 44 42.994970 -03 50 10.41087	0.20 0.30
* J1753-0102	17 50 35.447069 -01 02 13.39368	* 17 53 10.448843 *-01 02 48.85402	17 53 53.730031 -01 02 42.52414	0.00 0.00
* J1752-0147	17 49 42.498835 -01 46 37.39945	* 17 52 18.363781 *-01 47 16.68546	17 53 01.881441 -01 47 11.65597	0.00 0.00
* NGC2617	08 33 08.697405 -03 54 52.42420	* 08 35 38.790000 *-04 05 17.60000	08 36 19.768527 -04 08 09.41317	0.00 0.00
* J0834-0417	08 32 23.569436 -04 06 48.80287	* 08 34 53.470000 *-04 17 11.40000	08 35 34.398900 -04 20 02.46200	0.00 0.00
J0237+2848	02 34 55.589591	* 02 37 52.405678	02 38 43.004125	0.11
* 0234+285	28 35 11.40773	* 28 48 08.98998	28 51 40.96544	0.10
J0530+1331	05 28 06.759218	* 05 30 56.416749	05 31 43.796452	0.10
* 0528+134	13 29 42.28877	* 13 31 55.14944	13 32 27.05943	0.10
J0847-0520	08 45 29.564239	* 08 47 58.724940	08 48 39.403904	0.14
* 0845-051	-05 09 27.47547	*-05 20 33.89985	-05 23 36.69579	0.24
J0854+2006	08 51 57.250618	* 08 54 48.874930	08 55 35.549148	0.11
* 0J287	20 17 58.41733	* 20 06 30.64078	20 03 15.95146	0.10
J0927+3902	09 23 55.319217	* 09 27 03.013938	09 27 53.578806	0.13
* 4C39.25	39 15 23.56637	* 39 02 20.85177	38 58 36.93636	0.10
J1159+2914	11 56 57.786211	* 11 59 31.833912	12 00 13.042874	0.11
* 1156+295	29 31 25.73868	* 29 14 43.82678	29 10 12.29595	0.10
J1310+3220	13 08 07.560132	* 13 10 28.663851	13 11 06.329592	0.12
* 1308+326	32 36 40.23870	* 32 20 43.78277	32 16 30.28350	0.10



J1331+3030	13 28 49.657778	* 13 31 08.288070	13 31 45.384443	0.20
* 3C286	30 45 58.64061	* 30 30 32.95925	30 26 29.44131	0.19
* J1818+5017	18 17 16.882413	* 18 18 30.519237	18 18 51.400158	0.37
1817+502	50 16 01.52436	* 50 17 19.74367	50 18 08.30194	0.35
J1824+5651	18 23 14.951494	* 18 24 07.068372	18 24 22.076347	0.18
* 1823+568	56 49 18.07194	* 56 51 01.49075	56 51 57.22396	0.10

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

Source	Sun distance (deg)
AMHER	94.0
J1809+5007	92.9
J17535	93.0
J1743-0350	90.7
J1753-0102	92.9
J1752-0147	92.7
NGC2617	46.9
J0834-0417	47.1
0234+285	127.8
0528+134	92.1
0845-051	44.0
OJ287	44.6
4C39.25	48.1
1156+295	27.6
1308+326	36.8
3C286	38.5
J1818+5017	94.3
1823+568	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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

THE NUCLEAR STRUCTURE IN NEARBY AGN AT 3-500 SCHWARZSCHILD RADII RESOLUT

PI: *Tuomas Savolainen*

Address: MPIfR Bonn                      Auf dem Huegel 69                      53121 Bonn, Germany  
 Phone:    +49 (228) 525 473                      EMAIL:    tsavolainen@mpifr-bonn.mpg.de  
 Phone during observation: +49 (172) 408 2561

Observing mode: K-band, dual-pol

Schedule for TORUN                      (Code Tr )                      Page 2

The nuclear structure in nearby AGN at 3-500 Schwarzschild radii resolut

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.  
 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 21 Sep 2013 Day 264 ---

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 40	0316+413	19 18 01	17.5	42.4	-8.0	-32.8	0	0	18 00 40
18 05 40	---	19 23 01	18.0	43.3	-8.0	-33.4	300	10	18 00 41
18 06 20	0316+413	19 23 42	18.1	43.4	-8.0	-33.4	34	10	18 06 20
18 11 20	---	19 28 42	18.6	44.2	-7.9	-34.0	300	19	18 06 21
18 12 00	0316+413	19 29 23	18.7	44.3	-7.9	-34.1	34	19	18 12 00
18 17 00	---	19 34 23	19.2	45.1	-7.8	-34.7	300	29	18 12 01
18 17 40	0307+380	19 35 03	17.6	48.7	-7.6	-35.1	18	29	18 17 40
18 19 40	---	19 37 04	17.8	49.0	-7.6	-35.3	120	33	18 17 41
18 20 20	0316+413	19 37 44	19.6	45.7	-7.7	-35.0	18	33	18 20 20
18 25 20	---	19 42 45	20.1	46.5	-7.6	-35.6	300	42	18 20 21
18 26 00	0316+413	19 43 25	20.2	46.6	-7.6	-35.7	34	42	18 26 00
18 31 00	---	19 48 26	20.8	47.4	-7.5	-36.2	300	52	18 26 01
18 31 40	0316+413	19 49 06	20.8	47.5	-7.5	-36.3	34	52	18 31 40
18 36 40	---	19 54 07	21.4	48.3	-7.4	-36.8	300	61	18 31 41
18 37 20	0307+380	19 54 47	19.9	52.0	-7.3	-37.1	18	61	18 37 20
18 39 20	---	19 56 47	20.1	52.3	-7.2	-37.3	120	65	18 37 21
18 40 00	0316+413	19 57 27	21.8	48.9	-7.4	-37.2	18	65	18 40 00
18 44 00	---	20 01 28	22.2	49.5	-7.3	-37.6	240	73	18 40 01

----- K-band VLBI scans; time for KVN pointing -----

18 46 00	0316+413	20 03 28	22.4	49.8	-7.3	-37.8	114	73	18 46 00
18 55 30	---	20 13 00	23.6	51.3	-7.1	-38.8	570	91	18 46 01

Schedule for TORUN (Code Tr )

Page 3

The nuclear structure in nearby AGN at 3-500 Schwarzschild radii resolut

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 21 Sep 2013 Day 264 ---										
18 56 00	0316+413	20 13 30	23.6	51.4	-7.1		-38.9	24	91	18 56 00
19 05 30	---	20 23 01	24.7	52.9	-7.0		-39.8	570	109	18 56 01
19 06 00	0316+413	20 23 31	24.8	53.0	-7.0		-39.9	24	109	19 06 00
19 15 30	---	20 33 03	26.0	54.5	-6.8		-40.8	570	128	19 06 01
19 16 00	0316+413	20 33 33	26.0	54.6	-6.8		-40.8	24	128	19 16 00
19 26 00	---	20 43 35	27.3	56.2	-6.6		-41.8	600	147	19 16 01
----- K-band GRT-only VLBI scans -----										
19 27 30	0355+508	20 45 05	29.9	43.4	-7.3		-41.0	49	147	19 27 30
19 29 30	---	20 47 05	30.2	43.7	-7.2		-41.2	120	151	19 27 31
19 30 30	0307+380	20 48 05	26.6	60.8	-6.4		-41.9	11	151	19 30 30
19 32 30	---	20 50 06	26.8	61.1	-6.4		-42.1	120	155	19 30 31
19 33 10	0316+413	20 50 46	28.2	57.3	-6.5		-42.5	17	155	19 33 10
19 38 10	---	20 55 47	28.8	58.1	-6.4		-42.9	300	164	19 33 11
19 38 50	0316+413	20 56 27	28.9	58.2	-6.4		-43.0	34	164	19 38 50
19 43 50	---	21 01 28	29.5	59.0	-6.3		-43.4	300	174	19 38 51
19 44 30	0316+413	21 02 08	29.6	59.1	-6.3		-43.5	34	174	19 44 30
19 49 30	---	21 07 09	30.3	59.9	-6.2		-43.9	300	183	19 44 31
19 50 10	0307+380	21 07 49	29.2	64.0	-6.1		-43.4	17	183	19 50 10
19 52 10	---	21 09 49	29.4	64.3	-6.0		-43.6	120	187	19 50 11
19 52 50	0316+413	21 10 29	30.7	60.4	-6.2		-44.2	17	187	19 52 50
19 56 50	---	21 14 30	31.2	61.0	-6.1		-44.6	240	195	19 52 51
----- 12:20 min gap at Ef for pointing; 8:40 min gap at Tr, Mc and KVN for pointing/skydip -----										
20 05 30	0316+413	21 23 11	32.4	62.4	-6.0		-45.3	513	195	20 05 30
20 10 30	---	21 28 12	33.0	63.1	-5.9		-45.7	300	204	20 05 31
20 11 00	0316+413	21 28 42	33.1	63.2	-5.9		-45.8	24	204	20 11 00
20 16 00	---	21 33 43	33.8	64.0	-5.8		-46.2	300	214	20 11 01
20 17 20	0355+508	21 35 03	35.4	50.1	-6.4		-47.1	37	214	20 17 20
20 19 20	---	21 37 03	35.6	50.4	-6.4		-47.3	120	218	20 17 21
20 20 50	0307+380	21 38 34	33.4	69.0	-5.6		-45.6	38	218	20 20 50
20 22 50	---	21 40 34	33.7	69.3	-5.5		-45.7	120	222	20 20 51
20 23 40	0316+413	21 41 24	34.8	65.2	-5.7		-46.8	27	222	20 23 40
20 28 40	---	21 46 25	35.5	66.0	-5.6		-47.1	300	231	20 23 41

Schedule for TORUN (Code Tr )

Page 4

The nuclear structure in nearby AGN at 3-500 Schwarzschild radii resolut

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 21 Sep 2013 Day 264 ---										
20 29 20	0316+413	21 47 05	35.6	66.1	-5.6		-47.2	34	231	20 29 20
20 34 20	---	21 52 06	36.3	66.9	-5.5		-47.6	300	241	20 29 21
20 35 00	0316+413	21 52 46	36.4	67.0	-5.5		-47.6	34	241	20 35 00
20 36 30	---	21 54 16	36.6	67.2	-5.4		-47.7	90	244	20 35 01
----- K-band VLBI scans; time for pointing at KVN -----										
20 39 00	0316+413	21 56 47	36.9	67.6	-5.4		-47.9	144	244	20 39 00
20 48 30	---	22 06 18	38.3	69.1	-5.2		-48.6	570	262	20 39 01
20 49 00	0316+413	22 06 48	38.3	69.2	-5.2		-48.6	24	262	20 49 00
20 58 30	---	22 16 20	39.7	70.7	-5.1		-49.2	570	280	20 49 01
20 59 00	0316+413	22 16 50	39.7	70.8	-5.1		-49.3	24	280	20 59 00
21 08 30	---	22 26 22	41.1	72.3	-4.9		-49.9	570	299	20 59 01
21 09 00	0316+413	22 26 52	41.2	72.4	-4.9		-49.9	24	299	21 09 00
21 19 00	---	22 36 53	42.6	74.0	-4.7		-50.5	600	318	21 09 01
----- K-band GRT-only VLBI scans -----										
21 21 00	0355+508	22 38 54	43.2	58.3	-5.4		-54.3	73	318	21 21 00
21 23 00	---	22 40 54	43.4	58.6	-5.3		-54.5	120	322	21 21 01
21 24 20	0307+380	22 42 14	42.6	79.8	-4.5		-48.8	23	322	21 24 20
21 26 20	---	22 44 14	42.9	80.1	-4.5		-48.9	120	325	21 24 21
----- Time for pointing at KVN -----										
21 28 40	0316+413	22 46 35	44.0	75.5	-4.6		-51.0	115	325	21 28 40
21 33 40	---	22 51 36	44.7	76.4	-4.5		-51.3	300	335	21 28 41
21 34 20	0316+413	22 52 16	44.8	76.5	-4.5		-51.3	34	335	21 34 20
21 39 20	---	22 57 17	45.6	77.3	-4.4		-51.5	300	345	21 34 21
21 40 00	0316+413	22 57 57	45.7	77.4	-4.4		-51.6	34	345	21 40 00
21 45 00	---	23 02 58	46.4	78.3	-4.3		-51.8	300	354	21 40 01
21 45 40	0307+380	23 03 38	45.8	83.6	-4.1		-49.5	14	354	21 45 40
21 47 40	---	23 05 38	46.1	84.0	-4.1		-49.5	120	358	21 45 41
21 48 20	0316+413	23 06 18	46.9	78.8	-4.2		-51.9	15	358	21 48 20
21 53 20	---	23 11 19	47.6	79.7	-4.2		-52.1	300	368	21 48 21

Schedule for TORUN (Code Tr )

Page 5

The nuclear structure in nearby AGN at 3-500 Schwarzschild radii resolut

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 21 Sep 2013 Day 264 ---

```
21 54 00 0316+413      23 11 59  47.7  79.8 -4.1    -52.2   34    368   21 54 00
21 59 00 ---          23 17 00  48.5  80.6 -4.1    -52.4   300   377   21 54 01
```

----- 12:50 min gap at Ef for pointing -----

```
21 59 40 0316+413      23 17 40  48.6  80.8 -4.1    -52.4   34    377   21 59 40
22 04 40 ---          23 22 41  49.3  81.6 -4.0    -52.6   300   387   21 59 41
```

```
22 05 20 0316+413      23 23 21  49.4  81.8 -4.0    -52.6   34    387   22 05 20
22 10 20 ---          23 28 22  50.2  82.6 -3.9    -52.7   300   396   22 05 21
```

```
22 11 50 0355+508      23 29 52  49.9  64.7 -4.5    -59.6   39    396   22 11 50
22 13 50 ---          23 31 52  50.2  64.9 -4.5    -59.8   120   400   22 11 51
```

```
22 15 20 0307+380      23 33 23  50.2  89.2 -3.6    -49.9   27    400   22 15 20
22 17 20 ---          23 35 23  50.5  89.6 -3.6    -49.9   120   404   22 15 21
```

```
22 18 20 0316+413      23 36 23  51.4  84.1 -3.7    -53.0   34    404   22 18 20
22 23 20 ---          23 41 24  52.1  85.0 -3.7    -53.1   300   414   22 18 21
```

```
22 24 00 0316+413      23 42 04  52.2  85.1 -3.6    -53.1   34    414   22 24 00
22 29 00 ---          23 47 05  53.0  86.0 -3.6    -53.2   300   423   22 24 01
```

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

```
22 32 00 0316+413      23 50 05  53.4  86.6 -3.5    -53.2   173   423   22 32 00
22 41 30 ---          23 59 37  54.8  88.4 -3.4    -53.3   570   442   22 32 01
```

```
22 42 00 0316+413      00 00 07  54.9  88.5 -3.3    -53.3   24    442   22 42 00
22 51 30 ---          00 09 38  56.3  90.4 -3.2    -53.4   570   460   22 42 01
```

```
22 52 00 0316+413      00 10 09  56.4  90.5 -3.2    -53.4   24    460   22 52 00
23 01 30 ---          00 19 40  57.9  92.4 -3.0    -53.3   570   478   22 52 01
```

```
23 02 00 0316+413      00 20 10  57.9  92.6 -3.0    -53.3   24    478   23 02 00
23 12 00 ---          00 30 12  59.4  94.7 -2.8    -53.1   600   497   23 02 01
```

----- K-band GRT-only VLBI scans -----

```
23 14 00 0355+508      00 32 12  58.6  72.4 -3.5    -65.4   60    497   23 14 00
23 16 00 ---          00 34 12  58.9  72.7 -3.4    -65.6   120   501   23 14 01
```

```
23 18 00 0307+380      00 36 13  59.6 103.3 -2.6    -48.1   44    501   23 18 00
23 20 00 ---          00 38 13  59.9 103.8 -2.6    -48.0   120   505   23 18 01
```

Schedule for TORUN (Code Tr )

Page 6

The nuclear structure in nearby AGN at 3-500 Schwarzschild radii resolut

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 21 Sep 2013 Day 264 ---

----- Time for pointing at KVN -----

23 22 20	0316+413	00 40 34	61.0	97.1	-2.7		-52.8	111	505	23 22 20
23 27 20	---	00 45 34	61.7	98.3	-2.6		-52.6	300	515	23 22 21
23 28 00	0316+413	00 46 14	61.8	98.4	-2.6		-52.5	34	515	23 28 00
23 33 00	---	00 51 15	62.6	99.6	-2.5		-52.3	300	524	23 28 01
23 33 40	0316+413	00 51 55	62.7	99.8	-2.5		-52.3	34	524	23 33 40
23 38 40	---	00 56 56	63.4	101.1	-2.4		-52.0	300	534	23 33 41
23 39 30	0307+380	00 57 46	62.7	109.2	-2.2		-46.3	19	534	23 39 30
23 41 30	---	00 59 47	63.0	109.8	-2.2		-46.0	120	538	23 39 31

----- 09:30 min gap at Ef for pointing; 08:30 min gap at Tr, Mc, Ys, and KVN for pointing/skydi

23 50 00	0316+413	01 08 18	65.1	104.1	-2.2		-51.1	479	538	23 50 00
23 55 00	---	01 13 19	65.8	105.5	-2.1		-50.6	300	547	23 50 01

--- Start: Sat 21 Sep 2013 Day 264 -- Stop: Sun 22 Sep 2013 Day 265 ---

23 55 40	0316+413	01 13 59	65.9	105.7	-2.1		-50.6	34	547	23 55 40
00 00 40	---	01 19 00	66.6	107.2	-2.0		-50.0	300	557	23 55 41
00 02 10	0355+508	01 20 30	65.6	78.6	-2.7		-69.3	18	557	00 02 10
00 04 10	---	01 22 30	65.9	78.9	-2.6		-69.5	120	561	00 02 11
00 06 10	0307+380	01 24 31	66.4	118.0	-1.8		-42.5	27	561	00 06 10
00 08 10	---	01 26 31	66.6	118.7	-1.8		-42.2	120	564	00 06 11
00 09 10	0316+413	01 27 31	67.8	109.9	-1.9		-49.0	27	564	00 09 10
00 14 10	---	01 32 32	68.5	111.6	-1.8		-48.3	300	574	00 09 11
00 14 50	0316+413	01 33 12	68.6	111.8	-1.8		-48.2	34	574	00 14 50
00 19 50	---	01 38 13	69.3	113.6	-1.7		-47.4	300	584	00 14 51
00 20 30	0316+413	01 38 53	69.4	113.8	-1.7		-47.2	34	584	00 20 30
00 22 30	---	01 40 53	69.7	114.5	-1.7		-46.9	120	588	00 20 31

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

00 25 00	0316+413	01 43 24	70.0	115.5	-1.6		-46.4	143	588	00 25 00
00 34 30	---	01 52 55	71.3	119.2	-1.5		-44.4	570	606	00 25 01

Schedule for TORUN (Code Tr )

Page 7

The nuclear structure in nearby AGN at 3-500 Schwarzschild radii resolut

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 265 ---										
00 35 00	0316+413	01 53 25	71.4	119.4	-1.5		-44.3	23	606	00 35 00
00 44 30	---	02 02 57	72.6	123.6	-1.3		-41.9	570	624	00 35 01
00 45 00	0316+413	02 03 27	72.6	123.9	-1.3		-41.8	23	624	00 45 00
00 54 30	---	02 12 59	73.8	128.6	-1.1		-38.8	570	642	00 45 01
00 55 00	0316+413	02 13 29	73.9	128.9	-1.1		-38.7	23	642	00 55 00
01 05 00	---	02 23 30	75.0	134.4	-1.0		-35.0	600	661	00 55 01
----- K-band GRT-only VLBI scans -----										
01 07 00	0355+508	02 25 31	75.3	88.6	-1.6		-72.5	13	661	01 07 00
01 09 00	---	02 27 31	75.6	89.0	-1.6		-72.6	120	665	01 07 01
01 11 30	0307+380	02 30 01	73.5	149.9	-0.7		-22.6	14	665	01 11 30
01 13 30	---	02 32 02	73.7	151.2	-0.7		-21.6	120	669	01 11 31
----- Time for pointing at KVN -----										
01 15 50	0316+413	02 34 22	76.1	141.3	-0.8		-30.1	103	669	01 15 50
01 20 50	---	02 39 23	76.5	144.8	-0.7		-27.6	300	679	01 15 51
01 21 30	0316+413	02 40 03	76.6	145.3	-0.7		-27.2	33	679	01 21 30
01 26 30	---	02 45 04	77.0	149.0	-0.6		-24.4	300	688	01 21 31
01 27 10	0316+413	02 45 44	77.0	149.5	-0.6		-24.1	32	688	01 27 10
01 32 10	---	02 50 45	77.4	153.4	-0.5		-21.1	300	698	01 27 11
01 33 10	0307+380	02 51 45	74.8	164.9	-0.3		-11.5	23	698	01 33 10
01 35 10	---	02 53 45	74.9	166.4	-0.3		-10.4	120	702	01 33 11
01 36 10	0316+413	02 54 46	77.7	156.6	-0.4		-18.5	25	702	01 36 10
01 41 10	---	02 59 46	77.9	160.9	-0.3		-15.2	300	711	01 36 11
01 42 10	0316+413	03 00 46	78.0	161.8	-0.3		-14.5	52	711	01 42 10
01 47 10	---	03 05 47	78.2	166.2	-0.2		-11.0	300	721	01 42 11
----- 10:00 min gap at Ef for pointing -----										
01 47 50	0316+413	03 06 27	78.2	166.8	-0.2		-10.6	32	721	01 47 50
01 52 50	---	03 11 28	78.4	171.4	-0.2		-6.9	300	731	01 47 51
01 53 30	0316+413	03 12 08	78.4	172.0	-0.1		-6.4	32	731	01 53 30
01 58 30	---	03 17 09	78.4	176.6	-0.1		-2.7	300	740	01 53 31

Schedule for TORUN (Code Tr )

Page 8

The nuclear structure in nearby AGN at 3-500 Schwarzschild radii resolut

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 265 ---									
01 59 50	0307+380	03 18 29	75.2	185.2	0.1	4.0	49	740	01 59 50
02 01 50	---	03 20 30	75.1	186.7	0.1	5.1	120	744	01 59 51
02 03 10	0316+413	03 21 50	78.5	181.0	0.0	0.8	52	744	02 03 10
02 08 10	---	03 26 51	78.4	185.7	0.1	4.6	300	754	02 03 11
02 08 40	0316+413	03 27 21	78.4	186.2	0.1	4.9	22	754	02 08 40
02 14 40	---	03 33 22	78.3	191.7	0.2	9.4	360	765	02 08 41
02 16 00	0307+380	03 34 42	74.7	197.3	0.4	13.1	53	765	02 16 00
02 18 00	---	03 36 42	74.6	198.7	0.4	14.2	120	769	02 16 01
----- K-band VLBI scans -----									
02 20 00	0316+413	03 38 43	78.1	196.5	0.3	13.2	93	769	02 20 00
02 29 30	---	03 48 14	77.6	204.6	0.5	19.5	570	787	02 20 01
02 30 00	0316+413	03 48 44	77.5	205.0	0.5	19.8	22	787	02 30 00
02 39 30	---	03 58 16	76.9	212.4	0.6	25.5	570	805	02 30 01
02 40 00	0316+413	03 58 46	76.8	212.8	0.6	25.8	23	805	02 40 00
02 49 30	---	04 08 18	76.0	219.5	0.8	30.7	570	824	02 40 01
02 50 00	0316+413	04 08 48	75.9	219.8	0.8	30.9	23	824	02 50 00
03 00 00	---	04 18 49	74.9	226.0	1.0	35.3	600	843	02 50 01
----- K-band GRT-only VLBI scans -----									
03 02 20	0355+508	04 21 10	86.2	238.5	0.3	54.5	83	843	03 02 20
03 04 20	---	04 23 10	85.9	241.2	0.4	56.7	120	847	03 02 21
03 07 20	0307+380	04 26 10	70.4	228.4	1.2	34.9	109	847	03 07 20
03 09 20	---	04 28 11	70.2	229.3	1.3	35.5	120	851	03 07 21
03 10 50	0316+413	04 29 41	73.7	232.0	1.1	39.2	63	851	03 10 50
03 15 50	---	04 34 42	73.1	234.5	1.2	40.8	300	860	03 10 51
03 16 20	0316+413	04 35 12	73.0	234.8	1.2	41.0	23	860	03 16 20
03 21 20	---	04 40 13	72.4	237.1	1.3	42.4	300	870	03 16 21
03 21 50	0316+413	04 40 43	72.3	237.3	1.3	42.5	23	870	03 21 50
03 26 50	---	04 45 44	71.7	239.6	1.4	43.8	300	879	03 21 51
03 27 50	0307+380	04 46 44	68.0	237.4	1.6	40.1	33	879	03 27 50
03 29 50	---	04 48 44	67.7	238.2	1.6	40.5	120	883	03 27 51



Schedule for TORUN (Code Tr )

Page 9

The nuclear structure in nearby AGN at 3-500 Schwarzschild radii resolut

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 265 ---										
03 30 50	0316+413	04 49 44	71.1	241.2	1.5		44.7	33	883	03 30 50
03 35 50	---	04 54 45	70.5	243.3	1.6		45.8	300	893	03 30 51
03 36 20	0316+413	04 55 15	70.4	243.5	1.6		45.9	24	893	03 36 20
03 41 20	---	05 00 16	69.7	245.4	1.7		46.8	300	902	03 36 21
----- 13:10 min gap at Ef for pointing -----										
03 41 50	0316+413	05 00 46	69.7	245.5	1.7		46.9	24	902	03 41 50
03 46 50	---	05 05 47	69.0	247.3	1.8		47.8	300	912	03 41 51
03 47 20	0316+413	05 06 17	68.9	247.5	1.8		47.9	24	912	03 47 20
03 52 20	---	05 11 18	68.2	249.2	1.8		48.6	300	922	03 47 21
03 54 50	0355+508	05 13 48	78.6	266.8	1.2		72.3	96	922	03 54 50
03 56 50	---	05 15 49	78.3	267.3	1.3		72.4	120	925	03 54 51
03 59 10	0307+380	05 18 09	63.8	248.5	2.1		45.4	72	925	03 59 10
04 01 10	---	05 20 09	63.5	249.1	2.1		45.6	120	929	03 59 11
04 02 00	0316+413	05 20 59	66.8	252.3	2.0		49.9	23	929	04 02 00
04 07 00	---	05 26 00	66.1	253.8	2.1		50.4	300	939	04 02 01
04 07 30	0316+413	05 26 30	66.0	254.0	2.1		50.5	24	939	04 07 30
04 12 30	---	05 31 31	65.3	255.4	2.2		51.0	300	948	04 07 31
04 13 00	0316+413	05 32 01	65.2	255.6	2.2		51.0	24	948	04 13 00
04 18 00	---	05 37 02	64.5	256.9	2.3		51.4	300	958	04 13 01
----- K-band VLBI scans -----										
04 20 00	0316+413	05 39 02	64.2	257.5	2.3		51.6	113	958	04 20 00
04 29 30	---	05 48 34	62.8	259.9	2.5		52.2	570	976	04 20 01
04 30 00	0316+413	05 49 04	62.7	260.1	2.5		52.2	24	976	04 30 00
04 39 30	---	05 58 36	61.3	262.4	2.6		52.7	570	995	04 30 01
04 40 00	0316+413	05 59 06	61.3	262.5	2.6		52.7	24	995	04 40 00
04 49 30	---	06 08 37	59.8	264.7	2.8		53.0	570	1013	04 40 01
04 50 00	0316+413	06 09 07	59.8	264.8	2.8		53.1	24	1013	04 50 00
05 00 00	---	06 19 09	58.3	267.0	3.0		53.3	600	1032	04 50 01

Schedule for TORUN (Code Tr )

Page 10

The nuclear structure in nearby AGN at 3-500 Schwarzschild radii resolut

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 265 ---

----- K-band GRT-only VLBI scans -----

05 01 30	0355+508	06 20 39	68.6	278.6	2.3		70.6	37	1032	05 01 30
05 03 30	---	06 22 40	68.3	278.9	2.4		70.5	120	1036	05 01 31
05 05 00	0307+380	06 24 10	54.1	265.4	3.2		49.7	23	1036	05 05 00
05 07 00	---	06 26 10	53.8	265.8	3.2		49.7	120	1040	05 05 01
05 08 00	0316+413	06 27 10	57.1	268.7	3.1		53.3	34	1040	05 08 00
05 17 30	---	06 36 42	55.6	270.6	3.3		53.4	570	1058	05 08 01
05 18 00	0316+413	06 37 12	55.5	270.7	3.3		53.4	24	1058	05 18 00
05 27 30	---	06 46 44	54.1	272.5	3.4		53.3	570	1076	05 18 01
05 28 30	0307+380	06 47 44	50.6	270.3	3.6		49.9	33	1076	05 28 30
05 30 30	---	06 49 44	50.3	270.7	3.6		49.9	120	1080	05 28 31
05 31 20	0316+413	06 50 34	53.5	273.3	3.5		53.2	24	1080	05 31 20
05 40 50	---	07 00 06	52.1	275.0	3.7		53.1	570	1098	05 31 21
05 41 20	0316+413	07 00 36	52.0	275.1	3.7		53.1	24	1098	05 41 20
05 46 20	---	07 05 37	51.3	276.0	3.7		52.9	300	1108	05 41 21

----- 10:00 min gap at Ef for pointing -----

05 46 50	0316+413	07 06 07	51.2	276.1	3.8		52.9	24	1108	05 46 50
05 51 50	---	07 11 08	50.5	277.0	3.8		52.8	300	1117	05 46 51
05 53 10	0355+508	07 12 28	61.0	285.5	3.2		66.8	26	1117	05 53 10
05 55 10	---	07 14 28	60.7	285.8	3.2		66.7	120	1121	05 53 11
05 56 40	0307+380	07 15 58	46.4	275.7	4.1		49.6	23	1121	05 56 40
05 58 40	---	07 17 59	46.1	276.1	4.1		49.5	120	1125	05 56 41
05 59 30	0316+413	07 18 49	49.3	278.4	4.0		52.6	24	1125	05 59 30
06 09 00	---	07 28 20	47.9	280.0	4.1		52.2	570	1143	05 59 31

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

06 10 00	0316+413	07 29 20	47.8	280.2	4.1		52.2	54	1143	06 10 00
06 19 30	---	07 38 52	46.4	281.8	4.3		51.8	570	1162	06 10 01
06 20 30	0316+413	07 39 52	46.2	282.0	4.3		51.7	54	1162	06 20 30
06 30 00	---	07 49 24	44.8	283.5	4.5		51.3	570	1180	06 20 31

Schedule for TORUN (Code Tr )

Page 11

The nuclear structure in nearby AGN at 3-500 Schwarzschild radii resolut

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013  Day 265 ---

06 31 00  0316+413      07 50 24  44.7 283.7  4.5      51.2   54   1180  06 31 00
06 40 30  ---          07 59 55  43.3 285.3  4.7      50.7  570   1198  06 31 01

06 41 30  0316+413      08 00 56  43.1 285.4  4.7      50.7   54   1198  06 41 30
06 50 00  ---          08 09 27  41.9 286.8  4.8      50.2  510   1214  06 41 31

----- K-band GRT-only VLBI scans -----

06 56 00  0355+508      08 15 28  52.1 293.4  4.2      61.1  305   1214  06 56 00
06 58 00  ---          08 17 28  51.8 293.6  4.3      61.0  120   1218  06 56 01

06 59 00  0307+380      08 18 29  37.2 286.6  5.1      47.2   -9   1218  06 59 09
07 01 00  ---          08 20 29  36.9 286.9  5.1      47.1  111   1222  06 59 01

07 02 40  0316+413      08 22 09  40.1 288.8  5.0      49.4   73   1222  07 02 40
07 12 10  ---          08 31 41  38.8 290.4  5.2      48.8  570   1240  07 02 41

07 13 30  0316+413      08 33 01  38.6 290.6  5.2      48.7   74   1240  07 13 30
07 23 00  ---          08 42 32  37.2 292.1  5.4      48.1  570   1259  07 13 31

07 24 40  0307+380      08 44 13  33.5 290.9  5.5      45.6   73   1259  07 24 40
07 26 40  ---          08 46 13  33.2 291.2  5.6      45.5  120   1262  07 24 41

----- 09:20 min gap for Effelsberg pointing -----

07 27 10  0316+413      08 46 43  36.7 292.7  5.4      47.8    3   1262  07 27 10
07 32 10  ---          08 51 44  36.0 293.5  5.5      47.4  300   1272  07 27 11

07 33 30  0316+413      08 53 04  35.8 293.7  5.5      47.3   74   1272  07 33 30
07 43 00  ---          09 02 36  34.5 295.2  5.7      46.6  570   1290  07 33 31

07 44 50  0355+508      09 04 26  45.5 299.4  5.1      56.2   54   1290  07 44 50
07 46 50  ---          09 06 26  45.2 299.7  5.1      56.0  120   1294  07 44 51

07 48 20  0307+380      09 07 57  30.2 294.7  5.9      44.0   20   1294  07 48 20
07 50 20  ---          09 09 57  30.0 295.1  6.0      43.9  120   1298  07 48 21

07 52 10  0316+413      09 11 47  33.2 296.6  5.9      45.8   83   1298  07 52 10
07 59 00  ---          09 18 38  32.3 297.7  6.0      45.3  410   1311  07 52 11

```

## SETUP FILE INFORMATION:

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

=====  
Setup file: ralcm2.set

Matching groups in ./freq.sess313rdbe.dat:  
tr1cm

Setup group:	39	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:	8	Setup file default.	Used pcal sets:	2
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:	8			

The following pulse cal sets were used with this setup:

Pulse cal detection set:	2	PCAL = 1MHZ						
PCALXB1=	S1	S3	S1	S3	S1	S2	S3	S4
PCALXB2=	S2	S4	S2	S4	M1	M2	M3	M4
PCALFR1=	1000	1000	13000	13000	0	0	0	0
PCALFR2=	1000	1000	13000	13000	0	0	0	0

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 23.552455	0.00
	85 16 41.77889	* 85 00 00.00000	84 55 21.51327	0.00
J0310+3814	03 07 37.554068	* 03 10 49.879926	03 11 44.922072	0.13
* 0307+380	38 03 34.47086	* 38 14 53.83785	38 17 54.30640	0.10
J0319+4130	03 16 29.567260	* 03 19 48.160090	03 20 44.982340	1.30
* 0316+413	41 19 51.91699	* 41 30 42.10412	41 33 32.92264	2.72
J0359+5057	03 55 45.261370	* 03 59 29.747271	04 00 33.763079	0.16
* 0355+508	50 49 20.28582	* 50 57 50.16177	50 59 56.63384	0.10
J0542+4951	05 38 43.517523	* 05 42 36.137900	05 43 41.187682	0.16
* 3C147	49 49 42.83711	* 49 51 07.23374	49 51 12.22607	0.11

## EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	84.6
0307+380	121.0
0316+413	118.0
0355+508	107.6
3C147	92.0

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

For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

**rk01cmtr**

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
 Phone:    +7-495-3332167                      EMAIL:    yyk@asc.rssi.ru  
 Fax:       +7-495-3332378                      Phone during observation: +7-915-1546281

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 Sep 2013    Day 266 ---

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

```
Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies:  632.00  632.00  632.00  632.00
Next scan bandwidths:  16.00   16.00   16.00   16.00

00 03 00  2251+158    01 25 17  42.8 233.1  2.5    30.0    0    0  00 03 00
00 12 30  ---                01 34 48  41.7 235.8  2.7    31.1   570   18  00 03 01

00 13 00  2251+158    01 35 18  41.6 235.9  2.7    31.2   24   18  00 13 00
00 22 30  ---                01 44 50  40.4 238.5  2.8    32.2   570   36  00 13 01

00 23 00  2251+158    01 45 20  40.3 238.6  2.8    32.3   24   36  00 23 00
00 33 00  ---                01 55 22  39.0 241.3  3.0    33.3   600   56  00 23 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

Matching groups in /home/kirx/sched/catalogs/freq.dat:  
 tr18cm                      E-mail Borkowski 12Mar98, preferred alternative

```
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=    2300.00  2300.00  2300.00  2300.00
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 pcal sets: 1
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 632.00 632.00 632.00 632.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 6

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set: 1 PCAL = 1MHZ
PCALXB1= S1 S3 S1 S3 S1 S2 S3 S4
PCALXB2= S2 S4 S2 S4 M1 M2 M3 M4
PCALFR1= 1000 1000 13000 13000 0 0 0 0
PCALFR2= 1000 1000 13000 13000 0 0 0 0

```

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 23.512015	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 21.02240	0.00
J2253+1608	22 51 29.519738	* 22 53 57.747937	22 54 40.450539	0.68
* 2251+158	15 52 54.34810	* 16 08 53.56093	16 13 32.76588	0.72

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	85.0
2251+158	157.1

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

**rk01cntr**

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
 Phone:    +7-495-3332167                  EMAIL:    yyk@asc.rssi.ru  
 Fax:       +7-495-3332378                  Phone during observation: +7-915-1546281

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 Sep 2013    Day 266 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00  
 Next BBC frequencies: 632.00 632.00 632.00 632.00  
 Next scan bandwidths: 16.00 16.00 16.00 16.00

Start UT	Source	LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
02 00 00	0415+379	03 22 36	72.1	141.3	-0.9		-28.5	0	0	02 00 00
02 09 30	---	03 32 08	72.9	146.8	-0.8		-24.7	570	18	02 00 01
02 10 00	0415+379	03 32 38	72.9	147.1	-0.8		-24.5	23	18	02 10 00
02 19 30	---	03 42 09	73.6	153.2	-0.6		-20.1	570	36	02 10 01
02 20 00	0415+379	03 42 39	73.7	153.5	-0.6		-19.9	23	36	02 20 00
02 29 30	---	03 52 11	74.2	160.0	-0.5		-15.1	570	55	02 20 01
02 30 00	0415+379	03 52 41	74.3	160.3	-0.4		-14.9	23	55	02 30 00
02 40 00	---	04 02 43	74.7	167.5	-0.3		-9.5	600	74	02 30 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

Matching groups in /home/kirx/sched/catalogs/freq.dat:  
 tr18cm                      E-mail Borkowski 12Mar98, preferred alternative

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= 2300.00 2300.00 2300.00 2300.00
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 pcal sets:  1
LO sum=    1668.00  1668.00  1668.00  1668.00
BBC fr=     632.00  632.00  632.00  632.00
Bandwd=     16.00   16.00   16.00   16.00
Matching frequency sets:  4

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1   S3   S1   S3   S1   S2   S3   S4
PCALXB2=  S2   S4   S2   S4   M1   M2   M3   M4
PCALFR1= 1000 1000 13000 13000   0   0   0   0
PCALFR2= 1000 1000 13000 13000   0   0   0   0

```

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 23.509609	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 20.98761	0.00
J0418+3801	04 15 00.610264	* 04 18 21.277237	04 19 18.174620	0.15
* 0415+379	37 54 19.28071	* 38 01 35.80018	38 03 25.28783	0.13

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	85.0
0415+379	109.8

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

**rk01cotr**

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
 Phone:    +7-495-3332167                  EMAIL:    yyk@asc.rssi.ru  
 Fax:       +7-495-3332378                  Phone during observation: +7-915-1546281

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 Sep 2013    Day 266 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00  
 Next BBC frequencies: 632.00 632.00 632.00 632.00  
 Next scan bandwidths: 16.00 16.00 16.00 16.00

04 00 00	0507+179	05 22 56	54.9	185.0	0.2	3.1	0	0	04 00 00
04 09 30	---	05 32 27	54.7	188.9	0.4	5.6	570	18	04 00 01
04 10 00	0507+179	05 32 57	54.7	189.1	0.4	5.7	24	18	04 10 00
04 19 30	---	05 42 29	54.4	193.0	0.5	8.2	570	36	04 10 01
04 20 00	0507+179	05 42 59	54.4	193.2	0.5	8.3	24	36	04 20 00
04 29 30	---	05 52 31	54.0	197.0	0.7	10.6	570	55	04 20 01
04 30 00	0507+179	05 53 01	54.0	197.2	0.7	10.8	24	55	04 30 00
04 40 00	---	06 03 02	53.5	201.1	0.9	13.2	600	74	04 30 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

Matching groups in /home/kirx/sched/catalogs/freq.dat:

tr18cm                      E-mail Borkowski 12Mar98, preferred alternative

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=	2300.00	2300.00	2300.00	2300.00
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 pcal sets:  1
LO sum=    1668.00  1668.00  1668.00  1668.00
BBC fr=     632.00  632.00  632.00  632.00
Bandwd=     16.00   16.00   16.00   16.00
Matching frequency sets:  4

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1   S3   S1   S3   S1   S2   S3   S4
PCALXB2=  S2   S4   S2   S4   M1   M2   M3   M4
PCALFR1= 1000 1000 13000 13000   0   0   0   0
PCALFR2= 1000 1000 13000 13000   0   0   0   0

```

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 23.507764	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 20.96013	0.00
J0510+1800	05 07 07.486545	* 05 10 02.369131	05 10 51.495224	0.11
* 0507+179	17 56 58.64617	* 18 00 41.58162	18 01 37.19338	0.10
J0533+4822	05 29 27.565383	* 05 33 15.865792	05 34 19.874623	0.15
* 0529+483	48 20 47.97038	* 48 22 52.80771	48 23 09.67215	0.10

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	85.0
0507+179	102.0
0529+483	94.5

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

For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg



The following frequency sets based on these setups were used.

```

Frequency Set:  4  Setup file default.  Used pcal sets:  1
LO sum=    1668.00  1668.00  1668.00  1668.00
BBC fr=     632.00   632.00   632.00   632.00
Bandwd=     16.00   16.00   16.00   16.00
Matching frequency sets:  4

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1   S3   S1   S3   S1   S2   S3   S4
PCALXB2=  S2   S4   S2   S4   M1   M2   M3   M4
PCALFR1= 1000 1000 13000 13000   0   0   0   0
PCALFR2= 1000 1000 13000 13000   0   0   0   0

```

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 23.505563	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 20.92632	0.00
J0539+1433	05 36 51.361474	* 05 39 42.365992	05 40 30.207976	0.10
* 0536+145	14 32 10.73036	* 14 33 45.56166	14 34 06.41557	0.10

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	85.1
0536+145	95.1

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

rk01cqtr

RADIOASTRON AGN SURVEY

PI: Yuri Kovalev

Address: ASC Lebedev Profsoyuznaya 84/32 117997 Moscow, Russia
Phone: +7-495-3332167 EMAIL: yyk@asc.rssi.ru
Fax: +7-495-3332378 Phone during observation: +7-915-1546281

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 Sep 2013 Day 266 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 632.00 632.00 632.00 632.00
Next scan bandwidths: 16.00 16.00 16.00 16.00

Table with 11 columns: Start UT, Stop UT, Source, LST, EL, AZ, HA, UP, ParA, Dwell, GBytes, TPStart, SYNC. It lists observation times and parameters for source 0528+134.

SETUP FILE INFORMATION:

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

==== Setup file: ra18cm2.set
Matching groups in /home/kirx/sched/catalogs/freq.dat:
tri8cm E-mail Borkowski 12Mar98, preferred alternative

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= 2300.00 2300.00 2300.00 2300.00
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 pcal sets:  1
LO sum=    1668.00  1668.00  1668.00  1668.00
BBC fr=     632.00   632.00   632.00   632.00
Bandwd=     16.00   16.00   16.00   16.00
Matching frequency sets:  4

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1   S3   S1   S3   S1   S2   S3   S4
PCALXB2=  S2   S4   S2   S4   M1   M2   M3   M4
PCALFR1= 1000 1000 13000 13000   0   0   0   0
PCALFR2= 1000 1000 13000 13000   0   0   0   0

```

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 23.503549	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 20.89428	0.00
J0530+1331	05 28 06.759218	* 05 30 56.416749	05 31 43.940318	0.10
* 0528+134	13 29 42.28877	* 13 31 55.14944	13 32 27.03806	0.10

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	85.1
0528+134	97.3

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

For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

## RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
 Phone:    +7-495-3332167                      EMAIL:    yyk@asc.rssi.ru  
 Fax:       +7-495-3332378                      Phone during observation: +7-915-1546281

Observing mode: L-band, dual-pol

Schedule for TORUN                      (Code Tr )                      Page 2

RadioAstron AGN Survey

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013    Day 266 ---

Next scan frequencies:	1668.00	1668.00	1668.00	1668.00						
Next BBC frequencies:	632.00	632.00	632.00	632.00						
Next scan bandwidths:	16.00	16.00	16.00	16.00						
14 00 00	0529+483	15 24 34	15.1	-21.7	9.8		19.5	0	0	14 00 00
14 09 30	---	15 34 06	14.6	-20.1	10.0		18.1	570	18	14 00 01
14 10 00	0529+483	15 34 36	14.6	-20.0	10.0		18.0	24	18	14 10 00
14 19 30	---	15 44 07	14.1	-18.5	10.2		16.6	570	36	14 10 01
14 20 00	0529+483	15 44 38	14.1	-18.4	10.2		16.6	24	36	14 20 00
14 29 30	---	15 54 09	13.7	-16.8	10.3		15.2	570	55	14 20 01
14 30 00	0529+483	15 54 39	13.7	-16.7	10.3		15.1	24	55	14 30 00
14 39 30	---	16 04 11	13.3	-15.2	10.5		13.7	570	73	14 30 01
14 40 00	0529+483	16 04 41	13.2	-15.1	10.5		13.6	24	73	14 40 00
14 49 30	---	16 14 12	12.9	-13.5	10.7		12.2	570	91	14 40 01
14 50 00	0529+483	16 14 42	12.9	-13.4	10.7		12.1	24	91	14 50 00
15 00 00	---	16 24 44	12.6	-11.7	10.8		10.6	600	110	14 50 01

## SETUP FILE INFORMATION:

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=	2300.00	2300.00	2300.00	2300.00
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 pcal sets:  1
LO sum=    1668.00  1668.00  1668.00  1668.00
BBC fr=     632.00  632.00  632.00  632.00
Bandwd=     16.00   16.00   16.00   16.00
Matching frequency sets:  3

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1   S3   S1   S3   S1   S2   S3   S4
PCALXB2=  S2   S4   S2   S4   M1   M2   M3   M4
PCALFR1= 1000 1000 13000 13000   0   0   0   0
PCALFR2= 1000 1000 13000 13000   0   0   0   0

```

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 23.497915	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 20.79757	0.00
J0533+4822	05 29 27.565383	* 05 33 15.865792	05 34 19.893091	0.15
* 0529+483	48 20 47.97038	* 48 22 52.80771	48 23 09.66988	0.10

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	85.2
0529+483	94.9

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

For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

**rk01cutr**

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
 Phone:    +7-495-3332167                  EMAIL:    yyk@asc.rssi.ru  
 Fax:       +7-495-3332378                  Phone during observation: +7-915-1546281

Observing mode: C-band, dual-pol

Schedule for TORUN                      (Code Tr )    Page    2

RadioAstron AGN Survey

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

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

--- Tue 24 Sep 2013    Day 267 ---

Next scan frequencies: 4836.00 4836.00 4836.00 4836.00  
 Next BBC frequencies: 636.00 636.00 636.00 636.00  
 Next scan bandwidths: 16.00 16.00 16.00 16.00

01 00 00	0458-020	02 26 23	26.1	135.7	-2.6	-24.8	0	0	01 00 00
01 09 30	---	02 35 54	27.1	138.1	-2.4	-23.6	570	18	01 00 01
01 10 00	0458-020	02 36 24	27.1	138.2	-2.4	-23.6	24	18	01 10 00
01 19 30	---	02 45 56	28.0	140.7	-2.3	-22.4	570	36	01 10 01
01 20 00	0458-020	02 46 26	28.1	140.8	-2.3	-22.3	24	36	01 20 00
01 29 30	---	02 55 58	29.0	143.4	-2.1	-21.0	570	55	01 20 01
01 30 00	0458-020	02 56 28	29.0	143.5	-2.1	-20.9	24	55	01 30 00
01 40 00	---	03 06 29	29.9	146.2	-1.9	-19.5	600	74	01 30 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

Matching groups in /home/kirx/sched/catalogs/freq.dat:  
 tr6cm                      E-mail Borkowski 23Apr03 (CR 1May03)

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=	4200.00	4200.00	4200.00	4200.00
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 pcal sets:  1
LO sum=   4836.00  4836.00  4836.00  4836.00
BBC fr=    636.00   636.00   636.00   636.00
Bandwd=    16.00   16.00   16.00   16.00
Matching frequency sets:  2

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1  S3  S1  S3  S1  S2  S3  S4
PCALXB2=  S2  S4  S2  S4  M1  M2  M3  M4
PCALFR1= 1000 1000 13000 13000  0  0  0  0
PCALFR2= 1000 1000 13000 13000  0  0  0  0

```

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 23.489230	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 20.61558	0.00
J0501-0159	04 58 41.344688	* 05 01 12.809884	05 01 55.418916	0.10
* 0458-020	-02 03 33.86890	*-01 59 14.25635	-01 58 01.43822	0.10

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	85.4
0458-020	105.6

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

For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
 Phone:    +7-495-3332167                EMAIL:    yyk@asc.rssi.ru  
 Fax:       +7-495-3332378                Phone during observation: +7-915-1546281

Observing mode: L-band, dual-pol

Schedule for TORUN                      (Code Tr )    Page    2

RadioAstron AGN Survey

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

-----  

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

-----

--- Tue 24 Sep 2013    Day 267 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00  
 Next BBC frequencies: 632.00 632.00 632.00 632.00  
 Next scan bandwidths: 16.00 16.00 16.00 16.00

03 00 00	0506+056	04 26 42	41.8	165.4	-0.7		-8.7	0	0	03 00 00
03 09 30	---	04 36 14	42.1	168.6	-0.6		-6.9	570	18	03 00 01
03 10 00	0506+056	04 36 44	42.1	168.7	-0.6		-6.8	24	18	03 10 00
03 19 30	---	04 46 16	42.4	171.9	-0.4		-4.9	570	36	03 10 01
03 20 00	0506+056	04 46 46	42.4	172.1	-0.4		-4.8	24	36	03 20 00
03 29 30	---	04 56 17	42.5	175.3	-0.2		-2.8	570	55	03 20 01
03 30 00	0506+056	04 56 47	42.5	175.5	-0.2		-2.7	24	55	03 30 00
03 40 00	---	05 06 49	42.6	178.9	-0.1		-0.7	600	74	03 30 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

Matching groups in /home/kirx/sched/catalogs/freq.dat:

tr18cm                      E-mail Borkowski 12Mar98, preferred alternative

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=	2300.00	2300.00	2300.00	2300.00
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 pcal sets: 1
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 632.00 632.00 632.00 632.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 6

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set: 1 PCAL = 1MHZ
PCALXB1= S1 S3 S1 S3 S1 S2 S3 S4
PCALXB2= S2 S4 S2 S4 M1 M2 M3 M4
PCALFR1= 1000 1000 13000 13000 0 0 0 0
PCALFR2= 1000 1000 13000 13000 0 0 0 0

```

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 23.487940	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 20.58269	0.00
J0509+0541	05 06 45.765584	* 05 09 25.964476	05 10 10.985268	0.13
* 0506+056	05 37 50.30295	* 05 41 35.33360	05 42 35.87476	0.24

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	85.4
0506+056	103.6

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

For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

**rk01cwtr**

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
 Phone:    +7-495-3332167                  EMAIL:    yyk@asc.rssi.ru  
 Fax:       +7-495-3332378                  Phone during observation: +7-915-1546281

Observing mode: L-band, dual-pol

Schedule for TORUN                      (Code Tr )    Page    2

RadioAstron AGN Survey

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

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

--- Tue 24 Sep 2013    Day 267 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00  
 Next BBC frequencies: 632.00 632.00 632.00 632.00  
 Next scan bandwidths: 16.00 16.00 16.00 16.00

05 00 00	0422+004	06 27 02	31.8	216.5	2.0	20.9	0	0	05 00 00
05 09 30	---	06 36 34	30.9	219.1	2.2	22.3	570	18	05 00 01
05 10 00	0422+004	06 37 04	30.9	219.2	2.2	22.3	24	18	05 10 00
05 19 30	---	06 46 35	29.9	221.8	2.4	23.6	570	36	05 10 01
05 20 00	0422+004	06 47 05	29.9	221.9	2.4	23.7	24	36	05 20 00
05 29 30	---	06 56 37	28.9	224.4	2.5	24.8	570	55	05 20 01
05 30 00	0422+004	06 57 07	28.9	224.5	2.5	24.9	24	55	05 30 00
05 40 00	---	07 07 09	27.8	227.1	2.7	26.1	600	74	05 30 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

Matching groups in /home/kirx/sched/catalogs/freq.dat:

tr18cm                      E-mail Borkowski 12Mar98, preferred alternative

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=	2300.00	2300.00	2300.00	2300.00
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 pcal sets: 1
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 632.00 632.00 632.00 632.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 7

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set: 1 PCAL = 1MHZ
PCALXB1= S1 S3 S1 S3 S1 S2 S3 S4
PCALXB2= S2 S4 S2 S4 M1 M2 M3 M4
PCALFR1= 1000 1000 13000 13000 0 0 0 0
PCALFR2= 1000 1000 13000 13000 0 0 0 0

```

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 23.486828	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 20.55233	0.00
J0424+0036	04 22 12.515417	* 04 24 46.842063	04 25 30.452192	0.10
* 0422+004	00 29 16.67917	* 00 36 06.32935	00 38 00.59779	0.11

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	85.5
0422+004	114.8

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

rk01cxt

RADIOASTRON AGN SURVEY

PI: Yuri Kovalev

Address: ASC Lebedev Profsoyuznaya 84/32 117997 Moscow, Russia
Phone: +7-495-3332167 EMAIL: yyk@asc.rssi.ru
Fax: +7-495-3332378 Phone during observation: +7-915-1546281

Observing mode: L-band, dual-pol

Schedule for TORUN (Code Tr ) Page 2

RadioAstron AGN Survey

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

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

--- Tue 24 Sep 2013 Day 267 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 632.00 632.00 632.00 632.00
Next scan bandwidths: 16.00 16.00 16.00 16.00

Table with 11 columns: Start UT, Source, LST, EL, AZ, HA, UP, ParA, Dwell, GBytes, SYNC. It lists observation times and parameters for source 0529+483.

SETUP FILE INFORMATION:

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

==== Setup file: ra18cm2.set

Matching groups in /home/kirx/sched/catalogs/freq.dat:
tr18cm E-mail Borkowski 12Mar98, preferred alternative

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= 2300.00 2300.00 2300.00 2300.00
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 pcal sets: 1
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 632.00 632.00 632.00 632.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 7

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set: 1 PCAL = 1MHZ
PCALXB1= S1 S3 S1 S3 S1 S2 S3 S4
PCALXB2= S2 S4 S2 S4 M1 M2 M3 M4
PCALFR1= 1000 1000 13000 13000 0 0 0 0
PCALFR2= 1000 1000 13000 13000 0 0 0 0

```

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 23.485703	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 20.51930	0.00
J0533+4822	05 29 27.565383	* 05 33 15.865792	05 34 19.925196	0.15
* 0529+483	48 20 47.97038	* 48 22 52.80771	48 23 09.67024	0.10

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	85.5
0529+483	95.5

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

For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

**rk01cytr**

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
Phone:    +7-495-3332167                      EMAIL:    yyk@asc.rssi.ru  
Fax:       +7-495-3332378                      Phone during observation: +7-915-1546281

=====> UWAGA, dwa pasma!!!: 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  
-----

--- Tue 24 Sep 2013    Day 267 ---

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

Next scan frequencies: 4836.00 4836.00 4836.00 4836.00  
Next BBC frequencies: 636.00 636.00 636.00 636.00  
Next scan bandwidths: 16.00 16.00 16.00 16.00

09 00 00	0536+145	10 27 42	22.5	264.4	4.8	38.1	0	0	09 00 00
09 09 30	---	10 37 13	21.1	266.3	4.9	38.3	570	18	09 00 01
09 10 00	0536+145	10 37 43	21.0	266.4	5.0	38.3	24	18	09 10 00
09 15 00	---	10 42 44	20.2	267.4	5.0	38.3	300	28	09 10 01

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

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00  
Next BBC frequencies: 632.00 632.00 632.00 632.00

09 20 00	0536+145	10 47 45	19.5	268.4	5.1	38.3	293	28	09 20 00
09 29 30	---	10 57 16	18.1	270.4	5.3	38.3	570	46	09 20 01
09 30 00	0536+145	10 57 46	18.0	270.5	5.3	38.3	24	46	09 30 00
09 40 00	---	11 07 48	16.5	272.4	5.5	38.3	600	65	09 30 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

Matching groups in /home/kirx/sched/catalogs/freq.dat:  
tr6cm                   E-mail Borkowski 23Apr03 (CR 1May03)

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=	4200.00	4200.00	4200.00	4200.00
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 pcal sets:	1
LO sum=	4836.00	4836.00	4836.00	4836.00
BBC fr=	636.00	636.00	636.00	636.00
Bandwd=	16.00	16.00	16.00	16.00
Matching frequency sets:	4			

The following pulse cal sets were used with this setup:

Pulse cal detection set:	1	PCAL = 1MHZ						
PCALXB1=	S1	S3	S1	S3	S1	S2	S3	S4
PCALXB2=	S2	S4	S2	S4	M1	M2	M3	M4
PCALFR1=	1000	1000	13000	13000	0	0	0	0
PCALFR2=	1000	1000	13000	13000	0	0	0	0

Track assignments are:

track1= 2, 18, 3, 19  
barrel=roll\_off

=====  
Setup file: ra18cm2.set

Matching groups in /home/kirx/sched/catalogs/freq.dat:  
tr18cm                   E-mail Borkowski 12Mar98, preferred alternative

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=	2300.00	2300.00	2300.00	2300.00
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 pcal sets: 1
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 632.00 632.00 632.00 632.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 6

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set: 1 PCAL = 1MHZ
PCALXB1= S1 S3 S1 S3 S1 S2 S3 S4
PCALXB2= S2 S4 S2 S4 M1 M2 M3 M4
PCALFR1= 1000 1000 13000 13000 0 0 0 0
PCALFR2= 1000 1000 13000 13000 0 0 0 0

```

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 23.484667	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 20.48619	0.00
J0539+1433	05 36 51.361474	* 05 39 42.365992	05 40 30.243297	0.10
* 0536+145	14 32 10.73036	* 14 33 45.56166	14 34 06.38621	0.10

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	85.5
0536+145	96.2

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

**rk01datr**

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
 Phone:    +7-495-3332167                EMAIL:    yyk@asc.rssi.ru  
 Fax:       +7-495-3332378                Phone during observation: +7-915-1546281

Observing mode: L-band, dual-pol

Schedule for TORUN                      (Code Tr )    Page    2

RadioAstron AGN Survey

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

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

--- Tue 24 Sep 2013 Day 267 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00  
 Next BBC frequencies: 632.00 632.00 632.00 632.00  
 Next scan bandwidths: 16.00 16.00 16.00 16.00

Start UT	Source	LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
13 00 00	0529+483	14 28 21	18.9	-30.6	8.9		27.4	0	0	13 00 00
13 09 30	---	14 37 53	18.2	-29.1	9.1		26.1	570	18	13 00 01
13 10 00	0529+483	14 38 23	18.1	-29.0	9.1		26.0	24	18	13 10 00
13 19 30	---	14 47 54	17.4	-27.5	9.2		24.7	570	36	13 10 01
13 20 00	0529+483	14 48 24	17.4	-27.5	9.2		24.6	24	36	13 20 00
13 29 30	---	14 57 56	16.8	-25.9	9.4		23.3	570	55	13 20 01
13 30 00	0529+483	14 58 26	16.7	-25.9	9.4		23.2	24	55	13 30 00
13 40 00	---	15 08 28	16.1	-24.3	9.6		21.8	600	74	13 30 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

Matching groups in /home/kirx/sched/catalogs/freq.dat:  
 tr18cm                      E-mail Borkowski 12Mar98, preferred alternative

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=	2300.00	2300.00	2300.00	2300.00
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 pcal sets: 1
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 632.00 632.00 632.00 632.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 4

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set: 1 PCAL = 1MHZ
PCALXB1= S1 S3 S1 S3 S1 S2 S3 S4
PCALXB2= S2 S4 S2 S4 M1 M2 M3 M4
PCALFR1= 1000 1000 13000 13000 0 0 0 0
PCALFR2= 1000 1000 13000 13000 0 0 0 0

```

```

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 23.482800	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 20.41714	0.00
J0533+4822	05 29 27.565383	* 05 33 15.865792	05 34 19.937105	0.15
* 0529+483	48 20 47.97038	* 48 22 52.80771	48 23 09.67191	0.10

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	85.6
0529+483	95.8

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
 Phone:    +7-495-3332167                      EMAIL:    yyk@asc.rssi.ru  
 Fax:       +7-495-3332378                      Phone during observation: +7-915-1546281

Observing mode: L-band, dual-pol

Schedule for TORUN                      (Code Tr )    Page    2

RadioAstron AGN Survey

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

-----  

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

 -----

--- Wed 25 Sep 2013    Day 268 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00  
 Next BBC frequencies: 632.00 632.00 632.00 632.00  
 Next scan bandwidths: 16.00 16.00 16.00 16.00

01 00 00	0536+145	02 30 19	36.4	117.5	-3.2		-33.4	0	0	01 00 00
01 09 30	---	02 39 51	37.7	119.9	-3.0		-32.5	570	18	01 00 01
01 10 00	0536+145	02 40 21	37.7	120.0	-3.0		-32.5	24	18	01 10 00
01 19 30	---	02 49 52	38.9	122.5	-2.8		-31.5	570	36	01 10 01
01 20 00	0536+145	02 50 23	39.0	122.7	-2.8		-31.5	24	36	01 20 00
01 29 30	---	02 59 54	40.2	125.2	-2.7		-30.5	570	55	01 20 01
01 30 00	0536+145	03 00 24	40.3	125.4	-2.7		-30.4	24	55	01 30 00
01 40 00	---	03 10 26	41.5	128.1	-2.5		-29.2	600	74	01 30 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

Matching groups in /home/kirx/sched/catalogs/freq.dat:

tr18cm                      E-mail Borkowski 12Mar98, preferred alternative

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=	2300.00	2300.00	2300.00	2300.00
Net SB=	L	L	U	U
IF SB =	L	L	L	L
Pol. =	RCP	LCP	RCP	LCP
BBC =	1	2	1	2
BBC SB=	U	U	L	L
IF =	C	A	C	A

The following frequency sets based on these setups were used.

```

Frequency Set:  8  Setup file default.  Used pcal sets:  1
LO sum=    1668.00  1668.00  1668.00  1668.00
BBC fr=     632.00  632.00  632.00  632.00
Bandwd=     16.00   16.00   16.00   16.00
Matching frequency sets:  8

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1   S3   S1   S3   S1   S2   S3   S4
PCALXB2=  S2   S4   S2   S4   M1   M2   M3   M4
PCALFR1= 1000 1000 13000 13000   0   0   0   0
PCALFR2= 1000 1000 13000 13000   0   0   0   0

```

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 23.479673	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 20.21641	0.00
J0539+1433	05 36 51.361474	* 05 39 42.365992	05 40 30.265450	0.10
* 0536+145	14 32 10.73036	* 14 33 45.56166	14 34 06.37412	0.10

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	85.8
0536+145	96.8

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

For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg



**rk01dctr**

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
 Phone:    +7-495-3332167                      EMAIL:    yyk@asc.rssi.ru  
 Fax:       +7-495-3332378                      Phone during observation: +7-915-1546281

Observing mode: K-band, dual-pol

Schedule for TORUN                      (Code Tr )    Page    2

RadioAstron AGN Survey

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

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

--- Wed 25 Sep 2013    Day 268 ---

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

03 00 00	0446+112	04 30 39	48.1	172.9	-0.3		-4.3	0	0	03 00 00
03 09 30	---	04 40 11	48.2	176.4	-0.2		-2.2	570	18	03 00 01
03 10 00	0446+112	04 40 41	48.2	176.6	-0.2		-2.1	24	18	03 10 00
03 19 30	---	04 50 12	48.3	180.1	0.0		0.1	570	36	03 10 01
03 20 00	0446+112	04 50 42	48.3	180.3	0.0		0.2	24	36	03 20 00
03 29 30	---	05 00 14	48.2	183.8	0.2		2.3	570	55	03 20 01
03 30 00	0446+112	05 00 44	48.2	184.0	0.2		2.4	24	55	03 30 00
03 40 00	---	05 10 46	48.1	187.7	0.3		4.7	600	74	03 30 01

SETUP FILE INFORMATION:

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

=====  
Setup file: ra1cm2.set

Matching groups in /home/kirx/sched/catalogs/freq.dat:  
 tricm                      Values from Bob Campbell by email (23-04-2013)

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

```

Frequency Set:  5  Setup file default.  Used pcal sets:  1
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

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1   S3   S1   S3   S1   S2   S3   S4
PCALXB2=  S2   S4   S2   S4   M1   M2   M3   M4
PCALFR1= 1000 1000 13000 13000   0   0   0   0
PCALFR2= 1000 1000 13000 13000   0   0   0   0

```

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)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 23.479487	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 20.18277	0.00
J0449+1121	04 46 21.217284	* 04 49 07.671104	04 49 54.607440	0.10
* 0446+112	11 16 17.84557	* 11 21 28.59636	11 22 51.37927	0.10

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	85.8
0446+112	109.4

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

**rk01ddtr**

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
 Phone:    +7-495-3332167                  EMAIL:    yyk@asc.rssi.ru  
 Fax:       +7-495-3332378                  Phone during observation: +7-915-1546281

Observing mode: L-band, dual-pol

Schedule for TORUN                      (Code Tr )                                      Page    2

RadioAstron AGN Survey

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

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

--- Wed 25 Sep 2013    Day 268 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00  
 Next BBC frequencies:  632.00  632.00  632.00  632.00  
 Next scan bandwidths:  16.00  16.00  16.00  16.00

Start UT	Source	LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
05 00 00	0459+135	06 30 59	46.9	212.0	1.5		19.1	0	0	05 00 00
05 09 30	---	06 40 30	46.1	215.2	1.6		20.9	570	18	05 00 01
05 10 00	0459+135	06 41 00	46.1	215.4	1.6		21.0	24	18	05 10 00
05 19 30	---	06 50 32	45.2	218.4	1.8		22.6	570	36	05 10 01
05 20 00	0459+135	06 51 02	45.2	218.6	1.8		22.7	24	36	05 20 00
05 29 30	---	07 00 34	44.2	221.6	2.0		24.2	570	55	05 20 01
05 30 00	0459+135	07 01 04	44.2	221.7	2.0		24.3	24	55	05 30 00
05 40 00	---	07 11 05	43.2	224.8	2.1		25.8	600	74	05 30 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

Matching groups in /home/kirx/sched/catalogs/freq.dat:  
 tr18cm                      E-mail Borkowski 12Mar98, preferred alternative

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=	2300.00	2300.00	2300.00	2300.00
Net SB=	L	L	U	U
IF SB =	L	L	L	L
Pol. =	RCP	LCP	RCP	LCP
BBC =	1	2	1	2
BBC SB=	U	U	L	L
IF =	C	A	C	A

The following frequency sets based on these setups were used.

```

Frequency Set:  8  Setup file default.  Used pcal sets:  1
LO sum=    1668.00  1668.00  1668.00  1668.00
BBC fr=     632.00  632.00  632.00  632.00
Bandwd=     16.00   16.00   16.00   16.00
Matching frequency sets:  8

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1   S3   S1   S3   S1   S2   S3   S4
PCALXB2=  S2   S4   S2   S4   M1   M2   M3   M4
PCALFR1= 1000 1000 13000 13000   0   0   0   0
PCALFR2= 1000 1000 13000 13000   0   0   0   0

```

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 23.479399	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 20.14909	0.00
J0502+1338	04 59 43.841322	* 05 02 33.219517	05 03 20.904017	0.12
* 0459+135	13 33 56.42101	* 13 38 10.95886	13 39 17.05365	0.14

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	85.8
0459+135	106.0

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

**rk01detr**

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
 Phone:    +7-495-3332167                  EMAIL:    yyk@asc.rssi.ru  
 Fax:       +7-495-3332378                  Phone during observation: +7-915-1546281

Observing mode: L-band, dual-pol

Schedule for TORUN                      (Code Tr )                                      Page    2

RadioAstron AGN Survey

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

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

--- Wed 25 Sep 2013    Day 268 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00  
 Next BBC frequencies:  632.00  632.00  632.00  632.00  
 Next scan bandwidths:  16.00  16.00  16.00  16.00

Start UT	Source	LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
07 00 00	0507+179	08 31 18	37.9	247.5	3.3		35.7	0	0	07 00 00
07 09 30	---	08 40 50	36.5	249.8	3.5		36.4	570	18	07 00 01
07 10 00	0507+179	08 41 20	36.5	249.9	3.5		36.4	24	18	07 10 00
07 19 30	---	08 50 52	35.1	252.2	3.7		37.0	570	36	07 10 01
07 20 00	0507+179	08 51 22	35.0	252.3	3.7		37.0	24	36	07 20 00
07 29 30	---	09 00 53	33.7	254.5	3.8		37.5	570	55	07 20 01
07 30 00	0507+179	09 01 23	33.6	254.6	3.8		37.5	24	55	07 30 00
07 40 00	---	09 11 25	32.1	256.8	4.0		37.9	600	74	07 30 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

Matching groups in /home/kirx/sched/catalogs/freq.dat:  
 tr18cm                      E-mail Borkowski 12Mar98, preferred alternative

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=	2300.00	2300.00	2300.00	2300.00
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 pcal sets: 1
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 632.00 632.00 632.00 632.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 6

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set: 1 PCAL = 1MHZ
PCALXB1= S1 S3 S1 S3 S1 S2 S3 S4
PCALXB2= S2 S4 S2 S4 M1 M2 M3 M4
PCALFR1= 1000 1000 13000 13000 0 0 0 0
PCALFR2= 1000 1000 13000 13000 0 0 0 0

```

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 23.479409	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 20.11537	0.00
J0510+1800	05 07 07.486545	* 05 10 02.369131	05 10 51.564116	0.11
* 0507+179	17 56 58.64617	* 18 00 41.58162	18 01 37.19429	0.10

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	85.9
0507+179	104.1

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

For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

rk01dftr

RADIOASTRON AGN SURVEY

PI: Yuri Kovalev

Address: ASC Lebedev Profsoyuznaya 84/32 117997 Moscow, Russia
Phone: +7-495-3332167 EMAIL: yyk@asc.rssi.ru
Fax: +7-495-3332378 Phone during observation: +7-915-1546281

Observing mode: L-band, dual-pol

Schedule for TORUN (Code Tr ) Page 2

RadioAstron AGN Survey

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

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

--- Wed 25 Sep 2013 Day 268 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 632.00 632.00 632.00 632.00
Next scan bandwidths: 16.00 16.00 16.00 16.00

Table with 11 columns: Start UT, Source, LST, EL, AZ, HA, UP, ParA, Dwell, GBytes, SYNC. It lists observation times and parameters for source 0528+134.

SETUP FILE INFORMATION:

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

==== Setup file: ra18cm2.set

Matching groups in /home/kirx/sched/catalogs/freq.dat:
tr18cm E-mail Borkowski 12Mar98, preferred alternative

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= 2300.00 2300.00 2300.00 2300.00
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 pcal sets:  1
LO sum=    1668.00  1668.00  1668.00  1668.00
BBC fr=     632.00  632.00  632.00  632.00
Bandwd=     16.00   16.00   16.00   16.00
Matching frequency sets:  2

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1   S3   S1   S3   S1   S2   S3   S4
PCALXB2=  S2   S4   S2   S4   M1   M2   M3   M4
PCALFR1= 1000 1000 13000 13000   0   0   0   0
PCALFR2= 1000 1000 13000 13000   0   0   0   0

```

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 23.479517	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 20.08161	0.00
J0530+1331	05 28 06.759218	* 05 30 56.416749	05 31 44.005872	0.10
* 0528+134	13 29 42.28877	* 13 31 55.14944	13 32 27.00405	0.10

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	85.9
0528+134	99.3

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg



rk01dgtr

RADIOASTRON AGN SURVEY

PI: Yuri Kovalev

Address: ASC Lebedev Profsoyuznaya 84/32 117997 Moscow, Russia
Phone: +7-495-3332167 EMAIL: yyk@asc.rssi.ru
Fax: +7-495-3332378 Phone during observation: +7-915-1546281

Observing mode: C-band, dual-pol

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

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

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

--- Thu 26 Sep 2013 Day 269 ---

Next scan frequencies: 4836.00 4836.00 4836.00 4836.00
Next BBC frequencies: 636.00 636.00 636.00 636.00
Next scan bandwidths: 16.00 16.00 16.00 16.00

Table with columns: Start UT, Stop UT, Source, LST, EL, AZ, HA, UP, ParA, Early Dwell, Disk GBytes, TPStart SYNC. Contains scan schedule data for 02:00:00 to 02:40:00.

SETUP FILE INFORMATION:

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

==== Setup file: ra6cm2.set

Matching groups in /home/kirx/sched/catalogs/freq.dat:
tr6cm E-mail Borkowski 23Apr03 (CR 1May03)

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= 4200.00 4200.00 4200.00 4200.00
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 pcal sets:  1
LO sum=   4836.00  4836.00  4836.00  4836.00
BBC fr=    636.00   636.00   636.00   636.00
Bandwd=    16.00   16.00   16.00   16.00
Matching frequency sets:  4

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1   S3   S1   S3   S1   S2   S3   S4
PCALXB2=  S2   S4   S2   S4   M1   M2   M3   M4
PCALFR1= 1000 1000 13000 13000   0   0   0   0
PCALFR2= 1000 1000 13000 13000   0   0   0   0

```

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 23.484435	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 19.79348	0.00
J0502+1338	04 59 43.841322	* 05 02 33.219517	05 03 20.932740	0.12
* 0459+135	13 33 56.42101	* 13 38 10.95886	13 39 17.06677	0.14

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	86.2
0459+135	106.9

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

For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
 Phone:    +7-495-3332167                      EMAIL:    yyk@asc.rssi.ru  
 Fax:       +7-495-3332378                      Phone during observation: +7-915-1546281

Observing mode: L-band, dual-pol

Schedule for TORUN                      (Code Tr )    Page    2

RadioAstron AGN Survey

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

-----  

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

 -----

--- Thu 26 Sep 2013    Day 269 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00  
 Next BBC frequencies: 632.00 632.00 632.00 632.00  
 Next scan bandwidths: 16.00 16.00 16.00 16.00

04 00 00	0507+179	05 34 45	54.6	189.8	0.4		6.2	0	0	04 00 00
04 09 30	---	05 44 17	54.3	193.7	0.6		8.6	570	18	04 00 01
04 10 00	0507+179	05 44 47	54.3	193.9	0.6		8.7	24	18	04 10 00
04 19 30	---	05 54 19	53.9	197.7	0.7		11.1	570	36	04 10 01
04 20 00	0507+179	05 54 49	53.9	197.9	0.7		11.2	24	36	04 20 00
04 29 30	---	06 04 20	53.4	201.6	0.9		13.5	570	55	04 20 01
04 30 00	0507+179	06 04 50	53.4	201.8	0.9		13.6	24	55	04 30 00
04 40 00	---	06 14 52	52.8	205.7	1.1		15.9	600	74	04 30 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

Matching groups in /home/kirx/sched/catalogs/freq.dat:

tr18cm                      E-mail Borkowski 12Mar98, preferred alternative

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=	2300.00	2300.00	2300.00	2300.00
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 pcal sets: 1
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 632.00 632.00 632.00 632.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 7

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set: 1 PCAL = 1MHZ
PCALXB1= S1 S3 S1 S3 S1 S2 S3 S4
PCALXB2= S2 S4 S2 S4 M1 M2 M3 M4
PCALFR1= 1000 1000 13000 13000 0 0 0 0
PCALFR2= 1000 1000 13000 13000 0 0 0 0

```

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 23.485396	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 19.76219	0.00
J0510+1800	05 07 07.486545	* 05 10 02.369131	05 10 51.593560	0.11
* 0507+179	17 56 58.64617	* 18 00 41.58162	18 01 37.20992	0.10

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	86.2
0507+179	104.9

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

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 Phone:    +7-495-3332167                  EMAIL:    yyk@asc.rssi.ru  
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Observing mode: L-band, dual-pol

Schedule for TORUN                      (Code Tr )    Page    2

RadioAstron AGN Survey

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

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

--- Thu 26 Sep 2013    Day 269 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00  
 Next BBC frequencies: 632.00 632.00 632.00 632.00  
 Next scan bandwidths: 16.00 16.00 16.00 16.00

09 00 00	0536+145	10 35 35	21.3	266.0	4.9	38.2	0	0	09 00 00
09 09 30	---	10 45 06	19.9	267.9	5.1	38.3	570	18	09 00 01
09 10 00	0536+145	10 45 36	19.8	268.0	5.1	38.3	24	18	09 10 00
09 19 30	---	10 55 08	18.4	269.9	5.2	38.3	570	36	09 10 01
09 20 00	0536+145	10 55 38	18.3	270.0	5.3	38.3	24	36	09 20 00
09 29 30	---	11 05 09	16.9	271.9	5.4	38.3	570	55	09 20 01
09 30 00	0536+145	11 05 40	16.8	272.0	5.4	38.3	24	55	09 30 00
09 40 00	---	11 15 41	15.3	274.0	5.6	38.2	600	74	09 30 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

Matching groups in /home/kirx/sched/catalogs/freq.dat:

tr18cm                      E-mail Borkowski 12Mar98, preferred alternative

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=	2300.00	2300.00	2300.00	2300.00
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 pcal sets:  1
LO sum=    1668.00  1668.00  1668.00  1668.00
BBC fr=     632.00   632.00   632.00   632.00
Bandwd=     16.00   16.00   16.00   16.00
Matching frequency sets:  3

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1   S3   S1   S3   S1   S2   S3   S4
PCALXB2=  S2   S4   S2   S4   M1   M2   M3   M4
PCALFR1= 1000 1000 13000 13000   0   0   0   0
PCALFR2= 1000 1000 13000 13000   0   0   0   0

```

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 23.488424	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 19.67720	0.00
J0539+1433	05 36 51.361474	* 05 39 42.365992	05 40 30.310237	0.10
* 0536+145	14 32 10.73036	* 14 33 45.56166	14 34 06.36575	0.10

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	86.3
0536+145	98.1

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
 Phone:    +7-495-3332167                  EMAIL:    yyk@asc.rssi.ru  
 Fax:       +7-495-3332378                  Phone during observation: +7-915-1546281

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 27 Sep 2013    Day 270 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00  
 Next BBC frequencies: 632.00 632.00 632.00 632.00  
 Next scan bandwidths: 16.00 16.00 16.00 16.00

03 00 00	0536+145	04 38 32	49.6	156.5	-1.0		-14.3	0	0	03 00 00
03 09 30	---	04 48 04	50.1	160.0	-0.9		-12.3	570	18	03 00 01
03 10 00	0536+145	04 48 34	50.1	160.2	-0.9		-12.2	24	18	03 10 00
03 19 30	---	04 58 05	50.6	163.7	-0.7		-10.0	570	36	03 10 01
03 20 00	0536+145	04 58 35	50.6	163.9	-0.7		-9.9	24	36	03 20 00
03 29 30	---	05 08 07	50.9	167.5	-0.5		-7.7	570	55	03 20 01
03 30 00	0536+145	05 08 37	51.0	167.7	-0.5		-7.6	24	55	03 30 00
03 39 30	---	05 18 09	51.2	171.3	-0.4		-5.4	570	73	03 30 01
03 40 00	0536+145	05 18 39	51.2	171.5	-0.4		-5.2	24	73	03 40 00
03 49 30	---	05 28 10	51.4	175.2	-0.2		-3.0	570	91	03 40 01
03 50 00	0536+145	05 28 40	51.4	175.4	-0.2		-2.8	24	91	03 50 00
04 00 00	---	05 38 42	51.5	179.3	-0.0		-0.4	600	110	03 50 01

SETUP FILE INFORMATION:

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=	2300.00	2300.00	2300.00	2300.00
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 pcal sets: 1
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 632.00 632.00 632.00 632.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 3

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set: 1 PCAL = 1MHZ
PCALXB1= S1 S3 S1 S3 S1 S2 S3 S4
PCALXB2= S2 S4 S2 S4 M1 M2 M3 M4
PCALFR1= 1000 1000 13000 13000 0 0 0 0
PCALFR2= 1000 1000 13000 13000 0 0 0 0

```

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 23.504417	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 19.36879	0.00
J0539+1433	05 36 51.361474	* 05 39 42.365992	05 40 30.335842	0.10
* 0536+145	14 32 10.73036	* 14 33 45.56166	14 34 06.37046	0.10

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	86.6
0536+145	98.9

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg



RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
 Phone:    +7-495-3332167                      EMAIL:    yyk@asc.rssi.ru  
 Fax:       +7-495-3332378                      Phone during observation: +7-915-1546281

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 27 Sep 2013    Day 270 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00  
 Next BBC frequencies: 632.00 632.00 632.00 632.00  
 Next scan bandwidths: 16.00 16.00 16.00 16.00

05 00 00	0528+134	06 38 52	48.3	204.9	1.1	15.1	0	0	05 00 00
05 09 30	---	06 48 23	47.6	208.3	1.3	17.0	570	18	05 00 01
05 10 00	0528+134	06 48 53	47.6	208.4	1.3	17.1	24	18	05 10 00
05 19 30	---	06 58 25	46.9	211.7	1.4	18.9	570	36	05 10 01
05 20 00	0528+134	06 58 55	46.8	211.8	1.5	19.0	24	36	05 20 00
05 29 30	---	07 08 27	46.0	215.0	1.6	20.7	570	55	05 20 01
05 30 00	0528+134	07 08 57	46.0	215.2	1.6	20.8	24	55	05 30 00
05 39 30	---	07 18 28	45.1	218.2	1.8	22.5	570	73	05 30 01
05 40 00	0528+134	07 18 58	45.1	218.4	1.8	22.6	24	73	05 40 00
05 49 30	---	07 28 30	44.2	221.4	1.9	24.1	570	91	05 40 01
05 50 00	0528+134	07 29 00	44.1	221.5	2.0	24.2	24	91	05 50 00
06 00 00	---	07 39 02	43.1	224.6	2.1	25.7	600	110	05 50 01

SETUP FILE INFORMATION:

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=	2300.00	2300.00	2300.00	2300.00
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 pcal sets: 1
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 632.00 632.00 632.00 632.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 5

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set: 1 PCAL = 1MHZ
PCALXB1= S1 S3 S1 S3 S1 S2 S3 S4
PCALXB2= S2 S4 S2 S4 M1 M2 M3 M4
PCALFR1= 1000 1000 13000 13000 0 0 0 0
PCALFR2= 1000 1000 13000 13000 0 0 0 0

```

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 23.506460	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 19.33759	0.00
J0530+1331	05 28 06.759218	* 05 30 56.416749	05 31 44.067102	0.10
* 0528+134	13 29 42.28877	* 13 31 55.14944	13 32 27.01356	0.10

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	86.6
0528+134	101.1

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

For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

**rk01dmtr**

RADIOASTRON AGN SURVEY

PI: *Yuri Kovalev*

Address: ASC Lebedev                      Profsoyuznaya 84/32                      117997 Moscow, Russia  
 Phone:    +7-495-3332167                  EMAIL:    yyk@asc.rssi.ru  
 Fax:       +7-495-3332378                  Phone during observation: +7-915-1546281

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 27 Sep 2013    Day 270 ---

```

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies:  632.00  632.00  632.00  632.00
Next scan bandwidths:  16.00  16.00  16.00  16.00

09 00 00 0536+145      10 39 31 20.7 266.8 5.0      38.3    0      0    09 00 00
09 09 30 ---            10 49 03 19.3 268.7 5.1      38.3   570      18   09 00 01

09 10 00 0536+145      10 49 33 19.2 268.8 5.2      38.3   24      18   09 10 00
09 19 30 ---            10 59 04 17.8 270.7 5.3      38.3   570      36   09 10 01

09 20 00 0536+145      10 59 34 17.7 270.8 5.3      38.3   24      36   09 20 00
09 29 30 ---            11 09 06 16.3 272.7 5.5      38.3   570      55   09 20 01

09 30 00 0536+145      11 09 36 16.2 272.8 5.5      38.3   24      55   09 30 00
09 40 00 ---            11 19 38 14.7 274.8 5.7      38.2   600      74   09 30 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

Matching groups in /home/kirx/sched/catalogs/freq.dat:  
 tr18cm                      E-mail Borkowski 12Mar98, preferred alternative

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=    2300.00    2300.00    2300.00    2300.00
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 pcal sets:  1
LO sum=    1668.00  1668.00  1668.00  1668.00
BBC fr=     632.00  632.00  632.00  632.00
Bandwd=     16.00   16.00   16.00   16.00
Matching frequency sets:  3

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set:  1  PCAL = 1MHZ
PCALXB1=  S1   S3   S1   S3   S1   S2   S3   S4
PCALXB2=  S2   S4   S2   S4   M1   M2   M3   M4
PCALFR1= 1000 1000 13000 13000   0   0   0   0
PCALFR2= 1000 1000 13000 13000   0   0   0   0

```

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 23.511154	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 19.26989	0.00
J0539+1433	05 36 51.361474	* 05 39 42.365992	05 40 30.344012	0.10
* 0536+145	14 32 10.73036	* 14 33 45.56166	14 34 06.37334	0.10

#### EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	86.7
0536+145	99.1

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

For common VLBI bands, this is:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

## PROBING THE INNERMOST REGIONS OF AGN JETS AND THEIR MAGNETIC FIELDS

PI: *James M Anderson*

Address: MPIfR Bonn                    Auf dem Huegel 69                    53121 Bonn, Germany  
 Phone:    +49 228 525 356                    EMAIL:    anderson@mpifr-bonn.mpg.de  
 Fax:       +49 228 525 229                    Phone during observation: +7 903 661 48 65

Observing mode: L-band, dual-pol

Notes:            Please, send Mk5 disk pack, TR-00011/2000, to MPIfR-Bonn

Schedule for TORUN            (Code Tr )

Page 2

Probing the innermost regions of AGN jets and their magnetic fields

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013    Day 272 ---

```
Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies:  632.00  632.00  632.00  632.00
Next scan bandwidths:  16.00  16.00  16.00  16.00
```

```
22 00 00 2200+420    23 49 32 69.3 249.4 1.8       49.5    0       0    22 00 00
22 09 30 ---        23 59 04 68.0 252.5 1.9       50.8   570     18    22 00 01

22 10 00 2200+420    23 59 34 67.9 252.7 1.9       50.9    24     18    22 10 00
22 20 00 ---        00 09 36 66.5 255.6 2.1       51.9   600     37    22 10 01

22 25 00 2136+141    00 14 37 40.8 233.1 2.6       29.7   191     37    22 25 00
22 35 00 ---        00 24 38 39.6 235.9 2.7       30.9   600     57    22 25 01

22 40 00 2023+335    00 29 39 43.4 270.9 4.1       46.2   216     57    22 40 00
22 50 00 ---        00 39 41 41.9 272.8 4.2       46.2   600     76    22 40 01

22 55 00 2021+614    00 44 41 55.3 310.7 4.4       73.6   210     76    22 55 00
23 05 00 ---        00 54 43 54.1 311.3 4.5       71.9   600     95    22 55 01

23 15 00 2200+420    01 04 45 58.3 268.8 3.0       54.3   497     95    23 15 00
23 24 30 ---        01 14 16 56.8 270.7 3.2       54.3   570    113    23 15 01

23 25 00 2200+420    01 14 46 56.8 270.8 3.2       54.3    24    113    23 25 00
23 35 00 ---        01 24 48 55.3 272.8 3.4       54.2   600    132    23 25 01

23 40 00 2136+141    01 29 49 30.8 252.0 3.8       36.1   196    132    23 40 00
23 50 00 ---        01 39 51 29.3 254.2 4.0       36.6   600    152    23 40 01

23 55 00 2023+335    01 44 51 32.2 284.8 5.3       44.3   225    152    23 55 00
00 04 00 ---        01 53 53 30.9 286.4 5.5       43.9   540    169    23 55 01
```

Schedule for TORUN (Code Tr )

Page 3

Probing the innermost regions of AGN jets and their magnetic fields

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Start: Sun 29 Sep 2013 Day 272 -- Stop: Mon 30 Sep 2013 Day 273 ---										
00 09 00	2200+420	01 58 54	50.2	278.9	3.9		53.4	212	169	00 09 00
00 19 00	---	02 08 55	48.7	280.6	4.1		53.0	600	188	00 09 01
00 24 00	2021+614	02 13 56	45.6	317.3	5.9		59.0	212	188	00 24 00
00 34 00	---	02 23 58	44.6	318.2	6.0		57.5	600	207	00 24 01
00 39 00	2200+420	02 28 59	45.7	283.9	4.4		52.1	215	207	00 39 00
00 48 30	---	02 38 30	44.4	285.5	4.6		51.5	570	226	00 39 01
00 49 00	2200+420	02 39 00	44.3	285.6	4.6		51.5	24	226	00 49 00
00 58 30	---	02 48 32	42.9	287.1	4.8		51.0	570	244	00 49 01
00 59 00	2200+420	02 49 02	42.8	287.2	4.8		50.9	24	244	00 59 00
01 09 00	---	02 59 03	41.4	288.7	4.9		50.3	600	263	00 59 01
01 15 00	2136+141	03 05 04	16.7	272.0	5.4		38.3	256	263	01 15 00
01 25 00	---	03 15 06	15.2	274.0	5.6		38.2	600	282	01 15 01
01 30 00	2023+335	03 20 07	19.1	301.2	6.9		38.1	232	282	01 30 00
01 40 00	---	03 30 09	17.8	303.0	7.1		37.3	600	301	01 30 01
01 45 00	2200+420	03 35 09	36.4	294.4	5.5		47.7	215	301	01 45 00
01 55 00	---	03 45 11	35.0	295.9	5.7		47.0	600	321	01 45 01
02 00 00	2021+614	03 50 12	36.7	326.7	7.5		44.0	224	321	02 00 00
02 10 00	---	04 00 14	35.9	327.8	7.6		42.4	600	340	02 00 01
02 18 00	2200+420	04 08 15	31.9	299.5	6.1		45.0	406	340	02 18 00
02 27 30	---	04 17 46	30.7	300.9	6.2		44.2	570	358	02 18 01
02 28 00	2200+420	04 18 16	30.6	301.0	6.2		44.1	24	358	02 28 00
02 37 30	---	04 27 48	29.4	302.5	6.4		43.3	570	376	02 28 01
02 38 00	2200+420	04 28 18	29.4	302.5	6.4		43.2	24	376	02 38 00
02 48 00	---	04 38 20	28.1	304.1	6.6		42.3	600	396	02 38 01
02 53 00	2200+420	04 43 21	27.5	304.9	6.7		41.8	293	396	02 53 00
03 02 30	---	04 52 52	26.3	306.4	6.8		40.9	570	414	02 53 01
03 03 00	2200+420	04 53 22	26.3	306.4	6.8		40.8	24	414	03 03 00
03 12 30	---	05 02 54	25.1	307.9	7.0		39.9	570	432	03 03 01

Schedule for TORUN (Code Tr )

Page 4

Probing the innermost regions of AGN jets and their magnetic fields

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 273 ---										
03 13 00	2200+420	05 03 24	25.1	308.0	7.0		39.8	24	432	03 13 00
03 22 30	---	05 12 55	24.0	309.5	7.2		38.8	570	450	03 13 01
03 23 00	2200+420	05 13 25	23.9	309.6	7.2		38.8	24	450	03 23 00
03 33 00	---	05 23 27	22.7	311.2	7.3		37.7	600	469	03 23 01
03 38 00	2021+614	05 28 28	29.8	337.9	9.1		28.4	232	469	03 38 00
03 48 00	---	05 38 30	29.3	339.1	9.3		26.8	600	489	03 38 01
03 57 00	2200+420	05 47 31	20.1	315.0	7.7		35.1	474	489	03 57 00
04 06 30	---	05 57 03	19.1	316.5	7.9		34.0	570	507	03 57 01
04 07 00	2200+420	05 57 33	19.1	316.6	7.9		33.9	24	507	04 07 00
04 16 30	---	06 07 04	18.1	318.2	8.1		32.8	570	525	04 07 01
04 17 00	2200+420	06 07 34	18.0	318.3	8.1		32.8	24	525	04 17 00
04 27 00	---	06 17 36	17.1	319.9	8.2		31.6	600	544	04 17 01
04 32 00	2200+420	06 22 37	16.6	320.7	8.3		31.0	294	544	04 32 00
04 41 30	---	06 32 08	15.7	322.3	8.5		29.8	570	563	04 32 01
04 42 00	2200+420	06 32 38	15.6	322.4	8.5		29.7	24	563	04 42 00
04 51 30	---	06 42 10	14.8	324.0	8.6		28.5	570	581	04 42 01
04 52 00	2200+420	06 42 40	14.7	324.1	8.7		28.5	24	581	04 52 00
05 01 30	---	06 52 12	13.9	325.7	8.8		27.3	570	599	04 52 01
05 02 00	2200+420	06 52 42	13.9	325.8	8.8		27.2	24	599	05 02 00
05 12 00	---	07 02 43	13.0	327.5	9.0		25.9	600	618	05 02 01
05 17 00	2021+614	07 07 44	25.7	350.3	10.8		12.3	238	618	05 17 00
05 27 00	---	07 17 46	25.5	351.6	10.9		10.7	600	637	05 17 01
05 36 00	2200+420	07 26 47	11.2	331.6	9.4		22.7	475	637	05 36 00
05 45 30	---	07 36 19	10.6	333.3	9.5		21.4	570	656	05 36 01
05 46 00	2200+420	07 36 49	10.5	333.4	9.6		21.4	24	656	05 46 00
05 55 30	---	07 46 21	9.9	335.0	9.7		20.1	570	674	05 46 01

Schedule for TORUN (Code Tr )

Page 5

Probing the innermost regions of AGN jets and their magnetic fields

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
05 56 00	2200+420	07 46 51	9.9	335.1	9.7		20.0	24	674	05 56 00
06 06 00	---	07 56 52	9.3	336.9	9.9		18.6	600	693	05 56 01
06 15 00	2021+614	08 05 54	24.8	357.8	11.7		2.7	468	693	06 15 00
06 25 00	---	08 15 55	24.8	359.2	11.9		1.1	600	712	06 15 01
06 45 00	2200+420	08 35 59	7.3	343.9	10.5		13.0	1124	712	06 45 00
06 55 00	---	08 46 00	6.9	345.7	10.7		11.5	600	732	06 45 01
07 00 00	2021+614	08 51 01	24.9	363.7-11.5			-4.7	219	732	07 00 00
07 10 00	---	09 01 03	25.0	365.0-11.4			-6.4	600	751	07 00 01
07 15 00	2200+420	09 06 04	6.2	349.4	11.0		8.6	216	751	07 15 00
07 24 30	---	09 15 35	6.0	351.2	11.2		7.2	570	769	07 15 01
07 25 00	2200+420	09 16 05	6.0	351.3	11.2		7.1	24	769	07 25 00
07 34 30	---	09 25 37	5.8	353.0	11.4		5.7	570	787	07 25 01
07 35 00	2200+420	09 26 07	5.8	353.1	11.4		5.6	24	787	07 35 00
07 45 00	---	09 36 09	5.6	355.0	11.5		4.1	600	806	07 35 01
07 50 00	2021+614	09 41 09	25.8	370.2-10.7			-13.0	211	806	07 50 00
08 00 00	---	09 51 11	26.1	371.5-10.5			-14.6	600	826	07 50 01
08 20 00	2200+420	10 11 14	5.5	361.5-11.9			-1.2	1109	826	08 20 00
08 30 00	---	10 21 16	5.5	363.3-11.7			-2.7	600	845	08 20 01
08 35 00	2021+614	10 26 17	27.4	376.0 -9.9			-20.4	205	845	08 35 00
08 45 00	---	10 36 18	27.8	377.2 -9.8			-22.0	600	864	08 35 01
08 54 00	2200+420	10 45 20	5.9	367.8-11.3			-6.3	443	864	08 54 00
09 03 30	---	10 54 51	6.1	369.5-11.1			-7.7	570	882	08 54 01
09 04 00	2200+420	10 55 22	6.1	369.6-11.1			-7.8	24	882	09 04 00
09 13 30	---	11 04 53	6.4	371.4-11.0			-9.2	570	900	09 04 01
09 14 00	2200+420	11 05 23	6.4	371.5-11.0			-9.3	24	900	09 14 00
09 24 00	---	11 15 25	6.7	373.3-10.8			-10.8	600	920	09 14 01
09 30 00	2200+420	11 21 26	6.9	374.4-10.7			-11.7	353	920	09 30 00
09 40 00	---	11 31 27	7.3	376.2-10.5			-13.1	600	939	09 30 01



Schedule for TORUN (Code Tr )

Page 6

Probing the innermost regions of AGN jets and their magnetic fields

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 273 ---										
09 45 00	2023+335	11 36 28	6.2	398.2	-8.8		-26.5	243	939	09 45 00
09 55 00	---	11 46 30	7.2	400.1	-8.7		-27.7	600	958	09 45 01
10 00 00	2200+420	11 51 31	8.2	379.9-10.2			-16.0	243	958	10 00 00
10 10 00	---	12 01 32	8.8	381.6-10.0			-17.4	600	977	10 00 01
10 15 00	2021+614	12 06 33	33.0	388.0	-8.3		-36.4	196	977	10 15 00
10 25 00	---	12 16 35	33.7	389.1	-8.1		-38.0	600	996	10 15 01
10 33 00	2200+420	12 24 36	10.2	385.7	-9.6		-20.7	376	996	10 33 00
10 42 30	---	12 34 08	10.8	387.4	-9.5		-22.0	570	1015	10 33 01
10 43 00	2200+420	12 34 38	10.8	387.5	-9.5		-22.0	24	1015	10 43 00
10 52 30	---	12 44 09	11.5	389.1	-9.3		-23.3	570	1033	10 43 01
10 53 00	2200+420	12 44 39	11.6	389.2	-9.3		-23.4	24	1033	10 53 00
11 03 00	---	12 54 41	12.3	391.0	-9.1		-24.7	600	1052	10 53 01
11 10 00	2021+614	13 01 42	37.3	394.0	-7.3		-45.1	314	1052	11 10 00
11 15 00	---	13 06 43	37.7	394.6	-7.3		-45.9	300	1062	11 10 01
11 20 00	2023+335	13 11 44	16.6	415.4	-7.2		-36.5	205	1062	11 20 00
11 30 00	---	13 21 45	17.9	417.1	-7.1		-37.3	600	1081	11 20 01
11 35 00	2200+420	13 26 46	15.0	396.4	-8.6		-28.8	242	1081	11 35 00
11 45 00	---	13 36 48	15.9	398.1	-8.4		-30.1	600	1100	11 35 01
11 50 00	2021+614	13 41 49	40.8	398.1	-6.7		-51.4	194	1100	11 50 00
11 55 00	---	13 46 50	41.3	398.6	-6.6		-52.1	300	1110	11 50 01
12 12 00	2200+420	14 03 52	18.5	402.5	-8.0		-33.3	915	1110	12 12 00
12 21 30	---	14 13 24	19.5	404.1	-7.8		-34.4	570	1128	12 12 01
12 22 00	2200+420	14 13 54	19.6	404.2	-7.8		-34.5	24	1128	12 22 00
12 31 30	---	14 23 26	20.6	405.7	-7.7		-35.5	570	1146	12 22 01
12 32 00	2200+420	14 23 56	20.6	405.8	-7.7		-35.6	24	1146	12 32 00
12 42 00	---	14 33 57	21.7	407.4	-7.5		-36.7	600	1165	12 32 01

Schedule for TORUN (Code Tr )

Page 7

Probing the innermost regions of AGN jets and their magnetic fields

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 Sep 2013 Day 273 ---										
12 50 00	2136+141	14 41 59	3.1	429.9	-7.0		-35.6	396	1165	12 50 00
13 00 00	---	14 52 00	4.6	431.9	-6.8		-36.1	600	1185	12 50 01
13 05 00	2023+335	14 57 01	30.8	433.5	-5.5		-43.8	189	1185	13 05 00
13 15 00	---	15 07 03	32.3	435.3	-5.3		-44.3	600	1204	13 05 01
13 20 00	2200+420	15 12 04	26.1	413.4	-6.9		-40.7	240	1204	13 20 00
13 30 00	---	15 22 05	27.3	414.9	-6.7		-41.7	600	1223	13 20 01
13 35 00	2021+614	15 27 06	51.6	407.1	-4.9		-68.1	197	1223	13 35 00
13 45 00	---	15 37 08	52.7	407.8	-4.8		-69.7	600	1242	13 35 01
13 51 00	2200+420	15 43 09	30.0	418.2	-6.3		-43.7	259	1242	13 51 00
14 00 30	---	15 52 40	31.2	419.7	-6.2		-44.5	570	1260	13 51 01
14 01 00	2200+420	15 53 10	31.3	419.7	-6.2		-44.6	24	1260	14 01 00
14 10 30	---	16 02 42	32.5	421.2	-6.0		-45.4	570	1279	14 01 01
14 11 00	2200+420	16 03 12	32.6	421.3	-6.0		-45.4	24	1279	14 11 00
14 21 00	---	16 13 14	33.9	422.8	-5.8		-46.3	600	1298	14 11 01
14 30 00	2136+141	16 22 15	17.9	89.6	-5.3		-38.3	-141	1298	14 32 21
14 40 00	---	16 32 17	19.4	91.6	-5.1		-38.3	459	1317	14 30 01
14 45 00	2023+335	16 37 18	45.7	92.2	-3.8		-46.2	189	1317	14 45 00
14 55 00	---	16 47 19	47.2	94.3	-3.6		-46.1	600	1336	14 45 01
15 00 00	2200+420	16 52 20	39.3	68.9	-5.2		-49.3	233	1336	15 00 00
15 10 00	---	17 02 22	40.7	70.4	-5.0		-50.0	600	1356	15 00 01
15 15 00	2021+614	17 07 22	63.1	52.0	-3.3		-86.1	204	1356	15 15 00
15 25 00	---	17 17 24	64.3	52.2	-3.1		-88.2	600	1375	15 15 01
15 30 00	2200+420	17 22 25	43.5	73.6	-4.7		-51.2	206	1375	15 30 00
15 39 30	---	17 31 56	44.9	75.1	-4.5		-51.8	570	1393	15 30 01
15 40 00	2200+420	17 32 27	45.0	75.2	-4.5		-51.8	24	1393	15 40 00
15 49 30	---	17 41 58	46.4	76.8	-4.4		-52.3	570	1411	15 40 01
15 50 00	2200+420	17 42 28	46.4	76.8	-4.3		-52.3	24	1411	15 50 00
16 00 00	---	17 52 30	47.9	78.5	-4.2		-52.8	600	1430	15 50 01

## SETUP FILE INFORMATION:

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

=====  
Setup file: ra18cm2.set

Matching groups in ./freq.sess313rdbe.dat:

tr18cm            E-mail Borkowski 12Mar98, preferred alternative

Setup group:	13	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=	2300.00	2300.00	2300.00	2300.00
Net SB=	L	L	U	U
IF SB =	L	L	L	L
Pol. =	RCP	LCP	RCP	LCP
BBC =	1	2	1	2
BBC SB=	U	U	L	L
IF =	C	A	C	A

The following frequency sets based on these setups were used.

Frequency Set:	8	Setup file default.	Used pcal sets:	1
LO sum=	1668.00	1668.00	1668.00	1668.00
BBC fr=	632.00	632.00	632.00	632.00
Bandwd=	16.00	16.00	16.00	16.00
Matching frequency sets:	8			

The following pulse cal sets were used with this setup:

Pulse cal detection set:	1	PCAL = 1MHZ						
PCALXB1=	S1	S3	S1	S3	S1	S2	S3	S4
PCALXB2=	S2	S4	S2	S4	M1	M2	M3	M4
PCALFR1=	1000	1000	13000	13000	0	0	0	0
PCALFR2=	1000	1000	13000	13000	0	0	0	0

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 23.617495	0.00
	85 16 41.77889	* 85 00 00.00000	84 55 18.26092	0.00
J2022+6136	20 21 13.300235	* 20 22 06.681753	20 22 23.176148	0.21
* 2021+614	61 27 18.15575	* 61 36 58.80476	61 40 05.42841	0.10
J2025+3343	20 23 12.987114	* 20 25 10.842114	20 25 44.613676	0.15
* 2023+335	33 33 10.52771	* 33 43 00.21435	33 46 07.33414	0.13
J2139+1423	21 36 37.412147	* 21 39 01.309269	21 39 42.498677	0.10
* 2136+141	14 10 00.62093	* 14 23 35.99208	14 27 39.53440	0.10
J2202+4216	22 00 39.362504	* 22 02 43.291371	22 03 19.611366	0.14
* 2200+420	42 02 08.59073	* 42 16 39.97987	42 21 00.98615	0.10

## EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
FAKERA	87.8
2021+614	105.9
2023+335	116.1
2136+141	137.2
2200+420	129.2

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

rk01dntr

RADIOASTRON AGN SURVEY

PI: Yuri Kovalev

Address: ASC Lebedev Profsoyuznaya 84/32 117997 Moscow, Russia
Phone: +7-495-3332167 EMAIL: yyk@asc.rssi.ru
Fax: +7-495-3332378 Phone during observation: +7-915-1546281

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 Sep 2013 Day 273 ---

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 632.00 632.00 632.00 632.00
Next scan bandwidths: 16.00 16.00 16.00 16.00

Table with 11 columns: Start UT, Source, LST, EL, AZ, HA, UP, ParA, Dwell, GBytes, SYNC. It lists observation times and parameters for sources 2243-123.

SETUP FILE INFORMATION:

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

==== Setup file: ra18cm2.set

Matching groups in /home/kirx/sched/catalogs/freq.dat:
tr18cm E-mail Borkowski 12Mar98, preferred alternative

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= 2300.00 2300.00 2300.00 2300.00
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 pcal sets: 1
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 632.00 632.00 632.00 632.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 6

```

The following pulse cal sets were used with this setup:

```

Pulse cal detection set: 1 PCAL = 1MHZ
PCALXB1= S1 S3 S1 S3 S1 S2 S3 S4
PCALXB2= S2 S4 S2 S4 M1 M2 M3 M4
PCALFR1= 1000 1000 13000 13000 0 0 0 0
PCALFR2= 1000 1000 13000 13000 0 0 0 0

```

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 23.671313	0.00
	85 16 41.77889	* 85 00 00.000000	84 55 17.86916	0.00
J2246-1206	22 43 39.792813	* 22 46 18.231975	22 47 03.457767	0.25
* 2243-123	-12 22 40.29362	*-12 06 51.27753	-12 02 17.61797	0.60

#### EFFECT OF SOLAR CORONA

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

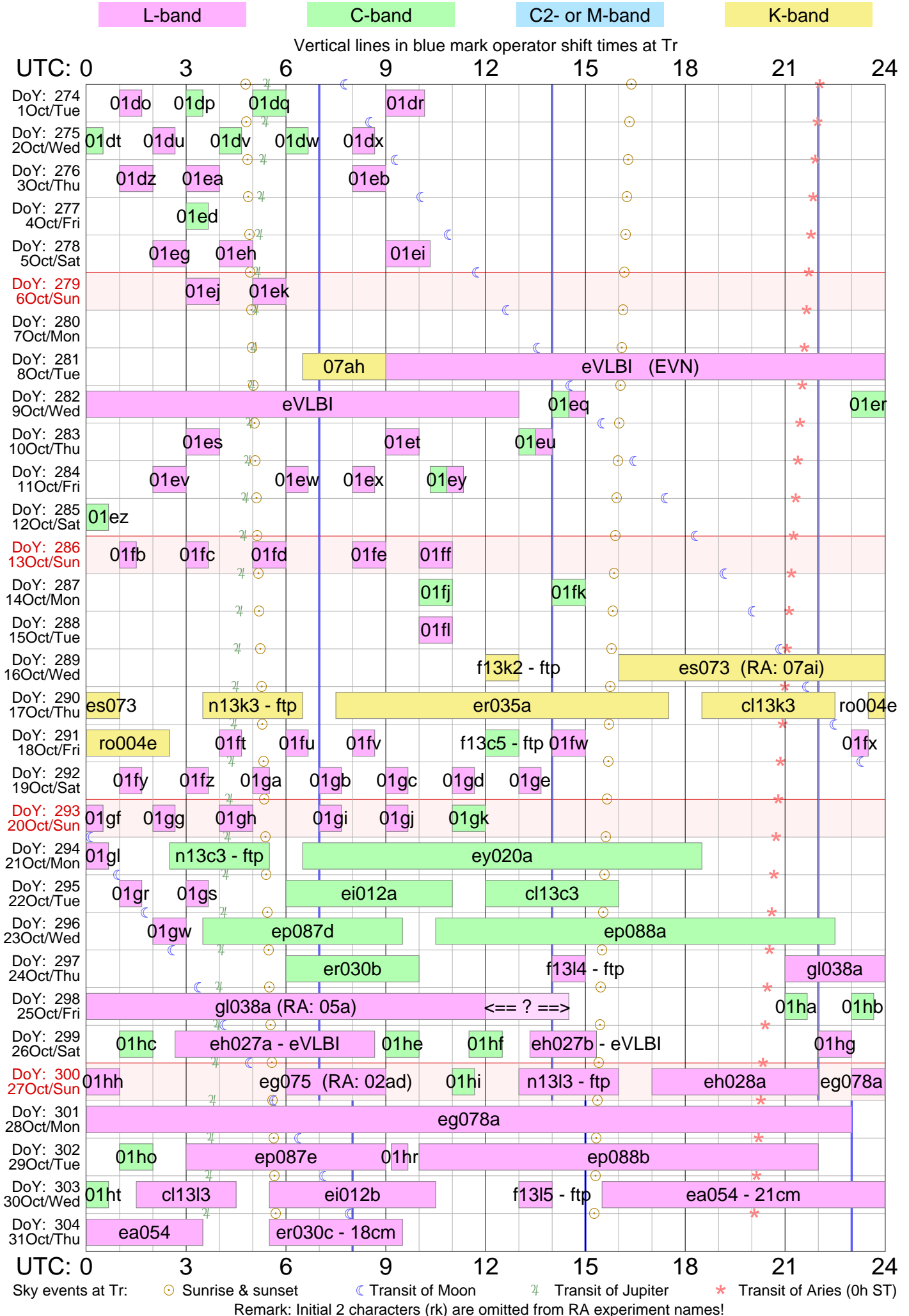
Source	Sun distance (deg)
FAKERA	88.1
2243-123	150.4

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:

327 MHz	117. deg
610 MHz	81. deg
1.6 GHz	45. deg
2.3 GHz	36. deg
5.0 GHz	23. deg
8.4 GHz	17. deg
15.0 GHz	12. deg
22.0 GHz	9. deg
43.0 GHz	6. deg

# Tr VLBI schedule for Oct 2013



# Contents

Graphical Plan of Experiments .....	1
Extended Experiment Listing .....	2
rk07aetr .....	4
rk01avtr .....	6
rk01awtr .....	8
rk01axtr .....	10
rk01aytr .....	12
rk01aztr .....	14
rk01bbtr .....	16
rk01bctr .....	19
rk01bdtr .....	22
rk01bftr .....	24
rk01bgtr .....	26
rk01bhtr .....	28
rk01bitr .....	30
rk01bmtr .....	32
rk01bntr .....	34
rk01botr .....	36
rk07aftr .....	38
rk07agtr .....	40
rk01bptr .....	42
rk01bqtr .....	44
rk01brtr .....	46
rk01bstr .....	48
rk01bttr .....	50
rk01butr .....	52
rk01bvtr .....	54
rk01bwtr .....	56
rk01bxtr .....	58
rk01bytr .....	60
rk01bztr .....	62
rk01catr .....	64
rk01cbtr .....	66
rk01cctr .....	68
rk01cdtr .....	70
rk01cetr .....	72
rk01cftr .....	74
rk01cgtr .....	76
rk01chtr .....	78
eg069etr .....	80
gs032atr .....	122
rk01cmtr .....	134
rk01cntr .....	136
rk01cotr .....	138
rk01cptr .....	140
rk01cqtr .....	142
rk01cttr .....	144
rk01cutr .....	146
rk01cvtr .....	148
rk01cwtr .....	150
rk01cxtr .....	152
rk01cytr .....	154
rk01datr .....	157
rk01dbtr .....	159
rk01dctr .....	161
rk01ddtr .....	163
rk01detr .....	165
rk01dftr .....	167
rk01dgtr .....	169
rk01dhtr .....	171
rk01ditr .....	173
rk01dktr .....	175
rk01dltr .....	177
rk01dmtr .....	179
ga030atr .....	181
rk01dntr .....	189
Provisional Plan for Oct 2013 .....	191