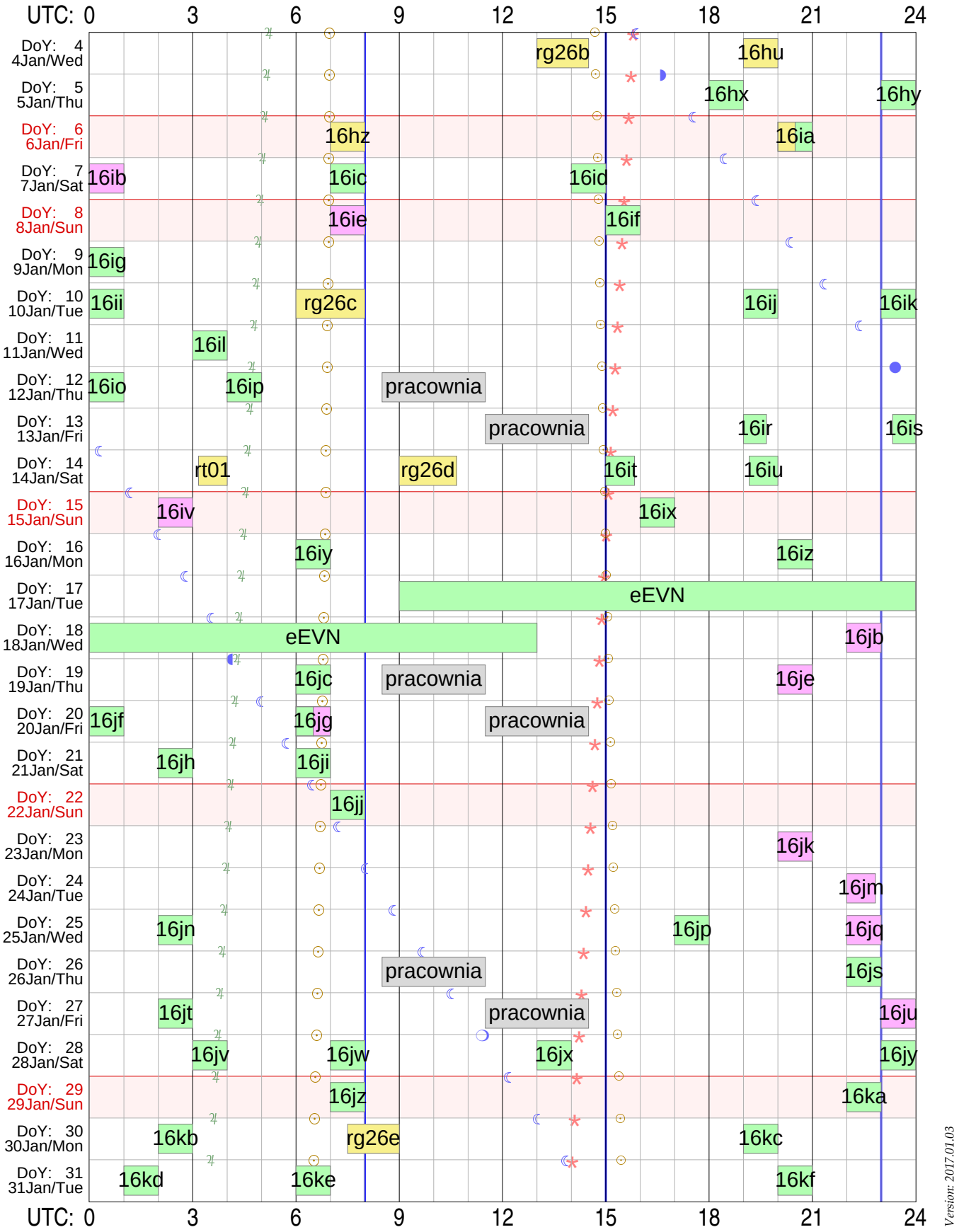
Tr VLBI plan for Jan 2017



Version: 2017.01.03

Sky events at Tr: ⊙ Sunrise & sunset ☽ Transit of Moon ♃ Transit of Jupiter ✶ Transit of Aries (0h ST)

Vertical lines in blue mark operator shift times at Tr

Total observing time: 104.3 hours in 59 experiments scheduled

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

Strona zostawiona celowo pusta

RadioAstron & EVN Experiments

Jan 2017

Uytkownik ftp dla logw i schedulw RA: `grt`
`ftp://webinet.asc.rssi.ru`
Przykad dla log files: `cd GRT_log_files/2014_09/2014_09_01_raks08ak`
Przykad dla sched files: `cd schedule/grtsched/RAKS/rk08ak`

```
 4  4 01 Sro  13 00  14 30  rg26b  "K        "
 4  4 01 Sro  19 00  20 00  rk16hu "K        "
 5  5 01 Czw  18 00  19 00  rk16hx "C        "
 5  5 01 Czw  23 00  24 00  rk16hy "C        "
 6  6 01 Pia   7 00   8 00  rk16hz "K        "
 6  6 01 Pia  20 00  21 00  rk16ia "K>C      "
 7  7 01 Sob   0 00   1 00  rk16ib "L        "
 7  7 01 Sob   7 00   8 00  rk16ic "C        "
 7  7 01 Sob  14 00  15 00  rk16id "C        "
 8  8 01 Nie   7 00   8 00  rk16ie "L        "
 8  8 01 Nie  15 00  16 00  rk16if "C        "
 9  9 01 Pon   0 00   1 00  rk16ig "C        "
10 10 01 Wto   0 00   1 00  rk16ii "C        "
10 10 01 Wto   6 00   8 00  rg26c  "K        "
10 10 01 Wto  19 00  20 00  rk16ij "C        "
10 10 01 Wto  23 00  24 00  rk16ik "C        "
11 11 01 Sro   3 00   4 00  rk16il "C        "
12 12 01 Czw   0 00   1 00  rk16io "C        "
12 12 01 Czw   4 00   5 00  rk16ip "C        "
13 13 01 Pia  19 00  19 40  rk16ir "C        "
13 13 01 Pia  23 20  24 00  rk16is "C        "
14 14 01 Sob   3 10   4 00  rt01   "K        "
14 14 01 Sob   9 00  10 40  rg26d  "K        "
14 14 01 Sob  15 00  15 50  rk16it "C        "
14 14 01 Sob  19 10  20 00  rk16iu "C        "
15 15 01 Nie   2 00   3 00  rk16iv "L        "
15 15 01 Nie  16 00  17 00  rk16ix "C        "
16 16 01 Pon   6 00   7 00  rk16iy "C        "
16 16 01 Pon  20 00  21 00  rk16iz "C        "
18 18 01 Sro  22 00  23 00  rk16jb "L        "
19 19 01 Czw   6 00   7 00  rk16jc "C        "
19 19 01 Czw  20 00  21 00  rk16je "L        "
20 20 01 Pia   0 00   1 00  rk16jf "C        "
20 20 01 Pia   6 00   7 00  rk16jg "C>L      "
21 21 01 Sob   2 00   3 00  rk16jh "C        "
21 21 01 Sob   6 00   7 00  rk16ji "C        "
22 22 01 Nie   7 00   8 00  rk16jj "C        "
23 23 01 Pon  20 00  21 00  rk16jk "L        "
24 24 01 Wto  22 00  22 50  rk16jm "L        "
25 25 01 Sro   2 00   3 00  rk16jn "C        "
```

```
 25 25 01 Sro  17 00  18 00  rk16jp "C        "
 25 25 01 Sro  22 00  23 00  rk16jq "L        "
 26 26 01 Czw  22 00  23 00  rk16js "C        "
 27 27 01 Pia   2 00   3 00  rk16jt "C        "
 27 27 01 Pia  23 00  24 00  rk16ju "L        "
 28 28 01 Sob   3 00   4 00  rk16jv "C        "
 28 28 01 Sob   7 00   8 00  rk16jw "C        "
 28 28 01 Sob  13 00  14 00  rk16jx "C        "
 28 28 01 Sob  23 00  24 00  rk16jy "C        "
 29 29 01 Nie   7 00   8 00  rk16jz "C        "
 29 29 01 Nie  22 00  23 00  rk16ka "C        "
 30 30 01 Pon   2 00   3 00  rk16kb "C        "
 30 30 01 Pon   7 30   9 00  rg26e  "K        "
 30 30 01 Pon  19 00  20 00  rk16kc "C        "
 31 31 01 Wto   1 00   2 00  rk16kd "C        "
 31 31 01 Wto   6 00   7 00  rk16ke "C        "
 31 31 01 Wto  20 00  21 00  rk16kf "C        "

 17 17 01 Wto  09 00  113 00  "eEVN"  "C         "
246  12 01 Pia  08 30  11 30  pracownia  "         "
246  13 01 Pia  11 30  14 30  pracownia  "         "
246  19 01 Pia  08 30  11 30  pracownia  "         "
246  20 01 Pia  11 30  14 30  pracownia  "         "
246  26 01 Pia  08 30  11 30  pracownia  "         "
246  27 01 Pia  11 30  14 30  pracownia  "         "
```

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

`http://paulo.astro.uni.torun.pl/~pw/VLBI/schedules/jan17.pdf`

rg26btr

RadioAstron Megamaser observations

PI: *Willem Baan*

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 Megamaser observations

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

Start UT / Stop UT	Source	LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 4 Jan 2017 Day 4 ---										
---------- K-band VLBI scan of NGC4258 ----------										
Next scan frequencies:		22204.00	22204.00	22204.00	22204.00					
Next BBC frequencies:		704.00	704.00	704.00	704.00					
Next scan bandwidths:		16.00	16.00	16.00	16.00					
13 00 00	NGC4258	21 11 34	18.0	-31.5	8.9		27.5	0	0	13 00 00
13 41 30	---	21 53 11	15.0	-24.8	9.6		21.8	2490	80	13 00 01
13 42 30	NGC4258	21 54 11	15.0	-24.7	9.6		21.6	54	80	13 42 30
14 24 00	---	22 35 48	12.7	-17.8	10.3		15.7	2490	160	13 42 31
---------- K-band VLBI scan of space-ground clock offset calibrator ----------										
14 25 00	1150+497	22 36 48	13.8	-12.8	10.7		11.8	35	160	14 25 00
14 30 00	---	22 41 49	13.7	-12.0	10.8		11.1	300	169	14 25 01

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

======== Setup file: ra1cm2.set

Setup group:	3	Station: TORUN	Total bit rate: 256
Format: MARK5B		Bits per sample: 2	Sample rate: 32.000
Number of channels:	4	DBE type: DBBC_DDC	Speedup factor: 1.00

Disk used to record data.

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

 The following frequency sets based on these setups were used.

 Frequency Set:   2  Setup file default.  Used with PCAL = off
 LO sum=   22204.00  22204.00  22204.00  22204.00
 BBC fr=     704.00    704.00    704.00    704.00
 Bandwd=      16.00     16.00     16.00     16.00
  Matching frequency sets:   2

 Track assignments are:
  track1=   2,  4,  6,  8
  barrel=roll_off
```

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 48.270345	0.00
	85 16 41.77889	* 85 00 00.00000	84 54 01.42091	0.00
	fake circumpolar target for a TS to look at			
* NGC4258	12 16 29.364915	* 12 18 57.504600	12 19 47.002789	0.00
NGC4258_H2O	47 34 53.16919	* 47 18 14.30300	47 12 21.51930	0.00
	./rg26b_sources.radioastron			
	H2O maser; positions from Herrnstein et al. 2005, RA-AO4-05, RA-AO3-10, RA-AO2-1			
* 1150+497	11 50 47.999856	* 11 53 24.466639	11 54 16.924193	0.00
J1153+4931	49 47 50.09409	* 49 31 08.83012	49 25 13.84944	0.00
	./rg26b_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 1816 observations, RA-AO3-04, RA-AO2-12			

rk16hutr

RadioAstron AGN Monitoring

PI: *Yuri Kovalev*

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

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Monitoring

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

Start UT / Stop UT	Source	LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Wed 4 Jan 2017 Day 4 ---										
---------- K-band VLBI scans ----------										
Next scan frequencies:		22236.00	22236.00	22236.00	22236.00					
Next BBC frequencies:		736.00	736.00	736.00	736.00					
Next scan bandwidths:		16.00	16.00	16.00	16.00					
19 00 00	0106+013	03 12 33	32.6	217.4	2.1		21.4	0	0	19 00 00
19 14 30	---	03 27 06	31.2	221.3	2.3		23.4	870	28	19 00 01
19 15 00	0106+013	03 27 36	31.2	221.5	2.3		23.4	24	28	19 15 00
19 29 30	---	03 42 08	29.7	225.3	2.5		25.3	870	56	19 15 01
19 30 00	0106+013	03 42 38	29.6	225.4	2.6		25.3	24	56	19 30 00
19 44 30	---	03 57 11	28.0	229.2	2.8		27.0	870	84	19 30 01
19 45 00	0106+013	03 57 41	28.0	229.3	2.8		27.1	24	84	19 45 00
20 00 00	---	04 12 43	26.2	233.0	3.1		28.7	900	112	19 45 01

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

======== Setup file: ra1cm2.set
Matching groups in ./rk16hu_freq.dat:
tr1cm

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

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

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 48.330787	0.00
	85 16 41.77889	* 85 00 00.00000	84 54 01.43205	0.00
	fake circumpolar target for a TS to look at			
* 0106+013	01 06 04.517938	* 01 08 38.771107	01 09 30.979301	0.00
J0108+0135	01 19 01.13979	* 01 35 00.31717	01 40 19.23000	0.00
	./rk16hu_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 46104 observations, RA-AO3-04, RA-AO2-1			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
0106+013	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 60deg F^(-0.6) where F is in GHz.
For common VLBI bands, this is:

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

rk16hxtr

RadioAstron AGN Monitoring

PI: *Yuri Kovalev*

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

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Monitoring

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

Start UT / Stop UT	Source	LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Thu 5 Jan 2017 Day 5 ---										
---------- C-band VLBI scans ----------										
Next scan frequencies:		4836.00	4836.00	4836.00	4836.00					
Next BBC frequencies:		736.00	736.00	736.00	736.00					
Next scan bandwidths:		16.00	16.00	16.00	16.00					
18 00 00	0106+013	02 16 20	36.7	201.0	1.1		12.4	0	0	18 00 00
18 14 30	---	02 30 53	35.9	205.4	1.4		14.9	870	28	18 00 01
18 15 00	0106+013	02 31 23	35.9	205.5	1.4		15.0	24	28	18 15 00
18 29 30	---	02 45 55	34.8	209.8	1.6		17.4	870	56	18 15 01
18 30 00	0106+013	02 46 25	34.8	210.0	1.6		17.5	24	56	18 30 00
18 44 30	---	03 00 57	33.6	214.1	1.9		19.7	870	84	18 30 01
18 45 00	0106+013	03 01 28	33.6	214.3	1.9		19.8	24	84	18 45 00
19 00 00	---	03 16 30	32.3	218.5	2.1		21.9	900	112	18 45 01

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

======== Setup file: ra6cm2.set

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

Disk used to record data.

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

 The following frequency sets based on these setups were used.

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

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 48.572821	0.00
	85 16 41.77889	* 85 00 00.00000	84 54 01.48138	0.00
	fake circumpolar target for a TS to look at			
* 0106+013	01 06 04.517938	* 01 08 38.771107	01 09 30.962425	0.00
J0108+0135	01 19 01.13979	* 01 35 00.31717	01 40 19.12714	0.00
	./rk16hx_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 46104 observations, RA-AO3-04, RA-AO2-1			

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  0106+013            91.0

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

rk16hytr

RadioAstron AGN Monitoring

PI: *Yuri Kovalev*

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

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Monitoring

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

Start UT / Stop UT	Source	LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Thu 5 Jan 2017 Day 5 ---										
---------- C-band VLBI scans ----------										
Next scan frequencies:		4836.00	4836.00	4836.00	4836.00					
Next BBC frequencies:		736.00	736.00	736.00	736.00					
Next scan bandwidths:		16.00	16.00	16.00	16.00					
23 00 00	0234+285	07 17 09	34.7	273.2	4.6		43.2	0	0	23 00 00
23 19 30	---	07 36 43	31.8	276.9	5.0		42.9	1170	37	23 00 01
23 20 00	0234+285	07 37 13	31.7	277.0	5.0		42.9	24	37	23 20 00
23 39 30	---	07 56 46	28.8	280.7	5.3		42.4	1170	75	23 20 01
23 40 00	0234+285	07 57 16	28.8	280.7	5.3		42.4	24	75	23 40 00
23 59 59	---	08 17 19	25.8	284.4	5.6		41.6	1199	113	23 40 01

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

======== Setup file: ra6cm2.set

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

Disk used to record data.

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

 The following frequency sets based on these setups were used.

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

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 48.624551	0.00
	85 16 41.77889	* 85 00 00.00000	84 54 01.49245	0.00
	fake circumpolar target for a TS to look at			
* 0234+285	02 34 55.589591	* 02 37 52.405678	02 38 53.156662	0.00
J0237+2848	28 35 11.40774	* 28 48 08.98999	28 52 31.10786	0.00
	./rk16hy_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 57147 observations, RA-AO4-07, RA-AO3-0			

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  0234+285           119.7

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

rk16hztr

RadioAstron AGN Monitoring

PI: *Yuri Kovalev*

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

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Monitoring

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

Start UT / Stop UT	Source	LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 6 Jan 2017 Day 6 ---										
---------- 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					
07 00 00	1253-055	15 18 28	23.9	219.0	2.4		22.3	0	0	07 00 00
07 14 30	---	15 33 01	22.5	222.6	2.6		24.1	870	28	07 00 01
07 15 00	1253-055	15 33 31	22.4	222.8	2.6		24.2	24	28	07 15 00
07 29 30	---	15 48 03	20.9	226.3	2.8		25.9	870	56	07 15 01
07 30 00	1253-055	15 48 33	20.8	226.4	2.9		25.9	24	56	07 30 00
07 44 30	---	16 03 06	19.2	229.8	3.1		27.5	870	84	07 30 01
07 45 00	1253-055	16 03 36	19.2	230.0	3.1		27.5	24	84	07 45 00
08 00 00	---	16 18 38	17.4	233.4	3.4		29.0	900	112	07 45 01

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

======== Setup file: ra1cm2.set
Matching groups in ./rk16hz_freq.dat:
tr1cm

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

Disk used to record data.

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

 The following frequency sets based on these setups were used.

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

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 48.703965	0.00
	85 16 41.77889	* 85 00 00.00000	84 54 01.50940	0.00
	fake circumpolar target for a TS to look at			
* 1253-055	12 53 35.831289	* 12 56 11.166557	12 57 03.717358	0.00
J1256-0547	-05 31 07.99603	*-05 47 21.52489	-05 52 47.58021	0.00
3C279	./rk16hz_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 7924 observations, RA-A04-07, RA-A03-04			

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1253-055            90.8

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

rk16iatr

RadioAstron AGN Monitoring

PI: *Yuri Kovalev*

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

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

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

Start UT / Stop UT	Source	LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Fri 6 Jan 2017 Day 6 ---										
---------- K-band VLBI scans ----------										
Next scan frequencies:		22236.00	22236.00	22236.00	22236.00					
Next BBC frequencies:		736.00	736.00	736.00	736.00					
Next scan bandwidths:		16.00	16.00	16.00	16.00					
20 00 00	0529+483	04 20 36	77.4	104.5	-1.2		-61.1	0	0	20 00 00
20 14 30	---	04 35 09	79.5	110.7	-1.0		-57.8	870	28	20 00 01
20 15 00	0529+483	04 35 39	79.6	110.9	-1.0		-57.6	23	28	20 15 00
20 24 30	---	04 45 10	80.9	116.1	-0.8		-54.3	570	46	20 15 01
---------- C-band VLBI scans ----------										
Next scan frequencies:		4836.00	4836.00	4836.00	4836.00					
Next BBC frequencies:		736.00	736.00	736.00	736.00					
20 30 00	0529+483	04 50 41	81.6	119.8	-0.7		-51.7	321	46	20 30 00
20 44 30	---	05 05 14	83.4	132.5	-0.5		-41.8	870	74	20 30 01
20 45 00	0529+483	05 05 44	83.5	133.0	-0.5		-41.4	22	74	20 45 00
21 00 00	---	05 20 46	84.8	153.7	-0.2		-23.6	900	103	20 45 01

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

======== Setup file: ra1cm2.set
Matching groups in ./rk16ia_freq.dat:
tr1cm

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

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

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


======== Setup file: ra6cm2.set

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

 Disk used to record data.
```

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

 The following frequency sets based on these setups were used.

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

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 48.831723	0.00
	85 16 41.77889	* 85 00 00.00000	84 54 01.53578	0.00
	fake circumpolar target for a TS to look at			
* 0529+483	05 29 27.565384	* 05 33 15.865793	05 34 35.020652	0.00
J0533+4822	48 20 47.97038	* 48 22 52.80771	48 23 26.53674	0.00
	./rk16ia_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 19801 observations, RA-AO4-07, RA-AO3-0			

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  0529+483           147.5

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

rk16ibtr

RadioAstron AGN Monitoring

PI: *Yuri Kovalev*

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

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Monitoring

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

Start UT / Stop UT	Source	LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sat 7 Jan 2017 Day 7 ---										
---------- L-band VLBI scans ----------										
Next scan frequencies:		1668.00	1668.00	1668.00	1668.00					
Next BBC frequencies:		732.00	732.00	732.00	732.00					
Next scan bandwidths:		16.00	16.00	16.00	16.00					
00 00 00	0607-157	08 21 16	15.7	212.7	2.2		19.7	0	0	00 00 00
00 14 30	---	08 35 48	14.4	216.1	2.4		21.6	870	28	00 00 01
00 15 00	0607-157	08 36 18	14.4	216.2	2.4		21.6	24	28	00 15 00
00 29 30	---	08 50 51	13.0	219.5	2.7		23.4	870	56	00 15 01
00 30 00	0607-157	08 51 21	13.0	219.6	2.7		23.4	24	56	00 30 00
00 44 30	---	09 05 53	11.5	222.9	2.9		25.1	870	84	00 30 01
00 45 00	0607-157	09 06 23	11.5	223.0	2.9		25.2	24	84	00 45 00
01 00 00	---	09 21 26	9.9	226.3	3.2		26.8	900	112	00 45 01

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

======== Setup file: ra18cm2.set

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

Disk used to record data.

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

 The following frequency sets based on these setups were used.

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

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 48.867746	0.00
	85 16 41.77889	* 85 00 00.00000	84 54 01.54283	0.00
	fake circumpolar target for a TS to look at			
* 0607-157	06 07 25.981282	* 06 09 40.949536	06 10 27.932429	0.00
J0609-1542	-15 42 03.30591	*-15 42 40.67271	-15 43 07.98849	0.00
	./rk16ib_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 40739 observations, RA-AO4-07, RA-AO3-0			

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  0607-157           138.9
  0605-085           145.2

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

rk16ictr

RadioAstron AGN Monitoring

PI: *Yuri Kovalev*

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

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Monitoring

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

Start UT / Stop UT	Source	LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sat 7 Jan 2017 Day 7 ---										
---------- C-band VLBI scans ----------										
Next scan frequencies:		4836.00	4836.00	4836.00	4836.00					
Next BBC frequencies:		736.00	736.00	736.00	736.00					
Next scan bandwidths:		16.00	16.00	16.00	16.00					
07 00 00	1040+244	15 22 25	31.1	269.3	4.6		41.1	0	0	07 00 00
07 19 30	---	15 41 58	28.2	273.2	5.0		41.0	1170	37	07 00 01
07 20 00	1040+244	15 42 28	28.1	273.3	5.0		41.0	24	37	07 20 00
07 39 30	---	16 02 01	25.2	277.1	5.3		40.7	1170	75	07 20 01
07 40 00	1040+244	16 02 31	25.1	277.2	5.3		40.7	24	75	07 40 00
08 00 00	---	16 22 35	22.2	281.0	5.6		40.2	1200	113	07 40 01

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

======== Setup file: ra6cm2.set

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

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

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 48.938640	0.00
	85 16 41.77889	* 85 00 00.00000	84 54 01.55602	0.00
	fake circumpolar target for a TS to look at			
* 1040+244	10 40 25.199377	* 10 43 09.035778	10 44 04.868425	0.00
J1043+2408	24 24 19.59847	* 24 08 35.40933	24 03 03.56951	0.00
	./rk16ic_sources.radioastron			
	AGN, MASIV, rfc_2013d Petrov, 2013, unpublished 7417 observations, RA-AO4-07, RA			

EFFECT OF SOLAR CORONA

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

Source	Sun distance (deg)
1040+244	132.1

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

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

rk16idtr

RadioAstron AGN Monitoring

PI: *Yuri Kovalev*

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

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

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

Start UT / Stop	Source	LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sat 7 Jan 2017 Day 7 ---										
---------- C-band VLBI scans ----------										
Next scan frequencies:		4836.00	4836.00	4836.00	4836.00					
Next BBC frequencies:		736.00	736.00	736.00	736.00					
Next scan bandwidths:		16.00	16.00	16.00	16.00					
14 00 00	0529+483	22 23 34	28.4	46.0	-7.2		-40.6	0	0	14 00 00
14 19 30	---	22 43 07	30.6	48.8	-6.9		-42.9	1170	37	14 00 01
14 20 00	0529+483	22 43 37	30.7	48.8	-6.8		-42.9	24	37	14 20 00
14 39 30	---	23 03 10	32.9	51.6	-6.5		-45.1	1170	75	14 20 01
14 40 00	0529+483	23 03 40	33.0	51.7	-6.5		-45.2	24	75	14 40 00
15 00 00	---	23 23 44	35.4	54.4	-6.2		-47.4	1200	113	14 40 01

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

======== Setup file: ra6cm2.set

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

Disk used to record data.

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

 The following frequency sets based on these setups were used.

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

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 49.005544	0.00
	85 16 41.77889	* 85 00 00.00000	84 54 01.56744	0.00
	fake circumpolar target for a TS to look at			
* 0529+483	05 29 27.565384	* 05 33 15.865793	05 34 35.019057	0.00
J0533+4822	48 20 47.97038	* 48 22 52.80771	48 23 26.62702	0.00
	./rk16id_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 19801 observations, RA-AO4-07, RA-AO3-0			

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  0529+483           147.0

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

rk16ietr

RadioAstron AGN Monitoring

PI: *Yuri Kovalev*

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

Observing mode: L-band, dual-pol

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Monitoring

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

Start UT / Stop UT	Source	LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sun 8 Jan 2017 Day 8 ---										
---------- L-band VLBI scans ----------										
Next scan frequencies:		1668.00	1668.00	1668.00	1668.00					
Next BBC frequencies:		732.00	732.00	732.00	732.00					
Next scan bandwidths:		16.00	16.00	16.00	16.00					
07 00 00	1253-055	15 26 21	23.1	221.0	2.5		23.3	0	0	07 00 00
07 19 30	---	15 45 55	21.1	225.8	2.8		25.6	1170	37	07 00 01
07 20 00	1253-055	15 46 25	21.1	225.9	2.8		25.7	24	37	07 20 00
07 39 30	---	16 05 58	18.9	230.5	3.1		27.8	1170	75	07 20 01
07 40 00	1253-055	16 06 28	18.8	230.6	3.2		27.8	24	75	07 40 00
08 00 00	---	16 26 31	16.4	235.2	3.5		29.7	1200	113	07 40 01

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

======== Setup file: ra18cm2.set

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

Disk used to record data.

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

 The following frequency sets based on these setups were used.

 Frequency Set:   2  Setup file default.  Used with PCAL = 1MHz
 LO sum=   1668.00  1668.00  1668.00  1668.00
 BBC fr=    732.00   732.00   732.00   732.00
 Bandwd=     16.00    16.00    16.00    16.00
  Matching frequency sets:   2

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



POSITIONS OF SOURCES USED IN RECORDING SCANS

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

* FAKERA             11 57 21.769299   * 12 00 00.000000     12 00 49.164297       0.00
                     85 16 41.77889    * 85 00 00.00000      84 54 01.58967        0.00
                     fake circumpolar target for a TS to look at

* 1253-055           12 53 35.831289   * 12 56 11.166557     12 57 03.779431       0.00
  J1256-0547        -05 31 07.99603    *-05 47 21.52489     -05 52 47.95526        0.00
  3C279              ./rk16ie_sources.radioastron
                     AGN, rfc_2013d Petrov, 2013, unpublished 7924 observations, RA-AO4-07, RA-AO3-04



EFFECT OF SOLAR CORONA

 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  1253-055            92.8

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

rk16iftr

RadioAstron AGN Monitoring

PI: *Yuri Kovalev*

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

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Monitoring

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

Start UT / Stop UT	Source	LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Sun 8 Jan 2017 Day 8 ---										
---------- C-band VLBI scans ----------										
Next scan frequencies:		4836.00	4836.00	4836.00	4836.00					
Next BBC frequencies:		736.00	736.00	736.00	736.00					
Next scan bandwidths:		16.00	16.00	16.00	16.00					
15 00 00	1044+719	23 27 40	34.9	3.6-11.4			-6.9	0	0	15 00 00
15 19 30	---	23 47 13	35.1	5.5-11.0			-10.5	1170	37	15 00 01
15 20 00	1044+719	23 47 44	35.1	5.5-11.0			-10.6	25	37	15 20 00
15 39 30	---	00 07 17	35.5	7.4-10.7			-14.2	1170	75	15 20 01
15 40 00	1044+719	00 07 47	35.5	7.4-10.7			-14.3	25	75	15 40 00
16 00 00	---	00 27 50	35.9	9.3-10.4			-17.9	1200	113	15 40 01

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

======== Setup file: ra6cm2.set

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

Disk used to record data.

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

 The following frequency sets based on these setups were used.

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

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 49.243909	0.00
	85 16 41.77889	* 85 00 00.00000	84 54 01.59800	0.00
	fake circumpolar target for a TS to look at			
* 1044+719	10 44 49.735111	* 10 48 27.619927	10 49 41.084105	0.00
J1048+7143	71 59 26.88535	* 71 43 35.93838	71 37 53.84785	0.00
	./rk16if_sources.radioastron			
	AGN, MASIV, rfc_2013d Petrov, 2013, unpublished 141793 observations, RA-AO4-07,			

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)
  1044+719           122.4

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

rk16igtr

RadioAstron AGN Monitoring

PI: *Yuri Kovalev*

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

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Monitoring

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

Start UT / Stop UT	Source	LST	EL	AZ	HA	UP	ParA	Early Dwell	Disk GBytes	TPStart SYNC
--- Mon 9 Jan 2017 Day 9 ---										
---------- C-band VLBI scans ----------										
Next scan frequencies:		4836.00	4836.00	4836.00	4836.00					
Next BBC frequencies:		736.00	736.00	736.00	736.00					
Next scan bandwidths:		16.00	16.00	16.00	16.00					
00 00 00	0529+483	08 29 09	62.4	278.0	2.9		63.6	0	0	00 00 00
00 19 30	---	08 48 42	59.5	281.1	3.2		62.6	1170	37	00 00 01
00 20 00	0529+483	08 49 12	59.5	281.1	3.2		62.5	24	37	00 20 00
00 39 30	---	09 08 45	56.6	284.0	3.6		61.3	1170	75	00 20 01
00 40 00	0529+483	09 09 15	56.5	284.1	3.6		61.3	24	75	00 40 00
01 00 00	---	09 29 19	53.6	287.0	3.9		59.9	1200	113	00 40 01

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

======== Setup file: ra6cm2.set

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

Disk used to record data.

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

 The following frequency sets based on these setups were used.

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

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 49.330781	0.00
	85 16 41.77889	* 85 00 00.00000	84 54 01.60495	0.00
	fake circumpolar target for a TS to look at			
* 0529+483	05 29 27.565384	* 05 33 15.865793	05 34 35.022348	0.00
J0533+4822	48 20 47.97038	* 48 22 52.80771	48 23 26.79289	0.00
	./rk16ig_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 19801 observations, RA-AO4-07, RA-AO3-0			

EFFECT OF SOLAR CORONA

```
 The solar corona can cause unstable phases for sources too close to the Sun.
 SCHED provides warnings at individual scans for distances less than 10 degrees.
 The distance from the Sun to each source in this schedule is:
   Source         Sun distance (deg)
  0529+483           146.1

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

Contents