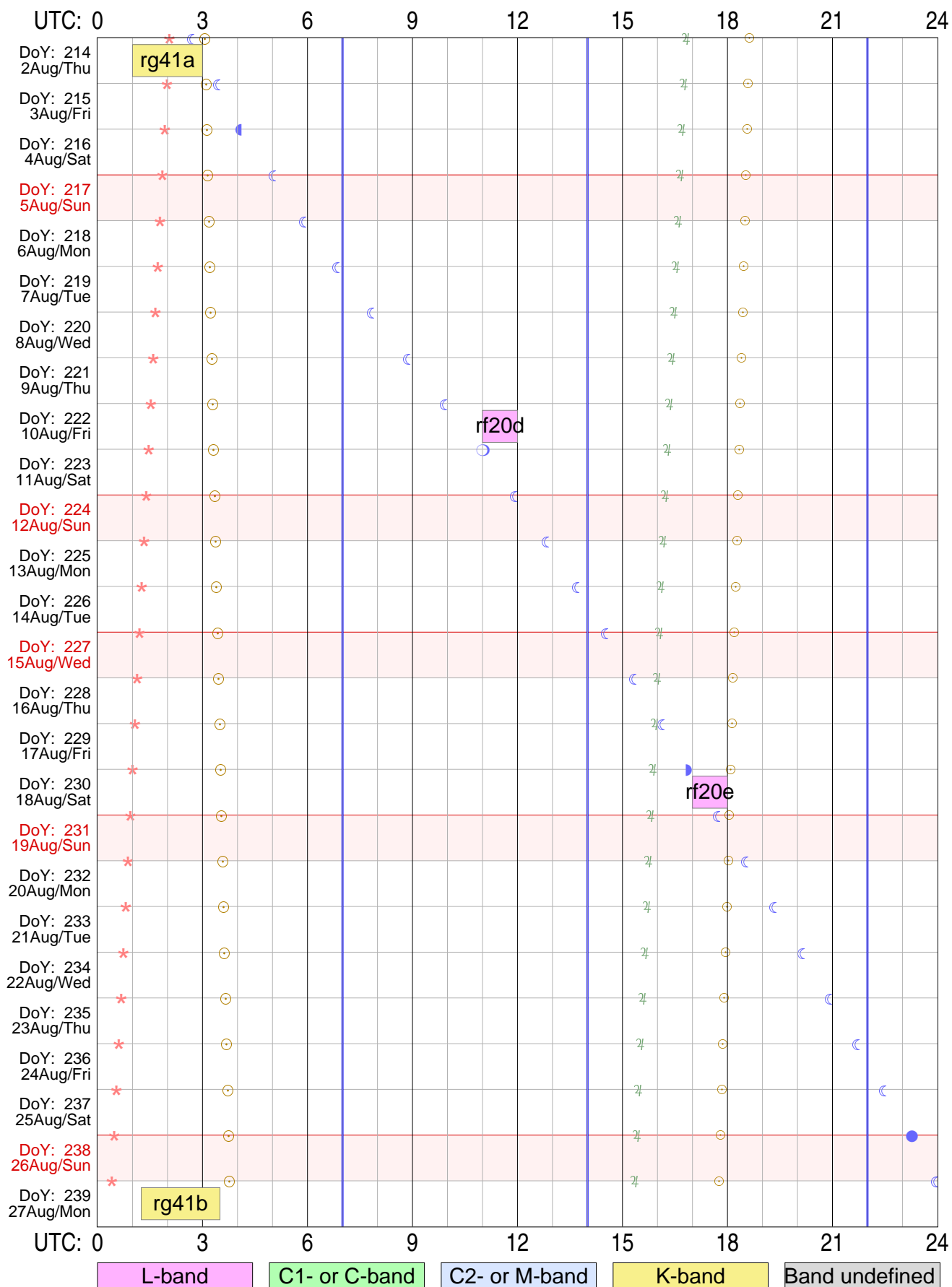


# Tr VLBI plan for Aug 2018



Strona zostawiona celowo pusta

# RadioAstron & EVN Experiments

## Aug 2018

Uytownik ftp dla logw i schedulw RA: grt

ftp://webinet.asc.rssi.ru

Przykad dla log files: cd GRT\_log\_files/2014\_09/2014\_09\_01\_raks08ak

Przykad dla sched files: cd schedule/grtsched/RAKS/rk08ak

Year = 2018, 2nd line is:	Year	Date	UTstart	UTstop	Exper.	xxComment
Nr	D	M	<=Dur	Exper.	name	Comment
1	2.08	2.0	rg41a			K
2	10.08	1.0	rf20d			L
3	18.08	1.0	rf20e			L
4	27.08	2.3	rg41b			K

Summer time (DST): Mar 25 to Oct 28, 2018  
Total observing time: 6.3 hours in 4 experiments

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

<http://paulo.astro.uni.torun.pl/~pw/VLBI/schedules/aug18.pdf>

**rg41atr**

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
-----

```

--- Thu    2 Aug 2018    Day 214 ---

----- This is a fringe finder/clock offset calibrator 23.6 deg. from IRAS2219 -----

```

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

```

```

00 57 00 1803+784       22 53 35 54.9 -19.4 4.9       90.8    0       0    00 57 00
01 02 00 ---                                              22 58 36 54.6 -19.4 5.0       89.5   300       10    00 57 01

```

----- Please, make sure PCAL is OFF for IRAS2219 maser observations. -----

```

01 05 00 IRAS2219       23 01 36 78.0 -21.3 0.7       150.3   78       10    01 05 00
01 19 30 ---                                              23 16 09 77.1 -27.4 0.9       141.0   870       37    01 05 01

```

----- Please, make sure PCAL is OFF for IRAS2219 maser observations. -----

```

01 20 00 IRAS2219       23 16 39 77.1 -27.6 0.9       140.7   24       37    01 20 00
01 39 30 ---                                              23 36 12 75.6 -34.0 1.2       130.1 1170       75    01 20 01

```

```

01 40 00 IRAS2219       23 36 42 75.5 -34.2 1.2       129.8   24       75    01 40 00
01 59 30 ---                                              23 56 15 73.8 -38.9 1.6       120.9 1170       112   01 40 01

```

```

02 00 00 IRAS2219       23 56 45 73.7 -39.0 1.6       120.7   24       112   02 00 00
02 19 30 ---                                              00 16 18 71.8 -42.3 1.9       113.2 1170       150   02 00 01

```

```

02 20 00 IRAS2219       00 16 48 71.8 -42.3 1.9       113.0   24       150   02 20 00
02 39 30 ---                                              00 36 22 69.7 -44.5 2.2       106.5 1170       187   02 20 01

```

```

02 40 00 IRAS2219       00 36 52 69.7 -44.6 2.2       106.4   24       187   02 40 00
03 00 00 ---                                              00 56 55 67.5 -46.0 2.6       100.5 1200       226   02 40 01

```

----- This is a fringe finder/clock offset calibrator 23.6 deg. from IRAS2219 -----

```

03 03 00 1803+784       00 59 56 48.8 -17.0 7.0       61.7    96       226   03 03 00
03 08 00 ---                                              01 04 56 48.6 -16.9 7.1       60.6   300       235   03 03 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 ./rg41a\_freq.dat:

tr1cm

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

Frequency Set:	5	Setup file default.	Used with PCAL = off	
LO sum=	22228.00	22228.00	22228.00	22228.00
BBC fr=	728.00	728.00	728.00	728.00
Bandwd=	16.00	16.00	16.00	16.00
Matching frequency sets:	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 42.864022	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 08.67020	0.00
	fake circumpolar target for a TS to look at			
* IRAS2219	22 19 49.807244	* 22 21 26.730000	22 22 05.576209	0.00
IRAS22198+63	63 36 28.73743	* 63 51 37.92000	63 57 08.23016	0.00
G107.30+5.64	./rg41a_sources.radioastron			
WB_176	RA-A06-04			
L1204G				
* 1803+784	18 03 39.193524	* 18 00 45.683902	17 59 47.179548	0.00
J1800+7828	78 27 54.29744	* 78 28 04.01838	78 28 22.49787	0.00
	./rg41a_sources.radioastron			
	AGN, rfc_2013d Petrov, 2013, unpublished 217073 observations, RA-A03-04, RA-A02-			

**rf20dtr**

RADIOASTRON FRINGE TEST

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 fringe test

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

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

--- Fri 10 Aug 2018    Day 222 ---

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

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

11 00 00	1641+399	09 29 46	21.4	51.5	-7.2		-37.7	0	0	11 00 00
11 09 30	---	09 39 18	22.6	53.1	-7.1		-38.7	570	18	11 00 01
11 10 00	1641+399	09 39 48	22.6	53.2	-7.1		-38.7	24	18	11 10 00
11 19 30	---	09 49 20	23.8	54.7	-6.9		-39.6	570	36	11 10 01
11 20 00	1641+399	09 49 50	23.9	54.8	-6.9		-39.7	24	36	11 20 00
11 29 30	---	09 59 21	25.0	56.3	-6.7		-40.6	570	55	11 20 01
11 30 00	1641+399	09 59 51	25.1	56.4	-6.7		-40.6	24	55	11 30 00
11 39 30	---	10 09 23	26.3	58.0	-6.6		-41.5	570	73	11 30 01
11 40 00	1641+399	10 09 53	26.4	58.0	-6.6		-41.5	24	73	11 40 00
11 49 30	---	10 19 24	27.6	59.6	-6.4		-42.4	570	91	11 40 01
11 50 00	1641+399	10 19 55	27.6	59.6	-6.4		-42.4	24	91	11 50 00
12 00 00	---	10 29 56	29.0	61.2	-6.2		-43.2	600	110	11 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

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

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

```

#### POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 41.563511	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 06.22724	0.00
	fake circumpolar target for a TS to look at			
* 1641+399	16 41 17.606226	* 16 42 58.809963	16 43 36.557897	0.00
3C345	39 54 10.81479	* 39 48 36.99385	39 46 56.98046	0.00
J1642+3948	./rf20d_sources.radioastron			
	AGN, rfc_20143, RA-A06-12			

#### EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
1641+399    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:

```

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

```

**rf20etr**

RADIOASTRON FRINGE TEST

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 fringe test

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

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

--- Sat 18 Aug 2018    Day 230 ---

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

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

17 00 00	1641+399	16 02 18	74.9	148.0	-0.7	-24.5	0	0	17 00 00
17 09 30	---	16 11 49	75.6	154.7	-0.5	-19.5	570	18	17 00 01
17 10 00	1641+399	16 12 20	75.7	155.0	-0.5	-19.3	23	18	17 10 00
17 19 30	---	16 21 51	76.2	162.2	-0.4	-13.8	570	36	17 10 01
17 20 00	1641+399	16 22 21	76.2	162.6	-0.4	-13.5	23	36	17 20 00
17 29 30	---	16 31 53	76.5	170.3	-0.2	-7.6	570	55	17 20 01
17 30 00	1641+399	16 32 23	76.6	170.7	-0.2	-7.3	22	55	17 30 00
17 39 30	---	16 41 54	76.7	178.6	-0.0	-1.1	570	73	17 30 01
17 40 00	1641+399	16 42 25	76.7	179.0	-0.0	-0.8	22	73	17 40 00
17 49 30	---	16 51 56	76.6	186.9	0.1	5.4	570	91	17 40 01
17 50 00	1641+399	16 52 26	76.6	187.3	0.1	5.7	22	91	17 50 00
18 00 00	---	17 02 28	76.3	195.5	0.3	12.0	600	110	17 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

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

Disk used to record data.



```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

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

```

#### POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* FAKERA	11 57 21.769299	* 12 00 00.000000	12 00 40.574868	0.00
	85 16 41.77889	* 85 00 00.000000	84 54 03.80868	0.00
	fake circumpolar target for a TS to look at			
* 1641+399	16 41 17.606226	* 16 42 58.809963	16 43 36.358962	0.00
3C345	39 54 10.81479	* 39 48 36.99385	39 46 57.70384	0.00
J1642+3948	./rf20e_sources.radioastron			
	AGN, rfc_20143, RA-A06-12			

#### EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
1641+399    91.4

```

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

For common VLBI bands, this is:

```

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

```

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