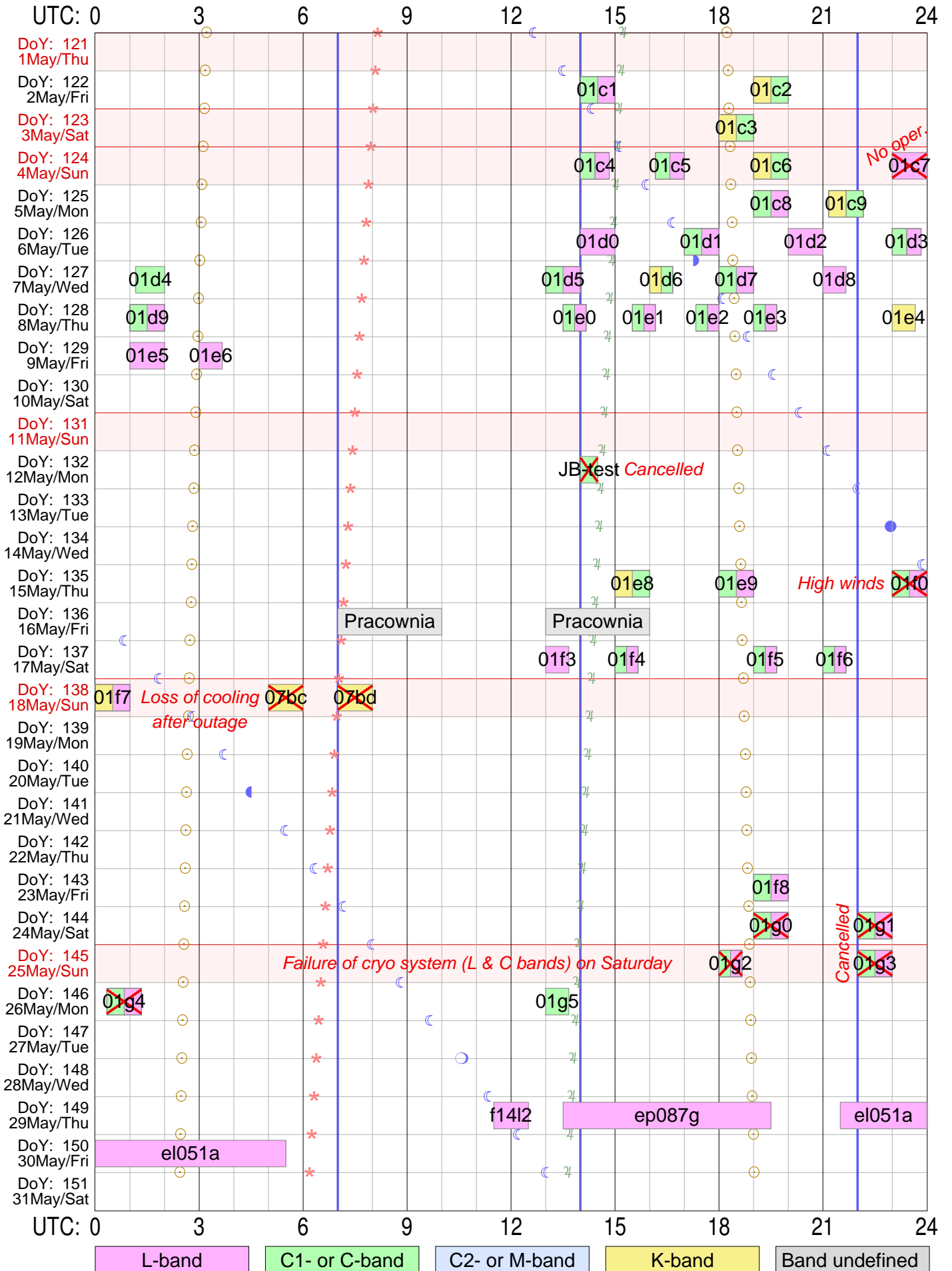


Tr VLBI plan for May 2014



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

Vertical lines in blue mark operator shift times at Tr

Total observing time: 89.5 hours in 47 experiments scheduled

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

Strona zostawiona celowo pusta

RadioAstron and EVN Experiments

May 2014

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

ftp://webinet.asc.rssi.ru

Przykład dla log files: cd GRT_log_files/2013_08/2013_08_01_raks02aa

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

| DoY | DoM | WD | UT_Start | UT_Stop | Experim. | Band | Uwagi |
|-----|-----|-----|----------|---------|----------|------|-------|
| | | | h m | h m | name | | |
| 122 | 2 | Pia | 14 00 | 15 00 | rk01c1 | C->L | |
| 122 | 2 | Pia | 19 00 | 20 00 | rk01c2 | K->C | |
| 123 | 3 | Sob | 18 00 | 19 00 | rk01c3 | K->C | |
| 124 | 4 | Nie | 14 00 | 14 50 | rk01c4 | C->L | |
| 124 | 4 | Nie | 16 10 | 17 00 | rk01c5 | C->L | |
| 124 | 4 | Nie | 19 00 | 20 00 | rk01c6 | K->C | |
| 124 | 4 | Nie | 23 00 | 24 00 | rk01c7 | L | |
| 125 | 5 | Pon | 19 00 | 20 00 | rk01c8 | C->L | |
| 125 | 5 | Pon | 21 10 | 22 10 | rk01c9 | K->C | |
| 126 | 6 | Wto | 14 00 | 15 00 | rk01d0 | L | |
| 126 | 6 | Wto | 17 00 | 18 00 | rk01d1 | C->L | |
| 126 | 6 | Wto | 20 00 | 21 00 | rk01d2 | L | |
| 126 | 6 | Wto | 23 00 | 23 50 | rk01d3 | C->L | |
| 127 | 7 | Sro | 1 10 | 2 00 | rk01d4 | C | |
| 127 | 7 | Sro | 13 00 | 14 00 | rk01d5 | L | |
| 127 | 7 | Sro | 16 00 | 16 40 | rk01d6 | K->C | |
| 127 | 7 | Sro | 18 00 | 19 00 | rk01d7 | C->L | |
| 127 | 7 | Sro | 21 00 | 21 40 | rk01d8 | L | |
| 128 | 8 | Czw | 1 00 | 2 00 | rk01d9 | C->L | |
| 128 | 8 | Czw | 13 30 | 14 10 | rk01e0 | C->L | |
| 128 | 8 | Czw | 15 30 | 16 10 | rk01e1 | C->L | |
| 128 | 8 | Czw | 17 20 | 18 00 | rk01e2 | C->L | |
| 128 | 8 | Czw | 19 00 | 19 40 | rk01e3 | C->L | |
| 128 | 8 | Czw | 23 00 | 23 40 | rk01e4 | K | |
| 129 | 9 | Pia | 1 00 | 2 00 | rk01e5 | L | |
| 129 | 9 | Pia | 3 00 | 3 40 | rk01e6 | L | |
| 135 | 15 | Czw | 15 00 | 16 00 | rk01e8 | K->C | |
| 135 | 15 | Czw | 18 00 | 19 00 | rk01e9 | C->L | |
| 135 | 15 | Czw | 23 00 | 24 00 | rk01f0 | C->L | |
| 137 | 17 | Sob | 13 00 | 13 40 | rk01f3 | L | |
| 137 | 17 | Sob | 15 00 | 15 40 | rk01f4 | C->L | |
| 137 | 17 | Sob | 19 00 | 19 40 | rk01f5 | C->L | |
| 137 | 17 | Sob | 21 00 | 21 40 | rk01f6 | C->L | |
| 138 | 18 | Nie | 0 00 | 1 00 | rk01f7 | K->L | |
| 138 | 18 | Nie | 5 00 | 6 00 | rk07bc | K | |
| 138 | 18 | Nie | 7 00 | 8 00 | rk07bd | K | |
| 143 | 23 | Pia | 19 00 | 20 00 | rk01f8 | C->L | |
| 144 | 24 | Sob | 19 00 | 20 00 | rk01g0 | C->L | |
| 144 | 24 | Sob | 22 00 | 23 00 | rk01g1 | C->L | |
| 145 | 25 | Nie | 18 00 | 18 40 | rk01g2 | C->L | |

| | | | | | | | | |
|-----|----|-----|-------|----------|--------|------|---------|-----------|
| 145 | 25 | Nie | 22 00 | 23 00 | rk01g3 | C->L | | |
| 146 | 26 | Pon | 0 20 | 1 20 | rk01g4 | C->L | | |
| 146 | 26 | Pon | 13 00 | 13 40 | rk01g5 | C | | |
| 149 | 29 | Czw | 11 30 | 12 30 | f1412 | L | 201 GB | Sesja EVN |
| 149 | 29 | Czw | 13 30 | 19 30 | ep087g | L | 2564 GB | |
| 149 | 29 | Czw | 21 30 | 24+05 30 | el051a | L | 3450 GB | |

Razem 46 eksperymentow (RA i EVN)

Do zapisu obserwacji RadioAstronu na stałe dedykowany jest dyskpak

TR-00002/1600

montowany w banku A. Gdyby ten się zapełnił, trzeba użyć innego paka, w pierwszym rzędzie

HART-041/3200 i SHA0-032/4000

W rezerwie są też paki na sesję majową:

J0D-0050/6000[4500], UA0-0016/2000, TR-00008/2000, USN-0203/2000 i JIVE-055/2000

Kolejny pak można zamontować w banku B obok TR-00002/1600 (lub sam w A). Jeśli zaczęto nagrywać w banku B, do kolejnych eksperymentów trzeba używać także banku B.

UWAGA: 1-godzinne eksperymenty RA zwykle wymagają 110 – 120 GB wolnego miejsca na dyskpaku (dłuższe odpowiednio więcej).

Plik pdf tego dokumentu jest dostępny w sieci pod adresem:

<http://cosmo.astro.umk.pl/foswiki/pub/Main/KazB/VLBI2014May.pdf>

rk01c1tr

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: zmiana pasma w czasie tego eksperymentu!!!

#####
Observing mode: C&L-band, dual-pol
#####

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

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

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

--- Fri 2 May 2014 Day 122 ---

----- 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 0906+015 05 55 53 24.6 124.6 -3.2 -29.6 0 0 14 00 00
14 14 30 --- 06 10 25 26.3 128.1 -3.0 -28.2 870 28 14 00 01
14 15 00 0906+015 06 10 55 26.4 128.2 -3.0 -28.2 24 28 14 15 00
14 25 00 --- 06 20 57 27.6 130.7 -2.8 -27.1 600 47 14 15 01

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

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 732.00 732.00 732.00 732.00

14 30 00 0906+015 06 25 58 28.1 132.0 -2.7 -26.5 293 47 14 30 00
14 44 30 --- 06 40 30 29.7 135.7 -2.5 -24.8 870 75 14 30 01
14 45 00 0906+015 06 41 00 29.7 135.8 -2.5 -24.7 24 75 14 45 00
15 00 00 --- 06 56 03 31.3 139.8 -2.2 -22.8 900 104 14 45 01

SETUP FILE INFORMATION:

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

=====
Setup file: ra6cm2.set

--- WARNING --- This group does not match an entry in the frequency catalog.
This might be ok because the catalog is not complete.
But be very careful to be sure that the setup is correct.

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

Frequency Set: 7 Setup file default. Used with PCAL = 1MHz

| | | | | |
|---------|---------|---------|---------|---------|
| LO sum= | 4836.00 | 4836.00 | 4836.00 | 4836.00 |
| BBC fr= | 736.00 | 736.00 | 736.00 | 736.00 |
| Bandwd= | 16.00 | 16.00 | 16.00 | 16.00 |

Matching frequency sets: 7

Track assignments are:

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

=====
Setup file: ra18cm2.set

--- WARNING --- This group does not match an entry in the frequency catalog.
This might be ok because the catalog is not complete.
But be very careful to be sure that the setup is correct.

| | | | | |
|---------------------|---------|------------------|-----------------|----------------------|
| Setup group: | 10 | Station: TORUN | Total bit rate: | 256 |
| Format: | MKIV1:4 | Bits per sample: | 2 | Sample rate: 32.000 |
| Number of channels: | 4 | DBE type: | | Speedup factor: 1.00 |

Disk used to record data.

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

The following frequency sets based on these setups were used.

```

Frequency Set:  9  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:  9

```

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) | | | Error |
|------------|--------------------------|-------------------|-----------------|-------|
| * 0906+015 | 09 06 35.181592 | * 09 09 10.091598 | 09 09 54.970122 | 0.00 |
| J0909+0121 | 01 33 48.12919 | * 01 21 35.61771 | 01 17 50.98833 | 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) |
|----------|--------------------|
| 0906+015 | 97.2 |

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 |

rk01c2tr

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: zmiana pasma w czasie tego eksperymentu!!!

#####
Observing mode: K&C-band, dual-pol
#####

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

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

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

--- Fri 2 May 2014 Day 122 ---

----- 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 0834-201 10 56 42 10.6 213.0 2.3 20.4 0 0 19 00 00
19 14 30 --- 11 11 15 9.4 216.3 2.6 22.3 870 28 19 00 01
19 15 00 0834-201 11 11 45 9.3 216.4 2.6 22.3 24 28 19 15 00
19 25 00 --- 11 21 46 8.4 218.6 2.7 23.5 600 47 19 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

19 30 00 0834-201 11 26 47 7.9 219.6 2.8 24.1 293 47 19 30 00
19 44 30 --- 11 41 20 6.5 222.8 3.1 25.8 870 75 19 30 01
19 45 00 0834-201 11 41 50 6.4 222.9 3.1 25.8 24 75 19 45 00
20 00 00 --- 11 56 52 4.9 226.0 3.3 27.4 900 104 19 45 01

SETUP FILE INFORMATION:

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

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

```

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

```

```

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

```

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | Source position (RA/Dec) (J2000) | (Date) | Error (mas) |
|------------|-------------------------------------|-------------------------------------|-----------------|----------------|
| * 0834-201 | 08 34 24.601681 | * 08 36 39.215241 | 08 37 18.192544 | 0.00 |
| J0836-2016 | -20 06 30.40845 | *-20 16 59.50414 | -20 20 21.76220 | 0.00 |

rk01c3tr

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: zmiana pasma w czasie tego eksperymentu!!!

```
#####
##### Observing mode: K&C-band, dual-pol #####
#####
```

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

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

--- Sat 3 May 2014 Day 123 ---

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

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

18 00 00 0919-260    10 00 29 10.1 188.7 0.6                    5.8    0                    0    18 00 00
18 14 30 ---                    10 15 01 9.7 192.0 0.9                    8.0    870                    28    18 00 01

18 15 00 0919-260    10 15 31 9.7 192.1 0.9                    8.1    24                    28    18 15 00
18 25 00 ---                    10 25 33 9.3 194.4 1.1                    9.6    600                    47    18 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

18 30 00 0919-260    10 30 34 9.1 195.5 1.1                    10.3    293                    47    18 30 00
18 44 30 ---                    10 45 06 8.5 198.7 1.4                    12.4    870                    75    18 30 01

18 45 00 0919-260    10 45 36 8.5 198.8 1.4                    12.5    24                    75    18 45 00
19 00 00 ---                    11 00 39 7.7 202.1 1.6                    14.6    900                    104    18 45 01
```

SETUP FILE INFORMATION:

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

```
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 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: 6 Setup file default. Used with PCAL = 1MHz
LO sum= 4836.00 4836.00 4836.00 4836.00
BBC fr= 736.00 736.00 736.00 736.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 6
```

Track assignments are:

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | Source position (RA/Dec) (J2000) | (Date) | Error (mas) |
|------------|-------------------------------------|-------------------------------------|-----------------|----------------|
| * 0919-260 | 09 19 16.702133 | * 09 21 29.353855 | 09 22 08.121195 | 0.00 |
| J0921-2618 | -26 05 54.56415 | *-26 18 43.38632 | -26 22 46.27096 | 0.00 |

rk01c4tr

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: zmiana pasma w czasie tego eksperymentu!!!

#####
Observing mode: C&L-band, dual-pol
#####

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

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

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

--- Sun 4 May 2014 Day 124 ---

----- 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 0953+254 06 03 46 38.6 99.1 -3.9 -40.9 0 0 14 00 00
14 10 00 --- 06 13 48 40.1 101.3 -3.7 -40.6 600 19 14 00 01

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

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 732.00 732.00 732.00 732.00

14 15 00 0953+254 06 18 49 40.9 102.4 -3.6 -40.4 293 19 14 15 00
14 29 30 --- 06 33 21 43.0 105.8 -3.4 -39.7 870 47 14 15 01
14 30 00 0953+254 06 33 51 43.0 105.9 -3.4 -39.7 24 47 14 30 00
14 35 00 --- 06 38 52 43.8 107.1 -3.3 -39.4 300 57 14 30 01

SETUP FILE INFORMATION:

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

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

Frequency Set: 7 Setup file default. Used with PCAL = 1MHz
 LO sum= 4836.00 4836.00 4836.00 4836.00
 BBC fr= 736.00 736.00 736.00 736.00
 Bandwd= 16.00 16.00 16.00 16.00
 Matching frequency sets: 7

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

| | | | | | |
|---------------------|---------|------------------|-------|-----------------|--------|
| 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: 8 Setup file default. Used with PCAL = 1MHz
 LO sum= 1668.00 1668.00 1668.00 1668.00
 BBC fr= 732.00 732.00 732.00 732.00
 Bandwd= 16.00 16.00 16.00 16.00
 Matching frequency sets: 8

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | Source position (RA/Dec) (J2000) | (Date) | Error (mas) |
|------------|-------------------------------------|-------------------------------------|-----------------|----------------|
| * 0953+254 | 09 53 59.738485 | * 09 56 49.875379 | 09 57 39.164367 | 0.00 |
| J0956+2515 | 25 29 33.58568 | * 25 15 16.04978 | 25 11 05.03561 | 0.00 |

rk01c5tr

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: zmiana pasma w czasie tego eksperymentu!!!

#####
Observing mode: C&L-band, dual-pol
#####

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

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

--- Sun 4 May 2014 Day 124 ---

----- 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
16 10 00 1005+066 08 14 07 37.7 143.0 -1.9 -21.3 0 0 16 10 00
16 20 00 --- 08 24 09 38.6 145.9 -1.7 -19.8 600 19 16 10 01

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

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 732.00 732.00 732.00 732.00
16 25 00 1005+066 08 29 10 39.0 147.4 -1.7 -19.0 293 19 16 25 00
16 39 30 --- 08 43 42 40.1 151.9 -1.4 -16.5 870 47 16 25 01
16 40 00 1005+066 08 44 12 40.1 152.0 -1.4 -16.5 24 47 16 40 00
16 45 00 --- 08 49 13 40.4 153.6 -1.3 -15.6 300 57 16 40 01

SETUP FILE INFORMATION:

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

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

Frequency Set: 7 Setup file default. Used with PCAL = 1MHz
 LO sum= 4836.00 4836.00 4836.00 4836.00
 BBC fr= 736.00 736.00 736.00 736.00
 Bandwd= 16.00 16.00 16.00 16.00
 Matching frequency sets: 7

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

| | | | | | |
|---------------------|---------|------------------|-------|-----------------|--------|
| 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: 8 Setup file default. Used with PCAL = 1MHz
 LO sum= 1668.00 1668.00 1668.00 1668.00
 BBC fr= 732.00 732.00 732.00 732.00
 Bandwd= 16.00 16.00 16.00 16.00
 Matching frequency sets: 8

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | Source position (RA/Dec) (J2000) | (Date) | Error (mas) |
|------------|-------------------------------------|-------------------------------------|-----------------|----------------|
| * 1005+066 | 10 05 23.466064 | * 10 08 00.816157 | 10 08 46.656325 | 0.00 |
| J1008+0621 | 06 36 03.30797 | * 06 21 21.21593 | 06 16 57.12105 | 0.00 |

rk01c6tr

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: zmiana pasma w czasie tego eksperymentu!!!

#####
Observing mode: K&C-band, dual-pol
#####

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

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

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

--- Sun 4 May 2014 Day 124 ---

----- 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 0906+015 11 04 35 33.0 214.9 1.9 20.1 0 0 19 00 00
19 14 30 --- 11 19 08 31.7 218.9 2.2 22.2 870 28 19 00 01
19 15 00 0906+015 11 19 38 31.7 219.0 2.2 22.2 24 28 19 15 00
19 25 00 --- 11 29 39 30.7 221.7 2.3 23.6 600 47 19 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

19 30 00 0906+015 11 34 40 30.2 223.1 2.4 24.2 293 47 19 30 00
19 44 30 --- 11 49 13 28.6 226.8 2.7 26.0 870 75 19 30 01
19 45 00 0906+015 11 49 43 28.6 227.0 2.7 26.0 24 75 19 45 00
20 00 00 --- 12 04 45 26.9 230.8 2.9 27.7 900 104 19 45 01

SETUP FILE INFORMATION:

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

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

Frequency Set: 6 Setup file default. Used with PCAL = 1MHz
 LO sum= 22236.00 22236.00 22236.00 22236.00
 BBC fr= 736.00 736.00 736.00 736.00
 Bandwd= 16.00 16.00 16.00 16.00
 Matching frequency sets: 6

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

| | | | | | |
|---------------------|---------|------------------|-------|-----------------|--------|
| Setup 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: 8 Setup file default. Used with PCAL = 1MHz
 LO sum= 4836.00 4836.00 4836.00 4836.00
 BBC fr= 736.00 736.00 736.00 736.00
 Bandwd= 16.00 16.00 16.00 16.00
 Matching frequency sets: 8

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | Source position (RA/Dec) (J2000) | (Date) | Error (mas) |
|------------|-------------------------------------|-------------------------------------|-----------------|----------------|
| * 0906+015 | 09 06 35.181592 | * 09 09 10.091598 | 09 09 54.945914 | 0.00 |
| J0909+0121 | 01 33 48.12919 | * 01 21 35.61771 | 01 17 51.06174 | 0.00 |

rk01c7tr

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 4 May 2014 Day 124 ---

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

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

Table with columns: Start UT, Stop UT, Source, LST, EL, AZ, HA, UP, ParA, Early Dwell, Disk GBytes, TPStart SYNC. Contains scan data for 1015+057 source.

SETUP FILE INFORMATION:

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

==== Setup file: ra18cm2.set

--- WARNING --- This group does not match an entry in the frequency catalog.
This might be ok because the catalog is not complete.
But be very careful to be sure that the setup is correct.

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set: 3 Setup file default. Used with PCAL = 1MHz
LO sum= 1668.00 1668.00 1668.00 1668.00
BBC fr= 732.00 732.00 732.00 732.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 3

```

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | (J2000) | (Date) | Error (mas) |
|------------|-------------------------------------|-------------------|-----------------|----------------|
| * 1015+057 | 10 15 51.237789 | * 10 18 27.848284 | 10 19 13.536718 | 0.00 |
| J1018+0530 | 05 45 32.82524 | * 05 30 29.96198 | 05 25 59.98557 | 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)
1015+057    110.2

```

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

```

rk01c8tr

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: zmiana pasma w czasie tego eksperymentu!!!

#####
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 5 May 2014 Day 125 ---

----- 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

19 00 00 1015+359 11 08 32 70.5 211.4 0.8 22.7 0 0 19 00 00
19 14 30 --- 11 23 04 69.2 219.2 1.1 27.8 870 28 19 00 01
19 15 00 1015+359 11 23 34 69.2 219.5 1.1 28.0 23 28 19 15 00
19 25 00 --- 11 33 36 68.2 224.3 1.2 31.1 600 47 19 15 01

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

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 732.00 732.00 732.00 732.00

19 30 00 1015+359 11 38 37 67.6 226.6 1.3 32.5 292 47 19 30 00
19 44 30 --- 11 53 09 66.0 232.8 1.6 36.1 870 75 19 30 01
19 45 00 1015+359 11 53 39 65.9 233.0 1.6 36.2 24 75 19 45 00
20 00 00 --- 12 08 42 64.0 238.8 1.8 39.2 900 104 19 45 01

SETUP FILE INFORMATION:

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

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:  6  Setup file default.  Used with PCAL = 1MHz
LO sum=  4836.00  4836.00  4836.00  4836.00
BBC fr=   736.00  736.00  736.00  736.00
Bandwd=   16.00  16.00  16.00  16.00
Matching frequency sets:  6

```

Track assignments are:

```

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

```

```

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

```

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  8  Setup file default.  Used with PCAL = 1MHz
LO sum=  1668.00  1668.00  1668.00  1668.00
BBC fr=   732.00  732.00  732.00  732.00
Bandwd=   16.00  16.00  16.00  16.00
Matching frequency sets:  8

```

Track assignments are:

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) | | (Date) | Error (mas) |
|------------|--------------------------|-------------------|-----------------|-------------|
| | (B1950) | (J2000) | | |
| * 1015+359 | 10 15 16.226760 | * 10 18 10.988103 | 10 19 01.602492 | 0.00 |
| J1018+3542 | 35 57 41.35603 | * 35 42 39.44084 | 35 38 19.73815 | 0.00 |

rk01c9tr

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: zmiana pasma w czasie tego eksperymentu!!!

#####
Observing mode: K&C-band, dual-pol
#####

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

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

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

--- Mon 5 May 2014 Day 125 ---

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

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

21 10 00 0906+015 13 18 53 17.3 247.9 4.1 33.8 0 0 21 10 00
21 24 30 --- 13 33 26 15.3 251.1 4.4 34.6 870 28 21 10 01
21 25 00 0906+015 13 33 56 15.2 251.2 4.4 34.6 24 28 21 25 00
21 35 00 --- 13 43 57 13.8 253.3 4.6 35.1 600 47 21 25 01

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

Next scan frequencies: 4836.00 4836.00 4836.00 4836.00
Next BBC frequencies: 736.00 736.00 736.00 736.00

21 40 00 0906+015 13 48 58 13.0 254.3 4.7 35.3 293 47 21 40 00
21 54 30 --- 14 03 31 10.9 257.4 4.9 35.9 870 75 21 40 01
21 55 00 0906+015 14 04 01 10.9 257.5 4.9 35.9 24 75 21 55 00
22 10 00 --- 14 19 03 8.6 260.5 5.2 36.3 900 104 21 55 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= 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 group:  3      Station: TORUN      Total bit rate:  256
Format: MKIV1:4      Bits per sample:  2      Sample rate: 32.000
Number of channels:  4  DBE type:      Speedup factor:  1.00

```

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | Source position (RA/Dec) (J2000) | (Date) | Error (mas) |
|------------|-------------------------------------|-------------------------------------|-----------------|----------------|
| * 0906+015 | 09 06 35.181592 | * 09 09 10.091598 | 09 09 54.931952 | 0.00 |
| J0909+0121 | 01 33 48.12919 | * 01 21 35.61771 | 01 17 51.12305 | 0.00 |

rk01d0tr

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 6 May 2014 Day 126 ---

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

Table with 11 columns: Start UT, Stop UT, Source, LST, EL, AZ, HA, UP, ParA, Dwell, GBytes, SYNC. It lists observation times and parameters for source 0906+015.

SETUP FILE INFORMATION:

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

==== Setup file: ra18cm2.set

--- WARNING --- This group does not match an entry in the frequency catalog.
This might be ok because the catalog is not complete.
But be very careful to be sure that the setup is correct.

Setup group: 11 Station: TORUN Total bit rate: 256
Format: MKIV1:4 Bits per sample: 2 Sample rate: 32.000
Number of channels: 4 DBE type: Speedup factor: 1.00

Disk used to record data.

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

The following frequency sets based on these setups were used.

Frequency Set: 7 Setup file default. Used with PCAL = 1MHz
 LO sum= 1668.00 1668.00 1668.00 1668.00
 BBC fr= 732.00 732.00 732.00 732.00
 Bandwd= 16.00 16.00 16.00 16.00
 Matching frequency sets: 7

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | (J2000) | (Date) | Error (mas) |
|------------|-------------------------------------|-------------------|-----------------|----------------|
| * 0906+015 | 09 06 35.181592 | * 09 09 10.091598 | 09 09 54.921921 | 0.00 |
| J0909+0121 | 01 33 48.12919 | * 01 21 35.61771 | 01 17 51.17054 | 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) |
|----------|--------------------|
| 0906+015 | 93.4 |

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 |

rk01d1tr

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: zmiana pasma w czasie tego eksperymentu!!!

#####
Observing mode: C&L-band, dual-pol
#####

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

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

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

--- Tue 6 May 2014 Day 126 ---

----- 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

17 00 00 0953+254 09 12 09 60.8 158.5 -0.8 -14.1 0 0 17 00 00
17 14 30 --- 09 26 41 61.5 165.2 -0.5 -9.8 870 28 17 00 01
17 15 00 0953+254 09 27 11 61.5 165.4 -0.5 -9.6 23 28 17 15 00
17 25 00 --- 09 37 13 61.8 170.2 -0.3 -6.5 600 47 17 15 01

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

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 732.00 732.00 732.00 732.00

17 30 00 0953+254 09 42 14 61.9 172.6 -0.3 -4.9 292 47 17 30 00
17 44 30 --- 09 56 46 62.1 179.6 -0.0 -0.3 870 75 17 30 01
17 45 00 0953+254 09 57 16 62.1 179.8 -0.0 -0.1 23 75 17 45 00
18 00 00 --- 10 12 19 62.0 187.1 0.2 4.7 900 104 17 45 01

SETUP FILE INFORMATION:

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

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  8  Setup file default.  Used with PCAL = 1MHz
LO sum=  4836.00  4836.00  4836.00  4836.00
BBC fr=   736.00  736.00  736.00  736.00
Bandwd=   16.00  16.00  16.00  16.00
Matching frequency sets:  8

```

```

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

```

```

Setup group:  12      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: 10  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: 10

```

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | Source position (RA/Dec) (J2000) | (Date) | Error (mas) |
|------------|-------------------------------------|-------------------------------------|-----------------|----------------|
| * 0953+254 | 09 53 59.738485 | * 09 56 49.875379 | 09 57 39.135164 | 0.00 |
| J0956+2515 | 25 29 33.58568 | * 25 15 16.04978 | 25 11 05.21110 | 0.00 |

rk01d2tr

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 6 May 2014 Day 126 ---

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

Table with columns: Start UT, Stop UT, Source, LST, EL, AZ, HA, UP, ParA, Dwell, GBytes, TPStart, SYNC. Contains scan schedule data for 0906+015.

SETUP FILE INFORMATION:

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

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) | Source position (RA/Dec) (J2000) | (Date) | Error (mas) |
|------------|-------------------------------------|-------------------------------------|-----------------|----------------|
| * 0906+015 | 09 06 35.181592 | * 09 09 10.091598 | 09 09 54.918134 | 0.00 |
| J0909+0121 | 01 33 48.12919 | * 01 21 35.61771 | 01 17 51.18879 | 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)
0906+015    93.2

```

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

```

rk01d3tr

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: zmiana pasma w czasie tego eksperymentu!!!

#####
Observing mode: C&L-band, dual-pol
#####

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

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

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

--- Tue 6 May 2014 Day 126 ---

----- 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 1015+057 15 13 08 14.2 259.9 4.9 36.4 0 0 23 00 00
23 10 00 --- 15 23 10 12.7 262.0 5.1 36.7 600 19 23 00 01

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

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 732.00 732.00 732.00 732.00

23 15 00 1015+057 15 28 10 12.0 263.0 5.1 36.8 293 19 23 15 00
23 29 30 --- 15 42 43 9.8 266.0 5.4 37.0 870 47 23 15 01
23 30 00 1015+057 15 43 13 9.7 266.1 5.4 37.0 24 47 23 30 00
23 35 00 --- 15 48 14 9.0 267.1 5.5 37.0 300 57 23 30 01

SETUP FILE INFORMATION:

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

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  3  Setup file default.  Used with PCAL = 1MHz
LO sum=  4836.00  4836.00  4836.00  4836.00
BBC fr=   736.00   736.00   736.00   736.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  3

```

```

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

```

```

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

```

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | Source position (RA/Dec) (J2000) | (Date) | Error (mas) |
|------------|-------------------------------------|-------------------------------------|-----------------|----------------|
| * 1015+057 | 10 15 51.237789 | * 10 18 27.848284 | 10 19 13.512073 | 0.00 |
| J1018+0530 | 05 45 32.82524 | * 05 30 29.96198 | 05 26 00.11369 | 0.00 |

rk01d4tr

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

--- Wed 7 May 2014 Day 127 ---

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

Table with 11 columns: Start UT, Stop UT, Source, LST, EL, AZ, HA, UP, ParA, Dwell, GBytes, SYNC. It lists observation times and parameters for source 1015+359.

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) | | (Date) | Error (mas) |
|------------|--------------------------|-------------------|-----------------|-------------|
| | (B1950) | (J2000) | | |
| * 1015+359 | 10 15 16.226760 | * 10 18 10.988103 | 10 19 01.581536 | 0.00 |
| J1018+3542 | 35 57 41.35603 | * 35 42 39.44084 | 35 38 19.87664 | 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) |
|----------|--------------------|
| 1015+359 | 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:

| | |
|----------|---------|
| 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 |

rk01d5tr

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: zmiana pasma w czasie tego eksperymentu!!!

#####
Observing mode: C&L-band, dual-pol
#####

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

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

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

--- Wed 7 May 2014 Day 127 ---

----- 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

13 00 00 1101+384 05 15 26 31.0 66.4 -5.8 -44.4 0 0 13 00 00
13 14 30 --- 05 29 58 33.0 68.8 -5.6 -45.4 870 28 13 00 01
13 15 00 1101+384 05 30 28 33.1 68.9 -5.6 -45.4 24 28 13 15 00
13 25 00 --- 05 40 30 34.5 70.6 -5.4 -46.0 600 47 13 15 01

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

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 732.00 732.00 732.00 732.00

13 30 00 1101+384 05 45 31 35.2 71.4 -5.3 -46.3 293 47 13 30 00
13 44 30 --- 06 00 03 37.3 73.8 -5.1 -47.1 870 75 13 30 01
13 45 00 1101+384 06 00 33 37.3 73.9 -5.1 -47.2 24 75 13 45 00
14 00 00 --- 06 15 36 39.5 76.4 -4.8 -47.9 900 104 13 45 01

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  8  Setup file default.  Used with PCAL = 1MHz
LO sum=  4836.00  4836.00  4836.00  4836.00
BBC fr=   736.00   736.00   736.00   736.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  8

```

```

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

```

```

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

```

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  9  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:  9

```

```

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) |
|------------|-------------------------------------|-------------------------------------|-----------------|----------------|
| * 1101+384 | 11 01 40.567856 | * 11 04 27.313945 | 11 05 15.836038 | 0.00 |
| J1104+3812 | 38 28 42.95187 | * 38 12 31.79894 | 38 07 54.15676 | 0.00 |

rk01d6tr

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: zmiana pasma w czasie tego eksperymentu!!!

#####
Observing mode: K&C-band, dual-pol
#####

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

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

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

--- Wed 7 May 2014 Day 127 ---

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

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

16 00 00 0906+015 08 15 55 37.0 163.0 -0.9 -10.1 0 0 16 00 00
16 15 00 --- 08 30 58 37.6 167.7 -0.6 -7.4 900 29 16 00 01

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

Next scan frequencies: 4836.00 4836.00 4836.00 4836.00
Next BBC frequencies: 736.00 736.00 736.00 736.00

16 20 00 0906+015 08 35 59 37.7 169.3 -0.6 -6.4 293 29 16 20 00
16 40 00 --- 08 56 02 38.1 175.6 -0.2 -2.6 1200 67 16 20 01

SETUP FILE INFORMATION:

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

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set: 6 Setup file default. Used with PCAL = 1MHz
LO sum= 22236.00 22236.00 22236.00 22236.00
BBC fr= 736.00 736.00 736.00 736.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 6

```

```

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

```

```

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

```

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set: 9 Setup file default. Used with PCAL = 1MHz
LO sum= 4836.00 4836.00 4836.00 4836.00
BBC fr= 736.00 736.00 736.00 736.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 9

```

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | Source position (RA/Dec) (J2000) | (Date) | Error (mas) |
|------------|-------------------------------------|-------------------------------------|-----------------|----------------|
| * 0906+015 | 09 06 35.181592 | * 09 09 10.091598 | 09 09 54.904656 | 0.00 |
| J0909+0121 | 01 33 48.12919 | * 01 21 35.61771 | 01 17 51.25390 | 0.00 |

rk01d7tr

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: zmiana pasma w czasie tego eksperymentu!!!

#####
Observing mode: C&L-band, dual-pol
#####

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

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

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

--- Wed 7 May 2014 Day 127 ---

----- 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 1015+359 10 16 15 72.5 178.1 -0.0 -1.4 0 0 18 00 00
18 14 30 --- 10 30 48 72.4 187.9 0.2 5.9 870 28 18 00 01
18 15 00 1015+359 10 31 18 72.4 188.3 0.2 6.1 23 28 18 15 00
18 25 00 --- 10 41 19 72.1 194.9 0.4 10.9 600 47 18 15 01

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

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 732.00 732.00 732.00 732.00
18 30 00 1015+359 10 46 20 71.9 198.1 0.5 13.3 291 47 18 30 00
18 44 30 --- 11 00 53 71.1 207.0 0.7 19.6 870 75 18 30 01
18 45 00 1015+359 11 01 23 71.0 207.3 0.7 19.8 23 75 18 45 00
19 00 00 --- 11 16 25 69.8 215.8 1.0 25.6 900 104 18 45 01

SETUP FILE INFORMATION:

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

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
```

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

```
Frequency Set:  7  Setup file default.  Used with PCAL = 1MHz
LO sum=  1668.00  1668.00  1668.00  1668.00
BBC fr=   732.00   732.00   732.00   732.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  7
```

Track assignments are:

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) | | (Date) | Error (mas) |
|------------|--------------------------|-------------------|-----------------|-------------|
| | (B1950) | (J2000) | | |
| * 1015+359 | 10 15 16.226760 | * 10 18 10.988103 | 10 19 01.568368 | 0.00 |
| J1018+3542 | 35 57 41.35603 | * 35 42 39.44084 | 35 38 19.95954 | 0.00 |

rk01d8tr

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 7 May 2014 Day 127 ---

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

| | | | | | | | | | | |
|----------|----------|----------|------|-------|-----|--|------|------|----|----------|
| 21 00 00 | 1005+066 | 13 16 45 | 29.6 | 236.8 | 3.1 | | 30.3 | 0 | 0 | 21 00 00 |
| 21 19 30 | --- | 13 36 18 | 27.1 | 241.5 | 3.5 | | 32.1 | 1170 | 37 | 21 00 01 |
| 21 20 00 | 1005+066 | 13 36 48 | 27.1 | 241.6 | 3.5 | | 32.1 | 24 | 37 | 21 20 00 |
| 21 40 00 | --- | 13 56 51 | 24.4 | 246.2 | 3.8 | | 33.6 | 1200 | 76 | 21 20 01 |

SETUP FILE INFORMATION:

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

===== Setup file: 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) |
|------------|-------------------------------------|-------------------|-----------------|----------------|
| * 1005+066 | 10 05 23.466064 | * 10 08 00.816157 | 10 08 46.613791 | 0.00 |
| J1008+0621 | 06 36 03.30797 | * 06 21 21.21593 | 06 16 57.34202 | 0.00 |

EFFECT OF SOLAR CORONA

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

| Source | Sun distance (deg) |
|----------|--------------------|
| 1005+066 | 104.6 |

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

For common VLBI bands, this is:

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

rk01d9tr

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: zmiana pasma w czasie tego eksperymentu!!!

```
#####
##### Observing mode: C&L-band, dual-pol #####
#####
```

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

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

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

--- Thu 8 May 2014 Day 128 ---

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

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

```
01 00 00 1144+402                      17 17 24 35.0 -68.2 5.5                      46.6    0        0    01 00 00
01 14 30 ---                                      17 31 57 33.0 -65.9 5.7                      45.6    870        28    01 00 01

01 15 00 1144+402                      17 32 27 32.9 -65.8 5.7                      45.5    24        28    01 15 00
01 25 00 ---                                      17 42 28 31.6 -64.2 5.9                      44.8    600        47    01 15 01
```

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

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
 Next BBC frequencies: 732.00 732.00 732.00 732.00

```
01 30 00 1144+402                      17 47 29 30.9 -63.4 6.0                      44.4    293        47    01 30 00
01 44 30 ---                                      18 02 01 29.0 -61.1 6.2                      43.2    870        75    01 30 01

01 45 00 1144+402                      18 02 32 28.9 -61.0 6.2                      43.2    24        75    01 45 00
02 00 00 ---                                      18 17 34 26.9 -58.6 6.5                      41.9    900        104    01 45 01
```

SETUP FILE INFORMATION:

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

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

```
Frequency Set:  6  Setup file default.  Used with PCAL = 1MHz
LO sum=  4836.00  4836.00  4836.00  4836.00
BBC fr=   736.00  736.00  736.00  736.00
Bandwd=   16.00  16.00  16.00  16.00
Matching frequency sets:  6
```

Track assignments are:

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

```
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:  7  Setup file default.  Used with PCAL = 1MHz
LO sum=  1668.00  1668.00  1668.00  1668.00
BBC fr=   732.00  732.00  732.00  732.00
Bandwd=   16.00  16.00  16.00  16.00
Matching frequency sets:  7
```

Track assignments are:

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | Source position (RA/Dec) (J2000) | (Date) | Error (mas) |
|------------|-------------------------------------|-------------------------------------|-----------------|----------------|
| * 1144+402 | 11 44 21.020905 | * 11 46 58.297917 | 11 47 44.323529 | 0.00 |
| J1146+3958 | 40 15 14.23942 | * 39 58 34.30433 | 39 53 49.60067 | 0.00 |

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  9  Setup file default.  Used with PCAL = 1MHz
LO sum=  4836.00  4836.00  4836.00  4836.00
BBC fr=   736.00   736.00   736.00   736.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  9

```

Track assignments are:

```

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

```

```

Setup group:  10      Station: TORUM      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: 10  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: 10

```

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) | | |
| * 1015+359 | 10 15 16.226760 | * 10 18 10.988103 | 10 19 01.552145 | 0.00 |
| J1018+3542 | 35 57 41.35603 | * 35 42 39.44084 | 35 38 20.05672 | 0.00 |

rk01e1tr

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: zmiana pasma w czasie tego eksperymentu!!!

#####
Observing mode: C&L-band, dual-pol
#####

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

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

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

--- Thu 8 May 2014 Day 128 ---

----- 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 30 00 1128+385 07 49 47 49.6 88.7 -3.7 -49.8 0 0 15 30 00
15 45 00 --- 08 04 50 51.9 91.7 -3.4 -49.8 900 29 15 30 01

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

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 732.00 732.00 732.00 732.00

15 50 00 1128+385 08 09 50 52.6 92.7 -3.4 -49.7 293 29 15 50 00
16 10 00 --- 08 29 54 55.6 97.1 -3.0 -49.3 1200 67 15 50 01

SETUP FILE INFORMATION:

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

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  8  Setup file default.  Used with PCAL = 1MHz
LO sum=  4836.00  4836.00  4836.00  4836.00
BBC fr=   736.00   736.00   736.00   736.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  8

```

Track assignments are:

```

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

```

```

Setup group:  11      Station: TORUM      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: 10  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: 10

```

Track assignments are:

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | | Source position (RA/Dec) (J2000) | | (Date) | Error (mas) |
|------------|-------------------------------------|-----------|-------------------------------------|-----------|-----------------|----------------|
| * 1128+385 | 11 28 | 12.513446 | * 11 30 | 53.282615 | 11 31 40.219691 | 0.00 |
| J1130+3815 | 38 31 | 51.62112 | * 38 15 | 18.54689 | 38 10 35.23940 | 0.00 |

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  8  Setup file default.  Used with PCAL = 1MHz
LO sum=  4836.00  4836.00  4836.00  4836.00
BBC fr=   736.00  736.00  736.00  736.00
Bandwd=   16.00  16.00  16.00  16.00
Matching frequency sets:  8

```

Track assignments are:

```

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

```

```

Setup group:  11      Station: TORUM      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: 10  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: 10

```

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) | | |
| * 1144+402 | 11 44 21.020905 | * 11 46 58.297917 | 11 47 44.312081 | 0.00 |
| J1146+3958 | 40 15 14.23942 | * 39 58 34.30433 | 39 53 49.72794 | 0.00 |

rk01e3tr

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: zmiana pasma w czasie tego eksperymentu!!!

```
#####
##### Observing mode: C&L-band, dual-pol #####
#####
```

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

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

--- Thu 8 May 2014 Day 128 ---

----- 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

19 00 00 1005+066    11 20 22 41.0 203.9 1.2            14.1    0            0    19 00 00
19 15 00 ---            11 35 24 40.0 208.6 1.4            16.8    900            29    19 00 01
```

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

```
Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies:  732.00  732.00  732.00  732.00

19 20 00 1005+066    11 40 25 39.6 210.1 1.5            17.7    293            29    19 20 00
19 40 00 ---            12 00 28 37.9 216.2 1.9            20.9    1200            67    19 20 01
```

SETUP FILE INFORMATION:

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

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  8  Setup file default.  Used with PCAL = 1MHz
LO sum=  4836.00  4836.00  4836.00  4836.00
BBC fr=   736.00  736.00  736.00  736.00
Bandwd=   16.00  16.00  16.00  16.00
Matching frequency sets:  8

```

Track assignments are:

```

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

```

```

Setup group:  11      Station: TORUN      Total bit rate:  256
Format: MKIV1:4      Bits per sample:  2      Sample rate: 32.000
Number of channels:  4  DBE type:          Speedup factor:  1.00

```

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set: 10  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: 10

```

Track assignments are:

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | Source position (RA/Dec) (J2000) | (Date) | Error (mas) |
|------------|-------------------------------------|-------------------------------------|-----------------|----------------|
| * 1005+066 | 10 05 23.466064 | * 10 08 00.816157 | 10 08 46.598599 | 0.00 |
| J1008+0621 | 06 36 03.30797 | * 06 21 21.21593 | 06 16 57.42160 | 0.00 |

rk01e4tr

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

--- Thu 8 May 2014 Day 128 ---

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

23 00 00 1228+126 15 21 01 37.2 235.7 2.8 30.5 0 0 23 00 00
23 19 30 --- 15 40 34 34.7 240.7 3.1 32.4 1170 37 23 00 01
23 20 00 1228+126 15 41 04 34.6 240.8 3.2 32.5 24 37 23 20 00
23 40 00 --- 16 01 08 31.9 245.7 3.5 34.1 1200 76 23 20 01

SETUP FILE INFORMATION:

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

==== Setup file: ra1cm2.set

Matching groups in ./rk01e4_freq.dat:
tr1cm

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set: 6 Setup file default. Used with PCAL = 1MHz
LO sum= 22236.00 22236.00 22236.00 22236.00
BBC fr= 736.00 736.00 736.00 736.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 6

```

Track assignments are:

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | Source position (RA/Dec) (J2000) | (Date) | Error (mas) |
|------------|-------------------------------------|-------------------------------------|-----------------|----------------|
| * 1228+126 | 12 28 17.569280 | * 12 30 49.423382 | 12 31 34.271770 | 0.00 |
| J1230+1223 | 12 40 01.74883 | * 12 23 28.04365 | 12 18 38.95588 | 0.00 |

EFFECT OF SOLAR CORONA

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

| Source | Sun distance (deg) |
|----------|--------------------|
| 3C286 | 127.5 |
| 1228+126 | 132.3 |

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

For common VLBI bands, this is:

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

rk01e5tr

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 9 May 2014 Day 129 ---

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

Table with 11 columns: Start UT, Source, LST, EL, AZ, HA, UP, ParA, Dwell, GBytes, SYNC. It lists observation times and parameters for source 1228+126.

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) |
|------------|-------------------------------------|-------------------|-----------------|----------------|
| * 1228+126 | 12 28 17.569280 | * 12 30 49.423382 | 12 31 34.270876 | 0.00 |
| J1230+1223 | 12 40 01.74883 | * 12 23 28.04365 | 12 18 38.96712 | 0.00 |

EFFECT OF SOLAR CORONA

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

| Source | Sun distance (deg) |
|----------|--------------------|
| 3C286 | 127.4 |
| 1228+126 | 132.2 |

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 |

rk01e6tr

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 9 May 2014 Day 129 ---

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

03 00 00 1128+385 19 21 40 16.0 -46.5 7.8 33.7 0 0 03 00 00
03 19 30 --- 19 41 14 14.0 -43.2 8.2 31.5 1170 37 03 00 01
03 20 00 1128+385 19 41 44 13.9 -43.1 8.2 31.4 24 37 03 20 00
03 40 00 --- 20 01 47 11.9 -39.6 8.5 29.1 1200 76 03 20 01

SETUP FILE INFORMATION:

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

==== Setup file: ra18cm2.set

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

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

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) | | (Date) | Error (mas) |
|------------|--------------------------|-------------------|-----------------|-------------|
| | (B1950) | (J2000) | | |
| * 1128+385 | 11 28 12.513446 | * 11 30 53.282615 | 11 31 40.210229 | 0.00 |
| J1130+3815 | 38 31 51.62112 | * 38 15 18.54689 | 38 10 35.32963 | 0.00 |

EFFECT OF SOLAR CORONA

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

| Source | Sun distance (deg) |
|----------|--------------------|
| 1128+385 | 105.5 |

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

For common VLBI bands, this is:

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

rk01e8tr

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: zmiana pasma w czasie tego eksperymentu!!!

 ##### Observing mode: K&C-band, dual-pol #####
 #####

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

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

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

--- Thu 15 May 2014 Day 135 ---

----- 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

| | | | | | | | | | | |
|----------|----------|----------|------|-------|------|--|-------|-----|----|----------|
| 15 00 00 | 1005+066 | 07 47 18 | 35.0 | 135.4 | -2.4 | | -25.1 | 0 | 0 | 15 00 00 |
| 15 14 30 | --- | 08 01 50 | 36.5 | 139.4 | -2.1 | | -23.1 | 870 | 28 | 15 00 01 |
| 15 15 00 | 1005+066 | 08 02 21 | 36.6 | 139.6 | -2.1 | | -23.1 | 24 | 28 | 15 15 00 |
| 15 25 00 | --- | 08 12 22 | 37.5 | 142.4 | -1.9 | | -21.6 | 600 | 47 | 15 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

| | | | | | | | | | | |
|----------|----------|----------|------|-------|------|--|-------|-----|-----|----------|
| 15 30 00 | 1005+066 | 08 17 23 | 38.0 | 143.9 | -1.9 | | -20.8 | 293 | 47 | 15 30 00 |
| 15 44 30 | --- | 08 31 55 | 39.2 | 148.3 | -1.6 | | -18.5 | 870 | 75 | 15 30 01 |
| 15 45 00 | 1005+066 | 08 32 25 | 39.2 | 148.4 | -1.6 | | -18.4 | 24 | 75 | 15 45 00 |
| 16 00 00 | --- | 08 47 28 | 40.3 | 153.1 | -1.4 | | -15.9 | 900 | 104 | 15 45 01 |

SETUP FILE INFORMATION:

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

```

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

```

```

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

```

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set: 10 Setup file default. Used with PCAL = 1MHz
LO sum= 4836.00 4836.00 4836.00 4836.00
BBC fr= 736.00 736.00 736.00 736.00
Bandwd= 16.00 16.00 16.00 16.00
Matching frequency sets: 10

```

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) | | (Date) | Error (mas) |
|------------|--------------------------|-------------------|-----------------|-------------|
| | (B1950) | (J2000) | | |
| * 1005+066 | 10 05 23.466064 | * 10 08 00.816157 | 10 08 46.490468 | 0.00 |
| J1008+0621 | 06 36 03.30797 | * 06 21 21.21593 | 06 16 57.84972 | 0.00 |

rk01e9tr

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: zmiana pasma w czasie tego eksperymentu!!!

#####
Observing mode: C&L-band, dual-pol
#####

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

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

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

--- Thu 15 May 2014 Day 135 ---

----- 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 1040+244 10 47 48 61.0 181.8 0.1 1.2 0 0 18 00 00
18 14 30 --- 11 02 20 60.8 188.6 0.3 5.7 870 28 18 00 01
18 15 00 1040+244 11 02 50 60.8 188.9 0.3 5.8 23 28 18 15 00
18 25 00 --- 11 12 52 60.5 193.5 0.5 8.8 600 47 18 15 01

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

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 732.00 732.00 732.00 732.00

18 30 00 1040+244 11 17 53 60.3 195.8 0.6 10.3 292 47 18 30 00
18 44 30 --- 11 32 25 59.6 202.2 0.8 14.4 870 75 18 30 01
18 45 00 1040+244 11 32 55 59.5 202.4 0.8 14.5 23 75 18 45 00
19 00 00 --- 11 47 57 58.6 208.9 1.1 18.5 900 104 18 45 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=  4100.00  4100.00  4100.00  4100.00
Net SB=      L      L      U      U
IF SB =      U      U      U      U
Pol.  =      RCP     LCP     RCP     LCP
BBC   =      1      2      1      2
BBC SB=      L      L      U      U
IF    =      C      A      C      A

```

The following frequency sets based on these setups were used.

```

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

```

```

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

```

```

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

```

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) | | (Date) | Error (mas) |
|------------|--------------------------|-------------------|-----------------|-------------|
| | (B1950) | (J2000) | | |
| * 1040+244 | 10 40 25.199377 | * 10 43 09.035778 | 10 43 56.587980 | 0.00 |
| J1043+2408 | 24 24 19.59847 | * 24 08 35.40933 | 24 04 01.49423 | 0.00 |

rk01f0tr

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: zmiana pasma w czasie tego eksperymentu!!!

#####
Observing mode: C&L-band, dual-pol
#####

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

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

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

--- Thu 15 May 2014 Day 135 ---

----- 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 1023+131 15 48 37 15.9 270.3 5.4 38.0 0 0 23 00 00
23 14 30 --- 16 03 09 13.7 273.1 5.6 37.9 870 28 23 00 01
23 15 00 1023+131 16 03 39 13.7 273.2 5.6 37.9 24 28 23 15 00
23 25 00 --- 16 13 41 12.2 275.2 5.8 37.8 600 47 23 15 01

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

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 732.00 732.00 732.00 732.00
23 30 00 1023+131 16 18 42 11.4 276.2 5.9 37.8 293 47 23 30 00
23 44 30 --- 16 33 14 9.3 279.1 6.1 37.5 870 75 23 30 01
23 45 00 1023+131 16 33 44 9.2 279.2 6.1 37.4 24 75 23 45 00
23 59 59 --- 16 48 47 7.0 282.1 6.4 37.0 899 104 23 45 01

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  3  Setup file default.  Used with PCAL = 1MHz
LO sum=  4836.00  4836.00  4836.00  4836.00
BBC fr=   736.00   736.00   736.00   736.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  3

```

```

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

```

```

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

```

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | Source position (RA/Dec) (J2000) | (Date) | Error (mas) |
|------------|-------------------------------------|-------------------------------------|-----------------|----------------|
| * 1023+131 | 10 23 16.285230 | * 10 25 56.285371 | 10 26 42.754510 | 0.00 |
| J1025+1253 | 13 09 05.49476 | * 12 53 49.02188 | 12 49 18.66693 | 0.00 |

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

The following frequency sets based on these setups were used.

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

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) | | (Date) | Error (mas) |
|------------|--------------------------|-------------------|-----------------|-------------|
| | (B1950) | (J2000) | | |
| * 1040+244 | 10 40 25.199377 | * 10 43 09.035778 | 10 43 56.574390 | 0.00 |
| J1043+2408 | 24 24 19.59847 | * 24 08 35.40933 | 24 04 01.56809 | 0.00 |

EFFECT OF SOLAR CORONA

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

| Source | Sun distance (deg) |
|----------|--------------------|
| 1040+244 | 96.5 |

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

For common VLBI bands, this is:

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

rk01f4tr

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: zmiana pasma w czasie tego eksperymentu!!!

#####
Observing mode: C&L-band, dual-pol
#####

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

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

--- Sat 17 May 2014 Day 137 ---

----- 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 1144+402 07 55 11 49.1 84.6 -3.9 -51.2 0 0 15 00 00
15 15 00 --- 08 10 14 51.4 87.4 -3.6 -51.4 900 29 15 00 01

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

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 732.00 732.00 732.00 732.00
15 20 00 1144+402 08 15 14 52.1 88.4 -3.5 -51.5 293 29 15 20 00
15 40 00 --- 08 35 18 55.1 92.5 -3.2 -51.4 1200 67 15 20 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=  4100.00  4100.00  4100.00  4100.00
Net SB=      L      L      U      U
IF SB =      U      U      U      U
Pol.  =      RCP     LCP     RCP     LCP
BBC   =      1      2      1      2
BBC SB=      L      L      U      U
IF    =      C      A      C      A

```

The following frequency sets based on these setups were used.

```

Frequency Set:  7  Setup file default.  Used with PCAL = 1MHz
LO sum=  4836.00  4836.00  4836.00  4836.00
BBC fr=   736.00   736.00   736.00   736.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  7

```

```

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

```

```

Setup group:  10      Station: TORUN      Total bit rate:  256
Format: MKIV1:4      Bits per sample:  2      Sample rate: 32.000
Number of channels:  4  DBE type:          Speedup factor:  1.00

```

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  9  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:  9

```

```

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) | | |
| * 1144+402 | 11 44 21.020905 | * 11 46 58.297917 | 11 47 44.161151 | 0.00 |
| J1146+3958 | 40 15 14.23942 | * 39 58 34.30433 | 39 53 51.12246 | 0.00 |

rk01f5tr

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: zmiana pasma w czasie tego eksperymentu!!!

#####
Observing mode: C&L-band, dual-pol
#####

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

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

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

--- Sat 17 May 2014 Day 137 ---

----- 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

19 00 00 1023+131 11 55 51 46.0 212.2 1.5 19.1 0 0 19 00 00
19 15 00 --- 12 10 53 44.7 217.0 1.7 21.8 900 29 19 00 01

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

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 732.00 732.00 732.00 732.00

19 20 00 1023+131 12 15 54 44.2 218.6 1.8 22.6 293 29 19 20 00
19 40 00 --- 12 35 57 42.2 224.8 2.2 25.7 1200 67 19 20 01

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  6  Setup file default.  Used with PCAL = 1MHz
LO sum=  4836.00  4836.00  4836.00  4836.00
BBC fr=   736.00   736.00   736.00   736.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  6

```

```

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

```

```

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

```

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  8  Setup file default.  Used with PCAL = 1MHz
LO sum=  1668.00  1668.00  1668.00  1668.00
BBC fr=   732.00   732.00   732.00   732.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  8

```

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) | | (Date) | Error (mas) |
|------------|--------------------------|-------------------|-----------------|----------------|
| | (B1950) | (J2000) | | |
| * 1023+131 | 10 23 16.285230 | * 10 25 56.285371 | 10 26 42.742996 | 0.00 |
| J1025+1253 | 13 09 05.49476 | * 12 53 49.02188 | 12 49 18.71435 | 0.00 |

rk01f6tr

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: zmiana pasma w czasie tego eksperymentu!!!

#####
Observing mode: C&L-band, dual-pol
#####

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

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

--- Sat 17 May 2014 Day 137 ---

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

Next scan frequencies: 4836.00 4836.00 4836.00 4836.00
Next BBC frequencies: 736.00 736.00 736.00 736.00
Next scan bandwidths: 16.00 16.00 16.00 16.00
21 00 00 1101+384 13 56 10 57.2 260.3 2.8 48.8 0 0 21 00 00
21 15 00 --- 14 11 13 55.0 263.8 3.1 49.4 900 29 21 00 01

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

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 732.00 732.00 732.00 732.00
21 20 00 1101+384 14 16 14 54.2 264.9 3.2 49.5 293 29 21 20 00
21 40 00 --- 14 36 17 51.2 269.1 3.5 49.8 1200 67 21 20 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=  4100.00  4100.00  4100.00  4100.00
Net SB=      L      L      U      U
IF SB =      U      U      U      U
Pol.  =      RCP     LCP     RCP     LCP
BBC   =      1      2      1      2
BBC SB=      L      L      U      U
IF    =      C      A      C      A

```

The following frequency sets based on these setups were used.

```

Frequency Set:  6  Setup file default.  Used with PCAL = 1MHz
LO sum=  4836.00  4836.00  4836.00  4836.00
BBC fr=   736.00   736.00   736.00   736.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  6

```

```

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

```

```

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:  7  Setup file default.  Used with PCAL = 1MHz
LO sum=  1668.00  1668.00  1668.00  1668.00
BBC fr=   732.00   732.00   732.00   732.00
Bandwd=   16.00   16.00   16.00   16.00
Matching frequency sets:  7

```

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | Source position (RA/Dec) (J2000) | (Date) | Error (mas) |
|------------|-------------------------------------|-------------------------------------|-----------------|----------------|
| * 1101+384 | 11 01 40.567856 | * 11 04 27.313945 | 11 05 15.647627 | 0.00 |
| J1104+3812 | 38 28 42.95187 | * 38 12 31.79894 | 38 07 55.39418 | 0.00 |

rk01f7tr

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: zmiana pasma w czasie tego eksperymentu!!!

#####
Observing mode: K&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 18 May 2014 Day 138 ---

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

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

00 00 00 1226+023 16 56 40 15.4 252.2 4.4 34.9 0 0 00 00 00
00 14 30 --- 17 11 12 13.3 255.2 4.7 35.5 870 28 00 00 01
00 15 00 1226+023 17 11 42 13.2 255.3 4.7 35.5 24 28 00 15 00
00 25 00 --- 17 21 44 11.7 257.4 4.9 35.9 600 47 00 15 01

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

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 732.00 732.00 732.00 732.00

00 30 00 1226+023 17 26 45 11.0 258.4 4.9 36.1 293 47 00 30 00
00 44 30 --- 17 41 17 8.8 261.4 5.2 36.4 870 75 00 30 01
00 45 00 1226+023 17 41 47 8.8 261.5 5.2 36.5 24 75 00 45 00
01 00 00 --- 17 56 50 6.5 264.6 5.4 36.7 900 104 00 45 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= 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 group:  2      Station: TORUN      Total bit rate:  256
Format: MKIV1:4      Bits per sample:  2      Sample rate: 32.000
Number of channels:  4  DBE type:      Speedup factor:  1.00

```

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | Source position (RA/Dec) (J2000) | (Date) | Error (mas) |
|------------|-------------------------------------|-------------------------------------|-----------------|----------------|
| * 1226+023 | 12 26 33.245835 | * 12 29 06.699731 | 12 29 52.046115 | 0.00 |
| J1229+0203 | 02 19 43.30547 | * 02 03 08.59797 | 01 58 17.32933 | 0.00 |


```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  2  Setup file default.  Used with PCAL = off
LO sum=  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) | | (Date) | Error (mas) |
|------------|--------------------------|-------------------|-----------------|-------------|
| | (B1950) | (J2000) | | |
| * W43A_H2O | 18 44 25.341951 | * 18 47 01.166000 | 18 47 47.329298 | 0.00 |
| | -01 48 30.32574 | *-01 45 11.70000 | -01 44 07.62387 | 0.00 |
| * 1937-101 | 19 37 12.649200 | * 19 39 57.256582 | 19 40 45.686325 | 0.00 |
| J1939-1002 | -10 09 39.45684 | *-10 02 41.52079 | -10 00 31.94994 | 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) |
|----------|--------------------|
| W43A_H2O | 130.7 |
| 1937-101 | 121.2 |

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 |

rk07bdr

RADIOASTRON MASER OBSERVATIONS

PI: Alexei Alakoz

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 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

--- Sun 18 May 2014 Day 138 ---

----- This is a fringe finder/clock offset calibrator 20.3 deg. from W49N_H2O -----

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

06 50 00 2029+121 23 47 47 33.9 242.3 3.3 33.0 0 0 06 50 00
06 55 00 --- 23 52 48 33.2 243.5 3.3 33.4 300 10 06 50 01

----- Please, make sure PCAL is OFF for W49N_H2O maser observations. -----

07 00 00 W49N_H20 23 57 49 18.2 260.8 4.8 36.9 232 10 07 00 00
07 09 30 --- 00 07 20 16.8 262.7 4.9 37.1 570 28 07 00 01

07 10 00 W49N_H20 00 07 51 16.7 262.8 4.9 37.1 24 28 07 10 00
07 19 30 --- 00 17 22 15.3 264.8 5.1 37.3 570 46 07 10 01

07 20 00 W49N_H20 00 17 52 15.2 264.9 5.1 37.3 24 46 07 20 00
07 29 30 --- 00 27 24 13.8 266.8 5.3 37.4 570 64 07 20 01

07 30 00 W49N_H20 00 27 54 13.7 266.9 5.3 37.4 24 64 07 30 00
07 39 30 --- 00 37 25 12.3 268.8 5.4 37.4 570 83 07 30 01

07 40 00 W49N_H20 00 37 55 12.2 268.9 5.4 37.5 24 83 07 40 00
07 49 30 --- 00 47 27 10.8 270.8 5.6 37.5 570 101 07 40 01

07 50 00 W49N_H20 00 47 57 10.7 270.9 5.6 37.5 24 101 07 50 00
08 00 00 --- 00 57 59 9.2 272.9 5.8 37.4 600 120 07 50 01

SETUP FILE INFORMATION:

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:  2  Setup file default.  Used with PCAL = off
LO sum=  22228.00 22228.00 22228.00 22228.00
BBC fr=   728.00  728.00  728.00  728.00
Bandwd=   16.00  16.00  16.00  16.00
Matching frequency sets:  2

```

Track assignments are:

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) | | (Date) | Error (mas) |
|------------|--------------------------|-------------------|-----------------|-------------|
| | (B1950) | (J2000) | | |
| * W49N_H2O | 19 07 49.797628 | * 19 10 13.409600 | 19 10 55.978586 | 0.00 |
| | 09 01 15.49441 | * 09 06 12.80300 | 09 07 42.38076 | 0.00 |
| * 2029+121 | 20 29 32.681261 | * 20 31 54.994268 | 20 32 36.833259 | 0.00 |
| J2031+1219 | 12 09 28.75295 | * 12 19 41.34011 | 12 22 39.12241 | 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) |
|----------|--------------------|
| W49N_H2O | 120.7 |
| 2029+121 | 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:

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


```

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

```

The following frequency sets based on these setups were used.

```

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

```

```

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

```

```

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

```

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | Source position (RA/Dec) (J2000) | (Date) | Error (mas) |
|------------|-------------------------------------|-------------------------------------|-----------------|----------------|
| * 1036+054 | 10 36 10.827228 | * 10 38 46.779881 | 10 39 32.148643 | 0.00 |
| J1038+0512 | 05 28 06.89952 | * 05 12 29.08645 | 05 07 50.92251 | 0.00 |


```

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

```

The following frequency sets based on these setups were used.

```

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

```

```

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

```

```

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

```

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | Source position (RA/Dec) (J2000) | (Date) | Error (mas) |
|------------|-------------------------------------|-------------------------------------|-----------------|----------------|
| * 1038+064 | 10 38 40.885155 | * 10 41 17.162502 | 10 42 02.611583 | 0.00 |
| J1041+0610 | 06 25 58.53276 | * 06 10 16.92354 | 06 05 38.18877 | 0.00 |

rk01g1tr

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: zmiana pasma w czasie tego eksperymentu!!!

```
#####
##### Observing mode: C&L-band, dual-pol #####
#####
```

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

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

--- Sat 24 May 2014 Day 144 ---

----- 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

```
22 00 00 1036+054 15 23 56 15.4 257.8 4.7 36.1 0 0 22 00 00
22 14 30 --- 15 38 28 13.2 260.8 5.0 36.5 870 28 22 00 01

22 15 00 1036+054 15 38 59 13.2 260.9 5.0 36.5 24 28 22 15 00
22 25 00 --- 15 49 00 11.7 262.9 5.2 36.7 600 47 22 15 01
```

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

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
 Next BBC frequencies: 732.00 732.00 732.00 732.00

```
22 30 00 1036+054 15 54 01 10.9 264.0 5.2 36.8 293 47 22 30 00
22 44 30 --- 16 08 33 8.7 266.9 5.5 37.0 870 75 22 30 01

22 45 00 1036+054 16 09 03 8.7 267.0 5.5 37.0 24 75 22 45 00
23 00 00 --- 16 24 06 6.4 270.0 5.7 37.1 900 104 22 45 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= | 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

| | | | | |
|---------------------|---------|------------------|-----------------|----------------------|
| Setup group: | 5 | Station: TORUM | 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) | | (Date) | Error (mas) |
|------------|--------------------------|-------------------|-----------------|-------------|
| | (B1950) | (J2000) | | |
| * 1036+054 | 10 36 10.827228 | * 10 38 46.779881 | 10 39 32.129082 | 0.00 |
| J1038+0512 | 05 28 06.89952 | * 05 12 29.08645 | 05 07 51.02216 | 0.00 |


```

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

```

The following frequency sets based on these setups were used.

```

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

```

```

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

```

```

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

```

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  7  Setup file default.  Used with PCAL = 1MHz
LO sum=  1668.00  1668.00  1668.00  1668.00
BBC fr=   732.00  732.00  732.00  732.00
Bandwd=   16.00  16.00  16.00  16.00
Matching frequency sets:  7

```

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) | | (Date) | Error (mas) |
|------------|--------------------------|-------------------|-----------------|-------------|
| | (B1950) | (J2000) | | |
| * 1036+054 | 10 36 10.827228 | * 10 38 46.779881 | 10 39 32.115815 | 0.00 |
| J1038+0512 | 05 28 06.89952 | * 05 12 29.08645 | 05 07 51.08477 | 0.00 |

rk01g3tr

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: zmiana pasma w czasie tego eksperymentu!!!

```
#####
##### Observing mode: C&L-band, dual-pol #####
#####
```

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

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

--- Sun 25 May 2014 Day 145 ---

----- 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

| | | | | | | | | | |
|----------|----------|----------|------|-------|-----|------|-----|----|----------|
| 22 00 00 | 1038+064 | 15 27 53 | 15.9 | 258.7 | 4.8 | 36.3 | 0 | 0 | 22 00 00 |
| 22 14 30 | --- | 15 42 25 | 13.8 | 261.7 | 5.0 | 36.7 | 870 | 28 | 22 00 01 |
| 22 15 00 | 1038+064 | 15 42 55 | 13.7 | 261.8 | 5.0 | 36.7 | 24 | 28 | 22 15 00 |
| 22 25 00 | --- | 15 52 57 | 12.2 | 263.8 | 5.2 | 36.9 | 600 | 47 | 22 15 01 |

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

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
 Next BBC frequencies: 732.00 732.00 732.00 732.00

| | | | | | | | | | |
|----------|----------|----------|------|-------|-----|------|-----|-----|----------|
| 22 30 00 | 1038+064 | 15 57 58 | 11.5 | 264.8 | 5.3 | 37.0 | 293 | 47 | 22 30 00 |
| 22 44 30 | --- | 16 12 30 | 9.3 | 267.8 | 5.5 | 37.1 | 870 | 75 | 22 30 01 |
| 22 45 00 | 1038+064 | 16 13 00 | 9.2 | 267.9 | 5.5 | 37.1 | 24 | 75 | 22 45 00 |
| 23 00 00 | --- | 16 28 02 | 7.0 | 270.9 | 5.8 | 37.1 | 900 | 104 | 22 45 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=  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

```

```

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

```

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | Source position (RA/Dec) (J2000) | (Date) | Error (mas) |
|------------|-------------------------------------|-------------------------------------|-----------------|----------------|
| * 1038+064 | 10 38 40.885155 | * 10 41 17.162502 | 10 02 02.593761 | 0.00 |
| J1041+0610 | 06 25 58.53276 | * 06 10 16.92354 | 06 05 38.27402 | 0.00 |

rk01g4tr

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: zmiana pasma w czasie tego eksperymentu!!!

#####
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 26 May 2014 Day 146 ---

----- 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 20 00 1144+402 17 48 16 30.8 -63.3 6.0 44.3 0 0 00 20 00
00 34 30 --- 18 02 48 28.9 -60.9 6.3 43.2 870 28 00 20 01
00 35 00 1144+402 18 03 18 28.8 -60.9 6.3 43.1 24 28 00 35 00
00 45 00 --- 18 13 20 27.5 -59.3 6.4 42.3 600 47 00 35 01

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

Next scan frequencies: 1668.00 1668.00 1668.00 1668.00
Next BBC frequencies: 732.00 732.00 732.00 732.00

00 50 00 1144+402 18 18 21 26.8 -58.5 6.5 41.8 293 47 00 50 00
01 04 30 --- 18 32 53 25.0 -56.1 6.8 40.5 870 75 00 50 01
01 05 00 1144+402 18 33 23 24.9 -56.0 6.8 40.5 24 75 01 05 00
01 20 00 --- 18 48 25 23.1 -53.6 7.0 39.1 900 104 01 05 01

SETUP FILE INFORMATION:

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

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

Track assignments are:

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

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

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

Track assignments are:

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | (J2000) | (Date) | Error (mas) |
|------------|-------------------------------------|-------------------|-----------------|----------------|
| * 1144+402 | 11 44 21.020905 | * 11 46 58.297917 | 11 47 44.016356 | 0.00 |
| J1146+3958 | 40 15 14.23942 | * 39 58 34.30433 | 39 53 52.30478 | 0.00 |

rk01g5tr

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

--- Mon 26 May 2014 Day 146 ---

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

13 00 00 1036+054 06 30 20 20.5 109.7 -4.2 -34.6 0 0 13 00 00
13 19 30 --- 06 49 54 23.2 114.1 -3.8 -33.4 1170 37 13 00 01
13 20 00 1036+054 06 50 24 23.3 114.2 -3.8 -33.4 24 37 13 20 00
13 40 00 --- 07 10 27 25.9 118.8 -3.5 -31.9 1200 76 13 20 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= | 4100.00 | 4100.00 | 4100.00 | 4100.00 |
| Net SB= | L | L | U | U |
| IF SB = | U | U | U | U |
| Pol. = | RCP | LCP | RCP | LCP |
| BBC = | 1 | 2 | 1 | 2 |
| BBC SB= | L | L | U | U |
| IF = | C | A | C | A |

The following frequency sets based on these setups were used.

Frequency Set: 3 Setup file default. Used with PCAL = 1MHz
 LO sum= 4836.00 4836.00 4836.00 4836.00
 BBC fr= 736.00 736.00 736.00 736.00
 Bandwd= 16.00 16.00 16.00 16.00
 Matching frequency sets: 3

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) | | (Date) | Error (mas) |
|------------|--------------------------|-------------------|-----------------|-------------|
| | (B1950) | (J2000) | | |
| * 1036+054 | 10 36 10.827228 | * 10 38 46.779881 | 10 39 32.104697 | 0.00 |
| J1038+0512 | 05 28 06.89952 | * 05 12 29.08645 | 05 07 51.13399 | 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) |
|----------|--------------------|
| 1036+054 | 94.3 |

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

For common VLBI bands, this is:

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

f1412tr

FTP TEST
PI: *Dmitry Duev*

Address: JIVE Postbus 2 7990 AA Dwingeloo The Netherlands
Phone: +31-521-596521 EMAIL: duev@jive.nl
Phone during observation: +31-521-596521

Notes: L-band ftp-test (512 Mbps, 2-bit sampling, 8 MHz filters) for session 2/2014

COVER LETTER:

This is the schedule for the L-band ftp fringe-test on 29 May 2014
involving 13 antennas: Eb Wb Jb1 On25 Nt Tr Sv Zc Bd Sh Hh Sr T6 (Td)

The ftp test uses a standard setup
and consists of long integrations on a strong source 4C39.25.

Two ftp tests are scheduled:
11:37:28 UT (scan 2, 2 sec, DA193)
12:27:28 UT (scan 8, 2 sec, 4C39.25)

Please make sure that the autoftp is set up correctly.

Good luck with the session and see you on Skype!

Dmitry
Skype account: oasis230987

Schedule for TORUN (Code Tr)

Page 2

Ftp 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
-----
```

--- Thu 29 May 2014 Day 149 ---

```
Next scan frequencies: 1634.49 1634.49 1634.49 1634.49 1650.49 1650.49 1650.49 1650.49
                       1666.49 1666.49 1666.49 1666.49 1682.49 1682.49 1682.49 1682.49
Next BBC frequencies:  665.51 665.51 665.51 665.51 649.51 649.51 649.51 649.51
                       633.51 633.51 633.51 633.51 617.51 617.51 617.51 617.51
Next scan bandwidths:  8.00  8.00  8.00  8.00  8.00  8.00  8.00  8.00  8.00
                       8.00  8.00  8.00  8.00  8.00  8.00  8.00  8.00  8.00
```

| | | | | | | | | | |
|----------|---------|----------|------|-------|------|-------|-----|-----|----------|
| 11 30 00 | DA193 | 05 11 55 | 74.7 | 145.8 | -0.7 | -26.1 | 0 | 0 | 11 30 00 |
| 11 34 00 | --- | 05 15 56 | 75.0 | 148.4 | -0.7 | -24.2 | 240 | 15 | 11 30 01 |
| 11 34 30 | DA193 | 05 16 26 | 75.1 | 148.8 | -0.7 | -23.9 | 23 | 15 | 11 34 30 |
| 11 38 30 | --- | 05 20 27 | 75.4 | 151.6 | -0.6 | -21.9 | 240 | 31 | 11 34 31 |
| 11 40 30 | DA193 | 05 22 27 | 75.5 | 153.0 | -0.6 | -20.8 | 112 | 31 | 11 40 30 |
| 11 46 30 | --- | 05 28 28 | 75.9 | 157.4 | -0.5 | -17.5 | 360 | 54 | 11 40 31 |
| 11 49 30 | 4C39.25 | 05 31 29 | 48.0 | 85.0 | -3.9 | -50.3 | 20 | 54 | 11 49 30 |
| 11 57 30 | --- | 05 39 30 | 49.2 | 86.5 | -3.8 | -50.4 | 480 | 85 | 11 49 31 |
| 11 58 00 | 4C39.25 | 05 40 00 | 49.2 | 86.6 | -3.8 | -50.4 | 24 | 85 | 11 58 00 |
| 12 06 00 | --- | 05 48 01 | 50.4 | 88.1 | -3.7 | -50.5 | 480 | 116 | 11 58 01 |
| 12 06 30 | 4C39.25 | 05 48 31 | 50.5 | 88.2 | -3.7 | -50.5 | 24 | 116 | 12 06 30 |
| 12 14 30 | --- | 05 56 33 | 51.7 | 89.8 | -3.5 | -50.6 | 480 | 147 | 12 06 31 |
| 12 15 00 | 4C39.25 | 05 57 03 | 51.8 | 89.9 | -3.5 | -50.6 | 24 | 147 | 12 15 00 |
| 12 23 00 | --- | 06 05 04 | 53.0 | 91.5 | -3.4 | -50.5 | 480 | 178 | 12 15 01 |
| 12 23 30 | 4C39.25 | 06 05 34 | 53.1 | 91.6 | -3.4 | -50.5 | 24 | 178 | 12 23 30 |
| 12 27 30 | --- | 06 09 35 | 53.7 | 92.4 | -3.3 | -50.5 | 240 | 194 | 12 23 31 |
| 12 28 00 | 4C39.25 | 06 10 05 | 53.7 | 92.5 | -3.3 | -50.5 | 24 | 194 | 12 28 00 |
| 12 30 00 | --- | 06 12 05 | 54.0 | 93.0 | -3.3 | -50.5 | 120 | 201 | 12 28 01 |

SETUP FILE INFORMATION:

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

==== Setup file: sess214.L512

--- WARNING --- This group does not match an entry in the frequency catalog.
 This might be ok because the catalog is not complete.
 But be very careful to be sure that the setup is correct.

```
Setup group: 11          Station: TORUN          Total bit rate: 512
Format: MARK5B         Bits per sample: 2      Sample rate: 16.000
Number of channels: 16  DBE type:          Speedup factor: 1.00
```

Disk used to record data.

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

The following frequency sets based on these setups were used.

Frequency Set: 6 Setup file default.

| | | | | | | | | |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| LO sum= | 1634.49 | 1634.49 | 1634.49 | 1634.49 | 1650.49 | 1650.49 | 1650.49 | 1650.49 |
| | 1666.49 | 1666.49 | 1666.49 | 1666.49 | 1682.49 | 1682.49 | 1682.49 | 1682.49 |
| BBC fr= | 665.51 | 665.51 | 665.51 | 665.51 | 649.51 | 649.51 | 649.51 | 649.51 |
| | 633.51 | 633.51 | 633.51 | 633.51 | 617.51 | 617.51 | 617.51 | 617.51 |
| Bandwd= | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 |
| | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 |

Matching frequency sets: 6

Track assignments are:

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

SOURCES USED IN RECORDING SCANS --

Ftp test

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) (B1950) | (J2000) | (Date) | Error (mas) |
|------------|-------------------------------------|-------------------|-----------------|----------------|
| J0555+3948 | 05 52 01.407174 | * 05 55 30.805616 | 05 56 30.106303 | 0.13 |
| * DA193 | 39 48 21.94578 | * 39 48 49.16493 | 39 48 47.45608 | 0.10 |
| J0927+3902 | 09 23 55.319217 | * 09 27 03.013938 | 09 27 56.578277 | 0.13 |
| * 4C39.25 | 39 15 23.56637 | * 39 02 20.85177 | 38 58 35.74358 | 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) |
| DA193 | 26.6 |
| 4C39.25 | 65.8 |

ep087gtr

ARP 299-A AT 1 GB/s
 PI: Miguel A. Perez-Torres

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

Observing mode: 1024 Mbps

Notes: Phase-ref of Arp 299 with the full EVN
 Full EVN observations at 18cm - Reobservation of EP087E (29/10/13)

Schedule for TORUN (Code Tr) Page 2

Arp 299-A at 1 Gb/s

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

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|--|------------|--------------|------|-------|------|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Thu 29 May 2014 Day 149 --- | | | | | | | | | | |
| Next scan frequencies: 1610.49 1610.49 1610.49 1610.49 1642.49 1642.49 1642.49 1642.49 | | | | | | | | | | |
| 1674.49 1674.49 1674.49 1674.49 1706.49 1706.49 1706.49 1706.49 | | | | | | | | | | |
| Next BBC frequencies: 689.51 689.51 689.51 689.51 657.51 657.51 657.51 657.51 | | | | | | | | | | |
| 625.51 625.51 625.51 625.51 593.51 593.51 593.51 593.51 | | | | | | | | | | |
| Next scan bandwidths: 16.00 16.00 16.00 16.00 16.00 16.00 16.00 16.00 | | | | | | | | | | |
| 16.00 16.00 16.00 16.00 16.00 16.00 16.00 16.00 | | | | | | | | | | |
| 13 30 00 | 4C39.25 | 07 12 15 | 62.9 | 107.7 | -2.3 | | -47.4 | 0 | 0 | 13 30 00 |
| 13 33 00 | --- | 07 15 16 | 63.3 | 108.5 | -2.2 | | -47.1 | 180 | 23 | 13 30 01 |
| 13 33 00 | 4C39.25 | 07 15 16 | 63.3 | 108.5 | -2.2 | | -47.1 | -5 | 23 | No stop |
| 13 36 00 | --- | 07 18 16 | 63.8 | 109.4 | -2.2 | | -46.8 | 175 | 46 | 13 33 01 |
| 13 42 00 | J1128+5925 | 07 24 17 | 56.7 | 54.4 | -4.1 | | -73.2 | 234 | 46 | 13 42 00 |
| 13 42 30 | --- | 07 24 47 | 56.7 | 54.4 | -4.1 | | -73.3 | 30 | 50 | 13 42 01 |
| 13 42 30 | ARP299 | 07 24 47 | 56.4 | 55.9 | -4.1 | | -72.0 | -16 | 50 | No stop |
| 13 45 30 | --- | 07 27 48 | 56.8 | 56.1 | -4.0 | | -72.5 | 164 | 73 | 13 42 31 |
| 13 45 30 | J1128+5925 | 07 27 48 | 57.1 | 54.6 | -4.0 | | -73.8 | -16 | 73 | No stop |
| 13 46 40 | --- | 07 28 58 | 57.2 | 54.7 | -4.0 | | -74.0 | 54 | 82 | 13 45 31 |
| 13 46 40 | ARP299 | 07 28 58 | 56.9 | 56.2 | -4.0 | | -72.6 | -16 | 82 | No stop |
| 13 51 10 | --- | 07 33 29 | 57.5 | 56.5 | -3.9 | | -73.3 | 254 | 117 | 13 46 41 |
| 13 51 50 | J1128+5925 | 07 34 09 | 57.9 | 55.0 | -3.9 | | -74.8 | 24 | 117 | 13 51 50 |
| 13 52 20 | --- | 07 34 39 | 57.9 | 55.1 | -3.9 | | -74.9 | 30 | 121 | 13 51 51 |
| 13 52 20 | ARP299 | 07 34 39 | 57.7 | 56.6 | -3.9 | | -73.5 | -16 | 121 | No stop |
| 13 56 50 | --- | 07 39 09 | 58.2 | 56.9 | -3.8 | | -74.2 | 254 | 155 | 13 52 21 |
| 13 56 50 | J1128+5925 | 07 39 09 | 58.5 | 55.3 | -3.8 | | -75.6 | -16 | 155 | No stop |
| 13 57 50 | --- | 07 40 10 | 58.6 | 55.4 | -3.8 | | -75.8 | 44 | 163 | 13 56 51 |

Schedule for TORUN (Code Tr)

Page 3

Arp 299-A at 1 Gb/s

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|------|------|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| --- Thu 29 May 2014 Day 149 --- | | | | | | | | | | |
| 13 57 50 | ARP299 | 07 40 10 | 58.3 | 57.0 | -3.8 | | -74.4 | -16 | 163 | No stop |
| 14 02 20 | --- | 07 44 40 | 58.9 | 57.3 | -3.7 | | -75.1 | 254 | 197 | 13 57 51 |
| 14 03 00 | J1128+5925 | 07 45 20 | 59.3 | 55.7 | -3.7 | | -76.6 | 24 | 197 | 14 03 00 |
| 14 03 30 | --- | 07 45 51 | 59.3 | 55.7 | -3.7 | | -76.7 | 30 | 201 | 14 03 01 |
| 14 03 30 | ARP299 | 07 45 51 | 59.1 | 57.3 | -3.7 | | -75.3 | -16 | 201 | No stop |
| 14 08 00 | --- | 07 50 21 | 59.6 | 57.6 | -3.7 | | -76.0 | 254 | 236 | 14 03 31 |
| 14 08 00 | J1128+5925 | 07 50 21 | 59.9 | 56.0 | -3.6 | | -77.5 | -16 | 236 | No stop |
| 14 09 10 | --- | 07 51 31 | 60.0 | 56.0 | -3.6 | | -77.7 | 54 | 245 | 14 08 01 |
| 14 09 10 | ARP299 | 07 51 31 | 59.8 | 57.7 | -3.6 | | -76.2 | -17 | 245 | No stop |
| 14 13 40 | --- | 07 56 02 | 60.4 | 58.0 | -3.6 | | -76.9 | 253 | 279 | 14 09 11 |
| 14 14 20 | J1128+5925 | 07 56 42 | 60.7 | 56.3 | -3.5 | | -78.5 | 23 | 279 | 14 14 20 |
| 14 14 50 | --- | 07 57 12 | 60.7 | 56.3 | -3.5 | | -78.6 | 30 | 283 | 14 14 21 |
| 14 14 50 | ARP299 | 07 57 12 | 60.5 | 58.0 | -3.5 | | -77.1 | -17 | 283 | No stop |
| 14 19 20 | --- | 08 01 43 | 61.1 | 58.3 | -3.5 | | -77.8 | 253 | 318 | 14 14 51 |
| 14 19 20 | J1128+5925 | 08 01 43 | 61.3 | 56.6 | -3.5 | | -79.4 | -17 | 318 | No stop |
| 14 20 30 | --- | 08 02 53 | 61.4 | 56.6 | -3.4 | | -79.6 | 53 | 327 | 14 19 21 |
| 14 20 30 | ARP299 | 08 02 53 | 61.2 | 58.4 | -3.4 | | -78.0 | -17 | 327 | No stop |
| 14 25 00 | --- | 08 07 24 | 61.8 | 58.6 | -3.4 | | -78.7 | 253 | 362 | 14 20 31 |
| 14 25 40 | J1128+5925 | 08 08 04 | 62.1 | 56.9 | -3.3 | | -80.5 | 23 | 362 | 14 25 40 |
| 14 26 10 | --- | 08 08 34 | 62.2 | 56.9 | -3.3 | | -80.6 | 30 | 365 | 14 25 41 |
| 14 26 10 | ARP299 | 08 08 34 | 62.0 | 58.7 | -3.3 | | -78.9 | -17 | 365 | No stop |
| 14 30 40 | --- | 08 13 05 | 62.5 | 58.9 | -3.3 | | -79.7 | 253 | 400 | 14 26 11 |
| 14 30 40 | J1128+5925 | 08 13 05 | 62.7 | 57.1 | -3.3 | | -81.4 | -17 | 400 | No stop |
| 14 31 40 | --- | 08 14 05 | 62.8 | 57.1 | -3.2 | | -81.6 | 43 | 408 | 14 30 41 |
| 14 31 40 | ARP299 | 08 14 05 | 62.7 | 59.0 | -3.3 | | -79.8 | -17 | 408 | No stop |
| 14 36 10 | --- | 08 18 36 | 63.2 | 59.2 | -3.2 | | -80.6 | 253 | 442 | 14 31 41 |
| 14 36 50 | J1128+5925 | 08 19 16 | 63.5 | 57.3 | -3.2 | | -82.5 | 23 | 442 | 14 36 50 |
| 14 37 20 | --- | 08 19 46 | 63.6 | 57.4 | -3.2 | | -82.6 | 30 | 446 | 14 36 51 |
| 14 37 20 | ARP299 | 08 19 46 | 63.4 | 59.2 | -3.2 | | -80.8 | -17 | 446 | No stop |
| 14 41 50 | --- | 08 24 17 | 64.0 | 59.4 | -3.1 | | -81.6 | 253 | 481 | 14 37 21 |
| 14 41 50 | J1128+5925 | 08 24 17 | 64.1 | 57.5 | -3.1 | | -83.4 | -17 | 481 | No stop |
| 14 43 00 | --- | 08 25 27 | 64.3 | 57.5 | -3.1 | | -83.6 | 53 | 490 | 14 41 51 |

Schedule for TORUN (Code Tr)

Page 4

Arp 299-A at 1 Gb/s

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|------|------|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| --- Thu 29 May 2014 Day 149 --- | | | | | | | | | | |
| 14 43 00 | ARP299 | 08 25 27 | 64.1 | 59.5 | -3.1 | | -81.8 | -17 | 490 | No stop |
| 14 47 30 | --- | 08 29 58 | 64.7 | 59.7 | -3.0 | | -82.6 | 253 | 524 | 14 43 01 |
| 14 48 10 | J1128+5925 | 08 30 38 | 64.9 | 57.7 | -3.0 | | -84.6 | 22 | 524 | 14 48 10 |
| 14 48 40 | --- | 08 31 08 | 65.0 | 57.7 | -3.0 | | -84.7 | 30 | 528 | 14 48 11 |
| 14 48 40 | ARP299 | 08 31 08 | 64.9 | 59.7 | -3.0 | | -82.8 | -18 | 528 | No stop |
| 14 53 10 | --- | 08 35 39 | 65.5 | 59.9 | -2.9 | | -83.6 | 252 | 563 | 14 48 41 |
| 14 53 10 | J1128+5925 | 08 35 39 | 65.6 | 57.8 | -2.9 | | -85.6 | -18 | 563 | No stop |
| 14 54 20 | --- | 08 36 49 | 65.7 | 57.9 | -2.9 | | -85.8 | 52 | 572 | 14 53 11 |
| 14 54 20 | ARP299 | 08 36 49 | 65.6 | 59.9 | -2.9 | | -83.8 | -18 | 572 | No stop |
| 14 58 50 | --- | 08 41 20 | 66.2 | 60.1 | -2.8 | | -84.7 | 252 | 606 | 14 54 21 |
| 14 59 30 | J1128+5925 | 08 42 00 | 66.4 | 58.0 | -2.8 | | -86.8 | 22 | 606 | 14 59 30 |
| 15 00 00 | --- | 08 42 30 | 66.5 | 58.0 | -2.8 | | -86.9 | 30 | 610 | 14 59 31 |
| 15 00 00 | ARP299 | 08 42 30 | 66.3 | 60.1 | -2.8 | | -84.9 | -18 | 610 | No stop |
| 15 04 30 | --- | 08 47 01 | 66.9 | 60.2 | -2.7 | | -85.7 | 252 | 645 | 15 00 01 |
| 15 04 30 | J1128+5925 | 08 47 01 | 67.0 | 58.0 | -2.7 | | -87.8 | -18 | 645 | No stop |
| 15 05 30 | --- | 08 48 01 | 67.2 | 58.1 | -2.7 | | -88.0 | 42 | 653 | 15 04 31 |
| 15 05 30 | ARP299 | 08 48 01 | 67.1 | 60.3 | -2.7 | | -85.9 | -18 | 653 | No stop |
| 15 10 00 | --- | 08 52 31 | 67.7 | 60.4 | -2.6 | | -86.8 | 252 | 687 | 15 05 31 |
| 15 10 40 | J1128+5925 | 08 53 12 | 67.8 | 58.1 | -2.6 | | -89.1 | 22 | 687 | 15 10 40 |
| 15 11 10 | --- | 08 53 42 | 67.9 | 58.1 | -2.6 | | -89.2 | 30 | 691 | 15 10 41 |
| 15 11 10 | ARP299 | 08 53 42 | 67.8 | 60.4 | -2.6 | | -87.0 | -18 | 691 | No stop |
| 15 15 40 | --- | 08 58 12 | 68.4 | 60.4 | -2.5 | | -87.9 | 252 | 726 | 15 11 11 |
| 15 15 40 | J1128+5925 | 08 58 12 | 68.5 | 58.1 | -2.5 | | -90.2 | -19 | 726 | No stop |
| 15 16 50 | --- | 08 59 23 | 68.6 | 58.1 | -2.5 | | -90.4 | 51 | 735 | 15 15 41 |
| 15 16 50 | ARP299 | 08 59 23 | 68.5 | 60.5 | -2.5 | | -88.1 | -19 | 735 | No stop |
| 15 21 20 | --- | 09 03 53 | 69.1 | 60.5 | -2.4 | | -89.1 | 251 | 769 | 15 16 51 |
| 15 22 00 | J1128+5925 | 09 04 33 | 69.3 | 58.1 | -2.4 | | -91.5 | 21 | 769 | 15 22 00 |
| 15 22 30 | --- | 09 05 04 | 69.3 | 58.1 | -2.4 | | -91.7 | 30 | 773 | 15 22 01 |
| 15 22 30 | ARP299 | 09 05 04 | 69.3 | 60.5 | -2.4 | | -89.3 | -19 | 773 | No stop |
| 15 27 00 | --- | 09 09 34 | 69.9 | 60.5 | -2.3 | | -90.3 | 251 | 808 | 15 22 31 |
| 15 27 00 | J1128+5925 | 09 09 34 | 69.9 | 58.0 | -2.3 | | -92.7 | -19 | 808 | No stop |
| 15 28 10 | --- | 09 10 44 | 70.0 | 58.0 | -2.3 | | -93.0 | 51 | 817 | 15 27 01 |

Schedule for TORUN (Code Tr)

Page 5

Arp 299-A at 1 Gb/s

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|------|------|----|--------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| --- Thu 29 May 2014 Day 149 --- | | | | | | | | | | |
| 15 28 10 | ARP299 | 09 10 44 | 70.0 | 60.5 | -2.3 | | -90.5 | -19 | 817 | No stop |
| 15 32 40 | --- | 09 15 15 | 70.6 | 60.5 | -2.2 | | -91.5 | 251 | 851 | 15 28 11 |
| 15 33 20 | J1128+5925 | 09 15 55 | 70.7 | 57.9 | -2.2 | | -94.2 | 21 | 851 | 15 33 20 |
| 15 33 50 | --- | 09 16 25 | 70.8 | 57.9 | -2.2 | | -94.3 | 30 | 855 | 15 33 21 |
| 15 33 50 | ARP299 | 09 16 25 | 70.8 | 60.5 | -2.2 | | -91.8 | -19 | 855 | No stop |
| 15 38 20 | --- | 09 20 56 | 71.4 | 60.4 | -2.1 | | -92.8 | 251 | 890 | 15 33 51 |
| 15 38 20 | J1128+5925 | 09 20 56 | 71.3 | 57.7 | -2.1 | | -95.4 | -20 | 890 | No stop |
| 15 39 20 | --- | 09 21 56 | 71.5 | 57.7 | -2.1 | | -95.7 | 40 | 897 | 15 38 21 |
| 15 39 20 | ARP299 | 09 21 56 | 71.5 | 60.4 | -2.1 | | -93.0 | -20 | 897 | No stop |
| 15 43 50 | --- | 09 26 27 | 72.1 | 60.3 | -2.0 | | -94.1 | 250 | 932 | 15 39 21 |
| 15 44 30 | J1128+5925 | 09 27 07 | 72.1 | 57.4 | -2.0 | | -97.0 | 20 | 932 | 15 44 30 |
| 15 45 00 | --- | 09 27 37 | 72.2 | 57.4 | -2.0 | | -97.1 | 30 | 936 | 15 44 31 |
| 15 45 00 | ARP299 | 09 27 37 | 72.2 | 60.2 | -2.0 | | -94.4 | -20 | 936 | No stop |
| 15 49 30 | --- | 09 32 08 | 72.8 | 60.0 | -2.0 | | -95.5 | 250 | 971 | 15 45 01 |
| 15 49 30 | J1128+5925 | 09 32 08 | 72.8 | 57.1 | -1.9 | | -98.4 | -20 | 971 | No stop |
| 15 50 40 | --- | 09 33 18 | 72.9 | 57.1 | -1.9 | | -98.7 | 50 | 979 | 15 49 31 |
| 15 50 40 | ARP299 | 09 33 18 | 73.0 | 60.0 | -1.9 | | -95.8 | -20 | 979 | No stop |
| 15 55 10 | --- | 09 37 49 | 73.6 | 59.8 | -1.9 | | -97.0 | 250 | 1014 | 15 50 41 |
| 15 55 50 | J1128+5925 | 09 38 29 | 73.6 | 56.7 | -1.8 | | -100.2 | 19 | 1014 | 15 55 50 |
| 15 56 20 | --- | 09 38 59 | 73.6 | 56.7 | -1.8 | | -100.3 | 30 | 1018 | 15 55 51 |
| 15 56 20 | ARP299 | 09 38 59 | 73.7 | 59.7 | -1.8 | | -97.3 | -21 | 1018 | No stop |
| 16 00 50 | --- | 09 43 30 | 74.3 | 59.4 | -1.8 | | -98.6 | 249 | 1053 | 15 56 21 |
| 16 00 50 | J1128+5925 | 09 43 30 | 74.2 | 56.3 | -1.8 | | -101.7 | -21 | 1053 | No stop |
| 16 02 00 | --- | 09 44 40 | 74.3 | 56.2 | -1.7 | | -102.0 | 49 | 1062 | 16 00 51 |
| 16 02 00 | ARP299 | 09 44 40 | 74.4 | 59.3 | -1.7 | | -98.9 | -21 | 1062 | No stop |
| 16 06 30 | --- | 09 49 11 | 75.0 | 58.9 | -1.7 | | -100.2 | 249 | 1096 | 16 02 01 |
| 16 07 10 | J1128+5925 | 09 49 51 | 75.0 | 55.6 | -1.7 | | -103.7 | 19 | 1096 | 16 07 10 |
| 16 07 40 | --- | 09 50 21 | 75.0 | 55.5 | -1.6 | | -103.8 | 30 | 1100 | 16 07 11 |
| 16 07 40 | ARP299 | 09 50 21 | 75.2 | 58.8 | -1.7 | | -100.6 | -21 | 1100 | No stop |
| 16 12 10 | --- | 09 54 52 | 75.8 | 58.4 | -1.6 | | -102.0 | 249 | 1135 | 16 07 41 |
| 16 12 10 | J1128+5925 | 09 54 52 | 75.6 | 55.0 | -1.6 | | -105.4 | -22 | 1135 | No stop |
| 16 13 10 | --- | 09 55 52 | 75.7 | 54.8 | -1.6 | | -105.7 | 38 | 1142 | 16 12 11 |

Schedule for TORUN (Code Tr)

Page 6

Arp 299-A at 1 Gb/s

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|------|------|----|--------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| --- Thu 29 May 2014 Day 149 --- | | | | | | | | | | |
| 16 13 10 | ARP299 | 09 55 52 | 75.9 | 58.3 | -1.6 | | -102.3 | -22 | 1142 | No stop |
| 16 17 40 | --- | 10 00 23 | 76.5 | 57.7 | -1.5 | | -103.8 | 248 | 1177 | 16 13 11 |
| 16 18 20 | J1128+5925 | 10 01 03 | 76.4 | 54.0 | -1.5 | | -107.6 | 18 | 1177 | 16 18 20 |
| 16 18 50 | --- | 10 01 33 | 76.4 | 54.0 | -1.5 | | -107.8 | 30 | 1181 | 16 18 21 |
| 16 18 50 | ARP299 | 10 01 33 | 76.6 | 57.5 | -1.5 | | -104.2 | -22 | 1181 | No stop |
| 16 23 20 | --- | 10 06 04 | 77.2 | 56.9 | -1.4 | | -105.8 | 248 | 1215 | 16 18 51 |
| 16 23 20 | J1128+5925 | 10 06 04 | 77.0 | 53.2 | -1.4 | | -109.5 | -22 | 1215 | No stop |
| 16 24 30 | --- | 10 07 14 | 77.1 | 52.9 | -1.4 | | -110.0 | 48 | 1224 | 16 23 21 |
| 16 24 30 | ARP299 | 10 07 14 | 77.3 | 56.7 | -1.4 | | -106.3 | -22 | 1224 | No stop |
| 16 29 00 | --- | 10 11 44 | 77.9 | 55.9 | -1.3 | | -108.0 | 248 | 1259 | 16 24 31 |
| 16 29 40 | J1128+5925 | 10 12 25 | 77.7 | 51.9 | -1.3 | | -112.2 | 17 | 1259 | 16 29 40 |
| 16 30 10 | --- | 10 12 55 | 77.8 | 51.7 | -1.3 | | -112.4 | 30 | 1263 | 16 29 41 |
| 16 30 10 | ARP299 | 10 12 55 | 78.0 | 55.6 | -1.3 | | -108.5 | -23 | 1263 | No stop |
| 16 34 40 | --- | 10 17 25 | 78.6 | 54.7 | -1.2 | | -110.4 | 247 | 1297 | 16 30 11 |
| 16 34 40 | J1128+5925 | 10 17 25 | 78.3 | 50.6 | -1.2 | | -114.4 | -23 | 1297 | No stop |
| 16 35 50 | --- | 10 18 36 | 78.4 | 50.3 | -1.2 | | -115.0 | 47 | 1306 | 16 34 41 |
| 16 35 50 | ARP299 | 10 18 36 | 78.7 | 54.4 | -1.2 | | -110.9 | -23 | 1306 | No stop |
| 16 40 20 | --- | 10 23 06 | 79.3 | 53.2 | -1.1 | | -113.0 | 247 | 1341 | 16 35 51 |
| 16 41 00 | J1128+5925 | 10 23 46 | 79.0 | 48.8 | -1.1 | | -117.6 | 16 | 1341 | 16 41 00 |
| 16 41 30 | --- | 10 24 17 | 79.1 | 48.7 | -1.1 | | -117.8 | 30 | 1345 | 16 41 01 |
| 16 41 30 | ARP299 | 10 24 17 | 79.4 | 52.9 | -1.1 | | -113.6 | -23 | 1345 | No stop |
| 16 46 00 | --- | 10 28 47 | 80.0 | 51.5 | -1.0 | | -115.9 | 247 | 1379 | 16 41 31 |
| 16 46 00 | J1128+5925 | 10 28 47 | 79.6 | 47.2 | -1.0 | | -120.3 | -24 | 1379 | No stop |
| 16 47 00 | --- | 10 29 47 | 79.7 | 46.8 | -1.0 | | -120.8 | 36 | 1387 | 16 46 01 |
| 16 47 00 | ARP299 | 10 29 47 | 80.1 | 51.2 | -1.0 | | -116.4 | -24 | 1387 | No stop |
| 16 51 30 | --- | 10 34 18 | 80.6 | 49.6 | -0.9 | | -119.0 | 246 | 1422 | 16 47 01 |
| 16 52 10 | J1128+5925 | 10 34 58 | 80.3 | 44.8 | -0.9 | | -124.0 | 16 | 1422 | 16 52 10 |
| 16 52 40 | --- | 10 35 28 | 80.3 | 44.6 | -0.9 | | -124.3 | 30 | 1426 | 16 52 11 |
| 16 52 40 | ARP299 | 10 35 28 | 80.7 | 49.1 | -0.9 | | -119.7 | -24 | 1426 | No stop |
| 16 57 10 | --- | 10 39 59 | 81.2 | 47.2 | -0.8 | | -122.6 | 246 | 1460 | 16 52 41 |
| 16 57 10 | J1128+5925 | 10 39 59 | 80.8 | 42.5 | -0.8 | | -127.3 | -25 | 1460 | No stop |
| 16 58 20 | --- | 10 41 09 | 80.9 | 41.9 | -0.8 | | -128.1 | 45 | 1469 | 16 57 11 |

Schedule for TORUN (Code Tr)

Page 7

Arp 299-A at 1 Gb/s

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|------|------|----|--------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| --- Thu 29 May 2014 Day 149 --- | | | | | | | | | | |
| 16 58 20 | ARP299 | 10 41 09 | 81.4 | 46.6 | -0.8 | | -123.4 | -24 | 1469 | No stop |
| 17 02 50 | --- | 10 45 40 | 81.8 | 44.3 | -0.7 | | -126.6 | 246 | 1504 | 16 58 21 |
| 17 03 30 | J1128+5925 | 10 46 20 | 81.4 | 39.2 | -0.7 | | -131.9 | 15 | 1504 | 17 03 30 |
| 17 04 00 | --- | 10 46 50 | 81.4 | 38.9 | -0.7 | | -132.3 | 30 | 1508 | 17 03 31 |
| 17 04 00 | ARP299 | 10 46 50 | 82.0 | 43.6 | -0.7 | | -127.5 | -24 | 1508 | No stop |
| 17 08 30 | --- | 10 51 21 | 82.4 | 40.9 | -0.6 | | -131.2 | 246 | 1542 | 17 04 01 |
| 17 08 30 | J1128+5925 | 10 51 21 | 81.9 | 36.1 | -0.6 | | -136.0 | -25 | 1542 | No stop |
| 17 09 40 | --- | 10 52 31 | 82.0 | 35.4 | -0.6 | | -137.0 | 45 | 1551 | 17 08 31 |
| 17 09 40 | ARP299 | 10 52 31 | 82.5 | 40.1 | -0.6 | | -132.3 | -24 | 1551 | No stop |
| 17 14 10 | --- | 10 57 02 | 83.0 | 36.8 | -0.5 | | -136.5 | 246 | 1586 | 17 09 41 |
| 17 14 50 | J1128+5925 | 10 57 42 | 82.4 | 31.7 | -0.5 | | -141.8 | 15 | 1586 | 17 14 50 |
| 17 15 20 | --- | 10 58 12 | 82.4 | 31.3 | -0.5 | | -142.3 | 30 | 1590 | 17 14 51 |
| 17 15 20 | ARP299 | 10 58 12 | 83.1 | 35.9 | -0.5 | | -137.6 | -24 | 1590 | No stop |
| 17 19 50 | --- | 11 02 43 | 83.4 | 32.1 | -0.4 | | -142.4 | 246 | 1624 | 17 15 21 |
| 17 19 50 | J1128+5925 | 11 02 43 | 82.8 | 27.6 | -0.4 | | -146.9 | -24 | 1624 | No stop |
| 17 20 50 | --- | 11 03 43 | 82.8 | 26.8 | -0.4 | | -147.9 | 36 | 1632 | 17 19 51 |
| 17 20 50 | ARP299 | 11 03 43 | 83.5 | 31.2 | -0.4 | | -143.5 | -23 | 1632 | No stop |
| 17 25 20 | --- | 11 08 14 | 83.8 | 26.7 | -0.4 | | -148.9 | 247 | 1667 | 17 20 51 |
| 17 26 00 | J1128+5925 | 11 08 54 | 83.2 | 22.1 | -0.3 | | -153.7 | 16 | 1667 | 17 26 00 |
| 17 26 30 | --- | 11 09 24 | 83.2 | 21.6 | -0.3 | | -154.3 | 30 | 1671 | 17 26 01 |
| 17 26 30 | ARP299 | 11 09 24 | 83.9 | 25.5 | -0.3 | | -150.4 | -22 | 1671 | No stop |
| 17 31 00 | --- | 11 13 55 | 84.2 | 20.4 | -0.3 | | -156.4 | 248 | 1705 | 17 26 31 |
| 17 31 00 | J1128+5925 | 11 13 55 | 83.4 | 17.0 | -0.3 | | -159.8 | -22 | 1705 | No stop |
| 17 32 10 | --- | 11 15 05 | 83.5 | 15.8 | -0.2 | | -161.3 | 48 | 1714 | 17 31 01 |
| 17 32 10 | ARP299 | 11 15 05 | 84.2 | 19.0 | -0.2 | | -158.1 | -20 | 1714 | No stop |
| 17 36 40 | --- | 11 19 36 | 84.4 | 13.3 | -0.2 | | -164.7 | 250 | 1749 | 17 32 11 |
| 17 37 20 | J1128+5925 | 11 20 16 | 83.6 | 10.1 | -0.1 | | -168.0 | 20 | 1749 | 17 37 20 |
| 17 37 50 | --- | 11 20 46 | 83.6 | 9.6 | -0.1 | | -168.7 | 30 | 1753 | 17 37 21 |
| 17 37 50 | ARP299 | 11 20 46 | 84.5 | 11.8 | -0.1 | | -166.5 | -17 | 1753 | No stop |
| 17 42 20 | --- | 11 25 17 | 84.6 | 5.7 | -0.1 | | -173.5 | 253 | 1787 | 17 37 51 |
| 17 42 20 | J1128+5925 | 11 25 17 | 83.7 | 4.4 | -0.1 | | -174.8 | -16 | 1787 | No stop |
| 17 43 30 | --- | 11 26 27 | 83.7 | 3.0 | -0.0 | | -176.4 | 54 | 1796 | 17 42 21 |

Schedule for TORUN (Code Tr)

Page 8

Arp 299-A at 1 Gb/s

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|------|----|--------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| --- Thu 29 May 2014 Day 149 --- | | | | | | | | | | |
| 17 43 30 | ARP299 | 11 26 27 | 84.6 | 4.1 | -0.0 | | -175.3 | -16 | 1796 | No stop |
| 17 48 00 | --- | 11 30 57 | 84.6 | -2.2 | 0.0 | | 177.5 | 254 | 1831 | 17 43 31 |
| 17 48 40 | J1128+5925 | 11 31 38 | 83.7 | -3.0 | 0.0 | | 176.4 | 24 | 1831 | 17 48 40 |
| 17 49 10 | --- | 11 32 08 | 83.7 | -3.6 | 0.1 | | 175.7 | 30 | 1835 | 17 48 41 |
| 17 49 10 | ARP299 | 11 32 08 | 84.6 | -3.8 | 0.0 | | 175.6 | -16 | 1835 | No stop |
| 17 53 40 | --- | 11 36 38 | 84.5 | -10.0 | 0.1 | | 168.5 | 254 | 1869 | 17 49 11 |
| 17 53 40 | J1128+5925 | 11 36 38 | 83.7 | -8.8 | 0.1 | | 169.6 | -16 | 1869 | No stop |
| 17 54 40 | --- | 11 37 39 | 83.6 | -9.9 | 0.1 | | 168.3 | 44 | 1877 | 17 53 41 |
| 17 54 40 | ARP299 | 11 37 39 | 84.5 | -11.3 | 0.1 | | 167.0 | -16 | 1877 | No stop |
| 17 59 10 | --- | 11 42 09 | 84.3 | -17.1 | 0.2 | | 160.2 | 254 | 1912 | 17 54 41 |
| 17 59 50 | J1128+5925 | 11 42 49 | 83.5 | -15.6 | 0.2 | | 161.5 | 22 | 1912 | 17 59 50 |
| 18 00 20 | --- | 11 43 19 | 83.4 | -16.2 | 0.2 | | 160.9 | 30 | 1915 | 17 59 51 |
| 18 00 20 | ARP299 | 11 43 19 | 84.3 | -18.6 | 0.2 | | 158.6 | -20 | 1915 | No stop |
| 18 04 50 | --- | 11 47 50 | 84.0 | -23.8 | 0.3 | | 152.4 | 250 | 1950 | 18 00 21 |
| 18 04 50 | J1128+5925 | 11 47 50 | 83.2 | -20.8 | 0.3 | | 155.3 | -20 | 1950 | No stop |
| 18 06 00 | --- | 11 49 00 | 83.2 | -21.9 | 0.3 | | 153.9 | 50 | 1959 | 18 04 51 |
| 18 06 00 | ARP299 | 11 49 00 | 83.9 | -25.1 | 0.3 | | 150.8 | -22 | 1959 | No stop |
| 18 10 30 | --- | 11 53 31 | 83.6 | -29.7 | 0.4 | | 145.3 | 248 | 1994 | 18 06 01 |
| 18 11 10 | J1128+5925 | 11 54 11 | 82.8 | -26.6 | 0.4 | | 148.1 | 18 | 1994 | 18 11 10 |
| 18 11 40 | --- | 11 54 41 | 82.8 | -27.1 | 0.4 | | 147.6 | 30 | 1997 | 18 11 11 |
| 18 11 40 | ARP299 | 11 54 41 | 83.5 | -30.8 | 0.4 | | 143.9 | -23 | 1997 | No stop |
| 18 16 10 | --- | 11 59 12 | 83.2 | -34.8 | 0.5 | | 139.0 | 247 | 2032 | 18 11 41 |
| 18 16 10 | J1128+5925 | 11 59 12 | 82.5 | -30.8 | 0.5 | | 142.9 | -22 | 2032 | No stop |
| 18 17 20 | --- | 12 00 22 | 82.4 | -31.7 | 0.5 | | 141.8 | 48 | 2041 | 18 16 11 |
| 18 17 20 | ARP299 | 12 00 22 | 83.1 | -35.8 | 0.5 | | 137.8 | -24 | 2041 | No stop |
| 18 21 50 | --- | 12 04 53 | 82.7 | -39.2 | 0.6 | | 133.5 | 246 | 2076 | 18 17 21 |
| 18 22 30 | J1128+5925 | 12 05 33 | 82.0 | -35.4 | 0.6 | | 137.0 | 17 | 2076 | 18 22 30 |
| 18 23 00 | --- | 12 06 03 | 81.9 | -35.7 | 0.6 | | 136.6 | 30 | 2079 | 18 22 31 |
| 18 23 00 | ARP299 | 12 06 03 | 82.6 | -40.0 | 0.6 | | 132.4 | -24 | 2079 | No stop |
| 18 27 30 | --- | 12 10 34 | 82.1 | -42.9 | 0.7 | | 128.6 | 246 | 2114 | 18 23 01 |
| 18 27 30 | J1128+5925 | 12 10 34 | 81.5 | -38.5 | 0.7 | | 132.9 | -23 | 2114 | No stop |
| 18 28 30 | --- | 12 11 34 | 81.4 | -39.1 | 0.7 | | 132.1 | 37 | 2122 | 18 27 31 |

Schedule for TORUN (Code Tr)

Page 9

Arp 299-A at 1 Gb/s

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | Early | Disk | TPStart | | |
|---------------------------------|------------|--------------|------|-------|-----|-------|-------|---------|--------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| --- Thu 29 May 2014 Day 149 --- | | | | | | | | | | |
| 18 28 30 | ARP299 | 12 11 34 | 82.0 | -43.5 | 0.7 | | 127.8 | -24 | 2122 | No stop |
| 18 33 00 | --- | 12 16 05 | 81.5 | -45.9 | 0.8 | | 124.4 | 246 | 2156 | 18 28 31 |
| 18 33 40 | J1128+5925 | 12 16 45 | 80.9 | -41.9 | 0.8 | | 128.2 | 17 | 2156 | 18 33 40 |
| 18 34 10 | --- | 12 17 15 | 80.9 | -42.1 | 0.8 | | 127.9 | 30 | 2160 | 18 33 41 |
| 18 34 10 | ARP299 | 12 17 15 | 81.4 | -46.5 | 0.8 | | 123.6 | -24 | 2160 | No stop |
| 18 38 40 | --- | 12 21 46 | 80.9 | -48.5 | 0.9 | | 120.6 | 246 | 2195 | 18 34 11 |
| 18 38 40 | J1128+5925 | 12 21 46 | 80.4 | -44.2 | 0.9 | | 124.8 | -23 | 2195 | No stop |
| 18 39 50 | --- | 12 22 56 | 80.3 | -44.7 | 0.9 | | 124.1 | 47 | 2204 | 18 38 41 |
| 18 39 50 | ARP299 | 12 22 56 | 80.8 | -49.0 | 0.9 | | 119.9 | -24 | 2204 | No stop |
| 18 44 20 | --- | 12 27 27 | 80.2 | -50.7 | 1.0 | | 117.3 | 246 | 2238 | 18 39 51 |
| 18 45 00 | J1128+5925 | 12 28 07 | 79.7 | -46.7 | 1.0 | | 120.9 | 17 | 2238 | 18 45 00 |
| 18 45 30 | --- | 12 28 37 | 79.7 | -46.9 | 1.0 | | 120.7 | 30 | 2242 | 18 45 01 |
| 18 45 30 | ARP299 | 12 28 37 | 80.1 | -51.1 | 1.0 | | 116.6 | -23 | 2242 | No stop |
| 18 50 00 | --- | 12 33 08 | 79.6 | -52.5 | 1.1 | | 114.2 | 247 | 2277 | 18 45 31 |
| 18 50 00 | J1128+5925 | 12 33 08 | 79.2 | -48.5 | 1.1 | | 118.2 | -23 | 2277 | No stop |
| 18 51 10 | --- | 12 34 18 | 79.0 | -48.8 | 1.1 | | 117.6 | 47 | 2286 | 18 50 01 |
| 18 51 10 | ARP299 | 12 34 18 | 79.4 | -52.9 | 1.1 | | 113.7 | -23 | 2286 | No stop |
| 18 55 40 | --- | 12 38 49 | 78.9 | -54.1 | 1.2 | | 111.5 | 247 | 2321 | 18 51 11 |
| 18 56 20 | J1128+5925 | 12 39 29 | 78.4 | -50.3 | 1.2 | | 115.0 | 17 | 2321 | 18 56 20 |
| 18 56 50 | --- | 12 39 59 | 78.4 | -50.5 | 1.2 | | 114.7 | 30 | 2324 | 18 56 21 |
| 18 56 50 | ARP299 | 12 39 59 | 78.8 | -54.4 | 1.2 | | 111.0 | -23 | 2324 | No stop |
| 19 01 20 | --- | 12 44 29 | 78.2 | -55.4 | 1.3 | | 109.0 | 247 | 2359 | 18 56 51 |
| 19 01 20 | J1128+5925 | 12 44 29 | 77.9 | -51.6 | 1.3 | | 112.7 | -22 | 2359 | No stop |
| 19 02 20 | --- | 12 45 30 | 77.7 | -51.8 | 1.3 | | 112.2 | 38 | 2367 | 19 01 21 |
| 19 02 20 | ARP299 | 12 45 30 | 78.1 | -55.6 | 1.3 | | 108.6 | -22 | 2367 | No stop |
| 19 06 50 | --- | 12 50 00 | 77.5 | -56.4 | 1.3 | | 106.8 | 248 | 2401 | 19 02 21 |
| 19 07 30 | J1128+5925 | 12 50 40 | 77.1 | -52.9 | 1.4 | | 110.0 | 18 | 2401 | 19 07 30 |
| 19 08 00 | --- | 12 51 11 | 77.1 | -53.0 | 1.4 | | 109.8 | 30 | 2405 | 19 07 31 |
| 19 08 00 | ARP299 | 12 51 11 | 77.4 | -56.6 | 1.4 | | 106.4 | -22 | 2405 | No stop |
| 19 12 30 | --- | 12 55 41 | 76.8 | -57.3 | 1.4 | | 104.7 | 248 | 2440 | 19 08 01 |
| 19 12 30 | J1128+5925 | 12 55 41 | 76.5 | -53.8 | 1.4 | | 108.1 | -22 | 2440 | No stop |
| 19 13 40 | --- | 12 56 52 | 76.4 | -54.0 | 1.5 | | 107.6 | 48 | 2449 | 19 12 31 |

Schedule for TORUN (Code Tr)

Page 10

Arp 299-A at 1 Gb/s

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|-----|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| --- Thu 29 May 2014 Day 149 --- | | | | | | | | | | |
| 19 13 40 | ARP299 | 12 56 52 | 76.7 | -57.5 | 1.5 | | 104.3 | -22 | 2449 | No stop |
| 19 18 10 | --- | 13 01 22 | 76.1 | -58.1 | 1.5 | | 102.8 | 248 | 2483 | 19 13 41 |
| 19 18 50 | J1128+5925 | 13 02 02 | 75.7 | -54.8 | 1.6 | | 105.8 | 19 | 2483 | 19 18 50 |
| 19 19 20 | --- | 13 02 32 | 75.7 | -54.9 | 1.6 | | 105.6 | 30 | 2487 | 19 18 51 |
| 19 19 20 | ARP299 | 13 02 32 | 75.9 | -58.2 | 1.6 | | 102.4 | -21 | 2487 | No stop |
| 19 23 50 | --- | 13 07 03 | 75.4 | -58.7 | 1.6 | | 101.0 | 249 | 2522 | 19 19 21 |
| 19 23 50 | J1128+5925 | 13 07 03 | 75.1 | -55.5 | 1.6 | | 104.0 | -21 | 2522 | No stop |
| 19 24 50 | --- | 13 08 03 | 75.0 | -55.6 | 1.7 | | 103.7 | 39 | 2529 | 19 23 51 |
| 19 24 50 | ARP299 | 13 08 03 | 75.2 | -58.8 | 1.6 | | 100.7 | -21 | 2529 | No stop |
| 19 28 50 | --- | 13 12 04 | 74.7 | -59.2 | 1.7 | | 99.5 | 219 | 2560 | 19 24 51 |
| 19 29 30 | J1128+5925 | 13 12 44 | 74.4 | -56.1 | 1.7 | | 102.2 | 19 | 2560 | 19 29 30 |
| 19 30 00 | --- | 13 13 14 | 74.4 | -56.1 | 1.7 | | 102.1 | 30 | 2564 | 19 29 31 |

SETUP FILE INFORMATION:

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

==== Setup file: sess214.L1024

--- WARNING --- This group does not match an entry in the frequency catalog.
 This might be ok because the catalog is not complete.
 But be very careful to be sure that the setup is correct.

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

```

Frequency Set: 6 Setup file default. Used with PCAL = off
LO sum= 1610.49 1610.49 1610.49 1610.49 1642.49 1642.49 1642.49 1642.49
        1674.49 1674.49 1674.49 1674.49 1706.49 1706.49 1706.49 1706.49
BBC fr= 689.51 689.51 689.51 689.51 657.51 657.51 657.51 657.51
        625.51 625.51 625.51 625.51 593.51 593.51 593.51 593.51
Bandwd= 16.00 16.00 16.00 16.00 16.00 16.00 16.00 16.00
        16.00 16.00 16.00 16.00 16.00 16.00 16.00 16.00
Matching frequency sets: 6

```

Track assignments are:

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) | | (Date) | Error (mas) |
|--------------|--------------------------|-------------------|-----------------|-------------|
| | (B1950) | (J2000) | | |
| * ARP299 | 11 25 44.174219 | * 11 28 33.622010 | 11 29 22.258077 | 0.00 |
| | 58 50 18.17319 | * 58 33 46.61000 | 58 29 11.62434 | 0.00 |
| * J1128+5925 | 11 25 23.181652 | * 11 28 13.340676 | 11 29 02.150499 | 0.00 |
| | 59 41 46.14397 | * 59 25 14.79866 | 59 20 40.05391 | 0.00 |
| J0927+3902 | 09 23 55.319217 | * 09 27 03.013938 | 09 27 56.570735 | 0.13 |
| * 4C39.25 | 39 15 23.56637 | * 39 02 20.85177 | 38 58 35.75724 | 0.10 |

EFFECT OF SOLAR CORONA

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

| Source | Sun distance (deg) |
|------------|--------------------|
| ARP299 | 79.5 |
| J1128+5925 | 79.1 |
| 4C39.25 | 65.6 |

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 |

Schedule for TORUN (Code Tr)

Page 3

VLBI observations of a HzRg in the center of a primordial galaxy cluster

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 29 May 2014 Day 149 --- | | | | | | | | | | |
| 22 04 30 | 7C1756+6520 | 15 48 10 | 69.8 | 40.2 | -2.2 | | -111.7 | -14 | 242 | No stop |
| 22 08 00 | --- | 15 51 40 | 70.2 | 39.8 | -2.1 | | -112.9 | 196 | 269 | 22 04 31 |
| 22 08 00 | J1754+6452 | 15 51 40 | 70.6 | 40.7 | -2.0 | | -112.7 | -13 | 269 | No stop |
| 22 09 30 | =1753+648 | 15 53 10 | 70.8 | 40.5 | -2.0 | | -113.2 | 77 | 281 | 22 08 01 |
| 22 09 30 | 7C1756+6520 | 15 53 10 | 70.3 | 39.6 | -2.1 | | -113.4 | -14 | 281 | No stop |
| 22 13 00 | --- | 15 56 41 | 70.6 | 39.2 | -2.0 | | -114.6 | 196 | 308 | 22 09 31 |
| 22 13 30 | J1754+6452 | 15 57 11 | 71.2 | 40.0 | -2.0 | | -114.6 | 17 | 308 | 22 13 30 |
| 22 15 00 | =1753+648 | 15 58 41 | 71.3 | 39.8 | -1.9 | | -115.2 | 90 | 319 | 22 13 31 |
| 22 15 00 | 7C1756+6520 | 15 58 41 | 70.8 | 38.9 | -2.0 | | -115.3 | -14 | 319 | No stop |
| 22 18 30 | --- | 16 02 12 | 71.2 | 38.4 | -1.9 | | -116.6 | 196 | 346 | 22 15 01 |
| 22 18 30 | J1754+6452 | 16 02 12 | 71.6 | 39.3 | -1.9 | | -116.5 | -13 | 346 | No stop |
| 22 20 00 | =1753+648 | 16 03 42 | 71.8 | 39.1 | -1.8 | | -117.0 | 77 | 358 | 22 18 31 |
| 22 20 00 | 7C1756+6520 | 16 03 42 | 71.3 | 38.2 | -1.9 | | -117.2 | -13 | 358 | No stop |
| 22 23 30 | --- | 16 07 13 | 71.6 | 37.7 | -1.8 | | -118.5 | 197 | 385 | 22 20 01 |
| 22 24 00 | J1754+6452 | 16 07 43 | 72.2 | 38.4 | -1.8 | | -118.5 | 17 | 385 | 22 24 00 |
| 22 25 30 | =1753+648 | 16 09 13 | 72.3 | 38.2 | -1.8 | | -119.1 | 90 | 396 | 22 24 01 |
| 22 25 30 | 7C1756+6520 | 16 09 13 | 71.8 | 37.3 | -1.8 | | -119.2 | -13 | 396 | No stop |
| 22 29 00 | --- | 16 12 44 | 72.1 | 36.8 | -1.7 | | -120.6 | 197 | 423 | 22 25 31 |
| 22 29 00 | J1754+6452 | 16 12 44 | 72.6 | 37.6 | -1.7 | | -120.5 | -13 | 423 | No stop |
| 22 30 30 | =1753+648 | 16 14 14 | 72.8 | 37.3 | -1.7 | | -121.1 | 77 | 435 | 22 29 01 |
| 22 30 30 | 7C1756+6520 | 16 14 14 | 72.3 | 36.5 | -1.7 | | -121.2 | -13 | 435 | No stop |
| 22 34 00 | --- | 16 17 44 | 72.6 | 35.8 | -1.7 | | -122.6 | 197 | 462 | 22 30 31 |
| 22 34 30 | J1754+6452 | 16 18 15 | 73.1 | 36.5 | -1.6 | | -122.7 | 17 | 462 | 22 34 30 |
| 22 36 00 | =1753+648 | 16 19 45 | 73.3 | 36.2 | -1.6 | | -123.4 | 90 | 473 | 22 34 31 |
| 22 36 00 | 7C1756+6520 | 16 19 45 | 72.7 | 35.5 | -1.6 | | -123.4 | -13 | 473 | No stop |
| 22 39 30 | --- | 16 23 15 | 73.0 | 34.8 | -1.6 | | -124.9 | 197 | 500 | 22 36 01 |
| 22 39 30 | J1754+6452 | 16 23 15 | 73.6 | 35.5 | -1.5 | | -124.9 | -13 | 500 | No stop |
| 22 41 00 | =1753+648 | 16 24 46 | 73.7 | 35.2 | -1.5 | | -125.5 | 77 | 512 | 22 39 31 |
| 22 41 00 | 7C1756+6520 | 16 24 46 | 73.2 | 34.5 | -1.5 | | -125.5 | -13 | 512 | No stop |
| 22 44 30 | --- | 16 28 16 | 73.5 | 33.7 | -1.5 | | -127.0 | 197 | 538 | 22 41 01 |
| 22 45 00 | J1754+6452 | 16 28 46 | 74.0 | 34.2 | -1.4 | | -127.3 | 17 | 538 | 22 45 00 |
| 22 46 30 | =1753+648 | 16 30 16 | 74.2 | 33.9 | -1.4 | | -128.0 | 90 | 550 | 22 45 01 |

Schedule for TORUN (Code Tr)

Page 4

VLBI observations of a HzRg in the center of a primordial galaxy cluster

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 29 May 2014 Day 149 --- | | | | | | | | | | |
| 22 46 30 | 7C1756+6520 | 16 30 16 | 73.6 | 33.3 | -1.4 | | -127.9 | -13 | 550 | No stop |
| 22 50 00 | --- | 16 33 47 | 73.9 | 32.4 | -1.4 | | -129.5 | 197 | 577 | 22 46 31 |
| 22 50 00 | J1754+6452 | 16 33 47 | 74.5 | 33.0 | -1.3 | | -129.6 | -14 | 577 | No stop |
| 22 51 30 | =1753+648 | 16 35 17 | 74.6 | 32.6 | -1.3 | | -130.3 | 76 | 588 | 22 50 01 |
| 22 51 30 | 7C1756+6520 | 16 35 17 | 74.0 | 32.1 | -1.4 | | -130.2 | -13 | 588 | No stop |
| 22 55 00 | --- | 16 38 48 | 74.3 | 31.2 | -1.3 | | -131.8 | 197 | 615 | 22 51 31 |
| 22 55 30 | J1754+6452 | 16 39 18 | 74.9 | 31.6 | -1.2 | | -132.3 | 16 | 615 | 22 55 30 |
| 22 57 00 | =1753+648 | 16 40 48 | 75.0 | 31.2 | -1.2 | | -133.0 | 90 | 627 | 22 55 31 |
| 22 57 00 | 7C1756+6520 | 16 40 48 | 74.5 | 30.7 | -1.3 | | -132.8 | -13 | 627 | No stop |
| 23 00 30 | --- | 16 44 19 | 74.7 | 29.7 | -1.2 | | -134.5 | 197 | 654 | 22 57 01 |
| 23 00 30 | J1754+6452 | 16 44 19 | 75.3 | 30.1 | -1.2 | | -134.8 | -14 | 654 | No stop |
| 23 02 00 | =1753+648 | 16 45 49 | 75.4 | 29.7 | -1.1 | | -135.5 | 76 | 665 | 23 00 31 |
| 23 02 00 | 7C1756+6520 | 16 45 49 | 74.8 | 29.3 | -1.2 | | -135.3 | -13 | 665 | No stop |
| 23 05 30 | --- | 16 49 20 | 75.1 | 28.3 | -1.1 | | -137.0 | 197 | 692 | 23 02 01 |
| 23 06 00 | J1754+6452 | 16 49 50 | 75.7 | 28.5 | -1.1 | | -137.6 | 16 | 692 | 23 06 00 |
| 23 07 30 | =1753+648 | 16 51 20 | 75.8 | 28.0 | -1.0 | | -138.5 | 90 | 704 | 23 06 01 |
| 23 07 30 | 7C1756+6520 | 16 51 20 | 75.2 | 27.7 | -1.1 | | -138.1 | -14 | 704 | No stop |
| 23 11 00 | --- | 16 54 50 | 75.5 | 26.6 | -1.0 | | -139.9 | 196 | 731 | 23 07 31 |
| 23 11 00 | J1754+6452 | 16 54 50 | 76.0 | 26.8 | -1.0 | | -140.4 | -14 | 731 | No stop |
| 23 12 30 | =1753+648 | 16 56 21 | 76.1 | 26.3 | -1.0 | | -141.2 | 76 | 742 | 23 11 01 |
| 23 12 30 | 7C1756+6520 | 16 56 21 | 75.6 | 26.1 | -1.0 | | -140.7 | -14 | 742 | No stop |
| 23 16 00 | --- | 16 59 51 | 75.8 | 24.9 | -1.0 | | -142.7 | 196 | 769 | 23 12 31 |
| 23 16 30 | J1754+6452 | 17 00 21 | 76.4 | 24.9 | -0.9 | | -143.5 | 16 | 769 | 23 16 30 |
| 23 18 00 | =1753+648 | 17 01 52 | 76.5 | 24.3 | -0.9 | | -144.4 | 90 | 781 | 23 16 31 |
| 23 18 00 | 7C1756+6520 | 17 01 52 | 75.9 | 24.2 | -0.9 | | -143.8 | -14 | 781 | No stop |
| 23 21 30 | --- | 17 05 22 | 76.1 | 23.0 | -0.9 | | -145.8 | 196 | 808 | 23 18 01 |
| 23 21 30 | J1754+6452 | 17 05 22 | 76.7 | 23.0 | -0.8 | | -146.5 | -14 | 808 | No stop |
| 23 23 00 | =1753+648 | 17 06 52 | 76.8 | 22.4 | -0.8 | | -147.4 | 76 | 819 | 23 21 31 |
| 23 23 00 | 7C1756+6520 | 17 06 52 | 76.2 | 22.5 | -0.8 | | -146.7 | -14 | 819 | No stop |
| 23 26 30 | --- | 17 10 23 | 76.4 | 21.1 | -0.8 | | -148.7 | 196 | 846 | 23 23 01 |
| 23 27 00 | J1754+6452 | 17 10 53 | 77.0 | 20.8 | -0.7 | | -149.8 | 16 | 846 | 23 27 00 |
| 23 28 30 | =1753+648 | 17 12 23 | 77.1 | 20.2 | -0.7 | | -150.8 | 90 | 858 | 23 27 01 |

Schedule for TORUN (Code Tr)

Page 5

VLBI observations of a HzRg in the center of a primordial galaxy cluster

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 29 May 2014 Day 149 --- | | | | | | | | | | |
| 23 28 30 | 7C1756+6520 | 17 12 23 | 76.5 | 20.4 | -0.7 | | -149.9 | -14 | 858 | No stop |
| 23 32 00 | --- | 17 15 54 | 76.7 | 19.0 | -0.7 | | -152.1 | 196 | 885 | 23 28 31 |
| 23 32 00 | J1754+6452 | 17 15 54 | 77.3 | 18.7 | -0.6 | | -153.0 | -14 | 885 | No stop |
| 23 33 30 | =1753+648 | 17 17 24 | 77.3 | 18.1 | -0.6 | | -154.0 | 76 | 896 | 23 32 01 |
| 23 33 30 | 7C1756+6520 | 17 17 24 | 76.8 | 18.4 | -0.7 | | -153.0 | -14 | 896 | No stop |
| 23 37 00 | --- | 17 20 55 | 76.9 | 16.9 | -0.6 | | -155.2 | 196 | 923 | 23 33 31 |
| 23 37 30 | J1754+6452 | 17 21 25 | 77.5 | 16.3 | -0.5 | | -156.6 | 16 | 923 | 23 37 30 |
| 23 39 00 | =1753+648 | 17 22 55 | 77.6 | 15.6 | -0.5 | | -157.7 | 90 | 935 | 23 37 31 |
| 23 39 00 | 7C1756+6520 | 17 22 55 | 77.0 | 16.1 | -0.6 | | -156.5 | -14 | 935 | No stop |
| 23 42 30 | --- | 17 26 26 | 77.2 | 14.6 | -0.5 | | -158.8 | 196 | 962 | 23 39 01 |
| 23 42 30 | J1754+6452 | 17 26 26 | 77.7 | 14.0 | -0.5 | | -160.0 | -14 | 962 | No stop |
| 23 44 00 | =1753+648 | 17 27 56 | 77.8 | 13.3 | -0.4 | | -161.1 | 76 | 973 | 23 42 31 |
| 23 44 00 | 7C1756+6520 | 17 27 56 | 77.2 | 13.9 | -0.5 | | -159.8 | -13 | 973 | No stop |
| 23 47 30 | --- | 17 31 26 | 77.3 | 12.3 | -0.4 | | -162.1 | 197 | 1000 | 23 44 01 |
| 23 48 00 | J1754+6452 | 17 31 57 | 77.9 | 11.3 | -0.4 | | -163.9 | 17 | 1000 | 23 48 00 |
| 23 49 30 | =1753+648 | 17 33 27 | 77.9 | 10.6 | -0.3 | | -164.9 | 90 | 1012 | 23 48 01 |
| 23 49 30 | 7C1756+6520 | 17 33 27 | 77.4 | 11.4 | -0.4 | | -163.5 | -13 | 1012 | No stop |
| 23 53 00 | --- | 17 36 57 | 77.5 | 9.8 | -0.3 | | -165.8 | 197 | 1038 | 23 49 31 |
| 23 53 00 | J1754+6452 | 17 36 57 | 78.0 | 8.9 | -0.3 | | -167.4 | -14 | 1038 | No stop |
| 23 54 30 | =1753+648 | 17 38 28 | 78.1 | 8.1 | -0.3 | | -168.5 | 76 | 1050 | 23 53 01 |
| 23 54 30 | 7C1756+6520 | 17 38 28 | 77.5 | 9.1 | -0.3 | | -166.9 | -13 | 1050 | No stop |
| 23 58 00 | --- | 17 41 58 | 77.6 | 7.4 | -0.3 | | -169.3 | 197 | 1077 | 23 54 31 |
| 23 58 30 | J1754+6452 | 17 42 28 | 78.1 | 6.1 | -0.2 | | -171.4 | 15 | 1077 | 23 58 30 |
| 23 59 59 | =1753+648 | 17 43 59 | 78.2 | 5.3 | -0.2 | | -172.5 | 89 | 1088 | 23 58 31 |
| --- Fri 30 May 2014 Day 150 --- | | | | | | | | | | |
| 00 00 00 | 7C1756+6520 | 17 43 59 | 77.7 | 6.5 | -0.2 | | -170.7 | -14 | 1088 | No stop |
| 00 03 30 | --- | 17 47 29 | 77.7 | 4.8 | -0.2 | | -173.1 | 196 | 1115 | 00 00 00 |
| 00 03 30 | J1754+6452 | 17 47 29 | 78.2 | 3.5 | -0.1 | | -175.0 | -15 | 1115 | No stop |
| 00 05 00 | =1753+648 | 17 48 59 | 78.2 | 2.7 | -0.1 | | -176.1 | 75 | 1127 | 00 03 31 |
| 00 05 00 | 7C1756+6520 | 17 48 59 | 77.7 | 4.0 | -0.1 | | -174.2 | -15 | 1127 | No stop |
| 00 08 30 | --- | 17 52 30 | 77.7 | 2.3 | -0.1 | | -176.7 | 195 | 1154 | 00 05 01 |

Schedule for TORUN (Code Tr)

Page 6

VLBI observations of a HzRg in the center of a primordial galaxy cluster

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 30 May 2014 Day 150 --- | | | | | | | | | | |
| 00 11 30 | J2005+7752 | 17 55 30 | 62.6 | 14.1 | -2.2 | | -135.6 | 109 | 1154 | 00 11 30 |
| 00 21 30 | =2007+777 | 18 05 32 | 63.0 | 13.3 | -2.0 | | -138.8 | 600 | 1231 | 00 11 31 |
| 00 23 30 | J1754+6452 | 18 07 32 | 78.1 | -6.9 | 0.2 | | 170.3 | 49 | 1231 | 00 23 30 |
| 00 25 00 | =1753+648 | 18 09 03 | 78.1 | -7.6 | 0.2 | | 169.2 | 90 | 1242 | 00 23 31 |
| 00 25 00 | 7C1756+6520 | 18 09 03 | 77.7 | -5.8 | 0.2 | | 171.6 | -17 | 1242 | No stop |
| 00 28 30 | --- | 18 12 33 | 77.6 | -7.5 | 0.3 | | 169.2 | 193 | 1269 | 00 25 01 |
| 00 28 30 | J1754+6452 | 18 12 33 | 78.0 | -9.4 | 0.3 | | 166.7 | -18 | 1269 | No stop |
| 00 30 00 | =1753+648 | 18 14 03 | 78.0 | -10.1 | 0.3 | | 165.6 | 72 | 1281 | 00 28 31 |
| 00 30 00 | 7C1756+6520 | 18 14 03 | 77.6 | -8.2 | 0.3 | | 168.1 | -17 | 1281 | No stop |
| 00 33 30 | --- | 18 17 34 | 77.5 | -9.9 | 0.3 | | 165.7 | 193 | 1308 | 00 30 01 |
| 00 34 00 | J1754+6452 | 18 18 04 | 77.8 | -12.1 | 0.4 | | 162.8 | 12 | 1308 | 00 34 00 |
| 00 35 30 | =1753+648 | 18 19 34 | 77.8 | -12.8 | 0.4 | | 161.7 | 90 | 1319 | 00 34 01 |
| 00 35 30 | 7C1756+6520 | 18 19 34 | 77.4 | -10.8 | 0.4 | | 164.4 | -17 | 1319 | No stop |
| 00 39 00 | --- | 18 23 05 | 77.3 | -12.4 | 0.4 | | 162.0 | 193 | 1346 | 00 35 31 |
| 00 39 00 | J1754+6452 | 18 23 05 | 77.7 | -14.5 | 0.5 | | 159.3 | -18 | 1346 | No stop |
| 00 40 30 | =1753+648 | 18 24 35 | 77.6 | -15.2 | 0.5 | | 158.3 | 72 | 1358 | 00 39 01 |
| 00 40 30 | 7C1756+6520 | 18 24 35 | 77.3 | -13.1 | 0.5 | | 161.0 | -18 | 1358 | No stop |
| 00 44 00 | --- | 18 28 06 | 77.2 | -14.6 | 0.5 | | 158.7 | 192 | 1385 | 00 40 31 |
| 00 44 30 | J1754+6452 | 18 28 36 | 77.5 | -17.0 | 0.6 | | 155.6 | 12 | 1385 | 00 44 30 |
| 00 46 00 | =1753+648 | 18 30 06 | 77.4 | -17.6 | 0.6 | | 154.6 | 90 | 1396 | 00 44 31 |
| 00 46 00 | 7C1756+6520 | 18 30 06 | 77.1 | -15.5 | 0.5 | | 157.4 | -18 | 1396 | No stop |
| 00 49 30 | --- | 18 33 37 | 76.9 | -17.0 | 0.6 | | 155.1 | 192 | 1423 | 00 46 01 |
| 00 49 30 | J1754+6452 | 18 33 37 | 77.2 | -19.2 | 0.7 | | 152.4 | -18 | 1423 | No stop |
| 00 51 00 | =1753+648 | 18 35 07 | 77.1 | -19.8 | 0.7 | | 151.4 | 72 | 1435 | 00 49 31 |
| 00 51 00 | 7C1756+6520 | 18 35 07 | 76.9 | -17.6 | 0.6 | | 154.2 | -18 | 1435 | No stop |
| 00 54 30 | --- | 18 38 38 | 76.7 | -19.0 | 0.7 | | 152.0 | 192 | 1462 | 00 51 01 |
| 00 55 00 | J1754+6452 | 18 39 08 | 76.9 | -21.4 | 0.7 | | 148.9 | 11 | 1462 | 00 55 00 |
| 00 56 30 | =1753+648 | 18 40 38 | 76.8 | -22.0 | 0.8 | | 148.0 | 90 | 1473 | 00 55 01 |
| 00 56 30 | 7C1756+6520 | 18 40 38 | 76.6 | -19.8 | 0.7 | | 150.8 | -18 | 1473 | No stop |
| 01 00 00 | --- | 18 44 08 | 76.4 | -21.2 | 0.8 | | 148.6 | 192 | 1500 | 00 56 31 |

Schedule for TORUN (Code Tr)

Page 7

VLBI observations of a HzRg in the center of a primordial galaxy cluster

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 30 May 2014 Day 150 --- | | | | | | | | | | |
| 01 00 00 | J1754+6452 | 18 44 08 | 76.6 | -23.4 | 0.8 | | 145.8 | -19 | 1500 | No stop |
| 01 01 30 | =1753+648 | 18 45 39 | 76.6 | -24.0 | 0.9 | | 144.9 | 71 | 1512 | 01 00 01 |
| 01 01 30 | 7C1756+6520 | 18 45 39 | 76.3 | -21.8 | 0.8 | | 147.8 | -18 | 1512 | No stop |
| 01 05 00 | --- | 18 49 09 | 76.1 | -23.1 | 0.9 | | 145.7 | 192 | 1538 | 01 01 31 |
| 01 05 30 | J1754+6452 | 18 49 39 | 76.3 | -25.4 | 0.9 | | 142.6 | 11 | 1538 | 01 05 30 |
| 01 07 00 | =1753+648 | 18 51 10 | 76.2 | -26.0 | 0.9 | | 141.8 | 90 | 1550 | 01 05 31 |
| 01 07 00 | 7C1756+6520 | 18 51 10 | 76.0 | -23.8 | 0.9 | | 144.6 | -18 | 1550 | No stop |
| 01 10 30 | --- | 18 54 40 | 75.8 | -25.0 | 1.0 | | 142.6 | 192 | 1577 | 01 07 01 |
| 01 10 30 | J1754+6452 | 18 54 40 | 76.0 | -27.2 | 1.0 | | 139.8 | -18 | 1577 | No stop |
| 01 12 00 | =1753+648 | 18 56 10 | 75.9 | -27.7 | 1.0 | | 139.0 | 72 | 1588 | 01 10 31 |
| 01 12 00 | 7C1756+6520 | 18 56 10 | 75.7 | -25.5 | 1.0 | | 141.8 | -18 | 1588 | No stop |
| 01 15 30 | --- | 18 59 41 | 75.5 | -26.6 | 1.0 | | 139.9 | 192 | 1615 | 01 12 01 |
| 01 16 00 | J1754+6452 | 19 00 11 | 75.6 | -28.9 | 1.1 | | 136.8 | 12 | 1615 | 01 16 00 |
| 01 17 30 | =1753+648 | 19 01 41 | 75.5 | -29.4 | 1.1 | | 136.0 | 90 | 1627 | 01 16 01 |
| 01 17 30 | 7C1756+6520 | 19 01 41 | 75.3 | -27.3 | 1.1 | | 138.8 | -18 | 1627 | No stop |
| 01 21 00 | --- | 19 05 12 | 75.1 | -28.3 | 1.1 | | 137.0 | 192 | 1654 | 01 17 31 |
| 01 21 00 | J1754+6452 | 19 05 12 | 75.2 | -30.5 | 1.2 | | 134.2 | -18 | 1654 | No stop |
| 01 22 30 | =1753+648 | 19 06 42 | 75.1 | -30.9 | 1.2 | | 133.5 | 72 | 1665 | 01 21 01 |
| 01 22 30 | 7C1756+6520 | 19 06 42 | 75.0 | -28.8 | 1.2 | | 136.2 | -18 | 1665 | No stop |
| 01 26 00 | --- | 19 10 13 | 74.7 | -29.8 | 1.2 | | 134.4 | 192 | 1692 | 01 22 31 |
| 01 26 30 | J1754+6452 | 19 10 43 | 74.8 | -32.0 | 1.3 | | 131.5 | 12 | 1692 | 01 26 30 |
| 01 28 00 | =1753+648 | 19 12 13 | 74.7 | -32.4 | 1.3 | | 130.8 | 90 | 1704 | 01 26 31 |
| 01 28 00 | 7C1756+6520 | 19 12 13 | 74.6 | -30.3 | 1.3 | | 133.5 | -18 | 1704 | No stop |
| 01 31 30 | --- | 19 15 44 | 74.3 | -31.2 | 1.3 | | 131.8 | 192 | 1731 | 01 28 01 |
| 01 31 30 | J1754+6452 | 19 15 44 | 74.4 | -33.3 | 1.4 | | 129.1 | -18 | 1731 | No stop |
| 01 33 00 | =1753+648 | 19 17 14 | 74.2 | -33.7 | 1.4 | | 128.4 | 72 | 1742 | 01 31 31 |
| 01 33 00 | 7C1756+6520 | 19 17 14 | 74.2 | -31.6 | 1.3 | | 131.1 | -18 | 1742 | No stop |
| 01 36 30 | --- | 19 20 44 | 73.9 | -32.5 | 1.4 | | 129.4 | 192 | 1769 | 01 33 01 |
| 01 37 00 | J1754+6452 | 19 21 14 | 73.9 | -34.6 | 1.5 | | 126.6 | 12 | 1769 | 01 37 00 |
| 01 38 30 | =1753+648 | 19 22 45 | 73.8 | -34.9 | 1.5 | | 125.9 | 90 | 1781 | 01 37 01 |

Schedule for TORUN (Code Tr)

Page 8

VLBI observations of a HzRg in the center of a primordial galaxy cluster

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 30 May 2014 Day 150 --- | | | | | | | | | | |
| 01 38 30 | 7C1756+6520 | 19 22 45 | 73.7 | -32.9 | 1.4 | | 128.5 | -17 | 1781 | No stop |
| 01 42 00 | --- | 19 26 15 | 73.5 | -33.7 | 1.5 | | 127.0 | 193 | 1808 | 01 38 31 |
| 01 42 00 | J1754+6452 | 19 26 15 | 73.5 | -35.7 | 1.5 | | 124.4 | -18 | 1808 | No stop |
| 01 43 30 | =1753+648 | 19 27 46 | 73.3 | -36.0 | 1.6 | | 123.8 | 72 | 1819 | 01 42 01 |
| 01 43 30 | 7C1756+6520 | 19 27 46 | 73.3 | -34.1 | 1.5 | | 126.3 | -17 | 1819 | No stop |
| 01 47 00 | --- | 19 31 16 | 73.0 | -34.8 | 1.6 | | 124.8 | 193 | 1846 | 01 43 31 |
| 01 47 30 | J1754+6452 | 19 31 46 | 73.0 | -36.8 | 1.6 | | 122.1 | 12 | 1846 | 01 47 30 |
| 01 49 00 | =1753+648 | 19 33 16 | 72.8 | -37.1 | 1.7 | | 121.5 | 90 | 1858 | 01 47 31 |
| 01 49 00 | 7C1756+6520 | 19 33 16 | 72.9 | -35.2 | 1.6 | | 124.0 | -17 | 1858 | No stop |
| 01 52 30 | --- | 19 36 47 | 72.6 | -35.9 | 1.7 | | 122.5 | 193 | 1885 | 01 49 01 |
| 01 52 30 | J1754+6452 | 19 36 47 | 72.5 | -37.7 | 1.7 | | 120.1 | -17 | 1885 | No stop |
| 01 54 00 | =1753+648 | 19 38 17 | 72.4 | -38.0 | 1.7 | | 119.5 | 73 | 1896 | 01 52 31 |
| 01 54 00 | 7C1756+6520 | 19 38 17 | 72.4 | -36.2 | 1.7 | | 121.9 | -17 | 1896 | No stop |
| 01 57 30 | --- | 19 41 48 | 72.1 | -36.8 | 1.7 | | 120.5 | 193 | 1923 | 01 54 01 |
| 01 58 00 | J1754+6452 | 19 42 18 | 72.0 | -38.7 | 1.8 | | 117.9 | 13 | 1923 | 01 58 00 |
| 01 59 30 | =1753+648 | 19 43 48 | 71.9 | -38.9 | 1.8 | | 117.4 | 90 | 1935 | 01 58 01 |
| 01 59 30 | 7C1756+6520 | 19 43 48 | 71.9 | -37.1 | 1.8 | | 119.7 | -17 | 1935 | No stop |
| 02 03 00 | --- | 19 47 19 | 71.6 | -37.7 | 1.8 | | 118.4 | 193 | 1962 | 01 59 31 |
| 02 03 00 | J1754+6452 | 19 47 19 | 71.5 | -39.4 | 1.9 | | 116.1 | -17 | 1962 | No stop |
| 02 04 30 | =1753+648 | 19 48 49 | 71.4 | -39.7 | 1.9 | | 115.5 | 73 | 1973 | 02 03 01 |
| 02 04 30 | 7C1756+6520 | 19 48 49 | 71.5 | -37.9 | 1.9 | | 117.8 | -17 | 1973 | No stop |
| 02 08 00 | --- | 19 52 20 | 71.1 | -38.4 | 1.9 | | 116.6 | 193 | 2000 | 02 04 31 |
| 02 08 30 | J1754+6452 | 19 52 50 | 71.0 | -40.2 | 2.0 | | 114.1 | 13 | 2000 | 02 08 30 |
| 02 10 00 | =1753+648 | 19 54 20 | 70.9 | -40.4 | 2.0 | | 113.6 | 90 | 2012 | 02 08 31 |
| 02 10 00 | 7C1756+6520 | 19 54 20 | 71.0 | -38.7 | 2.0 | | 115.8 | -17 | 2012 | No stop |
| 02 13 30 | --- | 19 57 50 | 70.6 | -39.2 | 2.0 | | 114.6 | 193 | 2038 | 02 10 01 |
| 02 13 30 | J1754+6452 | 19 57 50 | 70.5 | -40.9 | 2.1 | | 112.4 | -17 | 2038 | No stop |
| 02 15 00 | =1753+648 | 19 59 21 | 70.4 | -41.0 | 2.1 | | 111.8 | 73 | 2050 | 02 13 31 |
| 02 15 00 | 7C1756+6520 | 19 59 21 | 70.5 | -39.4 | 2.0 | | 114.1 | -16 | 2050 | No stop |
| 02 18 30 | --- | 20 02 51 | 70.1 | -39.8 | 2.1 | | 112.9 | 194 | 2077 | 02 15 01 |

Schedule for TORUN (Code Tr)

Page 9

VLBI observations of a HzRg in the center of a primordial galaxy cluster

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 30 May 2014 Day 150 --- | | | | | | | | | | |
| 02 19 00 | J1754+6452 | 20 03 21 | 70.0 | -41.5 | 2.2 | | 110.5 | 14 | 2077 | 02 19 00 |
| 02 20 30 | =1753+648 | 20 04 52 | 69.8 | -41.7 | 2.2 | | 110.0 | 90 | 2088 | 02 19 01 |
| 02 20 30 | 7C1756+6520 | 20 04 52 | 69.9 | -40.1 | 2.1 | | 112.2 | -16 | 2088 | No stop |
| 02 24 00 | --- | 20 08 22 | 69.6 | -40.5 | 2.2 | | 111.0 | 194 | 2115 | 02 20 31 |
| 02 24 00 | J1754+6452 | 20 08 22 | 69.5 | -42.0 | 2.2 | | 108.9 | -16 | 2115 | No stop |
| 02 25 30 | =1753+648 | 20 09 52 | 69.3 | -42.2 | 2.3 | | 108.4 | 74 | 2127 | 02 24 01 |
| 02 25 30 | 7C1756+6520 | 20 09 52 | 69.5 | -40.6 | 2.2 | | 110.5 | -16 | 2127 | No stop |
| 02 29 00 | --- | 20 13 23 | 69.1 | -41.0 | 2.3 | | 109.4 | 194 | 2154 | 02 25 31 |
| 02 29 30 | J1754+6452 | 20 13 53 | 68.9 | -42.5 | 2.3 | | 107.2 | 14 | 2154 | 02 29 30 |
| 02 31 00 | =1753+648 | 20 15 23 | 68.8 | -42.6 | 2.4 | | 106.7 | 90 | 2165 | 02 29 31 |
| 02 31 00 | 7C1756+6520 | 20 15 23 | 68.9 | -41.2 | 2.3 | | 108.8 | -16 | 2165 | No stop |
| 02 34 30 | --- | 20 18 54 | 68.6 | -41.5 | 2.4 | | 107.7 | 194 | 2192 | 02 31 01 |
| 02 34 30 | J1754+6452 | 20 18 54 | 68.4 | -42.9 | 2.4 | | 105.6 | -16 | 2192 | No stop |
| 02 36 00 | =1753+648 | 20 20 24 | 68.3 | -43.0 | 2.4 | | 105.2 | 74 | 2204 | 02 34 31 |
| 02 36 00 | 7C1756+6520 | 20 20 24 | 68.4 | -41.6 | 2.4 | | 107.2 | -16 | 2204 | No stop |
| 02 39 30 | --- | 20 23 55 | 68.1 | -41.9 | 2.4 | | 106.1 | 194 | 2231 | 02 36 01 |
| 02 40 00 | J1754+6452 | 20 24 25 | 67.8 | -43.3 | 2.5 | | 104.0 | 14 | 2231 | 02 40 00 |
| 02 41 30 | =1753+648 | 20 25 55 | 67.7 | -43.4 | 2.5 | | 103.6 | 90 | 2242 | 02 40 01 |
| 02 41 30 | 7C1756+6520 | 20 25 55 | 67.9 | -42.0 | 2.5 | | 105.6 | -16 | 2242 | No stop |
| 02 45 00 | --- | 20 29 26 | 67.5 | -42.3 | 2.5 | | 104.5 | 194 | 2269 | 02 41 31 |
| 02 45 00 | J1754+6452 | 20 29 26 | 67.3 | -43.7 | 2.6 | | 102.6 | -16 | 2269 | No stop |
| 02 46 30 | =1753+648 | 20 30 56 | 67.2 | -43.7 | 2.6 | | 102.2 | 74 | 2281 | 02 45 01 |
| 02 46 30 | 7C1756+6520 | 20 30 56 | 67.4 | -42.4 | 2.6 | | 104.1 | -15 | 2281 | No stop |
| 02 50 00 | --- | 20 34 26 | 67.0 | -42.6 | 2.6 | | 103.1 | 195 | 2308 | 02 46 31 |
| 02 53 00 | J2005+7752 | 20 37 27 | 65.0 | -4.0 | 0.5 | | 168.5 | 87 | 2308 | 02 53 00 |
| 03 01 30 | =2007+777 | 20 45 58 | 64.9 | -5.0 | 0.7 | | 165.4 | 510 | 2373 | 02 53 01 |
| 03 03 30 | J1754+6452 | 20 47 59 | 65.4 | -44.5 | 2.9 | | 97.6 | 26 | 2373 | 03 03 30 |
| 03 05 00 | =1753+648 | 20 49 29 | 65.2 | -44.6 | 2.9 | | 97.2 | 90 | 2385 | 03 03 31 |
| 03 05 00 | 7C1756+6520 | 20 49 29 | 65.5 | -43.4 | 2.9 | | 99.0 | -15 | 2385 | No stop |
| 03 08 30 | --- | 20 53 00 | 65.1 | -43.5 | 2.9 | | 98.1 | 195 | 2412 | 03 05 01 |
| 03 08 30 | J1754+6452 | 20 53 00 | 64.9 | -44.7 | 3.0 | | 96.3 | -15 | 2412 | No stop |
| 03 10 00 | =1753+648 | 20 54 30 | 64.7 | -44.7 | 3.0 | | 96.0 | 75 | 2423 | 03 08 31 |

Schedule for TORUN (Code Tr)

Page 10

VLBI observations of a HzRg in the center of a primordial galaxy cluster

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 30 May 2014 Day 150 --- | | | | | | | | | | |
| 03 10 00 | 7C1756+6520 | 20 54 30 | 65.0 | -43.5 | 3.0 | | 97.7 | -15 | 2423 | No stop |
| 03 13 30 | --- | 20 58 00 | 64.6 | -43.6 | 3.0 | | 96.8 | 195 | 2450 | 03 10 01 |
| 03 14 00 | J1754+6452 | 20 58 30 | 64.3 | -44.8 | 3.1 | | 95.0 | 15 | 2450 | 03 14 00 |
| 03 15 30 | =1753+648 | 21 00 01 | 64.1 | -44.8 | 3.1 | | 94.6 | 90 | 2462 | 03 14 01 |
| 03 15 30 | 7C1756+6520 | 21 00 01 | 64.4 | -43.7 | 3.0 | | 96.3 | -15 | 2462 | No stop |
| 03 19 00 | --- | 21 03 31 | 64.0 | -43.8 | 3.1 | | 95.4 | 195 | 2488 | 03 15 31 |
| 03 19 00 | J1754+6452 | 21 03 31 | 63.7 | -44.9 | 3.2 | | 93.7 | -14 | 2488 | No stop |
| 03 20 30 | =1753+648 | 21 05 01 | 63.6 | -44.9 | 3.2 | | 93.4 | 76 | 2500 | 03 19 01 |
| 03 20 30 | 7C1756+6520 | 21 05 01 | 63.9 | -43.8 | 3.1 | | 95.0 | -14 | 2500 | No stop |
| 03 24 00 | --- | 21 08 32 | 63.5 | -43.9 | 3.2 | | 94.2 | 196 | 2527 | 03 20 31 |
| 03 24 30 | J1754+6452 | 21 09 02 | 63.2 | -45.0 | 3.2 | | 92.4 | 16 | 2527 | 03 24 30 |
| 03 26 00 | =1753+648 | 21 10 32 | 63.0 | -45.0 | 3.3 | | 92.1 | 90 | 2538 | 03 24 31 |
| 03 26 00 | 7C1756+6520 | 21 10 32 | 63.3 | -43.9 | 3.2 | | 93.7 | -14 | 2538 | No stop |
| 03 29 30 | --- | 21 14 03 | 62.9 | -44.0 | 3.3 | | 92.9 | 196 | 2565 | 03 26 01 |
| 03 29 30 | J1754+6452 | 21 14 03 | 62.6 | -45.0 | 3.3 | | 91.3 | -14 | 2565 | No stop |
| 03 31 00 | =1753+648 | 21 15 33 | 62.5 | -45.0 | 3.4 | | 90.9 | 76 | 2577 | 03 29 31 |
| 03 31 00 | 7C1756+6520 | 21 15 33 | 62.8 | -44.0 | 3.3 | | 92.5 | -14 | 2577 | No stop |
| 03 34 30 | --- | 21 19 04 | 62.4 | -44.0 | 3.4 | | 91.7 | 196 | 2604 | 03 31 01 |
| 03 35 00 | J1754+6452 | 21 19 34 | 62.0 | -45.0 | 3.4 | | 90.0 | 16 | 2604 | 03 35 00 |
| 03 36 30 | =1753+648 | 21 21 04 | 61.9 | -45.0 | 3.4 | | 89.7 | 90 | 2615 | 03 35 01 |
| 03 36 30 | 7C1756+6520 | 21 21 04 | 62.2 | -44.0 | 3.4 | | 91.2 | -14 | 2615 | No stop |
| 03 40 00 | --- | 21 24 35 | 61.8 | -44.0 | 3.5 | | 90.4 | 196 | 2642 | 03 36 31 |
| 03 40 00 | J1754+6452 | 21 24 35 | 61.5 | -45.0 | 3.5 | | 88.9 | -14 | 2642 | No stop |
| 03 41 30 | =1753+648 | 21 26 05 | 61.3 | -45.0 | 3.5 | | 88.5 | 76 | 2654 | 03 40 01 |
| 03 41 30 | 7C1756+6520 | 21 26 05 | 61.7 | -44.0 | 3.5 | | 90.1 | -14 | 2654 | No stop |
| 03 45 00 | --- | 21 29 36 | 61.3 | -44.0 | 3.5 | | 89.3 | 196 | 2681 | 03 41 31 |
| 03 45 30 | J1754+6452 | 21 30 06 | 60.9 | -45.0 | 3.6 | | 87.7 | 16 | 2681 | 03 45 30 |
| 03 47 00 | =1753+648 | 21 31 36 | 60.8 | -45.0 | 3.6 | | 87.3 | 90 | 2692 | 03 45 31 |
| 03 47 00 | 7C1756+6520 | 21 31 36 | 61.1 | -44.0 | 3.6 | | 88.8 | -14 | 2692 | No stop |
| 03 50 30 | --- | 21 35 06 | 60.7 | -44.0 | 3.6 | | 88.0 | 196 | 2719 | 03 47 01 |
| 03 50 30 | J1754+6452 | 21 35 06 | 60.4 | -44.9 | 3.7 | | 86.6 | -14 | 2719 | No stop |
| 03 52 00 | =1753+648 | 21 36 37 | 60.2 | -44.9 | 3.7 | | 86.3 | 76 | 2731 | 03 50 31 |

Schedule for TORUN (Code Tr)

Page 11

VLBI observations of a HzRg in the center of a primordial galaxy cluster

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 30 May 2014 Day 150 --- | | | | | | | | | | |
| 03 52 00 | 7C1756+6520 | 21 36 37 | 60.6 | -44.0 | 3.7 | | 87.7 | -14 | 2731 | No stop |
| 03 55 30 | --- | 21 40 07 | 60.2 | -44.0 | 3.7 | | 86.9 | 196 | 2758 | 03 52 01 |
| 03 56 00 | J1754+6452 | 21 40 37 | 59.8 | -44.8 | 3.8 | | 85.4 | 17 | 2758 | 03 56 00 |
| 03 57 30 | =1753+648 | 21 42 08 | 59.6 | -44.8 | 3.8 | | 85.1 | 90 | 2769 | 03 56 01 |
| 03 57 30 | 7C1756+6520 | 21 42 08 | 60.0 | -43.9 | 3.7 | | 86.5 | -13 | 2769 | No stop |
| 04 01 00 | --- | 21 45 38 | 59.6 | -43.9 | 3.8 | | 85.8 | 197 | 2796 | 03 57 31 |
| 04 01 00 | J1754+6452 | 21 45 38 | 59.3 | -44.7 | 3.9 | | 84.3 | -13 | 2796 | No stop |
| 04 02 30 | =1753+648 | 21 47 08 | 59.1 | -44.7 | 3.9 | | 84.0 | 77 | 2808 | 04 01 01 |
| 04 02 30 | 7C1756+6520 | 21 47 08 | 59.5 | -43.9 | 3.8 | | 85.4 | -13 | 2808 | No stop |
| 04 06 00 | --- | 21 50 39 | 59.1 | -43.8 | 3.9 | | 84.7 | 197 | 2835 | 04 02 31 |
| 04 06 30 | J1754+6452 | 21 51 09 | 58.7 | -44.6 | 3.9 | | 83.2 | 17 | 2835 | 04 06 30 |
| 04 08 00 | =1753+648 | 21 52 39 | 58.5 | -44.6 | 4.0 | | 82.9 | 90 | 2846 | 04 06 31 |
| 04 08 00 | 7C1756+6520 | 21 52 39 | 58.9 | -43.8 | 3.9 | | 84.3 | -13 | 2846 | No stop |
| 04 11 30 | --- | 21 56 10 | 58.5 | -43.7 | 4.0 | | 83.5 | 197 | 2873 | 04 08 01 |
| 04 11 30 | J1754+6452 | 21 56 10 | 58.2 | -44.5 | 4.0 | | 82.2 | -13 | 2873 | No stop |
| 04 13 00 | =1753+648 | 21 57 40 | 58.0 | -44.4 | 4.1 | | 81.9 | 77 | 2885 | 04 11 31 |
| 04 13 00 | 7C1756+6520 | 21 57 40 | 58.4 | -43.6 | 4.0 | | 83.2 | -13 | 2885 | No stop |
| 04 16 30 | --- | 22 01 11 | 58.0 | -43.6 | 4.1 | | 82.5 | 197 | 2912 | 04 13 01 |
| 04 17 00 | J1754+6452 | 22 01 41 | 57.6 | -44.3 | 4.1 | | 81.1 | 17 | 2912 | 04 17 00 |
| 04 18 30 | =1753+648 | 22 03 11 | 57.4 | -44.3 | 4.1 | | 80.8 | 90 | 2923 | 04 17 01 |
| 04 18 30 | 7C1756+6520 | 22 03 11 | 57.8 | -43.5 | 4.1 | | 82.1 | -13 | 2923 | No stop |
| 04 22 00 | --- | 22 06 42 | 57.4 | -43.4 | 4.2 | | 81.4 | 197 | 2950 | 04 18 31 |
| 04 22 00 | J1754+6452 | 22 06 42 | 57.1 | -44.2 | 4.2 | | 80.1 | -13 | 2950 | No stop |
| 04 23 30 | =1753+648 | 22 08 12 | 56.9 | -44.1 | 4.2 | | 79.8 | 77 | 2962 | 04 22 01 |
| 04 23 30 | 7C1756+6520 | 22 08 12 | 57.3 | -43.4 | 4.2 | | 81.1 | -13 | 2962 | No stop |
| 04 27 00 | --- | 22 11 42 | 56.9 | -43.3 | 4.2 | | 80.4 | 197 | 2988 | 04 23 31 |
| 04 27 30 | J1754+6452 | 22 12 12 | 56.5 | -44.0 | 4.3 | | 79.0 | 17 | 2988 | 04 27 30 |
| 04 29 00 | =1753+648 | 22 13 43 | 56.3 | -43.9 | 4.3 | | 78.7 | 90 | 3000 | 04 27 31 |
| 04 29 00 | 7C1756+6520 | 22 13 43 | 56.7 | -43.2 | 4.3 | | 80.0 | -13 | 3000 | No stop |
| 04 32 30 | --- | 22 17 13 | 56.4 | -43.1 | 4.3 | | 79.3 | 197 | 3027 | 04 29 01 |
| 04 32 30 | J1754+6452 | 22 17 13 | 56.0 | -43.8 | 4.4 | | 78.0 | -13 | 3027 | No stop |
| 04 34 00 | =1753+648 | 22 18 44 | 55.8 | -43.7 | 4.4 | | 77.7 | 77 | 3038 | 04 32 31 |

Schedule for TORUN (Code Tr)

Page 12

VLBI observations of a HzRg in the center of a primordial galaxy cluster

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 30 May 2014 Day 150 --- | | | | | | | | | | |
| 04 34 00 | 7C1756+6520 | 22 18 44 | 56.2 | -43.0 | 4.4 | | 79.0 | -13 | 3038 | No stop |
| 04 37 30 | --- | 22 22 14 | 55.8 | -42.9 | 4.4 | | 78.3 | 197 | 3065 | 04 34 01 |
| 04 38 00 | J1754+6452 | 22 22 44 | 55.4 | -43.6 | 4.5 | | 76.9 | 18 | 3065 | 04 38 00 |
| 04 39 30 | =1753+648 | 22 24 14 | 55.2 | -43.5 | 4.5 | | 76.7 | 90 | 3077 | 04 38 01 |
| 04 39 30 | 7C1756+6520 | 22 24 14 | 55.6 | -42.8 | 4.5 | | 77.9 | -12 | 3077 | No stop |
| 04 43 00 | --- | 22 27 45 | 55.3 | -42.7 | 4.5 | | 77.2 | 198 | 3104 | 04 39 31 |
| 04 43 00 | J1754+6452 | 22 27 45 | 54.9 | -43.3 | 4.6 | | 76.0 | -13 | 3104 | No stop |
| 04 44 30 | =1753+648 | 22 29 15 | 54.7 | -43.3 | 4.6 | | 75.7 | 77 | 3115 | 04 43 01 |
| 04 44 30 | 7C1756+6520 | 22 29 15 | 55.1 | -42.6 | 4.5 | | 76.9 | -12 | 3115 | No stop |
| 04 48 00 | --- | 22 32 46 | 54.8 | -42.5 | 4.6 | | 76.2 | 198 | 3142 | 04 44 31 |
| 04 48 30 | J1754+6452 | 22 33 16 | 54.3 | -43.1 | 4.7 | | 74.9 | 17 | 3142 | 04 48 30 |
| 04 50 00 | =1753+648 | 22 34 46 | 54.2 | -43.0 | 4.7 | | 74.7 | 90 | 3154 | 04 48 31 |
| 04 50 00 | 7C1756+6520 | 22 34 46 | 54.6 | -42.4 | 4.6 | | 75.8 | -12 | 3154 | No stop |
| 04 53 30 | --- | 22 38 17 | 54.2 | -42.2 | 4.7 | | 75.2 | 198 | 3181 | 04 50 01 |
| 04 53 30 | J1754+6452 | 22 38 17 | 53.8 | -42.8 | 4.7 | | 74.0 | -13 | 3181 | No stop |
| 04 55 00 | =1753+648 | 22 39 47 | 53.6 | -42.8 | 4.8 | | 73.7 | 77 | 3192 | 04 53 31 |
| 04 55 00 | 7C1756+6520 | 22 39 47 | 54.1 | -42.1 | 4.7 | | 74.9 | -12 | 3192 | No stop |
| 04 58 30 | --- | 22 43 18 | 53.7 | -42.0 | 4.8 | | 74.2 | 198 | 3219 | 04 55 01 |
| 04 59 00 | J1754+6452 | 22 43 48 | 53.2 | -42.6 | 4.8 | | 73.0 | 17 | 3219 | 04 59 00 |
| 05 00 30 | =1753+648 | 22 45 18 | 53.1 | -42.5 | 4.9 | | 72.7 | 90 | 3231 | 04 59 01 |
| 05 00 30 | 7C1756+6520 | 22 45 18 | 53.5 | -41.9 | 4.8 | | 73.9 | -12 | 3231 | No stop |
| 05 04 00 | --- | 22 48 48 | 53.2 | -41.7 | 4.9 | | 73.2 | 198 | 3258 | 05 00 31 |
| 05 04 00 | J1754+6452 | 22 48 48 | 52.7 | -42.3 | 4.9 | | 72.1 | -13 | 3258 | No stop |
| 05 05 30 | =1753+648 | 22 50 19 | 52.6 | -42.2 | 4.9 | | 71.8 | 77 | 3269 | 05 04 01 |
| 05 05 30 | 7C1756+6520 | 22 50 19 | 53.0 | -41.6 | 4.9 | | 72.9 | -13 | 3269 | No stop |
| 05 09 00 | --- | 22 53 49 | 52.7 | -41.5 | 4.9 | | 72.3 | 197 | 3296 | 05 05 31 |
| 05 09 30 | J1754+6452 | 22 54 19 | 52.2 | -42.0 | 5.0 | | 71.1 | 17 | 3296 | 05 09 30 |
| 05 11 00 | =1753+648 | 22 55 50 | 52.0 | -41.9 | 5.0 | | 70.8 | 90 | 3308 | 05 09 31 |
| 05 11 00 | 7C1756+6520 | 22 55 50 | 52.5 | -41.3 | 5.0 | | 71.9 | -13 | 3308 | No stop |
| 05 14 30 | --- | 22 59 20 | 52.1 | -41.2 | 5.0 | | 71.2 | 197 | 3335 | 05 11 01 |
| 05 14 30 | J1754+6452 | 22 59 20 | 51.7 | -41.7 | 5.1 | | 70.1 | -13 | 3335 | No stop |
| 05 16 00 | =1753+648 | 23 00 50 | 51.5 | -41.6 | 5.1 | | 69.9 | 77 | 3346 | 05 14 31 |

Schedule for TORUN (Code Tr)

Page 13

VLBI observations of a HzRg in the center of a primordial galaxy cluster

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator 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 30 May 2014 Day 150 --- | | | | | | | | | | |
| 05 16 00 | 7C1756+6520 | 23 00 50 | 52.0 | -41.1 | 5.1 | | 71.0 | -13 | 3346 | No stop |
| 05 19 30 | --- | 23 04 21 | 51.6 | -40.9 | 5.1 | | 70.3 | 197 | 3373 | 05 16 01 |
| 05 20 00 | J1754+6452 | 23 04 51 | 51.1 | -41.4 | 5.2 | | 69.1 | 17 | 3373 | 05 20 00 |
| 05 21 30 | =1753+648 | 23 06 21 | 51.0 | -41.3 | 5.2 | | 68.9 | 90 | 3385 | 05 20 01 |
| 05 21 30 | 7C1756+6520 | 23 06 21 | 51.4 | -40.8 | 5.2 | | 70.0 | -13 | 3385 | No stop |
| 05 25 00 | --- | 23 09 52 | 51.1 | -40.6 | 5.2 | | 69.3 | 197 | 3412 | 05 21 31 |
| 05 25 00 | J1754+6452 | 23 09 52 | 50.6 | -41.1 | 5.3 | | 68.3 | -13 | 3412 | No stop |
| 05 26 30 | =1753+648 | 23 11 22 | 50.5 | -41.0 | 5.3 | | 68.0 | 77 | 3423 | 05 25 01 |
| 05 26 30 | 7C1756+6520 | 23 11 22 | 50.9 | -40.5 | 5.2 | | 69.0 | -13 | 3423 | No stop |
| 05 30 00 | --- | 23 14 53 | 50.6 | -40.3 | 5.3 | | 68.4 | 197 | 3450 | 05 26 31 |

SETUP FILE INFORMATION:

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

==== Setup file: sess214.L1024

--- WARNING --- This group does not match an entry in the frequency catalog.
 This might be ok because the catalog is not complete.
 But be very careful to be sure that the setup is correct.

Setup group: 10 Station: TORUN Total bit rate: 1024
 Format: MARK5B Bits per sample: 2 Sample rate: 32.000
 Number of channels: 16 DBE type: Speedup factor: 1.00

Disk used to record data.

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

The following frequency sets based on these setups were used.

```

Frequency Set: 6 Setup file default. Used with PCAL = off
LO sum= 1610.49 1610.49 1610.49 1610.49 1642.49 1642.49 1642.49 1642.49
        1674.49 1674.49 1674.49 1674.49 1706.49 1706.49 1706.49 1706.49
BBC fr= 689.51 689.51 689.51 689.51 657.51 657.51 657.51 657.51
        625.51 625.51 625.51 625.51 593.51 593.51 593.51 593.51
Bandwd= 16.00 16.00 16.00 16.00 16.00 16.00 16.00 16.00
        16.00 16.00 16.00 16.00 16.00 16.00 16.00 16.00
Matching frequency sets: 6

```

Track assignments are:

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) | | (Date) | Error (mas) |
|---------------|--------------------------|-------------------|-----------------|-------------|
| | (B1950) | (J2000) | | |
| * 7C1756+6520 | 17 56 57.408503 | * 17 57 05.760000 | 17 57 11.167912 | 0.00 |
| | 65 20 08.02492 | * 65 19 55.10000 | 65 19 52.84011 | 0.00 |
| * J1754+6452 | 17 53 56.158588 | * 17 54 07.589776 | 17 54 13.843158 | 2.89 |
| 1753+648 | 64 52 28.64646 | * 64 52 02.63111 | 64 51 56.82335 | 2.25 |
| * J2005+7752 | 20 07 20.430170 | * 20 05 30.998498 | 20 05 03.650791 | 0.48 |
| 2007+777 | 77 43 58.12300 | * 77 52 43.24753 | 77 55 06.28877 | 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:

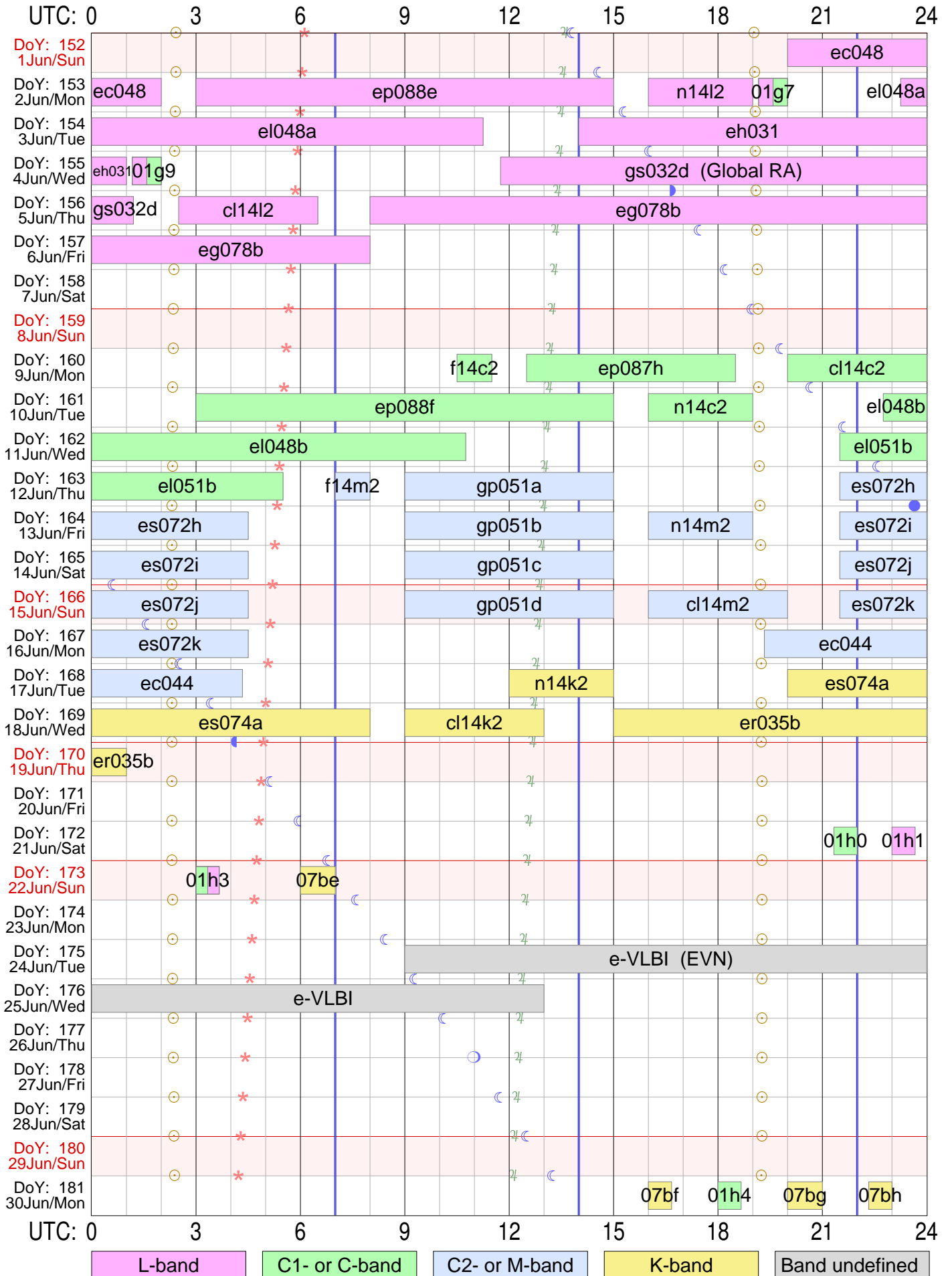
| Source | Sun distance (deg) |
|-------------|--------------------|
| 7C1756+6520 | 91.3 |
| J1754+6452 | 91.8 |
| J2005+7752 | 75.6 |

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 |

Tr VLBI plan for Jun 2014



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

Vertical lines in blue mark operator shift times at Tr

Total observing time: 265.1 hours in 42 experiments scheduled

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

Formatowanie/*conditioning* disk-packów na sesję 2/2014

1. Przy pierwszym podejściu do formatowania lub po resecie komputera **mark5** lub **mark5trao** logujemy się na ten komputer jako użytkownik **oper** i wpisujemy polecenie

```
script -af DP2014-2.txt (do zapisu komunikatów z SSErase)*
```

Tę komendę trzeba też powtórzyć, jeśli po poprzednim formatowaniu wydano polecenie **exit**.

2. Wkładamy *pack* do *banku A* (drugi bank powinien być pusty!) i przekręcamy kluczyk; zapali się lampka **locked**
3. W oknie **mark5** lub **mark5trao** wpisujemy komendę do czyszczenia *packa*

```
SSErase -m 0 -c 1
```

4. **SSErase** zapyta czy chcemy wyczyścić dyski w *banku A* – odpowiadamy 'y' (yes) i wciskamy klawisz **Enter**

Formatowanie *packów* o pojemności 8 TB trwa po ok. 20 godzin (mniejsze, odpowiednio mniej). Gdy wszystko pójdzie dobrze, pojawią się końcowe komunikaty typu:

```
SSErase DEBUG: Erase ending
SSErase DEBUG: That took 72249.8 seconds
SSErase DEBUG: XLRSetUserDir() OK
SSErase DISK: 0, 9VP29SBT
SSErase STATS: 0 : 155207 : 30361672 : 3120 : 1546 : 1490 : 390 : 59 : 0 ;
.....
SSErase DISK: 6, 6VPA6XS2
SSErase STATS: 6 : 160291 : 30357387 : 2468 : 1397 : 1661 : 274 : 5 : 1 ;
SSErase DISK: 7, 5VP751JP
SSErase STATS: 7 : 158600 : 30360160 : 1600 : 1630 : 1377 : 104 : 9 : 4 ;
SSErase DEBUG: XLRSelectBank() to A OK
SSErase DEBUG: Erased bank A OK
SSErase DEBUG: XLRSetUserDir() bank A OK
SSErase DEBUG: Bank-A DMS set to Erased
SSErase DEBUG: XLRClose() OK
```

5. Po zakończeniu czyszczenia wpisujemy:

```
SSReset
```

6. Teraz możemy już wyjąć *pack* i odłożyć go na półkę
7. Jeśli gdzieś brakuje **OK** (pojawia się słowo 'error'), należy odnotować ten fakt w tabelce na następnej stronie.
8. Jeśli nie planujemy wymazywania innego *packa*, zamykamy działanie komendy **script** (wydanej w punkcie 1. powyżej) poleceniem **exit**, w przeciwnym przypadku wykonujemy czynności od punktu 2. powyżej.

* Nazwa pliku tekstowego **DP20yy-n.txt** (**yy** to rok, zaś **n** to 1, 2 lub 3) komendy **script** ma oznaczać **Disk-Packi** na sesję **20yy-n**. Są w nim komunikaty programu **SSErase**, w tym (na końcu mazania każdego DP) statystyki poszczególnych dysków. Po wyczyszczeniu wszystkich *packów*, plik **DP2014-2.txt** będzie zawierał komplet informacji o jakości wszystkich *packów* z sesji 2/2014.

Lista *packów* do formatowania

(objaśnienia są na poprzedniej stronie)

| VSN / GB | Start (UTC) | Koniec | Uwagi (Mark5A/Mark5B) |
|----------------|--------------|----------|--------------------------|
| MPI+1607/16000 | .8:35/13V.. | | ...OK*....40.8 godz..... |
| MPI+1206/6000 | ..6:36/16V.. | .21:55.. | ...OK*..... |
| MPI-0512/4000 | ..7:03/20... | | ...OK*..... |
| WSRT-076/4000 | ..5:26/19... | .15:40.. | ...OK....(powtórzone)... |
| MPI-0523/4000 | .15:45/19... | | ...OK*....~7 godz..... |
| MPI-0502/4000 | ..7:51/21... | ~13:00.. | ...OK..... |
| WSRT-072/4000 | .13:20/21... | | ...OK....23038 sek..... |
| WSRT-067/4000 | .12:21/22... | ~18:00.. | ...OK....18913 sek..... |
| JOD-0038/3200 | .22:10/16... | ..6:33.. | ...OK*..... |
| NRAO-055/2000 | ..5:25/22... | .11:40.. | ...OK*..... |
| WSRT-063/2000 | ..5:27/15... | ~12:00.. | ...OK*..... |
| MED-0007/2000 | .18:35/22... | ~21:00.. | ...OK....93345 sek..... |

* - brak VSN (*labela*); wszystkie wpisano 26 V 2014 r.

Jeśli używamy Mark5A (komputer **mark5**), przed formatowaniem trzeba brać pod uwagę ile czasu jest do następnego eksperymentu VLBI. Jeśli jest więcej niż 20 godzin, można zacząć formatować *pack* 8-terabajtowy, jeśli mniej, czyścimy któryś z mniejszych *packów*. W razie konieczności przerwania formatowania, robimy to klawiszami **Ctrl+C** i piszemy **SSReset**. Przy niepowodzeniu trzeba zresetować rekorder Mark5A (z klawiatury, a w przypadku niepowodzenia klawiszem na płycie czołowej rekordera – naduszamy go tylko raz, i czekamy ok. minuty na widoczną reakcję na monitorze w stojaku z lewej strony).

Packi wcześniej sformatowane i w użyciu:

HART-041/3200, **SHA0-032/4000**, **JOD-0050/6000[4500]**,
UAO-0016/2000, **TR-00008/2000** i **USN-0203/2000** oraz
TR-00002/1600 (*dedykowany do RA*) i **JIVE-055/2000** (*tu chyba jest zapisany Global RA*).

Sprawdzanie czy jest coś nagrane: na komputerze **mark5** wpisujemy polecenia **Mark5A -m0 & i DirList**; gdy coś jest na *packu*, pokaże się lista skanów. Jeśli jest tam coś niepotrzebne, wymazujemy *pack* bez formatowania komendą:

SSERase albo **SSERase -m 0 -c 0** [uwaga na argument **-c 0 !**],

bądź spod **FS**:

mk5=protect=off i następnie

mk5=reset=erase

Plan użycia *disk-packów* na Mark5B w sesji EVN 2/2014

(wersja 0.1, 2014.05.27)

| Projekt | Zapotrzebowanie | Bank A | Bank B | Uwagi |
|-------------------|-----------------|------------------------------|---------------|----------------------------|
| Corr. | ----TB--- | -----VSN/GB-- | -----VSN/GB-- | |
| **L-band** | | | | |
| f1412 EVN | 0.201 | MPI+1607/16000 | | 2 x ftp [WSRT-072/4000]\$ |
| ep087g EVN | 2.564 | MPI-0512/4000 | | |
| e1051a EVN | 3.450 | WSRT-072/4000 | | |
| ec048 EVN | 1.270 | MPI-0512/4000 | | zostaje 0.166 TB |
| ep088e EVN | 5.062 | MPI+1206/6000 | | |
| n1412 EVN | 0.581 | MPI+1206/6000 | | 4 x ftp (zostaje 357 GB)-> |
| rk01g7 RA | 0.057 | TR-00002/1600 | <-- na Mark5A | RA (L->C1) |
| e1048a EVN | 4.503 | MPI+1607/16000 | | |
| eh031 EVN | 4.328 | JOD-0050/6000[4500] | | |
| rk01g7 RA | 0.057 | TR-00002/1600 | <-- na Mark5A | RA (L->C1) |
| gs032d Bonn | 1.399 | JIVE-055/2000 *USN-0203/2000 | | Korelator Bonn, * = e-ship |
| eg078b EVNs | 10.662 | MPI+1607/16000 | | |
| **C-band** | | | | |
| f14c2 EVN | 0.174 | | | 2 x ftp |
| ep087h EVN | 2.590 | | | |
| ep088f EVN | 5.231 | | | |
| n14c2 EVN | 0.608 | | | 4 x ftp |
| e1048b EVN | 4.529 | | | |
| e1051b EVN | 3.442 | | | |
| **M-band** | | | | |
| f14m2 EVN | 0.045 | MPI+1206/6000 | | 2 x ftp |
| gp051a EVN | 0.285 | MPI+1206/6000 | | zostaje 27 GB |
| es072h EVN | 0.081 | | | |
| gp051b EVN | 0.285 | | | |
| n14m2 EVN | 0.608 | | | 4 x ftp |
| es072i EVN | 0.081 | | | |
| gp051c EVN | 0.285 | | | |
| es072j EVN | 0.081 | | | |
| gp051d EVN | 0.266 | | | |
| es072k EVN | 0.082 | | | |
| ec044 EVN | 0.905 | | | |
| **K-band** | | | | |
| n14k2 EVN | 1.262 | | | 3 x ftp |
| es074a EVN | 0.155 | JOD-0050/6000[4500] | | zostaje 0.017 TB |
| er035b EVN | 3.977 | | | |

\$ — na wypadek problemów z packiem 16-TB.

TR-00002/1600 — **dedykowany do RadioAstronu** (Mark5A, bank A)

Rezerwa: ... i ...

Contents

| | |
|---|-----|
| Graphical Plan of Experiments in May 2014 | 1 |
| Experiment Listing | 3 |
| rk01c1tr – RadioAstron AGN Survey | 5 |
| rk01c2tr – RadioAstron AGN Survey | 8 |
| rk01c3tr – RadioAstron AGN Survey | 10 |
| rk01c4tr – RadioAstron AGN Survey | 12 |
| rk01c5tr – RadioAstron AGN Survey | 14 |
| rk01c6tr – RadioAstron AGN Survey | 16 |
| rk01c7tr – RadioAstron AGN Survey | 18 |
| rk01c8tr – RadioAstron AGN Survey | 20 |
| rk01c9tr – RadioAstron AGN Survey | 22 |
| rk01d0tr – RadioAstron AGN Survey | 24 |
| rk01d1tr – RadioAstron AGN Survey | 26 |
| rk01d2tr – RadioAstron AGN Survey | 28 |
| rk01d3tr – RadioAstron AGN Survey | 30 |
| rk01d4tr – RadioAstron AGN Survey | 32 |
| rk01d5tr – RadioAstron AGN Survey | 34 |
| rk01d6tr – RadioAstron AGN Survey | 36 |
| rk01d7tr – RadioAstron AGN Survey | 38 |
| rk01d8tr – RadioAstron AGN Survey | 40 |
| rk01d9tr – RadioAstron AGN Survey | 42 |
| rk01e0tr – RadioAstron AGN Survey | 44 |
| rk01e1tr – RadioAstron AGN Survey | 46 |
| rk01e2tr – RadioAstron AGN Survey | 48 |
| rk01e3tr – RadioAstron AGN Survey | 50 |
| rk01e4tr – RadioAstron AGN Survey | 52 |
| rk01e5tr – RadioAstron AGN Survey | 54 |
| rk01e6tr – RadioAstron AGN Survey | 56 |
| rk01e8tr – RadioAstron AGN Survey | 58 |
| rk01e9tr – RadioAstron AGN Survey | 60 |
| rk01f0tr – RadioAstron AGN Survey | 62 |
| rk01f3tr – RadioAstron AGN Survey | 64 |
| rk01f4tr – RadioAstron AGN Survey | 66 |
| rk01f5tr – RadioAstron AGN Survey | 68 |
| rk01f6tr – RadioAstron AGN Survey | 70 |
| rk01f7tr – RadioAstron AGN Survey | 72 |
| rk07bctr – RadioAstron Maser observations | 74 |
| rk07bdtr – RadioAstron Maser observations | 76 |
| rk01f8tr – RadioAstron AGN Survey | 78 |
| rk01g0tr – RadioAstron AGN Survey | 80 |
| rk01g1tr – RadioAstron AGN Survey | 82 |
| rk01g2tr – RadioAstron AGN Survey | 84 |
| rk01g3tr – RadioAstron AGN Survey | 86 |
| rk01g4tr – RadioAstron AGN Survey | 88 |
| rk01g5tr – RadioAstron AGN Survey | 90 |
| f14l2tr – Ftp test | 92 |
| ep087gtr – Arp 299-A at 1 Gb/s | 95 |
| e1051atr – VLBI observations of a HzRg in the center of a primordial galaxy cluster | 105 |
| Provisional Plan for June 2014 | 118 |
| Instrukcja formatowania <i>disk-paczek</i> | 119 |
| Lista formatowanych <i>paczek</i> | 120 |
| Plan użycia <i>disk-paczek</i> | 121 |