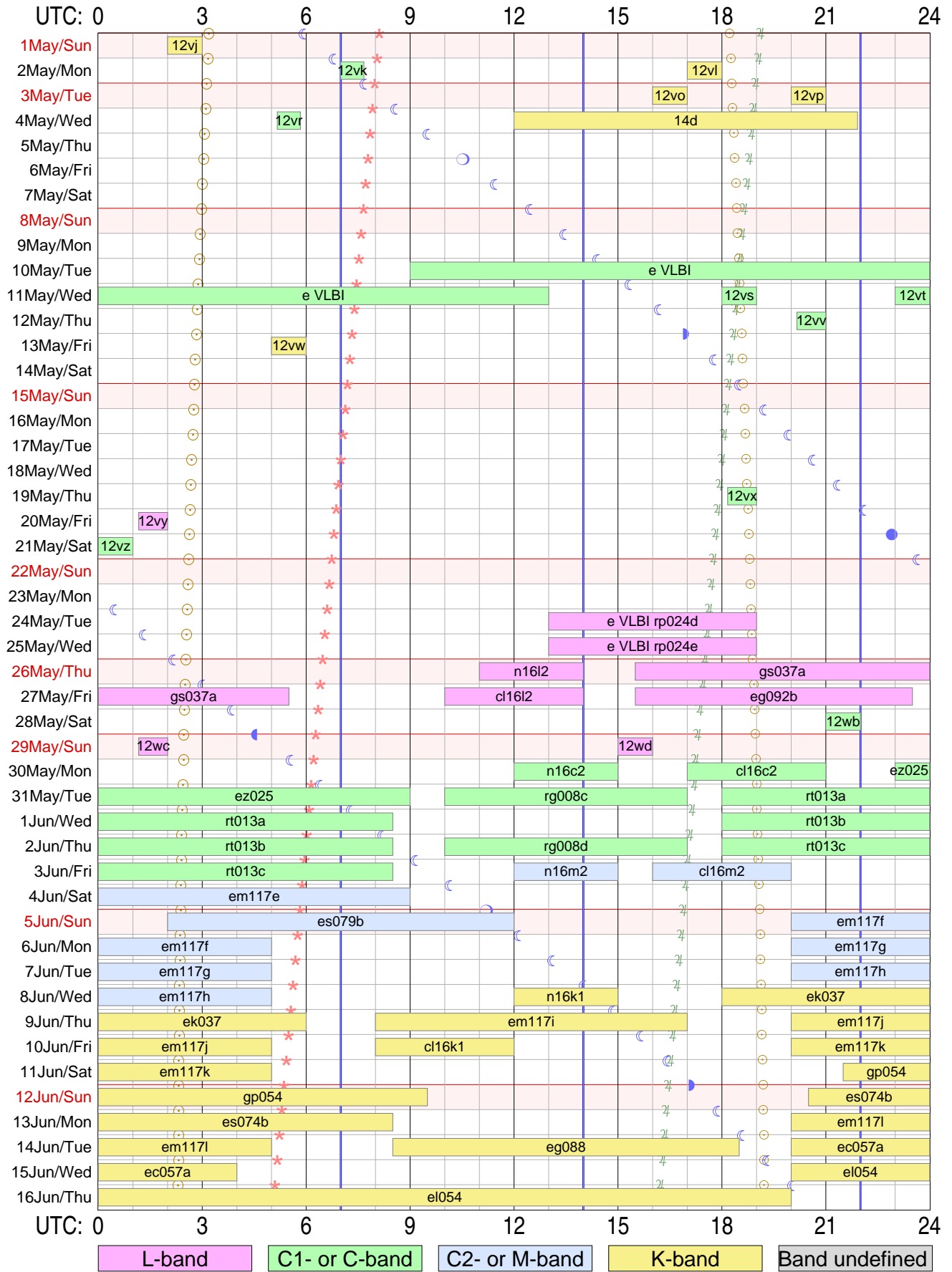


Tr VLBI plan for May/June 2016



Version: 2016.05.24

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: 342.1 hours in 49 experiments scheduled

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

Strona zostawiona celowo pusta

RadioAstron & EVN Experiments

May 2016

Uytownik ftp dla logw i schedulw RA: grt

ftp://webinet.asc.rssi.ru

Przykad dla log files: cd GRT_log_files/2014_09/2014_09_01_raks08ak

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

| Year | Date | UTstart | UTstop | Exper. | xxComment |
|--|-----------|---------|--------|--------|--------------------------------|
| 2016 | D M DoW | hh mm | hh mm | name | |
| %22 | 1 05 xxx | 0 0 | 0 0 | empty | "1" <- remove rk from RA names |
| 122 | 1 05 Nie | 2 00 | 3 00 | rk12vj | "K" |
| 123 | 2 05 Pon | 7 00 | 7 40 | rk12vk | "C" |
| 123 | 2 05 Pon | 17 00 | 18 00 | rk12vl | "K" |
| 124 | 3 05 Wto | 16 00 | 17 00 | rk12vo | "K" |
| 124 | 3 05 Wto | 20 00 | 21 00 | rk12vp | "K" |
| 125 | 4 05 Sro | 5 10 | 5 50 | rk12vr | "C" |
| 125 | 4 05 Sro | 12 00 | 21 55 | rk14d | "K" |
| 132 | 11 05 Sro | 18 00 | 19 00 | rk12vs | "C" |
| 132 | 11 05 Sro | 23 00 | 24 00 | rk12vt | "C" |
| 133 | 12 05 Czw | 20 10 | 21 00 | rk12vv | "C" |
| 134 | 13 05 Pia | 5 00 | 6 00 | rk12vw | "K" |
| 140 | 19 05 Czw | 18 10 | 19 00 | rk12vx | "C" |
| 141 | 20 05 Pia | 1 10 | 2 00 | rk12vy | "L" |
| 142 | 21 05 Sob | 0 00 | 1 00 | rk12vz | "C" |
| 149 | 28 05 Sob | 21 00 | 22 00 | rk12wb | "C" |
| 150 | 29 05 Nie | 1 10 | 2 00 | rk12wc | "L" |
| 150 | 29 05 Nie | 15 00 | 16 00 | rk12wd | "L" |
| Total observing time: 52.6 hours in 18 experiments | | | | | |

| Year | Date | UTstart | UTstop | Exper. | xxComment | Nr | Corr | ~TB |
|------|-----------|---------|--------|--------|-----------|-----|------|------|
| 2016 | D M DoW | hh mm | hh mm | name | | | | |
| 147 | 26 05 Czw | 11 00 | 14 00 | n1612 | "L" | 1- | EVN9 | 0.69 |
| 147 | 26 05 Czw | 15 30 | 24 00 | gs037a | "L" | | | |
| 148 | 27 05 Pia | 0 00 | 5 30 | gs037a | "L" | 2- | EVN8 | 6.45 |
| 148 | 27 05 Pia | 10 00 | 14 00 | c11612 | "L" | 3- | ---0 | 0.00 |
| 148 | 27 05 Pia | 15 30 | 23 30 | eg092b | "L" | 4- | EVN6 | 3.69 |
| 151 | 30 05 Pon | 12 00 | 15 00 | n16c2 | "C" | 5- | EVN1 | 0.69 |
| 151 | 30 05 Pon | 17 00 | 21 00 | c116c2 | "C" | 6- | ---0 | 0.00 |
| 151 | 30 05 Pon | 23 00 | 24 00 | ez025 | "C" | | | |
| 152 | 31 05 Wto | 0 00 | 9 00 | ez025 | "C" | 7R | EVN7 | 4.61 |
| 152 | 31 05 Wto | 10 00 | 17 00 | rg008c | "C" | 8- | eEVO | 0.00 |
| 152 | 31 05 Wto | 18 00 | 24 00 | rt013a | "C" | | | |
| 153 | 1 06 Sro | 0 00 | 8 30 | rt013a | "C" | 9- | eEVO | 0.00 |
| 153 | 1 06 Sro | 18 00 | 24 00 | rt013b | "C" | | | |
| 154 | 2 06 Czw | 0 00 | 8 30 | rt013b | "C" | 10- | eEVO | 0.00 |

| | | | | | | | | | | | | |
|---|----|----|-----|----|----|----|----|--------|-----|-----|------|-------|
| 154 | 2 | 06 | Czw | 10 | 00 | 17 | 00 | rg008d | "C" | 11- | eEVO | 0.00 |
| 154 | 2 | 06 | Czw | 18 | 00 | 24 | 00 | rt013c | "C" | | | |
| 155 | 3 | 06 | Pia | 0 | 00 | 8 | 30 | rt013c | "C" | 12- | eEVO | 0.00 |
| 155 | 3 | 06 | Pia | 12 | 00 | 15 | 00 | n16m2 | "M" | 13- | EVN0 | 0.17 |
| 155 | 3 | 06 | Pia | 16 | 00 | 20 | 00 | cl16m2 | "M" | 14- | ---0 | 0.00 |
| 156 | 4 | 06 | Sob | 0 | 00 | 9 | 00 | em117e | "M" | 15- | EVN7 | 0.52 |
| 157 | 5 | 06 | Nie | 2 | 00 | 12 | 00 | es079b | "M" | 16- | EVN2 | 1.15 |
| 157 | 5 | 06 | Nie | 20 | 00 | 24 | 00 | em117f | "M" | | | |
| 158 | 6 | 06 | Pon | 0 | 00 | 5 | 00 | em117f | "M" | 17- | EVN8 | 0.52 |
| 158 | 6 | 06 | Pon | 20 | 00 | 24 | 00 | em117g | "M" | | | |
| 159 | 7 | 06 | Wto | 0 | 00 | 5 | 00 | em117g | "M" | 18- | EVN8 | 0.52 |
| 159 | 7 | 06 | Wto | 20 | 00 | 24 | 00 | em117h | "M" | | | |
| 160 | 8 | 06 | Sro | 0 | 00 | 5 | 00 | em117h | "M" | 19- | EVN8 | 0.52 |
| 160 | 8 | 06 | Sro | 12 | 00 | 15 | 00 | n16k1 | "K" | 20- | EVN0 | 1.38 |
| 160 | 8 | 06 | Sro | 18 | 00 | 24 | 00 | ek037 | "K" | | | |
| 161 | 9 | 06 | Czw | 0 | 00 | 6 | 00 | ek037 | "K" | 21- | EVN2 | 1.38 |
| 161 | 9 | 06 | Czw | 8 | 00 | 17 | 00 | em117i | "K" | 22- | EVN8 | 1.04 |
| 161 | 9 | 06 | Czw | 20 | 00 | 24 | 00 | em117j | "K" | | | |
| 162 | 10 | 06 | Pia | 0 | 00 | 5 | 00 | em117j | "K" | 23- | EVN8 | 1.04 |
| 162 | 10 | 06 | Pia | 8 | 00 | 12 | 00 | cl16k1 | "K" | 24- | ---0 | 0.00 |
| 162 | 10 | 06 | Pia | 20 | 00 | 24 | 00 | em117k | "K" | | | |
| 163 | 11 | 06 | Sob | 0 | 00 | 5 | 00 | em117k | "K" | 25- | EVN8 | 1.04 |
| 163 | 11 | 06 | Sob | 21 | 30 | 24 | 00 | gp054 | "K" | | | |
| 164 | 12 | 06 | Nie | 0 | 00 | 9 | 30 | gp054 | "K" | 26- | EVN5 | 11.06 |
| 164 | 12 | 06 | Nie | 20 | 30 | 24 | 00 | es074b | "K" | | | |
| 165 | 13 | 06 | Pon | 0 | 00 | 8 | 30 | es074b | "K" | 27- | EVN8 | 0.17 |
| 165 | 13 | 06 | Pon | 20 | 00 | 24 | 00 | em117l | "K" | | | |
| 166 | 14 | 06 | Wto | 0 | 00 | 5 | 00 | em117l | "K" | 28- | EVN8 | 1.04 |
| 166 | 14 | 06 | Wto | 8 | 30 | 18 | 30 | eg088 | "K" | 29- | EVN4 | 4.61 |
| 166 | 14 | 06 | Wto | 20 | 00 | 24 | 00 | ec057a | "K" | | | |
| 167 | 15 | 06 | Sro | 0 | 00 | 4 | 00 | ec057a | "K" | 30- | EVN7 | 0.46 |
| 167 | 15 | 06 | Sro | 20 | 00 | 24 | 00 | el054 | "K" | | | |
| 168 | 16 | 06 | Czw | 0 | 00 | 20 | 00 | el054 | "K" | 31- | Bon3 | 5.53 |
| Total observing time: 277.5 hours in 31 experiments | | | | | | | | | | | | |

=====
Total observing time: 330.1 hours in 49 experiments

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

<http://paulo.astro.uni.torun.pl/~pw/VLBI/schedules/may16.pdf>

rk12vjtr

RADIOASTRON AGN SURVEY

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

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

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

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

--- Sun 1 May 2016 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 | | | | | | | | | | |
| 02 00 00 | 1546+027 | 17 52 00 | 33.6 | 217.4 | 2.0 | | 21.4 | 0 | 0 | 02 00 00 |
| 02 14 30 | --- | 18 06 33 | 32.2 | 221.4 | 2.3 | | 23.4 | 870 | 28 | 02 00 01 |
| | | | | | | | | | | |
| 02 15 00 | 1546+027 | 18 07 03 | 32.1 | 221.5 | 2.3 | | 23.5 | 24 | 28 | 02 15 00 |
| 02 29 30 | --- | 18 21 35 | 30.6 | 225.4 | 2.5 | | 25.3 | 870 | 56 | 02 15 01 |
| | | | | | | | | | | |
| 02 30 00 | 1546+027 | 18 22 05 | 30.6 | 225.5 | 2.5 | | 25.4 | 24 | 56 | 02 30 00 |
| 02 44 30 | --- | 18 36 37 | 29.0 | 229.3 | 2.8 | | 27.1 | 870 | 84 | 02 30 01 |
| | | | | | | | | | | |
| 02 45 00 | 1546+027 | 18 37 08 | 28.9 | 229.4 | 2.8 | | 27.2 | 24 | 84 | 02 45 00 |
| 03 00 00 | --- | 18 52 10 | 27.2 | 233.2 | 3.0 | | 28.8 | 900 | 112 | 02 45 01 |

SETUP FILE INFORMATION:

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

=====
Setup file: ra1cm2.set
Matching groups in ./rk12vj_freq.dat:
 tr1cm

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  4  Setup file default.  Used with PCAL = 1MHz
LO sum= 22236.00 22236.00 22236.00 22236.00
BBC fr=  736.00  736.00  736.00  736.00
Bandwd=  16.00  16.00  16.00  16.00
Matching frequency sets:  4

```

Track assignments are:

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | (J2000) | (Date) | Error (mas) |
|------------|--|-------------------|-----------------|----------------|
| * FAKERA | 11 57 21.769299 | * 12 00 00.000000 | 12 00 53.474139 | 0.00 |
| | 85 16 41.77889 | * 85 00 00.000000 | 84 54 47.00018 | 0.00 |
| | fake circumpolar target for a TS to look at | | | |
| * 1546+027 | 15 46 58.292171 | * 15 49 29.436845 | 15 50 19.787853 | 0.00 |
| J1549+0237 | 02 46 06.07581 | * 02 37 01.16316 | 02 34 07.38150 | 0.00 |
| | ./rk12vj_sources.radioastron | | | |
| | AGN, rfc_2013d Petrov, 2013, unpublished 15857 observations, RA-A03-04, RA-A02-1 | | | |

EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
1546+027    154.3

```

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

```

rk12vktr

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

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

--- Mon 2 May 2016 Day 123 ---

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

| | | | | | | | | | | |
|------------------------|----------|----------|---------|---------|-----|------|------|----|----------|--|
| Next scan frequencies: | 4836.00 | 4836.00 | 4836.00 | 4836.00 | | | | | | |
| Next BBC frequencies: | 736.00 | 736.00 | 736.00 | 736.00 | | | | | | |
| Next scan bandwidths: | 16.00 | 16.00 | 16.00 | 16.00 | | | | | | |
| 07 00 00 | 1717+178 | 22 56 46 | 17.5 | 276.4 | 5.6 | 38.8 | 0 | 0 | 07 00 00 | |
| 07 19 30 | --- | 23 16 19 | 14.6 | 280.2 | 5.9 | 38.4 | 1170 | 37 | 07 00 01 | |
| 07 20 00 | 1717+178 | 23 16 49 | 14.6 | 280.3 | 5.9 | 38.3 | 24 | 37 | 07 20 00 | |
| 07 40 00 | --- | 23 36 53 | 11.6 | 284.1 | 6.3 | 37.7 | 1200 | 76 | 07 20 01 | |

SETUP FILE INFORMATION:

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

==== Setup file: ra6cm2.set

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | (J2000) | (Date) | Error (mas) |
|------------|--|-------------------|-----------------|----------------|
| * FAKERA | 11 57 21.769299 | * 12 00 00.000000 | 12 00 53.301586 | 0.00 |
| | 85 16 41.77889 | * 85 00 00.000000 | 84 54 47.29140 | 0.00 |
| | fake circumpolar target for a TS to look at | | | |
| * 1717+178 | 17 17 00.324732 | * 17 19 13.048481 | 17 19 57.225925 | 0.00 |
| J1719+1745 | 17 48 08.51592 | * 17 45 06.43714 | 17 44 08.94139 | 0.00 |
| | ./rk12vk_sources.radioastron | | | |
| | AGN, MASIV, rfc_2013d Petrov, 2013, unpublished 2632 observations, RA-A03-04, RA | | | |

EFFECT OF SOLAR CORONA

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

```

Source          Sun distance (deg)
1717+178        128.3

```

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

For common VLBI bands, this is:

```

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

```


rk12vltr

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Mon 2 May 2016 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

| | | | | | | | | | | |
|----------|----------|----------|------|-------|------|--|-------|-----|-----|----------|
| 17 00 00 | 1156+295 | 08 58 25 | 49.2 | 107.6 | -3.0 | | -41.0 | 0 | 0 | 17 00 00 |
| 17 14 30 | --- | 09 12 57 | 51.3 | 111.3 | -2.8 | | -39.8 | 870 | 28 | 17 00 01 |
| 17 15 00 | 1156+295 | 09 13 27 | 51.3 | 111.5 | -2.8 | | -39.8 | 24 | 28 | 17 15 00 |
| 17 29 30 | --- | 09 27 59 | 53.3 | 115.5 | -2.5 | | -38.4 | 870 | 56 | 17 15 01 |
| 17 30 00 | 1156+295 | 09 28 29 | 53.4 | 115.6 | -2.5 | | -38.3 | 24 | 56 | 17 30 00 |
| 17 44 30 | --- | 09 43 02 | 55.3 | 120.0 | -2.3 | | -36.6 | 870 | 84 | 17 30 01 |
| 17 45 00 | 1156+295 | 09 43 32 | 55.4 | 120.1 | -2.3 | | -36.5 | 24 | 84 | 17 45 00 |
| 18 00 00 | --- | 09 58 34 | 57.3 | 125.0 | -2.0 | | -34.3 | 900 | 112 | 17 45 01 |

SETUP FILE INFORMATION:

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

=====
Setup file: ra1cm2.set

Matching groups in ./rk12vl_freq.dat:

tr1cm

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | (J2000) | (Date) | Error (mas) |
|------------|--|-------------------|-----------------|----------------|
| * FAKERA | 11 57 21.769299 | * 12 00 00.000000 | 12 00 53.238719 | 0.00 |
| | 85 16 41.77889 | * 85 00 00.000000 | 84 54 47.39316 | 0.00 |
| | fake circumpolar target for a TS to look at | | | |
| * 1156+295 | 11 56 57.786212 | * 11 59 31.833913 | 12 00 22.514709 | 0.00 |
| J1159+2914 | 29 31 25.73868 | * 29 14 43.82678 | 29 09 19.61559 | 0.00 |
| | ./rk12vl_sources.radioastron | | | |
| | AGN, MASIV, rfc_2013d Petrov, 2013, unpublished 70591 observations, RA-A03-04, R | | | |

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)
1156+295    120.7

```

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

For common VLBI bands, this is:

```

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

```

rk12votr

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| | | |
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| Fax: +7-495-3332378 | Phone during observation: +7-903-6614865 | |

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

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

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

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart |
|-------------------------------|----------|--------------|----------|----------|----------|-------|------------|--------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA Dwell | GBytes | SYNC |
| ----- | | | | | | | | | |
| --- | Tue | 3 May 2016 | 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 | | | | |
| 16 00 00 | 1156+295 | 08 02 11 | 40.9 | 94.7 | -4.0 | -43.3 | 0 | 0 | 16 00 00 |
| 16 14 30 | --- | 08 16 44 | 43.1 | 97.8 | -3.7 | -42.9 | 870 | 28 | 16 00 01 |
| 16 15 00 | 1156+295 | 08 17 14 | 43.2 | 97.9 | -3.7 | -42.9 | 24 | 28 | 16 15 00 |
| 16 29 30 | --- | 08 31 46 | 45.3 | 101.2 | -3.5 | -42.4 | 870 | 56 | 16 15 01 |
| 16 30 00 | 1156+295 | 08 32 16 | 45.4 | 101.3 | -3.5 | -42.4 | 24 | 56 | 16 30 00 |
| 16 44 30 | --- | 08 46 49 | 47.5 | 104.7 | -3.2 | -41.7 | 870 | 84 | 16 30 01 |
| 16 45 00 | 1156+295 | 08 47 19 | 47.6 | 104.8 | -3.2 | -41.7 | 24 | 84 | 16 45 00 |
| 17 00 00 | --- | 09 02 21 | 49.8 | 108.6 | -3.0 | -40.7 | 900 | 112 | 16 45 01 |

SETUP FILE INFORMATION:

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

=====
Setup file: ra1cm2.set

Matching groups in ./rk12vo_freq.dat:
tr1cm

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  4  Setup file default.  Used with PCAL = 1MHz
LO sum= 22236.00 22236.00 22236.00 22236.00
BBC fr=  736.00  736.00  736.00  736.00
Bandwd=  16.00  16.00  16.00  16.00
Matching frequency sets:  4

```

Track assignments are:

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | (J2000) | (Date) | Error (mas) |
|------------|--|-------------------|-----------------|----------------|
| * FAKERA | 11 57 21.769299 | * 12 00 00.000000 | 12 00 53.081168 | 0.00 |
| | 85 16 41.77889 | * 85 00 00.000000 | 84 54 47.63212 | 0.00 |
| | fake circumpolar target for a TS to look at | | | |
| * 1156+295 | 11 56 57.786212 | * 11 59 31.833913 | 12 00 22.500679 | 0.00 |
| J1159+2914 | 29 31 25.73868 | * 29 14 43.82678 | 29 09 19.80039 | 0.00 |
| | ./rk12vo_sources.radioastron | | | |
| | AGN, MASIV, rfc_2013d Petrov, 2013, unpublished 70591 observations, RA-A03-04, R | | | |

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)
1156+295    119.9

```

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

For common VLBI bands, this is:

```

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

```



```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  4  Setup file default.  Used with PCAL = 1MHz
LO sum= 22236.00 22236.00 22236.00 22236.00
BBC fr=  736.00  736.00  736.00  736.00
Bandwd=  16.00  16.00  16.00  16.00
Matching frequency sets:  4

```

Track assignments are:

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | (J2000) | (Date) | Error (mas) |
|------------|---|-------------------|-----------------|----------------|
| * FAKERA | 11 57 21.769299 | * 12 00 00.000000 | 12 00 53.051948 | 0.00 |
| | 85 16 41.77889 | * 85 00 00.000000 | 84 54 47.67366 | 0.00 |
| | fake circumpolar target for a TS to look at | | | |
| * 1222+216 | 12 22 23.408709 | * 12 24 54.458394 | 12 25 44.325666 | 0.00 |
| J1224+2122 | 21 39 23.03696 | * 21 22 46.38857 | 21 17 22.73437 | 0.00 |
| | ./rk12vp_sources.radioastron | | | |
| | AGN, rfc_2013d Petrov, 2013, unpublished 406 observations, RA-A03-04, RA-A02-12 | | | |

EFFECT OF SOLAR CORONA

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

| Source | Sun distance (deg) |
|----------|--------------------|
| 1222+216 | 129.4 |

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 |

rk12vrtr

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

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

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

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

--- Wed 4 May 2016 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 | | | | | | |
| 05 10 00 | 1655+077 | 21 14 21 | 21.7 | 253.2 | 4.3 | | 35.4 | 0 | 0 | 05 10 00 |
| 05 29 30 | --- | 21 33 54 | 18.8 | 257.4 | 4.6 | | 36.2 | 1170 | 37 | 05 10 01 |
| 05 30 00 | 1655+077 | 21 34 24 | 18.7 | 257.5 | 4.6 | | 36.3 | 24 | 37 | 05 30 00 |
| 05 50 00 | --- | 21 54 28 | 15.8 | 261.6 | 4.9 | | 36.8 | 1200 | 76 | 05 30 01 |

SETUP FILE INFORMATION:

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

==== Setup file: ra6cm2.set

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

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

Track assignments are:

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | (J2000) | (Date) | Error (mas) |
|------------|--|-------------------|-----------------|----------------|
| * FAKERA | 11 57 21.769299 | * 12 00 00.000000 | 12 00 52.984763 | 0.00 |
| | 85 16 41.77889 | * 85 00 00.000000 | 84 54 47.76578 | 0.00 |
| | fake circumpolar target for a TS to look at | | | |
| * 1655+077 | 16 55 43.951808 | * 16 58 09.011465 | 16 58 57.267756 | 0.00 |
| J1658+0741 | 07 45 59.75697 | * 07 41 27.54032 | 07 40 02.90442 | 0.00 |
| | ./rk12vr_sources.radioastron AGN, rfc_2013d Petrov, 2013, unpublished 1094 observations, RA-A03-04, RA-A02-12 | | | |

EFFECT OF SOLAR CORONA

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

| Source | Sun distance (deg) |
|----------|--------------------|
| 1655+077 | 139.6 |

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 |

RADIOASTRON AGN POLARIZATION IMAGING

PI: Jose L. Gomez, Andrei Lobanov

Observing mode: K-band, dual-pol
 Schedule for TORUN (Code Tr)

Page 2

RadioAstron AGN polarization imaging

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | Early | Disk | TPStart | | |
|--|----------|--------------|------|-------|------|-------|------|---------|----------|------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Wed 4 May 2016 Day 125 --- | | | | | | | | | | |
| ----- EVN on calibrators until 2nd space segment, except BD and UR and KVN ----- | | | | | | | | | | |
| Next scan frequencies: 22236.00 22236.00 22236.00 22236.00 22268.00 22268.00 22268.00 22268.00 | | | | | | | | | | |
| Next BBC frequencies: 736.00 736.00 736.00 736.00 768.00 768.00 768.00 768.00 | | | | | | | | | | |
| Next scan bandwidths: 16.00 16.00 16.00 16.00 16.00 16.00 16.00 16.00 | | | | | | | | | | |
| 12 00 00 | 0552+398 | 04 05 28 | 66.9 | 113.9 | -1.9 | -45.6 | 0 | 0 | 12 00 00 | |
| 12 09 30 | --- | 04 15 00 | 68.2 | 117.3 | -1.7 | -44.0 | 570 | 37 | 12 00 01 | |
| 12 10 00 | 0642+449 | 04 15 30 | 64.0 | 93.0 | -2.5 | -57.7 | -33 | 37 | 12 10 00 | |
| 12 19 30 | --- | 04 25 02 | 65.5 | 95.2 | -2.4 | -57.5 | 537 | 73 | 12 10 01 | |
| ----- EVN on calibrators until 2nd space segment, except BD and UR and KVN ----- | | | | | | | | | | |
| 12 20 00 | 0552+398 | 04 25 32 | 69.6 | 121.4 | -1.5 | -41.8 | -38 | 73 | 12 20 00 | |
| 12 29 30 | --- | 04 35 03 | 70.8 | 125.5 | -1.4 | -39.5 | 532 | 110 | 12 20 01 | |
| 12 30 00 | 0642+449 | 04 35 33 | 67.0 | 97.7 | -2.2 | -57.1 | -40 | 110 | 12 30 00 | |
| 12 39 30 | --- | 04 45 05 | 68.5 | 100.1 | -2.0 | -56.5 | 530 | 146 | 12 30 01 | |
| ----- EVN on calibrators until 2nd space segment, except BD and UR and KVN ----- | | | | | | | | | | |
| 12 40 00 | 0552+398 | 04 45 35 | 72.0 | 130.5 | -1.2 | -36.4 | -47 | 146 | 12 40 00 | |
| 12 49 30 | --- | 04 55 06 | 73.1 | 135.6 | -1.0 | -33.2 | 523 | 183 | 12 40 01 | |
| 12 50 00 | 0642+449 | 04 55 37 | 70.0 | 103.0 | -1.9 | -55.6 | -50 | 183 | 12 50 00 | |
| 12 59 30 | --- | 05 05 08 | 71.4 | 106.0 | -1.7 | -54.5 | 520 | 219 | 12 50 01 | |
| 13 00 00 | 0552+398 | 05 05 38 | 74.1 | 141.7 | -0.8 | -29.0 | -58 | 219 | 13 00 00 | |
| 13 09 30 | --- | 05 15 10 | 75.0 | 147.8 | -0.7 | -24.6 | 512 | 256 | 13 00 01 | |
| 13 10 00 | 0642+449 | 05 15 40 | 72.9 | 109.6 | -1.5 | -52.9 | -61 | 256 | 13 10 00 | |
| 13 19 30 | --- | 05 25 11 | 74.2 | 113.2 | -1.4 | -51.1 | 509 | 292 | 13 10 01 | |
| 13 20 00 | 0552+398 | 05 25 42 | 75.7 | 155.2 | -0.5 | -19.1 | -71 | 292 | 13 20 00 | |
| 13 29 30 | --- | 05 35 13 | 76.2 | 162.5 | -0.4 | -13.6 | 499 | 329 | 13 20 01 | |
| 13 30 00 | 0642+449 | 05 35 43 | 75.6 | 117.9 | -1.2 | -48.5 | -73 | 329 | 13 30 00 | |
| 13 39 30 | --- | 05 45 15 | 76.9 | 122.7 | -1.0 | -45.4 | 497 | 365 | 13 30 01 | |
| 13 40 00 | 0552+398 | 05 45 45 | 76.6 | 171.0 | -0.2 | -7.1 | -84 | 365 | 13 40 00 | |
| 13 49 30 | --- | 05 55 16 | 76.7 | 178.9 | -0.0 | -0.9 | 486 | 402 | 13 40 01 | |

Schedule for TORUN (Code Tr)

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RadioAstron AGN polarization imaging

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

```
-----
Start UT  Source          Start / Stop          Early  Disk  TPStart
Stop UT          LST      EL  AZ  HA  UP  ParA  Dwell  GBytes  SYNC
-----
--- Wed   4 May 2016   Day 125 ---
13 50 00  0642+449   05 55 46  78.2 129.0 -0.9   -41.1  -83    402  13 50 00
13 59 30  ---          06 05 18  79.2 135.8 -0.7   -36.2  487    438  13 50 01

14 00 00  0552+398   06 05 48  76.6 187.6  0.2     6.0  -91    438  14 00 00
14 09 30  ---          06 15 20  76.3 195.4  0.3    12.0  479    475  14 00 01
```

----- EVN on calibrators until 2nd space segment, except BD and UR and KVN -----

```
14 10 00  0642+449   06 15 50  80.2 144.6 -0.5   -29.4  -84    475  14 10 00
14 19 30  ---          06 25 21  81.0 153.9 -0.4   -21.9  486    512  14 10 01

14 20 00  0552+398   06 25 51  75.8 203.5  0.5    18.2  -86    512  14 20 00
14 29 30  ---          06 35 23  75.2 210.3  0.6    23.2  484    548  14 20 01

14 30 00  0642+449   06 35 53  81.5 165.7 -0.2   -12.1  -72    548  14 30 00
14 39 30  ---          06 45 25  81.7 177.2 -0.0    -2.4  498    585  14 30 01

14 40 00  0552+398   06 45 55  74.3 217.2  0.8    28.2  -66    585  14 40 00
14 49 30  ---          06 55 26  73.4 222.9  1.0    32.2  504    621  14 40 01

14 50 00  0642+449   06 55 56  81.6 190.1  0.1     8.5  -49    621  14 50 00
14 59 30  ---          07 05 28  81.2 201.1  0.3    17.8  521    658  14 50 01

15 00 00  0552+398   07 05 58  72.2 228.6  1.2    35.9  -40    658  15 00 00
15 09 30  ---          07 15 29  71.1 233.2  1.3    38.8  530    694  15 00 01

15 10 00  0642+449   07 16 00  80.5 212.1  0.5    26.7  -27    694  15 10 00
15 19 30  ---          07 25 31  79.7 220.6  0.6    33.4  543    731  15 10 01

15 20 00  0552+398   07 26 01  69.8 237.8  1.5    41.4  -21    731  15 20 00
15 29 30  ---          07 35 33  68.6 241.6  1.6    43.5  549    767  15 20 01

15 30 00  0642+449   07 36 03  78.6 228.6  0.8    39.4  -21    767  15 30 00
15 39 30  ---          07 45 34  77.5 234.7  1.0    43.7  549    804  15 30 01

15 40 00  0552+398   07 46 05  67.2 245.5  1.8    45.3  -23    804  15 40 00
15 49 30  ---          07 55 36  65.9 248.7  2.0    46.7  547    840  15 40 01

15 50 00  0642+449   07 56 06  76.1 240.4  1.1    47.4  -22    840  15 50 00
15 59 30  ---          08 05 38  74.9 244.8  1.3    50.0  548    877  15 50 01

16 00 00  0552+398   08 06 08  64.4 251.9  2.2    48.0  -23    877  16 00 00
16 09 30  ---          08 15 39  63.0 254.7  2.3    48.9  547    913  16 00 01
```

----- EVN on calibrators until 2nd space segment, except BD and UR and KVN -----

```
16 10 00  0642+449   08 16 09  73.4 249.1  1.5    52.3  -23    913  16 10 00
16 19 30  ---          08 25 41  72.0 252.5  1.6    53.9  547    950  16 10 01
```

Schedule for TORUN (Code Tr)

Page 4

RadioAstron AGN polarization imaging

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|--|----------|--------------|------|-------|------|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Wed 4 May 2016 Day 125 --- | | | | | | | | | | |
| 16 20 00 | 0552+398 | 08 26 11 | 61.5 | 257.5 | 2.5 | | 49.7 | -24 | 950 | 16 20 00 |
| 16 29 30 | --- | 08 35 43 | 60.1 | 259.9 | 2.7 | | 50.3 | 546 | 987 | 16 20 01 |
| 16 30 00 | 0642+449 | 08 36 13 | 70.5 | 255.9 | 1.8 | | 55.2 | -23 | 987 | 16 30 00 |
| 16 39 30 | --- | 08 45 44 | 69.1 | 258.7 | 2.0 | | 56.1 | 547 | 1023 | 16 30 01 |
| 16 40 00 | 0552+398 | 08 46 14 | 58.5 | 262.4 | 2.8 | | 50.8 | -24 | 1023 | 16 40 00 |
| 16 49 30 | --- | 08 55 46 | 57.1 | 264.6 | 3.0 | | 51.1 | 546 | 1060 | 16 40 01 |
| 16 50 00 | 0642+449 | 08 56 16 | 67.6 | 261.4 | 2.1 | | 56.9 | -23 | 1060 | 16 50 00 |
| 16 59 30 | --- | 09 05 48 | 66.2 | 263.8 | 2.3 | | 57.3 | 547 | 1096 | 16 50 01 |
| 17 00 00 | 0552+398 | 09 06 18 | 55.5 | 266.8 | 3.2 | | 51.3 | -24 | 1096 | 17 00 00 |
| 17 09 30 | --- | 09 15 49 | 54.1 | 268.8 | 3.3 | | 51.4 | 546 | 1133 | 17 00 01 |
| 17 10 00 | 0642+449 | 09 16 19 | 64.6 | 266.2 | 2.5 | | 57.7 | -23 | 1133 | 17 10 00 |
| 17 19 30 | --- | 09 25 51 | 63.2 | 268.2 | 2.6 | | 57.8 | 547 | 1169 | 17 10 01 |
| ----- K-band VLBI scans. Ground segment 02: 1641+399 ----- | | | | | | | | | | |
| 17 21 00 | 1641+399 | 09 27 21 | 21.2 | 411.2 | -7.3 | | -37.5 | -212 | 1169 | 17 21 00 |
| 17 30 30 | --- | 09 36 53 | 22.3 | 412.7 | -7.1 | | -38.4 | 358 | 1206 | 17 21 01 |
| 17 30 30 | 1641+399 | 09 36 53 | 22.3 | 412.7 | -7.1 | | -38.4 | -5 | 1206 | No stop |
| 17 40 00 | --- | 09 46 24 | 23.4 | 414.3 | -7.0 | | -39.4 | 565 | 1242 | 17 30 31 |
| 17 40 30 | 1641+399 | 09 46 54 | 23.5 | 414.3 | -6.9 | | -39.4 | 24 | 1242 | 17 40 30 |
| 17 50 00 | --- | 09 56 26 | 24.7 | 415.9 | -6.8 | | -40.3 | 570 | 1279 | 17 40 31 |
| 17 50 30 | 1641+399 | 09 56 56 | 24.7 | 416.0 | -6.8 | | -40.4 | 24 | 1279 | 17 50 30 |
| 18 00 00 | --- | 10 06 27 | 25.9 | 417.5 | -6.6 | | -41.2 | 570 | 1315 | 17 50 31 |
| 18 01 00 | 1641+399 | 10 07 28 | 26.1 | 417.7 | -6.6 | | -41.3 | 54 | 1315 | 18 01 00 |
| 18 10 30 | --- | 10 16 59 | 27.3 | 419.2 | -6.4 | | -42.1 | 570 | 1352 | 18 01 01 |
| ----- K-band VLBI scans. Ground segment 02: 1641+399 ----- | | | | | | | | | | |
| 18 10 30 | 1641+399 | 10 16 59 | 27.3 | 419.2 | -6.4 | | -42.1 | -5 | 1352 | No stop |
| 18 20 00 | --- | 10 26 31 | 28.5 | 420.7 | -6.3 | | -43.0 | 565 | 1388 | 18 10 31 |
| 18 21 00 | 1641+399 | 10 27 31 | 28.6 | 420.9 | -6.3 | | -43.0 | 54 | 1388 | 18 21 00 |
| 18 30 30 | --- | 10 37 03 | 29.9 | 422.4 | -6.1 | | -43.8 | 570 | 1425 | 18 21 01 |
| 18 31 00 | 1641+399 | 10 37 33 | 30.0 | 422.5 | -6.1 | | -43.9 | 24 | 1425 | 18 31 00 |
| 18 40 30 | --- | 10 47 04 | 31.2 | 424.0 | -5.9 | | -44.6 | 570 | 1462 | 18 31 01 |

Schedule for TORUN (Code Tr)

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RadioAstron AGN polarization imaging

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|--|----------|--------------|------|-------|------|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Wed 4 May 2016 Day 125 --- | | | | | | | | | | |
| 18 41 00 | 1641+399 | 10 47 34 | 31.3 | 424.1 | -5.9 | | -44.6 | 24 | 1462 | 18 41 00 |
| 18 50 30 | --- | 10 57 06 | 32.6 | 425.6 | -5.8 | | -45.4 | 570 | 1498 | 18 41 01 |
| 18 51 00 | 1641+399 | 10 57 36 | 32.7 | 425.7 | -5.8 | | -45.4 | 24 | 1498 | 18 51 00 |
| 19 00 30 | --- | 11 07 07 | 34.0 | 427.2 | -5.6 | | -46.1 | 570 | 1535 | 18 51 01 |
| 19 01 00 | 1641+399 | 11 07 38 | 34.1 | 427.3 | -5.6 | | -46.1 | 24 | 1535 | 19 01 00 |
| 19 10 30 | --- | 11 17 09 | 35.4 | 428.8 | -5.4 | | -46.8 | 570 | 1571 | 19 01 01 |
| 19 11 00 | 1641+399 | 11 17 39 | 35.5 | 428.9 | -5.4 | | -46.8 | 24 | 1571 | 19 11 00 |
| 19 20 30 | --- | 11 27 11 | 36.8 | 430.5 | -5.3 | | -47.4 | 570 | 1608 | 19 11 01 |
| 19 21 00 | 1641+399 | 11 27 41 | 36.9 | 430.5 | -5.3 | | -47.5 | 24 | 1608 | 19 21 00 |
| 19 30 30 | --- | 11 37 12 | 38.2 | 432.1 | -5.1 | | -48.0 | 570 | 1644 | 19 21 01 |
| 19 31 00 | 1641+399 | 11 37 42 | 38.3 | 432.2 | -5.1 | | -48.1 | 24 | 1644 | 19 31 00 |
| 19 40 30 | --- | 11 47 14 | 39.7 | 433.7 | -4.9 | | -48.6 | 570 | 1681 | 19 31 01 |
| 19 41 00 | 1641+399 | 11 47 44 | 39.7 | 433.8 | -4.9 | | -48.6 | 24 | 1681 | 19 41 00 |
| 19 50 30 | --- | 11 57 16 | 41.1 | 435.4 | -4.8 | | -49.1 | 570 | 1717 | 19 41 01 |
| 19 51 00 | 1641+399 | 11 57 46 | 41.2 | 435.5 | -4.8 | | -49.1 | 24 | 1717 | 19 51 00 |
| 20 00 30 | --- | 12 07 17 | 42.6 | 437.1 | -4.6 | | -49.6 | 570 | 1754 | 19 51 01 |
| ----- K-band VLBI scans. Ground segment 02: 1641+399 ----- | | | | | | | | | | |
| 20 01 00 | 1641+399 | 12 07 47 | 42.6 | 437.2 | -4.6 | | -49.6 | 24 | 1754 | 20 01 00 |
| 20 09 30 | --- | 12 16 19 | 43.9 | 438.6 | -4.5 | | -50.0 | 510 | 1787 | 20 01 01 |
| ----- K-band VLBI scans. Space segment 03: 1641+399 ----- | | | | | | | | | | |
| 20 10 00 | 1641+399 | 12 16 49 | 44.0 | 78.7 | -4.4 | W | -50.0 | -701 | 1787 | 20 10 00 |
| 20 20 00 | --- | 12 26 50 | 45.5 | 80.4 | -4.3 | W | -50.4 | 0 | 1825 | 20 10 01 |
| 20 20 30 | 1641+399 | 12 27 21 | 45.5 | 80.5 | -4.3 | | -50.4 | 24 | 1825 | 20 20 30 |
| 20 30 00 | --- | 12 36 52 | 46.9 | 82.2 | -4.1 | | -50.7 | 570 | 1862 | 20 20 31 |
| 20 30 30 | 1641+399 | 12 37 22 | 47.0 | 82.3 | -4.1 | | -50.7 | 24 | 1862 | 20 30 30 |
| 20 40 00 | --- | 12 46 54 | 48.4 | 84.0 | -3.9 | | -51.0 | 570 | 1898 | 20 30 31 |
| 20 40 30 | 1641+399 | 12 47 24 | 48.5 | 84.1 | -3.9 | | -51.0 | 24 | 1898 | 20 40 30 |
| 20 50 00 | --- | 12 56 55 | 49.9 | 85.9 | -3.8 | | -51.2 | 570 | 1935 | 20 40 31 |
| 20 50 30 | 1641+399 | 12 57 26 | 50.0 | 86.0 | -3.8 | | -51.2 | 24 | 1935 | 20 50 30 |
| 21 00 00 | --- | 13 06 57 | 51.4 | 87.8 | -3.6 | | -51.3 | 570 | 1971 | 20 50 31 |

Schedule for TORUN (Code Tr)

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RadioAstron AGN polarization imaging

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Wed 4 May 2016 Day 125 ---

```
21 00 30 1641+399    13 07 27  51.5  87.9 -3.6    -51.3   24   1971  21 00 30
21 10 00 ---          13 16 59  52.9  89.7 -3.4    -51.4   570   2008  21 00 31

21 10 30 1641+399    13 17 29  53.0  89.8 -3.4    -51.4   24   2008  21 10 30
21 20 00 ---          13 27 00  54.4  91.8 -3.3    -51.4   570   2044  21 10 31

21 20 30 1641+399    13 27 30  54.5  91.9 -3.3    -51.3   24   2044  21 20 30
21 30 00 ---          13 37 02  55.9  93.9 -3.1    -51.2   570   2081  21 20 31
```

----- K-band VLBI scans. Ground segment 02: 1641+399 -----

```
21 31 00 1641+399    13 38 02  56.1  94.1 -3.1    -51.2   54   2081  21 31 00
21 41 00 ---          13 48 04  57.6  96.3 -2.9    -51.0   600   2119  21 31 01

21 41 30 1641+399    13 48 34  57.7  96.4 -2.9    -50.9   24   2119  21 41 30
21 51 00 ---          13 58 05  59.1  98.6 -2.8    -50.6   570   2156  21 41 31

21 51 30 1641+399    13 58 36  59.2  98.7 -2.7    -50.6   24   2156  21 51 30
21 55 00 ---          14 02 06  59.7  99.6 -2.7    -50.4   210   2169  21 51 31
```

SETUP FILE INFORMATION:

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

===== Setup file: ra1cm2.set

```
Setup group: 15          Station: TORUN          Total bit rate: 512
Format: MARK5B          Bits per sample: 2      Sample rate: 32.000
Number of channels: 8    DBE type: DBBC_DDC    Speedup factor: 1.00
```

Disk used to record data.

| | | | | | | | | | |
|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1st LO= | 21500.00 | 21500.00 | 21500.00 | 21500.00 | 21500.00 | 21500.00 | 21500.00 | 21500.00 | 21500.00 |
| Net SB= | U | U | L | L | U | U | L | L | |
| IF SB = | U | U | U | U | U | U | U | U | |
| Pol. = | RCP | LCP | RCP | LCP | RCP | LCP | RCP | LCP | |
| BBC = | 1 | 5 | 1 | 5 | 2 | 6 | 2 | 6 | |
| BBC SB= | U | U | L | L | U | U | L | L | |
| IF = | A1 | B1 | A1 | B1 | A1 | B1 | A1 | B1 | |

The following frequency sets based on these setups were used.

Frequency Set: 21 Setup file default. Used with PCAL = 1MHz

| | | | | | | | | |
|---------|----------|----------|----------|----------|----------|----------|----------|----------|
| LO sum= | 22236.00 | 22236.00 | 22236.00 | 22236.00 | 22268.00 | 22268.00 | 22268.00 | 22268.00 |
| BBC fr= | 736.00 | 736.00 | 736.00 | 736.00 | 768.00 | 768.00 | 768.00 | 768.00 |
| Bandwd= | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 |

Matching frequency sets: 21

Track assignments are:

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | (J2000) | (Date) | Error (mas) |
|------------|--|-------------------|-----------------|----------------|
| 0316+413 | 03 16 29.567283 | * 03 19 48.160114 | 03 20 51.478442 | 0.00 |
| J0319+4130 | 41 19 51.91847 | * 41 30 42.10559 | 41 34 00.64304 | 0.00 |
| * 3C84 | ./gg079d_sources.radioastron | | | |
| 0355+508 | 03 55 45.261370 | * 03 59 29.747271 | 04 00 41.281703 | 0.00 |
| J0359+5057 | 50 49 20.28584 | * 50 57 50.16179 | 51 00 24.99723 | 0.00 |
| * NRA0150 | ./gg079d_sources.radioastron | | | |
| * 0552+398 | 05 52 01.407174 | * 05 55 30.805616 | 05 56 37.626233 | 0.00 |
| J0555+3948 | 39 48 21.94579 | * 39 48 49.16494 | 39 48 49.71446 | 0.00 |
| * 0642+449 | 06 42 53.021453 | * 06 46 32.026000 | 06 47 41.964830 | 0.00 |
| J0646+4451 | 44 54 30.82735 | * 44 51 16.59010 | 44 50 08.47437 | 0.00 |
| * 1641+399 | 16 41 17.606226 | * 16 42 58.809963 | 16 43 33.055616 | 0.00 |
| J1642+3948 | 39 54 10.81479 | * 39 48 36.99385 | 39 46 48.81080 | 0.00 |
| 3C345 | ./gg079d_sources.radioastron | | | |
| 2251+158 | 22 51 29.519741 | * 22 53 57.747940 | 22 54 45.464296 | 0.00 |
| J2253+1608 | 15 52 54.34791 | * 16 08 53.56074 | 16 13 57.99014 | 0.00 |
| * 3C454.3 | ./gg079d_sources.radioastron | | | |
| | AGN, rfc_2013d Petrov, 2013, unpublished 40570 observations, RA-A03-04, RA-A02-1 | | | |

rg008btr

E-EVN: RG008B, RSP13, EG082I, RST03, RSH01
 PI: *Gioletti, Perez-Torres, Gawronski, Tudose, Herrero*

Address: JIVE

Observing mode: realtime e-vlbi

Schedule for TORUN (Code Tr)

Page 2

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|--|----------|--------------|------|-------|------|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Tue 10 May 2016 Day 131 --- | | | | | | | | | | |
| ----- clock-search ----- | | | | | | | | | | |
| | | | | | | | | | | |
| Next scan frequencies: 4942.49 4942.49 4942.49 4942.49 4974.49 4974.49 4974.49 4974.49 | | | | | | | | | | |
| 5006.49 5006.49 5006.49 5006.49 5038.49 5038.49 5038.49 5038.49 | | | | | | | | | | |
| Next BBC frequencies: 742.49 742.49 742.49 742.49 774.49 774.49 774.49 774.49 | | | | | | | | | | |
| 806.49 806.49 806.49 806.49 838.49 838.49 838.49 838.49 | | | | | | | | | | |
| Next scan bandwidths: 16.00 16.00 16.00 16.00 16.00 16.00 16.00 16.00 | | | | | | | | | | |
| 16.00 16.00 16.00 16.00 16.00 16.00 16.00 16.00 | | | | | | | | | | |
| | | | | | | | | | | |
| 09 00 00 | 0234+285 | 01 28 38 | 62.6 | 145.1 | -1.2 | | -23.1 | 0 | 0 | 09 00 00 |
| 09 07 00 | --- | 01 35 39 | 63.1 | 148.2 | -1.1 | | -21.2 | 420 | 54 | 09 00 01 |
| | | | | | | | | | | |
| 09 07 00 | 0234+285 | 01 35 39 | 63.1 | 148.2 | -1.1 | | -21.2 | -5 | 54 | No stop |
| 09 12 00 | --- | 01 40 40 | 63.5 | 150.5 | -1.0 | | -19.8 | 295 | 92 | 09 07 01 |
| | | | | | | | | | | |
| 09 12 40 | 0234+285 | 01 41 20 | 63.6 | 150.8 | -1.0 | | -19.6 | 33 | 92 | 09 12 40 |
| 09 17 00 | --- | 01 45 41 | 63.9 | 152.8 | -0.9 | | -18.3 | 260 | 126 | 09 12 41 |
| | | | | | | | | | | |
| 09 17 00 | 0234+285 | 01 45 41 | 63.9 | 152.8 | -0.9 | | -18.3 | -5 | 126 | No stop |
| 09 22 00 | --- | 01 50 42 | 64.2 | 155.2 | -0.8 | | -16.7 | 295 | 164 | 09 17 01 |
| | | | | | | | | | | |
| 09 22 40 | 0234+285 | 01 51 22 | 64.3 | 155.5 | -0.8 | | -16.5 | 33 | 164 | 09 22 40 |
| 09 27 00 | --- | 01 55 43 | 64.5 | 157.6 | -0.7 | | -15.1 | 260 | 197 | 09 22 41 |
| | | | | | | | | | | |
| 09 27 00 | 0234+285 | 01 55 43 | 64.5 | 157.6 | -0.7 | | -15.1 | -5 | 197 | No stop |
| 09 32 00 | --- | 02 00 43 | 64.8 | 160.1 | -0.6 | | -13.5 | 295 | 236 | 09 27 01 |
| | | | | | | | | | | |
| 09 32 40 | 0234+285 | 02 01 23 | 64.8 | 160.5 | -0.6 | | -13.3 | 33 | 236 | 09 32 40 |
| 09 37 00 | --- | 02 05 44 | 65.0 | 162.6 | -0.6 | | -11.8 | 260 | 269 | 09 32 41 |
| | | | | | | | | | | |
| 09 37 00 | 0234+285 | 02 05 44 | 65.0 | 162.6 | -0.6 | | -11.8 | -5 | 269 | No stop |
| 09 42 00 | --- | 02 10 45 | 65.2 | 165.2 | -0.5 | | -10.1 | 295 | 308 | 09 37 01 |
| | | | | | | | | | | |
| 09 42 40 | 0234+285 | 02 11 25 | 65.3 | 165.6 | -0.5 | | -9.9 | 33 | 308 | 09 42 40 |
| 09 47 00 | --- | 02 15 46 | 65.4 | 167.8 | -0.4 | | -8.3 | 260 | 341 | 09 42 41 |
| | | | | | | | | | | |
| 09 51 00 | DA193 | 02 19 47 | 51.4 | 87.7 | -3.6 | | -51.4 | 64 | 341 | 09 51 00 |
| 09 56 00 | --- | 02 24 47 | 52.2 | 88.6 | -3.5 | | -51.4 | 300 | 379 | 09 51 01 |
| | | | | | | | | | | |
| 09 56 00 | DA193 | 02 24 47 | 52.2 | 88.6 | -3.5 | | -51.4 | -5 | 379 | No stop |
| 10 02 00 | --- | 02 30 48 | 53.1 | 89.8 | -3.4 | | -51.4 | 355 | 426 | 09 56 01 |

Schedule for TORUN (Code Tr)

Page 3

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | | |
|----------|-----------------|--------------|------|-------|------|----|-------|-------|---------|----------|--|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC | |
| ----- | | | | | | | | | | | |
| --- | Tue 10 May 2016 | Day 131 | | | | | --- | | | | |
| 10 02 40 | DA193 | 02 31 28 | 53.2 | 90.0 | -3.4 | | -51.4 | 34 | 426 | 10 02 40 | |
| 10 07 00 | --- | 02 35 49 | 53.8 | 90.8 | -3.3 | | -51.4 | 260 | 459 | 10 02 41 | |
| 10 07 00 | DA193 | 02 35 49 | 53.8 | 90.8 | -3.3 | | -51.4 | -5 | 459 | No stop | |
| 10 13 00 | --- | 02 41 50 | 54.7 | 92.1 | -3.2 | | -51.4 | 355 | 505 | 10 07 01 | |
| 10 13 40 | DA193 | 02 42 30 | 54.8 | 92.2 | -3.2 | | -51.4 | 34 | 505 | 10 13 40 | |
| 10 18 00 | --- | 02 46 51 | 55.5 | 93.1 | -3.2 | | -51.3 | 260 | 538 | 10 13 41 | |
| 10 18 00 | DA193 | 02 46 51 | 55.5 | 93.1 | -3.2 | | -51.3 | -5 | 538 | No stop | |
| 10 24 00 | --- | 02 52 52 | 56.4 | 94.4 | -3.1 | | -51.2 | 355 | 585 | 10 18 01 | |
| 10 24 40 | DA193 | 02 53 32 | 56.5 | 94.6 | -3.1 | | -51.2 | 34 | 585 | 10 24 40 | |
| 10 29 00 | --- | 02 57 53 | 57.1 | 95.5 | -3.0 | | -51.1 | 260 | 618 | 10 24 41 | |
| 10 29 00 | DA193 | 02 57 53 | 57.1 | 95.5 | -3.0 | | -51.1 | -5 | 618 | No stop | |
| 10 35 00 | --- | 03 03 54 | 58.0 | 96.9 | -2.9 | | -50.9 | 355 | 664 | 10 29 01 | |
| 10 35 40 | DA193 | 03 04 34 | 58.1 | 97.0 | -2.9 | | -50.9 | 34 | 664 | 10 35 40 | |
| 10 40 00 | --- | 03 08 55 | 58.8 | 98.0 | -2.8 | | -50.7 | 260 | 697 | 10 35 41 | |
| 10 40 00 | DA193 | 03 08 55 | 58.8 | 98.0 | -2.8 | | -50.7 | -5 | 697 | No stop | |
| 10 46 00 | --- | 03 14 56 | 59.7 | 99.5 | -2.7 | | -50.5 | 355 | 744 | 10 40 01 | |
| 10 46 40 | DA193 | 03 15 36 | 59.8 | 99.6 | -2.7 | | -50.4 | 34 | 744 | 10 46 40 | |
| 10 51 00 | --- | 03 19 56 | 60.4 | 100.7 | -2.6 | | -50.2 | 260 | 777 | 10 46 41 | |
| 10 51 00 | DA193 | 03 19 56 | 60.4 | 100.7 | -2.6 | | -50.2 | -5 | 777 | No stop | |
| 10 57 00 | --- | 03 25 57 | 61.3 | 102.2 | -2.5 | | -49.8 | 355 | 823 | 10 51 01 | |
| 10 57 40 | DA193 | 03 26 37 | 61.4 | 102.4 | -2.5 | | -49.8 | 34 | 823 | 10 57 40 | |
| 11 02 00 | --- | 03 30 58 | 62.0 | 103.5 | -2.4 | | -49.5 | 260 | 856 | 10 57 41 | |
| 11 02 00 | DA193 | 03 30 58 | 62.0 | 103.5 | -2.4 | | -49.5 | -5 | 856 | No stop | |
| 11 08 00 | --- | 03 36 59 | 62.9 | 105.2 | -2.3 | | -49.0 | 355 | 903 | 11 02 01 | |
| 11 08 40 | DA193 | 03 37 39 | 63.0 | 105.4 | -2.3 | | -48.9 | 34 | 903 | 11 08 40 | |
| 11 13 00 | --- | 03 42 00 | 63.6 | 106.6 | -2.2 | | -48.5 | 260 | 936 | 11 08 41 | |
| 11 13 00 | DA193 | 03 42 00 | 63.6 | 106.6 | -2.2 | | -48.5 | -5 | 936 | No stop | |
| 11 19 00 | --- | 03 48 01 | 64.5 | 108.3 | -2.1 | | -47.9 | 355 | 982 | 11 13 01 | |
| 11 19 40 | DA193 | 03 48 41 | 64.6 | 108.5 | -2.1 | | -47.8 | 34 | 982 | 11 19 40 | |
| 11 24 00 | --- | 03 53 02 | 65.2 | 109.9 | -2.1 | | -47.3 | 260 | 1015 | 11 19 41 | |
| 11 24 00 | DA193 | 03 53 02 | 65.2 | 109.9 | -2.1 | | -47.3 | -5 | 1015 | No stop | |
| 11 30 00 | --- | 03 59 03 | 66.0 | 111.8 | -2.0 | | -46.5 | 355 | 1062 | 11 24 01 | |

Schedule for TORUN (Code Tr)

Page 4

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|--------|--------------|------|-------|------|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Tue 10 May 2016 Day 131 --- | | | | | | | | | | |
| 11 30 40 | DA193 | 03 59 43 | 66.1 | 112.0 | -1.9 | | -46.5 | 34 | 1062 | 11 30 40 |
| 11 35 00 | --- | 04 04 04 | 66.7 | 113.4 | -1.9 | | -45.8 | 260 | 1095 | 11 30 41 |
| 11 35 00 | DA193 | 04 04 04 | 66.7 | 113.4 | -1.9 | | -45.8 | -5 | 1095 | No stop |
| 11 41 00 | --- | 04 10 05 | 67.6 | 115.5 | -1.8 | | -44.9 | 355 | 1141 | 11 35 01 |
| 11 41 40 | DA193 | 04 10 45 | 67.7 | 115.8 | -1.8 | | -44.7 | 34 | 1141 | 11 41 40 |
| 11 46 00 | --- | 04 15 05 | 68.2 | 117.4 | -1.7 | | -44.0 | 260 | 1174 | 11 41 41 |
| 11 46 00 | DA193 | 04 15 05 | 68.2 | 117.4 | -1.7 | | -44.0 | -5 | 1174 | No stop |
| 11 52 00 | --- | 04 21 06 | 69.0 | 119.7 | -1.6 | | -42.8 | 355 | 1221 | 11 46 01 |
| 11 52 40 | DA193 | 04 21 46 | 69.1 | 119.9 | -1.6 | | -42.6 | 33 | 1221 | 11 52 40 |
| 11 57 00 | --- | 04 26 07 | 69.7 | 121.7 | -1.5 | | -41.7 | 260 | 1254 | 11 52 41 |
| 11 57 00 | DA193 | 04 26 07 | 69.7 | 121.7 | -1.5 | | -41.7 | -5 | 1254 | No stop |
| 12 03 00 | --- | 04 32 08 | 70.4 | 124.3 | -1.4 | | -40.3 | 355 | 1300 | 11 57 01 |
| 12 03 40 | DA193 | 04 32 48 | 70.5 | 124.5 | -1.4 | | -40.1 | 33 | 1300 | 12 03 40 |
| 12 08 00 | --- | 04 37 09 | 71.0 | 126.5 | -1.3 | | -38.9 | 260 | 1333 | 12 03 41 |
| 12 08 00 | DA193 | 04 37 09 | 71.0 | 126.5 | -1.3 | | -38.9 | -5 | 1333 | No stop |
| 12 14 00 | --- | 04 43 10 | 71.8 | 129.4 | -1.2 | | -37.2 | 355 | 1379 | 12 08 01 |
| 12 14 40 | DA193 | 04 43 50 | 71.8 | 129.7 | -1.2 | | -37.0 | 33 | 1379 | 12 14 40 |
| 12 19 00 | --- | 04 48 11 | 72.3 | 131.9 | -1.1 | | -35.6 | 260 | 1413 | 12 14 41 |
| 12 19 00 | DA193 | 04 48 11 | 72.3 | 131.9 | -1.1 | | -35.6 | -5 | 1413 | No stop |
| 12 25 00 | --- | 04 54 12 | 73.0 | 135.1 | -1.0 | | -33.5 | 355 | 1459 | 12 19 01 |
| 12 25 40 | DA193 | 04 54 52 | 73.1 | 135.4 | -1.0 | | -33.3 | 33 | 1459 | 12 25 40 |
| 12 30 00 | --- | 04 59 13 | 73.5 | 137.9 | -1.0 | | -31.6 | 260 | 1492 | 12 25 41 |
| 12 30 00 | DA193 | 04 59 13 | 73.5 | 137.9 | -1.0 | | -31.6 | -5 | 1492 | No stop |
| 12 36 00 | --- | 05 05 14 | 74.1 | 141.4 | -0.9 | | -29.2 | 355 | 1538 | 12 30 01 |
| 12 36 40 | DA193 | 05 05 54 | 74.2 | 141.9 | -0.8 | | -28.9 | 33 | 1538 | 12 36 40 |
| 12 41 00 | --- | 05 10 14 | 74.5 | 144.6 | -0.8 | | -26.9 | 260 | 1572 | 12 36 41 |
| 12 41 00 | DA193 | 05 10 14 | 74.5 | 144.6 | -0.8 | | -26.9 | -5 | 1572 | No stop |
| 12 47 00 | --- | 05 16 15 | 75.0 | 148.6 | -0.7 | | -24.1 | 355 | 1618 | 12 41 01 |
| 12 47 40 | DA193 | 05 16 56 | 75.1 | 149.0 | -0.7 | | -23.7 | 33 | 1618 | 12 47 40 |
| 12 52 00 | --- | 05 21 16 | 75.4 | 152.0 | -0.6 | | -21.5 | 260 | 1651 | 12 47 41 |

Schedule for TORUN (Code Tr)

Page 5

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|------|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Tue 10 May 2016 Day 131 --- | | | | | | | | | | |
| 12 52 00 | DA193 | 05 21 16 | 75.4 | 152.0 | -0.6 | | -21.5 | -5 | 1651 | No stop |
| 12 55 00 | --- | 05 24 17 | 75.6 | 154.2 | -0.5 | | -19.9 | 175 | 1674 | 12 52 01 |
| ----- RG008B ----- | | | | | | | | | | |
| 13 00 00 | 0528+134 | 05 29 18 | 50.4 | 179.0 | -0.0 | | -0.6 | 192 | 1674 | 13 00 00 |
| 13 10 00 | --- | 05 39 19 | 50.4 | 182.9 | 0.1 | | 1.8 | 600 | 1751 | 13 00 01 |
| 13 13 30 | J0718-1813 | 05 42 50 | 15.7 | 156.3 | -1.6 | | -14.7 | 66 | 1751 | 13 13 30 |
| 13 16 30 | --- | 05 45 50 | 15.9 | 157.0 | -1.6 | | -14.3 | 180 | 1774 | 13 13 31 |
| 13 16 30 | FRB150418 | 05 45 50 | 15.2 | 157.6 | -1.5 | | -14.0 | -14 | 1774 | No stop |
| 13 19 30 | --- | 05 48 51 | 15.4 | 158.3 | -1.5 | | -13.6 | 166 | 1797 | 13 16 31 |
| 13 19 30 | J0718-1813 | 05 48 51 | 16.0 | 157.8 | -1.5 | | -13.8 | -15 | 1797 | No stop |
| 13 21 00 | --- | 05 50 21 | 16.1 | 158.1 | -1.5 | | -13.6 | 75 | 1809 | 13 19 31 |
| 13 21 00 | FRB150418 | 05 50 21 | 15.4 | 158.7 | -1.4 | | -13.3 | -14 | 1809 | No stop |
| 13 24 00 | --- | 05 53 21 | 15.6 | 159.4 | -1.4 | | -12.9 | 166 | 1832 | 13 21 01 |
| 13 24 00 | J0718-1813 | 05 53 21 | 16.3 | 158.8 | -1.4 | | -13.2 | -15 | 1832 | No stop |
| 13 25 30 | --- | 05 54 52 | 16.4 | 159.2 | -1.4 | | -13.0 | 75 | 1844 | 13 24 01 |
| 13 25 30 | FRB150418 | 05 54 52 | 15.7 | 159.8 | -1.4 | | -12.7 | -15 | 1844 | No stop |
| 13 28 30 | --- | 05 57 52 | 15.8 | 160.5 | -1.3 | | -12.2 | 165 | 1867 | 13 25 31 |
| 13 28 30 | J0718-1813 | 05 57 52 | 16.5 | 159.9 | -1.4 | | -12.5 | -15 | 1867 | No stop |
| 13 30 00 | --- | 05 59 22 | 16.6 | 160.3 | -1.3 | | -12.3 | 75 | 1878 | 13 28 31 |
| 13 30 00 | J0716-1856 | 05 59 22 | 16.0 | 160.8 | -1.3 | | -12.0 | -14 | 1878 | No stop |
| 13 32 30 | --- | 06 01 53 | 16.1 | 161.4 | -1.3 | | -11.7 | 136 | 1897 | 13 30 01 |
| 13 33 10 | J0718-1813 | 06 02 33 | 16.8 | 161.1 | -1.3 | | -11.8 | 26 | 1897 | 13 33 10 |
| 13 34 00 | --- | 06 03 23 | 16.8 | 161.3 | -1.3 | | -11.7 | 50 | 1904 | 13 33 11 |
| 13 34 00 | FRB150418 | 06 03 23 | 16.1 | 161.8 | -1.2 | | -11.4 | -15 | 1904 | No stop |
| 13 37 00 | --- | 06 06 24 | 16.2 | 162.6 | -1.2 | | -11.0 | 165 | 1927 | 13 34 01 |
| 13 37 00 | J0718-1813 | 06 06 24 | 16.9 | 162.0 | -1.2 | | -11.3 | -15 | 1927 | No stop |
| 13 38 30 | --- | 06 07 54 | 17.0 | 162.4 | -1.2 | | -11.0 | 75 | 1938 | 13 37 01 |
| 13 38 30 | FRB150418 | 06 07 54 | 16.3 | 162.9 | -1.2 | | -10.8 | -15 | 1938 | No stop |
| 13 41 30 | --- | 06 10 54 | 16.4 | 163.7 | -1.1 | | -10.3 | 165 | 1962 | 13 38 31 |

Schedule for TORUN (Code Tr)

Page 6

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|------|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| --- Tue 10 May 2016 Day 131 --- | | | | | | | | | | |
| 13 41 30 | J0718-1813 | 06 10 54 | 17.1 | 163.1 | -1.1 | | -10.6 | -15 | 1962 | No stop |
| 13 43 00 | --- | 06 12 25 | 17.2 | 163.5 | -1.1 | | -10.4 | 75 | 1973 | 13 41 31 |
| 13 43 00 | FRB150418 | 06 12 25 | 16.5 | 164.0 | -1.1 | | -10.1 | -15 | 1973 | No stop |
| 13 46 00 | --- | 06 15 25 | 16.6 | 164.7 | -1.0 | | -9.6 | 165 | 1996 | 13 43 01 |
| 13 46 00 | J0718-1813 | 06 15 25 | 17.3 | 164.2 | -1.1 | | -9.9 | -15 | 1996 | No stop |
| 13 47 30 | --- | 06 16 55 | 17.4 | 164.6 | -1.0 | | -9.7 | 75 | 2008 | 13 46 01 |
| 13 47 30 | J0716-1900 | 06 16 55 | 16.7 | 165.2 | -1.0 | | -9.3 | -15 | 2008 | No stop |
| 13 50 00 | --- | 06 19 26 | 16.8 | 165.8 | -1.0 | | -8.9 | 135 | 2027 | 13 47 31 |
| 13 50 40 | J0718-1813 | 06 20 06 | 17.5 | 165.3 | -1.0 | | -9.2 | 25 | 2027 | 13 50 40 |
| 13 51 30 | --- | 06 20 56 | 17.6 | 165.6 | -1.0 | | -9.1 | 50 | 2033 | 13 50 41 |
| 13 51 30 | FRB150418 | 06 20 56 | 16.8 | 166.1 | -0.9 | | -8.8 | -15 | 2033 | No stop |
| 13 54 30 | --- | 06 23 57 | 16.9 | 166.8 | -0.9 | | -8.3 | 165 | 2056 | 13 51 31 |
| 13 54 30 | J0718-1813 | 06 23 57 | 17.7 | 166.3 | -0.9 | | -8.6 | -15 | 2056 | No stop |
| 13 56 00 | --- | 06 25 27 | 17.7 | 166.7 | -0.9 | | -8.4 | 75 | 2068 | 13 54 31 |
| 13 56 00 | FRB150418 | 06 25 27 | 17.0 | 167.2 | -0.9 | | -8.1 | -15 | 2068 | No stop |
| 13 59 00 | --- | 06 28 27 | 17.1 | 167.9 | -0.8 | | -7.6 | 165 | 2091 | 13 56 01 |
| 13 59 00 | J0718-1813 | 06 28 27 | 17.8 | 167.4 | -0.8 | | -7.9 | -15 | 2091 | No stop |
| 14 00 30 | --- | 06 29 57 | 17.9 | 167.8 | -0.8 | | -7.7 | 75 | 2103 | 13 59 01 |
| 14 00 30 | FRB150418 | 06 29 57 | 17.1 | 168.3 | -0.8 | | -7.4 | -15 | 2103 | No stop |
| 14 03 30 | --- | 06 32 58 | 17.2 | 169.0 | -0.7 | | -6.9 | 165 | 2126 | 14 00 31 |
| 14 03 30 | J0718-1813 | 06 32 58 | 18.0 | 168.5 | -0.8 | | -7.2 | -15 | 2126 | No stop |
| 14 05 00 | --- | 06 34 28 | 18.0 | 168.9 | -0.7 | | -7.0 | 75 | 2137 | 14 03 31 |
| 14 05 00 | J0712-1847 | 06 34 28 | 17.6 | 170.4 | -0.6 | | -6.0 | -16 | 2137 | No stop |
| 14 07 30 | --- | 06 36 59 | 17.7 | 171.1 | -0.6 | | -5.7 | 134 | 2156 | 14 05 01 |
| 14 08 10 | J0718-1813 | 06 37 39 | 18.1 | 169.7 | -0.7 | | -6.5 | 24 | 2156 | 14 08 10 |
| 14 09 00 | --- | 06 38 29 | 18.1 | 169.9 | -0.7 | | -6.4 | 50 | 2163 | 14 08 11 |
| 14 09 00 | FRB150418 | 06 38 29 | 17.4 | 170.4 | -0.6 | | -6.1 | -15 | 2163 | No stop |
| 14 12 00 | --- | 06 41 29 | 17.4 | 171.1 | -0.6 | | -5.6 | 165 | 2186 | 14 09 01 |
| 14 12 00 | J0718-1813 | 06 41 29 | 18.2 | 170.6 | -0.6 | | -5.9 | -15 | 2186 | No stop |
| 14 13 30 | --- | 06 43 00 | 18.2 | 171.0 | -0.6 | | -5.7 | 75 | 2197 | 14 12 01 |

Schedule for TORUN (Code Tr)

Page 7

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|------|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Tue 10 May 2016 Day 131 --- | | | | | | | | | | |
| 14 13 30 | FRB150418 | 06 43 00 | 17.5 | 171.5 | -0.6 | | -5.4 | -15 | 2197 | No stop |
| 14 16 30 | --- | 06 46 00 | 17.5 | 172.2 | -0.5 | | -4.9 | 165 | 2221 | 14 13 31 |
| 14 16 30 | J0718-1813 | 06 46 00 | 18.3 | 171.8 | -0.5 | | -5.2 | -15 | 2221 | No stop |
| 14 18 00 | --- | 06 47 30 | 18.3 | 172.1 | -0.5 | | -5.0 | 75 | 2232 | 14 16 31 |
| 14 18 00 | FRB150418 | 06 47 30 | 17.6 | 172.6 | -0.5 | | -4.7 | -15 | 2232 | No stop |
| 14 21 00 | --- | 06 50 31 | 17.6 | 173.4 | -0.4 | | -4.2 | 165 | 2255 | 14 18 01 |
| 14 21 00 | J0718-1813 | 06 50 31 | 18.4 | 172.9 | -0.5 | | -4.5 | -15 | 2255 | No stop |
| 14 22 30 | --- | 06 52 01 | 18.4 | 173.3 | -0.4 | | -4.3 | 75 | 2267 | 14 21 01 |
| 14 22 30 | J0712-1847 | 06 52 01 | 17.9 | 174.8 | -0.3 | | -3.3 | -16 | 2267 | No stop |
| 14 25 00 | --- | 06 54 32 | 18.0 | 175.4 | -0.3 | | -2.9 | 134 | 2286 | 14 22 31 |
| 14 25 40 | J0718-1813 | 06 55 12 | 18.5 | 174.1 | -0.4 | | -3.8 | 24 | 2286 | 14 25 40 |
| 14 26 30 | --- | 06 56 02 | 18.5 | 174.3 | -0.4 | | -3.6 | 50 | 2292 | 14 25 41 |
| 14 26 30 | FRB150418 | 06 56 02 | 17.7 | 174.7 | -0.4 | | -3.3 | -15 | 2292 | No stop |
| 14 29 30 | --- | 06 59 02 | 17.8 | 175.5 | -0.3 | | -2.9 | 165 | 2315 | 14 26 31 |
| 14 29 30 | J0718-1813 | 06 59 02 | 18.5 | 175.0 | -0.3 | | -3.1 | -15 | 2315 | No stop |
| 14 31 00 | --- | 07 00 32 | 18.5 | 175.4 | -0.3 | | -2.9 | 75 | 2327 | 14 29 31 |
| 14 31 00 | FRB150418 | 07 00 32 | 17.8 | 175.8 | -0.3 | | -2.6 | -15 | 2327 | No stop |
| 14 34 00 | --- | 07 03 33 | 17.8 | 176.6 | -0.2 | | -2.2 | 165 | 2350 | 14 31 01 |
| 14 34 00 | J0718-1813 | 07 03 33 | 18.6 | 176.1 | -0.3 | | -2.4 | -15 | 2350 | No stop |
| 14 35 30 | --- | 07 05 03 | 18.6 | 176.5 | -0.2 | | -2.2 | 75 | 2362 | 14 34 01 |
| 14 35 30 | FRB150418 | 07 05 03 | 17.8 | 177.0 | -0.2 | | -1.9 | -15 | 2362 | No stop |
| 14 38 30 | --- | 07 08 04 | 17.8 | 177.7 | -0.2 | | -1.5 | 165 | 2385 | 14 35 31 |
| 14 38 30 | J0718-1813 | 07 08 04 | 18.6 | 177.3 | -0.2 | | -1.7 | -15 | 2385 | No stop |
| 14 40 00 | --- | 07 09 34 | 18.6 | 177.6 | -0.2 | | -1.5 | 75 | 2396 | 14 38 31 |
| 14 40 00 | J0712-1847 | 07 09 34 | 18.1 | 179.2 | -0.1 | | -0.5 | -16 | 2396 | No stop |
| 14 42 30 | --- | 07 12 04 | 18.1 | 179.8 | -0.0 | | -0.1 | 134 | 2415 | 14 40 01 |
| 14 43 10 | J0718-1813 | 07 12 44 | 18.6 | 178.4 | -0.1 | | -1.0 | 24 | 2415 | 14 43 10 |
| 14 44 00 | --- | 07 13 35 | 18.6 | 178.7 | -0.1 | | -0.9 | 50 | 2422 | 14 43 11 |
| 14 44 00 | FRB150418 | 07 13 35 | 17.9 | 179.1 | -0.1 | | -0.6 | -15 | 2422 | No stop |
| 14 47 00 | --- | 07 16 35 | 17.9 | 179.8 | -0.0 | | -0.1 | 165 | 2445 | 14 44 01 |

Schedule for TORUN (Code Tr)

Page 8

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|------|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Tue 10 May 2016 Day 131 --- | | | | | | | | | | |
| 14 47 00 | J0718-1813 | 07 16 35 | 18.6 | 179.4 | -0.0 | | -0.4 | -15 | 2445 | No stop |
| 14 48 30 | --- | 07 18 05 | 18.7 | 179.8 | -0.0 | | -0.1 | 75 | 2456 | 14 47 01 |
| 14 48 30 | FRB150418 | 07 18 05 | 17.9 | 180.2 | 0.0 | | 0.1 | -15 | 2456 | No stop |
| 14 51 30 | --- | 07 21 06 | 17.9 | 180.9 | 0.1 | | 0.6 | 165 | 2479 | 14 48 31 |
| 14 51 30 | J0718-1813 | 07 21 06 | 18.6 | 180.5 | 0.0 | | 0.3 | -15 | 2479 | No stop |
| 14 53 00 | --- | 07 22 36 | 18.6 | 180.9 | 0.1 | | 0.6 | 75 | 2491 | 14 51 31 |
| 14 53 00 | FRB150418 | 07 22 36 | 17.8 | 181.3 | 0.1 | | 0.8 | -15 | 2491 | No stop |
| 14 56 00 | --- | 07 25 37 | 17.8 | 182.1 | 0.1 | | 1.3 | 165 | 2514 | 14 53 01 |
| 14 56 00 | J0718-1813 | 07 25 37 | 18.6 | 181.7 | 0.1 | | 1.1 | -15 | 2514 | No stop |
| 14 57 30 | --- | 07 27 07 | 18.6 | 182.0 | 0.1 | | 1.3 | 75 | 2526 | 14 56 01 |
| 14 57 30 | J0712-1847 | 07 27 07 | 18.0 | 183.5 | 0.2 | | 2.2 | -16 | 2526 | No stop |
| 15 00 00 | --- | 07 29 37 | 18.0 | 184.1 | 0.3 | | 2.6 | 134 | 2545 | 14 57 31 |
| 15 00 40 | J0718-1813 | 07 30 17 | 18.6 | 182.8 | 0.2 | | 1.8 | 24 | 2545 | 15 00 40 |
| 15 01 30 | --- | 07 31 08 | 18.6 | 183.1 | 0.2 | | 1.9 | 50 | 2551 | 15 00 41 |
| 15 01 30 | FRB150418 | 07 31 08 | 17.8 | 183.4 | 0.2 | | 2.2 | -15 | 2551 | No stop |
| 15 04 30 | --- | 07 34 08 | 17.8 | 184.2 | 0.3 | | 2.7 | 165 | 2574 | 15 01 31 |
| 15 04 30 | J0718-1813 | 07 34 08 | 18.6 | 183.8 | 0.3 | | 2.4 | -15 | 2574 | No stop |
| 15 06 00 | --- | 07 35 38 | 18.6 | 184.2 | 0.3 | | 2.6 | 75 | 2586 | 15 04 31 |
| 15 06 00 | FRB150418 | 07 35 38 | 17.7 | 184.6 | 0.3 | | 2.9 | -15 | 2586 | No stop |
| 15 09 00 | --- | 07 38 39 | 17.7 | 185.3 | 0.4 | | 3.4 | 165 | 2609 | 15 06 01 |
| 15 09 00 | J0718-1813 | 07 38 39 | 18.5 | 184.9 | 0.3 | | 3.1 | -15 | 2609 | No stop |
| 15 10 30 | --- | 07 40 09 | 18.5 | 185.3 | 0.4 | | 3.4 | 75 | 2621 | 15 09 01 |
| 15 10 30 | FRB150418 | 07 40 09 | 17.7 | 185.7 | 0.4 | | 3.6 | -15 | 2621 | No stop |
| 15 13 30 | --- | 07 43 09 | 17.6 | 186.4 | 0.4 | | 4.1 | 165 | 2644 | 15 10 31 |
| 15 13 30 | J0718-1813 | 07 43 09 | 18.5 | 186.1 | 0.4 | | 3.8 | -15 | 2644 | No stop |
| 15 15 00 | --- | 07 44 40 | 18.4 | 186.4 | 0.4 | | 4.1 | 75 | 2655 | 15 13 31 |
| 15 15 00 | J0712-1847 | 07 44 40 | 17.7 | 187.9 | 0.5 | | 5.0 | -16 | 2655 | No stop |
| 15 17 30 | --- | 07 47 10 | 17.7 | 188.5 | 0.6 | | 5.4 | 134 | 2674 | 15 15 01 |
| 15 18 10 | J0718-1813 | 07 47 50 | 18.4 | 187.2 | 0.5 | | 4.6 | 24 | 2674 | 15 18 10 |
| 15 19 00 | --- | 07 48 40 | 18.4 | 187.4 | 0.5 | | 4.7 | 50 | 2681 | 15 18 11 |

Schedule for TORUN (Code Tr)

Page 9

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|-------|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | |
| --- Tue 10 May 2016 Day 131 --- | | | | | | | | | |
| 15 19 00 | FRB150418 | 07 48 40 | 17.5 | 187.8 | 0.5 | 4.9 | -15 | 2681 | No stop |
| 15 22 00 | --- | 07 51 41 | 17.5 | 188.5 | 0.6 | 5.4 | 165 | 2704 | 15 19 01 |
| 15 22 00 | J0718-1813 | 07 51 41 | 18.3 | 188.2 | 0.5 | 5.2 | -15 | 2704 | No stop |
| 15 23 30 | --- | 07 53 11 | 18.3 | 188.6 | 0.6 | 5.4 | 75 | 2715 | 15 22 01 |
| 15 23 30 | FRB150418 | 07 53 11 | 17.4 | 188.9 | 0.6 | 5.6 | -16 | 2715 | No stop |
| 15 26 30 | --- | 07 56 12 | 17.4 | 189.6 | 0.6 | 6.1 | 164 | 2738 | 15 23 31 |
| 15 26 30 | J0718-1813 | 07 56 12 | 18.2 | 189.3 | 0.6 | 5.9 | -15 | 2738 | No stop |
| 15 28 00 | --- | 07 57 42 | 18.2 | 189.7 | 0.6 | 6.1 | 75 | 2750 | 15 26 31 |
| 15 28 00 | FRB150418 | 07 57 42 | 17.3 | 190.0 | 0.7 | 6.3 | -16 | 2750 | No stop |
| 15 31 00 | --- | 08 00 42 | 17.2 | 190.7 | 0.7 | 6.8 | 164 | 2773 | 15 28 01 |
| 15 31 00 | J0718-1813 | 08 00 42 | 18.1 | 190.4 | 0.7 | 6.6 | -16 | 2773 | No stop |
| 15 32 30 | --- | 08 02 13 | 18.0 | 190.8 | 0.7 | 6.8 | 74 | 2785 | 15 31 01 |
| 15 32 30 | J0712-1847 | 08 02 13 | 17.3 | 192.2 | 0.8 | 7.7 | -16 | 2785 | No stop |
| 15 35 00 | --- | 08 04 43 | 17.2 | 192.8 | 0.9 | 8.1 | 134 | 2804 | 15 32 31 |
| 15 35 40 | J0718-1813 | 08 05 23 | 17.9 | 191.6 | 0.8 | 7.3 | 25 | 2804 | 15 35 40 |
| 15 36 30 | --- | 08 06 13 | 17.9 | 191.8 | 0.8 | 7.4 | 50 | 2810 | 15 35 41 |
| 15 36 30 | FRB150418 | 08 06 13 | 17.1 | 192.1 | 0.8 | 7.7 | -16 | 2810 | No stop |
| 15 39 30 | --- | 08 09 14 | 17.0 | 192.8 | 0.9 | 8.1 | 164 | 2833 | 15 36 31 |
| 15 39 30 | J0718-1813 | 08 09 14 | 17.8 | 192.5 | 0.8 | 7.9 | -16 | 2833 | No stop |
| 15 41 00 | --- | 08 10 44 | 17.8 | 192.9 | 0.9 | 8.1 | 74 | 2845 | 15 39 31 |
| 15 41 00 | FRB150418 | 08 10 44 | 16.9 | 193.2 | 0.9 | 8.3 | -16 | 2845 | No stop |
| 15 44 00 | --- | 08 13 44 | 16.8 | 193.9 | 0.9 | 8.8 | 164 | 2868 | 15 41 01 |
| 15 44 00 | J0718-1813 | 08 13 44 | 17.7 | 193.7 | 0.9 | 8.6 | -16 | 2868 | No stop |
| 15 45 30 | --- | 08 15 15 | 17.6 | 194.0 | 0.9 | 8.8 | 74 | 2879 | 15 44 01 |
| 15 45 30 | FRB150418 | 08 15 15 | 16.8 | 194.3 | 1.0 | 9.0 | -16 | 2879 | No stop |
| 15 48 30 | --- | 08 18 15 | 16.7 | 195.0 | 1.0 | 9.5 | 164 | 2903 | 15 45 31 |
| 15 48 30 | J0718-1813 | 08 18 15 | 17.5 | 194.8 | 1.0 | 9.3 | -16 | 2903 | No stop |
| 15 50 00 | --- | 08 19 45 | 17.4 | 195.1 | 1.0 | 9.5 | 74 | 2914 | 15 48 31 |
| 15 50 00 | J0712-1847 | 08 19 45 | 16.6 | 196.5 | 1.1 | 10.4 | -16 | 2914 | No stop |
| 15 52 30 | --- | 08 22 16 | 16.5 | 197.1 | 1.2 | 10.8 | 134 | 2933 | 15 50 01 |

Schedule for TORUN (Code Tr)

Page 10

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|-----|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Tue 10 May 2016 Day 131 --- | | | | | | | | | | |
| 15 53 10 | J0718-1813 | 08 22 56 | 17.3 | 195.9 | 1.1 | | 10.0 | 25 | 2933 | 15 53 10 |
| 15 54 00 | --- | 08 23 46 | 17.3 | 196.1 | 1.1 | | 10.1 | 50 | 2940 | 15 53 11 |
| 15 54 00 | FRB150418 | 08 23 46 | 16.4 | 196.4 | 1.1 | | 10.3 | -16 | 2940 | No stop |
| 15 57 00 | --- | 08 26 47 | 16.3 | 197.1 | 1.2 | | 10.8 | 164 | 2963 | 15 54 01 |
| 15 57 00 | J0718-1813 | 08 26 47 | 17.2 | 196.9 | 1.1 | | 10.6 | -16 | 2963 | No stop |
| 15 58 30 | --- | 08 28 17 | 17.1 | 197.2 | 1.2 | | 10.8 | 74 | 2974 | 15 57 01 |
| 15 58 30 | FRB150418 | 08 28 17 | 16.2 | 197.5 | 1.2 | | 11.0 | -16 | 2974 | No stop |
| 16 01 30 | --- | 08 31 17 | 16.1 | 198.2 | 1.2 | | 11.4 | 164 | 2997 | 15 58 31 |
| 16 01 30 | J0718-1813 | 08 31 17 | 17.0 | 198.0 | 1.2 | | 11.2 | -16 | 2997 | No stop |
| 16 03 00 | --- | 08 32 48 | 16.9 | 198.3 | 1.2 | | 11.5 | 74 | 3009 | 16 01 31 |
| 16 03 00 | FRB150418 | 08 32 48 | 16.0 | 198.6 | 1.3 | | 11.7 | -16 | 3009 | No stop |
| 16 06 00 | --- | 08 35 48 | 15.9 | 199.3 | 1.3 | | 12.1 | 164 | 3032 | 16 03 01 |
| 16 06 00 | J0718-1813 | 08 35 48 | 16.7 | 199.0 | 1.3 | | 11.9 | -16 | 3032 | No stop |
| 16 07 30 | --- | 08 37 18 | 16.7 | 199.4 | 1.3 | | 12.1 | 74 | 3044 | 16 06 01 |
| 16 07 30 | J0712-1847 | 08 37 18 | 15.8 | 200.7 | 1.4 | | 13.0 | -16 | 3044 | No stop |
| 16 10 00 | --- | 08 39 49 | 15.7 | 201.3 | 1.4 | | 13.3 | 134 | 3063 | 16 07 31 |
| 16 10 40 | J0718-1813 | 08 40 29 | 16.5 | 200.2 | 1.4 | | 12.6 | 24 | 3063 | 16 10 40 |
| 16 11 30 | --- | 08 41 19 | 16.5 | 200.4 | 1.4 | | 12.7 | 50 | 3069 | 16 10 41 |
| 16 11 30 | FRB150418 | 08 41 19 | 15.6 | 200.6 | 1.4 | | 12.9 | -16 | 3069 | No stop |
| 16 14 30 | --- | 08 44 20 | 15.4 | 201.3 | 1.5 | | 13.4 | 164 | 3092 | 16 11 31 |
| 16 14 30 | J0718-1813 | 08 44 20 | 16.3 | 201.1 | 1.4 | | 13.2 | -16 | 3092 | No stop |
| 16 16 00 | --- | 08 45 50 | 16.2 | 201.5 | 1.4 | | 13.4 | 74 | 3104 | 16 14 31 |
| 16 16 00 | FRB150418 | 08 45 50 | 15.4 | 201.7 | 1.5 | | 13.6 | -16 | 3104 | No stop |
| 16 19 00 | --- | 08 48 50 | 15.2 | 202.4 | 1.5 | | 14.0 | 164 | 3127 | 16 16 01 |
| 16 19 00 | J0718-1813 | 08 48 50 | 16.1 | 202.2 | 1.5 | | 13.8 | -16 | 3127 | No stop |
| 16 20 30 | --- | 08 50 20 | 16.0 | 202.6 | 1.5 | | 14.0 | 74 | 3138 | 16 19 01 |
| 16 20 30 | FRB150418 | 08 50 20 | 15.1 | 202.8 | 1.6 | | 14.2 | -16 | 3138 | No stop |
| 16 23 30 | --- | 08 53 21 | 14.9 | 203.5 | 1.6 | | 14.7 | 164 | 3162 | 16 20 31 |
| 16 23 30 | J0718-1813 | 08 53 21 | 15.8 | 203.3 | 1.6 | | 14.5 | -16 | 3162 | No stop |
| 16 25 00 | --- | 08 54 51 | 15.7 | 203.6 | 1.6 | | 14.7 | 74 | 3173 | 16 23 31 |

Schedule for TORUN (Code Tr)

Page 11

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | Early | Disk | TPStart | | |
|---------------------------------|------------|--------------|------|-------|-----|-------|------|---------|--------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| --- Tue 10 May 2016 Day 131 --- | | | | | | | | | | |
| 16 25 00 | J0712-1847 | 08 54 51 | 14.8 | 204.9 | 1.7 | | 15.5 | -16 | 3173 | No stop |
| 16 27 30 | --- | 08 57 22 | 14.6 | 205.5 | 1.7 | | 15.8 | 134 | 3192 | 16 25 01 |
| 16 28 10 | J0718-1813 | 08 58 02 | 15.5 | 204.4 | 1.7 | | 15.1 | 24 | 3192 | 16 28 10 |
| 16 29 00 | --- | 08 58 52 | 15.5 | 204.6 | 1.7 | | 15.3 | 50 | 3199 | 16 28 11 |
| 16 29 00 | FRB150418 | 08 58 52 | 14.6 | 204.8 | 1.7 | | 15.4 | -16 | 3199 | No stop |
| 16 32 00 | --- | 09 01 52 | 14.4 | 205.5 | 1.7 | | 15.9 | 164 | 3222 | 16 29 01 |
| 16 32 00 | J0718-1813 | 09 01 52 | 15.3 | 205.3 | 1.7 | | 15.7 | -16 | 3222 | No stop |
| 16 33 30 | --- | 09 03 23 | 15.2 | 205.7 | 1.7 | | 15.9 | 74 | 3233 | 16 32 01 |
| 16 33 30 | FRB150418 | 09 03 23 | 14.3 | 205.8 | 1.8 | | 16.1 | -16 | 3233 | No stop |
| 16 36 30 | --- | 09 06 23 | 14.1 | 206.5 | 1.8 | | 16.5 | 164 | 3256 | 16 33 31 |
| 16 36 30 | J0718-1813 | 09 06 23 | 15.0 | 206.4 | 1.8 | | 16.3 | -16 | 3256 | No stop |
| 16 38 00 | --- | 09 07 53 | 14.9 | 206.7 | 1.8 | | 16.5 | 74 | 3268 | 16 36 31 |
| 16 38 00 | FRB150418 | 09 07 53 | 14.0 | 206.9 | 1.8 | | 16.7 | -16 | 3268 | No stop |
| 16 41 00 | --- | 09 10 54 | 13.8 | 207.6 | 1.9 | | 17.1 | 164 | 3291 | 16 38 01 |
| 16 41 00 | J0718-1813 | 09 10 54 | 14.7 | 207.4 | 1.9 | | 16.9 | -16 | 3291 | No stop |
| 16 42 30 | --- | 09 12 24 | 14.6 | 207.8 | 1.9 | | 17.1 | 74 | 3303 | 16 41 01 |
| 16 42 30 | J0712-1847 | 09 12 24 | 13.6 | 209.0 | 2.0 | | 17.9 | -17 | 3303 | No stop |
| 16 45 00 | --- | 09 14 55 | 13.4 | 209.6 | 2.0 | | 18.3 | 133 | 3322 | 16 42 31 |
| 16 45 40 | J0718-1813 | 09 15 35 | 14.3 | 208.5 | 1.9 | | 17.6 | 24 | 3322 | 16 45 40 |
| 16 46 30 | --- | 09 16 25 | 14.3 | 208.7 | 2.0 | | 17.7 | 50 | 3328 | 16 45 41 |
| 16 46 30 | FRB150418 | 09 16 25 | 13.4 | 208.9 | 2.0 | | 17.9 | -16 | 3328 | No stop |
| 16 49 30 | --- | 09 19 25 | 13.2 | 209.6 | 2.0 | | 18.3 | 164 | 3351 | 16 46 31 |
| 16 49 30 | J0718-1813 | 09 19 25 | 14.1 | 209.4 | 2.0 | | 18.1 | -16 | 3351 | No stop |
| 16 51 00 | --- | 09 20 55 | 13.9 | 209.8 | 2.0 | | 18.3 | 74 | 3363 | 16 49 31 |
| 16 51 00 | FRB150418 | 09 20 55 | 13.1 | 209.9 | 2.1 | | 18.5 | -16 | 3363 | No stop |
| 16 54 00 | --- | 09 23 56 | 12.8 | 210.6 | 2.1 | | 18.9 | 164 | 3386 | 16 51 01 |
| 16 54 00 | J0718-1813 | 09 23 56 | 13.7 | 210.5 | 2.1 | | 18.7 | -16 | 3386 | No stop |
| 16 55 30 | --- | 09 25 26 | 13.6 | 210.8 | 2.1 | | 18.9 | 74 | 3397 | 16 54 01 |
| 16 55 30 | FRB150418 | 09 25 26 | 12.7 | 210.9 | 2.1 | | 19.1 | -16 | 3397 | No stop |
| 16 58 30 | --- | 09 28 27 | 12.5 | 211.6 | 2.2 | | 19.5 | 164 | 3421 | 16 55 31 |

Schedule for TORUN (Code Tr)

Page 12

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|------|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Tue 10 May 2016 Day 131 --- | | | | | | | | | | |
| 16 58 30 | J0718-1813 | 09 28 27 | 13.4 | 211.5 | 2.2 | | 19.3 | -16 | 3421 | No stop |
| 17 00 00 | --- | 09 29 57 | 13.2 | 211.9 | 2.2 | | 19.5 | 74 | 3432 | 16 58 31 |
| 17 00 00 | J0716-1856 | 09 29 57 | 12.4 | 212.0 | 2.2 | | 19.6 | -15 | 3432 | No stop |
| 17 02 30 | --- | 09 32 27 | 12.2 | 212.5 | 2.3 | | 20.0 | 135 | 3451 | 17 00 01 |
| 17 03 10 | J0718-1813 | 09 33 07 | 13.0 | 212.6 | 2.2 | | 19.9 | 25 | 3451 | 17 03 10 |
| 17 04 00 | --- | 09 33 58 | 12.9 | 212.8 | 2.3 | | 20.0 | 50 | 3458 | 17 03 11 |
| 17 04 00 | FRB150418 | 09 33 58 | 12.0 | 212.9 | 2.3 | | 20.2 | -16 | 3458 | No stop |
| 17 07 00 | --- | 09 36 58 | 11.8 | 213.6 | 2.3 | | 20.6 | 164 | 3481 | 17 04 01 |
| 17 07 00 | J0718-1813 | 09 36 58 | 12.7 | 213.5 | 2.3 | | 20.4 | -16 | 3481 | No stop |
| 17 08 30 | --- | 09 38 28 | 12.6 | 213.8 | 2.3 | | 20.6 | 74 | 3492 | 17 07 01 |
| 17 08 30 | FRB150418 | 09 38 28 | 11.7 | 213.9 | 2.4 | | 20.8 | -16 | 3492 | No stop |
| 17 11 30 | --- | 09 41 29 | 11.4 | 214.6 | 2.4 | | 21.1 | 164 | 3515 | 17 08 31 |
| 17 11 30 | J0718-1813 | 09 41 29 | 12.3 | 214.5 | 2.4 | | 21.0 | -16 | 3515 | No stop |
| 17 13 00 | --- | 09 42 59 | 12.2 | 214.8 | 2.4 | | 21.2 | 74 | 3527 | 17 11 31 |
| 17 13 00 | FRB150418 | 09 42 59 | 11.3 | 214.9 | 2.4 | | 21.3 | -16 | 3527 | No stop |
| 17 16 00 | --- | 09 46 00 | 11.0 | 215.6 | 2.5 | | 21.7 | 164 | 3550 | 17 13 01 |
| 17 16 00 | J0718-1813 | 09 46 00 | 11.9 | 215.5 | 2.5 | | 21.5 | -16 | 3550 | No stop |
| 17 17 30 | --- | 09 47 30 | 11.8 | 215.9 | 2.5 | | 21.7 | 74 | 3562 | 17 16 01 |
| 17 17 30 | J0716-1900 | 09 47 30 | 10.9 | 216.0 | 2.5 | | 21.9 | -16 | 3562 | No stop |
| 17 20 00 | --- | 09 50 00 | 10.6 | 216.6 | 2.6 | | 22.3 | 134 | 3581 | 17 17 31 |
| 17 20 40 | J0718-1813 | 09 50 40 | 11.5 | 216.6 | 2.5 | | 22.1 | 24 | 3581 | 17 20 40 |
| 17 21 30 | --- | 09 51 31 | 11.4 | 216.8 | 2.5 | | 22.2 | 50 | 3587 | 17 20 41 |
| ----- RSP13 ----- | | | | | | | | | | |
| 18 15 00 | 3C273B | 10 45 09 | 34.5 | 147.6 | -1.7 | | -18.8 | 3029 | 3587 | 18 15 00 |
| 18 18 00 | --- | 10 48 10 | 34.7 | 148.5 | -1.7 | | -18.3 | 180 | 3610 | 18 15 01 |
| 18 20 00 | J0959-0828 | 10 50 10 | 27.5 | 193.8 | 0.8 | | 8.3 | 15 | 3610 | 18 20 00 |
| 18 20 40 | =0957-082 | 10 50 50 | 27.4 | 194.0 | 0.8 | | 8.4 | 40 | 3615 | 18 20 01 |
| 18 20 40 | NGC3110 | 10 50 50 | 29.6 | 193.2 | 0.8 | | 7.9 | -22 | 3615 | No stop |
| 18 24 00 | --- | 10 54 11 | 29.4 | 194.1 | 0.8 | | 8.5 | 178 | 3641 | 18 20 41 |

Schedule for TORUN (Code Tr)

Page 13

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|-------|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | |
| --- Tue 10 May 2016 Day 131 --- | | | | | | | | | |
| 18 24 00 | J0959-0828 | 10 54 11 | 27.3 | 194.9 | 0.9 | 9.0 | -22 | 3641 | No stop |
| 18 24 40 | =0957-082 | 10 54 51 | 27.3 | 195.1 | 0.9 | 9.1 | 18 | 3646 | 18 24 01 |
| 18 24 40 | NGC3110 | 10 54 51 | 29.4 | 194.3 | 0.8 | 8.6 | -22 | 3646 | No stop |
| 18 27 40 | --- | 10 57 51 | 29.3 | 195.1 | 0.9 | 9.1 | 158 | 3669 | 18 24 41 |
| 18 27 40 | J0959-0828 | 10 57 51 | 27.2 | 195.9 | 1.0 | 9.6 | -22 | 3669 | No stop |
| 18 28 20 | =0957-082 | 10 58 31 | 27.1 | 196.1 | 1.0 | 9.7 | 18 | 3674 | 18 27 41 |
| 18 28 20 | NGC3110 | 10 58 31 | 29.3 | 195.3 | 0.9 | 9.2 | -22 | 3674 | No stop |
| 18 31 40 | --- | 11 01 52 | 29.1 | 196.3 | 1.0 | 9.7 | 178 | 3700 | 18 28 21 |
| 18 32 20 | J0959-0828 | 11 02 32 | 27.0 | 197.2 | 1.0 | 10.3 | 18 | 3700 | 18 32 20 |
| 18 32 50 | =0957-082 | 11 03 02 | 26.9 | 197.3 | 1.0 | 10.4 | 30 | 3704 | 18 32 21 |
| 18 32 50 | NGC3110 | 11 03 02 | 29.1 | 196.6 | 1.0 | 9.9 | -22 | 3704 | No stop |
| 18 36 10 | --- | 11 06 23 | 28.9 | 197.5 | 1.0 | 10.5 | 178 | 3729 | 18 32 51 |
| 18 36 10 | J0959-0828 | 11 06 23 | 26.8 | 198.2 | 1.1 | 10.9 | -22 | 3729 | No stop |
| 18 36 50 | =0957-082 | 11 07 03 | 26.8 | 198.4 | 1.1 | 11.1 | 18 | 3735 | 18 36 11 |
| 18 36 50 | NGC3110 | 11 07 03 | 28.9 | 197.7 | 1.0 | 10.6 | -22 | 3735 | No stop |
| 18 39 50 | --- | 11 10 03 | 28.8 | 198.6 | 1.1 | 11.1 | 158 | 3758 | 18 36 51 |
| 18 39 50 | J0959-0828 | 11 10 03 | 26.6 | 199.2 | 1.2 | 11.5 | -22 | 3758 | No stop |
| 18 40 30 | =0957-082 | 11 10 43 | 26.6 | 199.4 | 1.2 | 11.6 | 18 | 3763 | 18 39 51 |
| 18 40 30 | NGC3110 | 11 10 43 | 28.7 | 198.7 | 1.1 | 11.2 | -22 | 3763 | No stop |
| 18 43 50 | --- | 11 14 04 | 28.6 | 199.7 | 1.2 | 11.7 | 178 | 3788 | 18 40 31 |
| 18 44 30 | J0959-0828 | 11 14 44 | 26.4 | 200.5 | 1.2 | 12.3 | 18 | 3788 | 18 44 30 |
| 18 45 00 | =0957-082 | 11 15 14 | 26.3 | 200.6 | 1.2 | 12.4 | 30 | 3792 | 18 44 31 |
| 18 45 00 | NGC3110 | 11 15 14 | 28.5 | 200.0 | 1.2 | 11.9 | -22 | 3792 | No stop |
| 18 48 20 | --- | 11 18 35 | 28.3 | 200.9 | 1.2 | 12.5 | 178 | 3818 | 18 45 01 |
| 18 48 20 | J0959-0828 | 11 18 35 | 26.2 | 201.5 | 1.3 | 12.9 | -22 | 3818 | No stop |
| 18 49 00 | =0957-082 | 11 19 15 | 26.1 | 201.7 | 1.3 | 13.0 | 18 | 3823 | 18 48 21 |
| 18 49 00 | NGC3110 | 11 19 15 | 28.3 | 201.1 | 1.2 | 12.6 | -22 | 3823 | No stop |
| 18 52 00 | --- | 11 22 15 | 28.1 | 201.9 | 1.3 | 13.0 | 158 | 3846 | 18 49 01 |
| 18 52 00 | J0959-0828 | 11 22 15 | 26.0 | 202.5 | 1.4 | 13.4 | -22 | 3846 | No stop |
| 18 52 40 | =0957-082 | 11 22 55 | 25.9 | 202.7 | 1.4 | 13.5 | 18 | 3851 | 18 52 01 |

Schedule for TORUN (Code Tr)

Page 14

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|-----|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Tue 10 May 2016 Day 131 --- | | | | | | | | | | |
| 18 52 40 | NGC3110 | 11 22 55 | 28.1 | 202.1 | 1.3 | | 13.1 | -22 | 3851 | No stop |
| 18 56 00 | --- | 11 26 16 | 27.9 | 203.0 | 1.4 | | 13.7 | 178 | 3877 | 18 52 41 |
| 18 56 40 | J0959-0828 | 11 26 56 | 25.7 | 203.8 | 1.4 | | 14.2 | 18 | 3877 | 18 56 40 |
| 18 57 10 | =0957-082 | 11 27 26 | 25.7 | 203.9 | 1.4 | | 14.2 | 30 | 3881 | 18 56 41 |
| 18 57 10 | NGC3110 | 11 27 26 | 27.8 | 203.3 | 1.4 | | 13.9 | -22 | 3881 | No stop |
| 19 00 30 | --- | 11 30 47 | 27.6 | 204.2 | 1.4 | | 14.4 | 178 | 3906 | 18 57 11 |
| 19 00 30 | J0959-0828 | 11 30 47 | 25.4 | 204.8 | 1.5 | | 14.7 | -22 | 3906 | No stop |
| 19 01 10 | =0957-082 | 11 31 27 | 25.4 | 205.0 | 1.5 | | 14.8 | 18 | 3912 | 19 00 31 |
| 19 01 10 | NGC3110 | 11 31 27 | 27.6 | 204.4 | 1.4 | | 14.5 | -22 | 3912 | No stop |
| 19 04 10 | --- | 11 34 27 | 27.4 | 205.2 | 1.5 | | 14.9 | 158 | 3935 | 19 01 11 |
| 19 04 10 | J0959-0828 | 11 34 27 | 25.2 | 205.7 | 1.6 | | 15.3 | -22 | 3935 | No stop |
| 19 04 50 | =0957-082 | 11 35 07 | 25.2 | 205.9 | 1.6 | | 15.4 | 18 | 3940 | 19 04 11 |
| 19 04 50 | NGC3110 | 11 35 07 | 27.4 | 205.4 | 1.5 | | 15.0 | -22 | 3940 | No stop |
| 19 08 10 | --- | 11 38 28 | 27.1 | 206.3 | 1.6 | | 15.5 | 178 | 3965 | 19 04 51 |
| 19 08 50 | J0959-0828 | 11 39 08 | 24.9 | 207.0 | 1.6 | | 16.0 | 18 | 3965 | 19 08 50 |
| 19 09 20 | =0957-082 | 11 39 38 | 24.9 | 207.1 | 1.6 | | 16.1 | 30 | 3969 | 19 08 51 |
| 19 09 20 | NGC3110 | 11 39 38 | 27.1 | 206.6 | 1.6 | | 15.7 | -22 | 3969 | No stop |
| 19 12 40 | --- | 11 42 59 | 26.8 | 207.5 | 1.6 | | 16.2 | 178 | 3995 | 19 09 21 |
| 19 12 40 | J0959-0828 | 11 42 59 | 24.6 | 208.0 | 1.7 | | 16.6 | -22 | 3995 | No stop |
| 19 13 20 | =0957-082 | 11 43 39 | 24.6 | 208.2 | 1.7 | | 16.7 | 18 | 4000 | 19 12 41 |
| 19 13 20 | NGC3110 | 11 43 39 | 26.8 | 207.7 | 1.6 | | 16.3 | -22 | 4000 | No stop |
| 19 16 20 | --- | 11 46 39 | 26.6 | 208.5 | 1.7 | | 16.8 | 158 | 4023 | 19 13 21 |
| 19 16 20 | J0959-0828 | 11 46 39 | 24.4 | 208.9 | 1.8 | | 17.1 | -22 | 4023 | No stop |
| 19 17 00 | =0957-082 | 11 47 19 | 24.3 | 209.1 | 1.8 | | 17.2 | 18 | 4028 | 19 16 21 |
| 19 17 00 | NGC3110 | 11 47 19 | 26.5 | 208.7 | 1.7 | | 16.9 | -22 | 4028 | No stop |
| 19 20 20 | --- | 11 50 40 | 26.3 | 209.6 | 1.8 | | 17.4 | 178 | 4054 | 19 17 01 |
| 19 21 00 | J0959-0828 | 11 51 20 | 24.0 | 210.1 | 1.8 | | 17.8 | 18 | 4054 | 19 21 00 |
| 19 21 30 | =0957-082 | 11 51 50 | 24.0 | 210.3 | 1.9 | | 17.8 | 30 | 4058 | 19 21 01 |
| 19 21 30 | NGC3110 | 11 51 50 | 26.2 | 209.9 | 1.8 | | 17.5 | -22 | 4058 | No stop |
| 19 24 50 | --- | 11 55 11 | 25.9 | 210.8 | 1.8 | | 18.0 | 178 | 4083 | 19 21 31 |

Schedule for TORUN (Code Tr)

Page 15

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|-----|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Tue 10 May 2016 Day 131 --- | | | | | | | | | | |
| 19 24 50 | J0959-0828 | 11 55 11 | 23.7 | 211.1 | 1.9 | | 18.3 | -22 | 4083 | No stop |
| 19 25 30 | =0957-082 | 11 55 51 | 23.7 | 211.3 | 1.9 | | 18.4 | 18 | 4088 | 19 24 51 |
| 19 25 30 | NGC3110 | 11 55 51 | 25.9 | 210.9 | 1.9 | | 18.1 | -22 | 4088 | No stop |
| 19 28 30 | --- | 11 58 51 | 25.7 | 211.7 | 1.9 | | 18.5 | 158 | 4112 | 19 25 31 |
| 19 28 30 | J0959-0828 | 11 58 51 | 23.4 | 212.1 | 2.0 | | 18.8 | -22 | 4112 | No stop |
| 19 29 10 | =0957-082 | 11 59 31 | 23.4 | 212.2 | 2.0 | | 18.9 | 18 | 4117 | 19 28 31 |
| 19 29 10 | NGC3110 | 11 59 31 | 25.6 | 211.9 | 1.9 | | 18.6 | -22 | 4117 | No stop |
| 19 32 30 | --- | 12 02 52 | 25.3 | 212.8 | 2.0 | | 19.1 | 178 | 4142 | 19 29 11 |
| 19 33 10 | J0959-0828 | 12 03 32 | 23.1 | 213.3 | 2.0 | | 19.5 | 18 | 4142 | 19 33 10 |
| 19 33 40 | =0957-082 | 12 04 02 | 23.0 | 213.4 | 2.1 | | 19.5 | 30 | 4146 | 19 33 11 |
| 19 33 40 | NGC3110 | 12 04 02 | 25.2 | 213.1 | 2.0 | | 19.3 | -22 | 4146 | No stop |
| 19 37 00 | --- | 12 07 23 | 25.0 | 213.9 | 2.0 | | 19.7 | 178 | 4172 | 19 33 41 |
| 19 37 00 | J0959-0828 | 12 07 23 | 22.7 | 214.2 | 2.1 | | 20.0 | -22 | 4172 | No stop |
| 19 37 40 | =0957-082 | 12 08 03 | 22.7 | 214.4 | 2.1 | | 20.1 | 18 | 4177 | 19 37 01 |
| 19 37 40 | NGC3110 | 12 08 03 | 24.9 | 214.1 | 2.1 | | 19.8 | -22 | 4177 | No stop |
| 19 40 40 | --- | 12 11 03 | 24.6 | 214.9 | 2.1 | | 20.2 | 158 | 4200 | 19 37 41 |
| 19 40 40 | J0959-0828 | 12 11 03 | 22.4 | 215.2 | 2.2 | | 20.5 | -22 | 4200 | No stop |
| 19 41 20 | =0957-082 | 12 11 43 | 22.4 | 215.3 | 2.2 | | 20.6 | 18 | 4205 | 19 40 41 |
| 19 41 20 | NGC3110 | 12 11 43 | 24.6 | 215.1 | 2.1 | | 20.3 | -22 | 4205 | No stop |
| 19 44 40 | --- | 12 15 04 | 24.3 | 215.9 | 2.2 | | 20.8 | 178 | 4231 | 19 41 21 |
| 19 45 20 | J0959-0828 | 12 15 44 | 22.0 | 216.3 | 2.2 | | 21.1 | 18 | 4231 | 19 45 20 |
| 19 45 50 | =0957-082 | 12 16 14 | 22.0 | 216.5 | 2.3 | | 21.2 | 30 | 4235 | 19 45 21 |
| 19 45 50 | NGC3110 | 12 16 14 | 24.2 | 216.2 | 2.2 | | 20.9 | -22 | 4235 | No stop |
| 19 49 10 | --- | 12 19 35 | 23.9 | 217.1 | 2.2 | | 21.4 | 178 | 4260 | 19 45 51 |
| 19 49 10 | J0959-0828 | 12 19 35 | 21.7 | 217.3 | 2.3 | | 21.6 | -22 | 4260 | No stop |
| 19 49 50 | =0957-082 | 12 20 15 | 21.6 | 217.4 | 2.3 | | 21.7 | 18 | 4265 | 19 49 11 |
| 19 49 50 | NGC3110 | 12 20 15 | 23.8 | 217.2 | 2.3 | | 21.4 | -22 | 4265 | No stop |
| 19 52 50 | --- | 12 23 15 | 23.6 | 218.0 | 2.3 | | 21.8 | 158 | 4288 | 19 49 51 |
| 19 52 50 | J0959-0828 | 12 23 15 | 21.3 | 218.2 | 2.4 | | 22.1 | -22 | 4288 | No stop |
| 19 53 30 | =0957-082 | 12 23 55 | 21.3 | 218.4 | 2.4 | | 22.1 | 18 | 4294 | 19 52 51 |

Schedule for TORUN (Code Tr)

Page 16

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | Early | Disk | TPStart | | |
|---------------------------------|------------|--------------|------|-------|-----|-------|------|---------|--------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Tue 10 May 2016 Day 131 --- | | | | | | | | | | |
| 19 53 30 | NGC3110 | 12 23 55 | 23.5 | 218.2 | 2.3 | | 21.9 | -22 | 4294 | No stop |
| 19 56 50 | --- | 12 27 16 | 23.2 | 219.0 | 2.4 | | 22.4 | 178 | 4319 | 19 53 31 |
| 19 57 30 | J0959-0828 | 12 27 56 | 20.9 | 219.3 | 2.5 | | 22.6 | 18 | 4319 | 19 57 30 |
| 19 58 00 | =0957-082 | 12 28 26 | 20.8 | 219.5 | 2.5 | | 22.7 | 30 | 4323 | 19 57 31 |
| 19 58 00 | NGC3110 | 12 28 26 | 23.1 | 219.3 | 2.4 | | 22.5 | -22 | 4323 | No stop |
| 20 01 20 | --- | 12 31 47 | 22.8 | 220.1 | 2.4 | | 22.9 | 178 | 4349 | 19 58 01 |
| 20 01 20 | J0959-0828 | 12 31 47 | 20.5 | 220.3 | 2.5 | | 23.1 | -22 | 4349 | No stop |
| 20 02 00 | =0957-082 | 12 32 27 | 20.5 | 220.4 | 2.5 | | 23.2 | 18 | 4354 | 20 01 21 |
| 20 02 00 | NGC3110 | 12 32 27 | 22.7 | 220.3 | 2.5 | | 23.0 | -22 | 4354 | No stop |
| 20 05 00 | --- | 12 35 27 | 22.4 | 221.0 | 2.5 | | 23.4 | 158 | 4377 | 20 02 01 |
| 20 05 00 | J0959-0828 | 12 35 27 | 20.2 | 221.2 | 2.6 | | 23.6 | -22 | 4377 | No stop |
| 20 05 40 | =0957-082 | 12 36 07 | 20.1 | 221.3 | 2.6 | | 23.6 | 18 | 4382 | 20 05 01 |
| 20 05 40 | NGC3110 | 12 36 07 | 22.3 | 221.2 | 2.5 | | 23.5 | -22 | 4382 | No stop |
| 20 09 00 | --- | 12 39 28 | 22.0 | 222.0 | 2.6 | | 23.9 | 178 | 4408 | 20 05 41 |
| 20 09 40 | J0959-0828 | 12 40 08 | 19.7 | 222.3 | 2.7 | | 24.1 | 18 | 4408 | 20 09 40 |
| 20 10 10 | =0957-082 | 12 40 38 | 19.6 | 222.4 | 2.7 | | 24.2 | 30 | 4412 | 20 09 41 |
| 20 10 10 | NGC3110 | 12 40 38 | 21.9 | 222.3 | 2.6 | | 24.0 | -22 | 4412 | No stop |
| 20 13 30 | --- | 12 43 59 | 21.5 | 223.1 | 2.7 | | 24.4 | 178 | 4437 | 20 10 11 |
| 20 13 30 | J0959-0828 | 12 43 59 | 19.3 | 223.2 | 2.7 | | 24.6 | -22 | 4437 | No stop |
| 20 14 10 | =0957-082 | 12 44 39 | 19.2 | 223.4 | 2.7 | | 24.6 | 18 | 4442 | 20 13 31 |
| 20 14 10 | NGC3110 | 12 44 39 | 21.5 | 223.3 | 2.7 | | 24.5 | -22 | 4442 | No stop |
| 20 17 10 | --- | 12 47 39 | 21.2 | 224.0 | 2.7 | | 24.8 | 158 | 4465 | 20 14 11 |
| 20 17 10 | J0959-0828 | 12 47 39 | 18.9 | 224.1 | 2.8 | | 25.0 | -22 | 4465 | No stop |
| 20 17 50 | =0957-082 | 12 48 19 | 18.8 | 224.2 | 2.8 | | 25.1 | 18 | 4471 | 20 17 11 |
| 20 17 50 | NGC3110 | 12 48 19 | 21.1 | 224.2 | 2.7 | | 24.9 | -22 | 4471 | No stop |
| 20 21 10 | --- | 12 51 40 | 20.7 | 225.0 | 2.8 | | 25.3 | 178 | 4496 | 20 17 51 |
| 20 21 50 | J0959-0828 | 12 52 20 | 18.4 | 225.2 | 2.9 | | 25.5 | 18 | 4496 | 20 21 50 |
| 20 22 20 | =0957-082 | 12 52 50 | 18.4 | 225.3 | 2.9 | | 25.6 | 30 | 4500 | 20 21 51 |
| 20 22 20 | NGC3110 | 12 52 50 | 20.6 | 225.3 | 2.8 | | 25.4 | -22 | 4500 | No stop |
| 20 25 40 | --- | 12 56 11 | 20.3 | 226.0 | 2.9 | | 25.8 | 178 | 4526 | 20 22 21 |

Schedule for TORUN (Code Tr)

Page 17

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | Early | Disk | TPStart | | |
|---------------------------------|------------|--------------|------|-------|-----|-------|------|---------|--------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Tue 10 May 2016 Day 131 --- | | | | | | | | | | |
| 20 25 40 | J0959-0828 | 12 56 11 | 18.0 | 226.1 | 2.9 | | 25.9 | -22 | 4526 | No stop |
| 20 26 20 | =0957-082 | 12 56 51 | 17.9 | 226.2 | 2.9 | | 26.0 | 18 | 4531 | 20 25 41 |
| 20 26 20 | NGC3110 | 12 56 51 | 20.2 | 226.2 | 2.9 | | 25.9 | -22 | 4531 | No stop |
| 20 29 20 | --- | 12 59 51 | 19.9 | 226.9 | 2.9 | | 26.2 | 158 | 4554 | 20 26 21 |
| 20 29 20 | J0959-0828 | 12 59 51 | 17.6 | 226.9 | 3.0 | | 26.3 | -22 | 4554 | No stop |
| 20 30 00 | =0957-082 | 13 00 31 | 17.5 | 227.1 | 3.0 | | 26.4 | 18 | 4559 | 20 29 21 |
| 20 30 00 | NGC3110 | 13 00 31 | 19.8 | 227.1 | 2.9 | | 26.3 | -22 | 4559 | No stop |
| 20 33 20 | --- | 13 03 52 | 19.4 | 227.9 | 3.0 | | 26.6 | 178 | 4585 | 20 30 01 |
| 20 34 00 | J0959-0828 | 13 04 32 | 17.1 | 228.0 | 3.1 | | 26.8 | 18 | 4585 | 20 34 00 |
| 20 34 30 | =0957-082 | 13 05 02 | 17.0 | 228.1 | 3.1 | | 26.9 | 30 | 4588 | 20 34 01 |
| 20 34 30 | NGC3110 | 13 05 02 | 19.3 | 228.1 | 3.0 | | 26.8 | -22 | 4588 | No stop |
| 20 37 50 | --- | 13 08 23 | 18.9 | 228.9 | 3.1 | | 27.1 | 178 | 4614 | 20 34 31 |
| 20 37 50 | J0959-0828 | 13 08 23 | 16.7 | 228.9 | 3.1 | | 27.2 | -22 | 4614 | No stop |
| 20 38 30 | =0957-082 | 13 09 03 | 16.6 | 229.1 | 3.1 | | 27.3 | 18 | 4619 | 20 37 51 |
| 20 38 30 | NGC3110 | 13 09 03 | 18.8 | 229.1 | 3.1 | | 27.2 | -22 | 4619 | No stop |
| 20 41 30 | --- | 13 12 03 | 18.5 | 229.8 | 3.1 | | 27.5 | 158 | 4642 | 20 38 31 |
| 20 41 30 | J0959-0828 | 13 12 03 | 16.2 | 229.8 | 3.2 | | 27.6 | -22 | 4642 | No stop |
| 20 42 10 | =0957-082 | 13 12 43 | 16.2 | 229.9 | 3.2 | | 27.7 | 18 | 4647 | 20 41 31 |
| 20 42 10 | NGC3110 | 13 12 43 | 18.4 | 229.9 | 3.1 | | 27.6 | -22 | 4647 | No stop |
| 20 45 30 | --- | 13 16 04 | 18.0 | 230.7 | 3.2 | | 27.9 | 178 | 4673 | 20 42 11 |
| 20 46 10 | J0959-0828 | 13 16 44 | 15.7 | 230.8 | 3.3 | | 28.1 | 18 | 4673 | 20 46 10 |
| 20 46 40 | =0957-082 | 13 17 14 | 15.6 | 230.9 | 3.3 | | 28.1 | 30 | 4677 | 20 46 11 |
| 20 46 40 | NGC3110 | 13 17 14 | 17.9 | 231.0 | 3.2 | | 28.0 | -22 | 4677 | No stop |
| 20 50 00 | --- | 13 20 35 | 17.5 | 231.8 | 3.3 | | 28.3 | 178 | 4703 | 20 46 41 |
| 20 50 00 | J0959-0828 | 13 20 35 | 15.3 | 231.7 | 3.3 | | 28.5 | -22 | 4703 | No stop |
| 20 50 40 | =0957-082 | 13 21 15 | 15.2 | 231.8 | 3.3 | | 28.5 | 18 | 4708 | 20 50 01 |
| 20 50 40 | NGC3110 | 13 21 15 | 17.4 | 231.9 | 3.3 | | 28.4 | -22 | 4708 | No stop |
| 20 53 40 | --- | 13 24 15 | 17.1 | 232.6 | 3.3 | | 28.7 | 158 | 4731 | 20 50 41 |
| 20 53 40 | J0959-0828 | 13 24 15 | 14.8 | 232.5 | 3.4 | | 28.8 | -22 | 4731 | No stop |
| 20 54 20 | =0957-082 | 13 24 55 | 14.7 | 232.7 | 3.4 | | 28.9 | 18 | 4736 | 20 53 41 |

Schedule for TORUN (Code Tr)

Page 18

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|-----|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Tue 10 May 2016 Day 131 --- | | | | | | | | | | |
| 20 54 20 | NGC3110 | 13 24 55 | 17.0 | 232.7 | 3.3 | | 28.8 | -22 | 4736 | No stop |
| 20 57 40 | --- | 13 28 16 | 16.6 | 233.5 | 3.4 | | 29.1 | 178 | 4762 | 20 54 21 |
| 20 58 20 | J0959-0828 | 13 28 56 | 14.3 | 233.6 | 3.5 | | 29.2 | 18 | 4762 | 20 58 20 |
| 20 58 50 | =0957-082 | 13 29 26 | 14.2 | 233.7 | 3.5 | | 29.3 | 30 | 4765 | 20 58 21 |
| 20 58 50 | NGC3110 | 13 29 26 | 16.4 | 233.8 | 3.4 | | 29.2 | -22 | 4765 | No stop |
| 21 02 10 | --- | 13 32 47 | 16.0 | 234.5 | 3.5 | | 29.5 | 178 | 4791 | 20 58 51 |
| 21 02 10 | J0959-0828 | 13 32 47 | 13.8 | 234.4 | 3.5 | | 29.6 | -22 | 4791 | No stop |
| 21 02 50 | =0957-082 | 13 33 27 | 13.7 | 234.6 | 3.5 | | 29.7 | 18 | 4796 | 21 02 11 |
| 21 02 50 | NGC3110 | 13 33 27 | 15.9 | 234.7 | 3.5 | | 29.5 | -22 | 4796 | No stop |
| 21 05 50 | --- | 13 36 27 | 15.6 | 235.3 | 3.5 | | 29.8 | 158 | 4819 | 21 02 51 |
| 21 05 50 | J0959-0828 | 13 36 27 | 13.3 | 235.2 | 3.6 | | 29.9 | -22 | 4819 | No stop |
| 21 06 30 | =0957-082 | 13 37 07 | 13.3 | 235.4 | 3.6 | | 30.0 | 18 | 4824 | 21 05 51 |
| 21 06 30 | NGC3110 | 13 37 07 | 15.5 | 235.5 | 3.5 | | 29.9 | -22 | 4824 | No stop |
| 21 09 50 | --- | 13 40 28 | 15.1 | 236.2 | 3.6 | | 30.2 | 178 | 4850 | 21 06 31 |
| 21 10 30 | J0959-0828 | 13 41 08 | 12.8 | 236.2 | 3.7 | | 30.3 | 18 | 4850 | 21 10 30 |
| 21 11 00 | =0957-082 | 13 41 38 | 12.7 | 236.4 | 3.7 | | 30.4 | 30 | 4854 | 21 10 31 |
| 21 11 00 | NGC3110 | 13 41 38 | 14.9 | 236.5 | 3.6 | | 30.3 | -22 | 4854 | No stop |
| 21 14 20 | --- | 13 44 59 | 14.5 | 237.2 | 3.7 | | 30.6 | 178 | 4879 | 21 11 01 |
| 21 14 20 | J0959-0828 | 13 44 59 | 12.3 | 237.1 | 3.7 | | 30.6 | -22 | 4879 | No stop |
| 21 15 00 | =0957-082 | 13 45 39 | 12.2 | 237.2 | 3.7 | | 30.7 | 18 | 4885 | 21 14 21 |
| ----- EG082I ----- | | | | | | | | | | |
| 21 15 00 | J1038+0512 | 13 45 39 | 28.9 | 235.6 | 3.1 | | 29.8 | -76 | 4885 | No stop |
| 21 19 00 | =1036+054 | 13 49 40 | 28.4 | 236.6 | 3.2 | | 30.2 | 164 | 4915 | 21 15 01 |
| 21 19 30 | J1035+0522 | 13 50 10 | 28.0 | 237.7 | 3.2 | | 30.7 | 16 | 4915 | 21 19 30 |
| 21 23 00 | --- | 13 53 40 | 27.5 | 238.6 | 3.3 | | 31.0 | 210 | 4942 | 21 19 31 |
| 21 23 30 | J1038+0512 | 13 54 10 | 27.8 | 237.7 | 3.2 | | 30.6 | 16 | 4942 | 21 23 30 |
| 21 24 30 | =1036+054 | 13 55 10 | 27.7 | 237.9 | 3.3 | | 30.7 | 60 | 4950 | 21 23 31 |
| 21 24 30 | RYSEX | 13 55 10 | 27.3 | 238.6 | 3.3 | | 30.9 | -13 | 4950 | No stop |
| 21 28 00 | --- | 13 58 41 | 26.8 | 239.4 | 3.4 | | 31.3 | 197 | 4977 | 21 24 31 |

Schedule for TORUN (Code Tr)

Page 19

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|-----|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Tue 10 May 2016 Day 131 --- | | | | | | | | | | |
| 21 28 00 | J1038+0512 | 13 58 41 | 27.2 | 238.8 | 3.3 | | 31.0 | -12 | 4977 | No stop |
| 21 29 30 | =1036+054 | 14 00 11 | 27.0 | 239.1 | 3.3 | | 31.2 | 78 | 4988 | 21 28 01 |
| 21 29 30 | RYSEX | 14 00 11 | 26.6 | 239.7 | 3.4 | | 31.4 | -13 | 4988 | No stop |
| 21 33 00 | --- | 14 03 42 | 26.2 | 240.6 | 3.4 | | 31.7 | 197 | 5015 | 21 29 31 |
| 21 33 30 | J1038+0512 | 14 04 12 | 26.5 | 240.1 | 3.4 | | 31.5 | 18 | 5015 | 21 33 30 |
| 21 34 30 | =1036+054 | 14 05 12 | 26.4 | 240.3 | 3.4 | | 31.6 | 60 | 5023 | 21 33 31 |
| 21 34 30 | RYSEX | 14 05 12 | 26.0 | 240.9 | 3.5 | | 31.8 | -13 | 5023 | No stop |
| 21 38 00 | --- | 14 08 43 | 25.5 | 241.8 | 3.5 | | 32.1 | 197 | 5050 | 21 34 31 |
| 21 38 00 | J1038+0512 | 14 08 43 | 25.9 | 241.2 | 3.5 | | 31.9 | -13 | 5050 | No stop |
| 21 39 30 | =1036+054 | 14 10 13 | 25.7 | 241.5 | 3.5 | | 32.0 | 77 | 5062 | 21 38 01 |
| 21 39 30 | RYSEX | 14 10 13 | 25.3 | 242.1 | 3.6 | | 32.2 | -13 | 5062 | No stop |
| 21 43 00 | --- | 14 13 43 | 24.8 | 242.9 | 3.6 | | 32.5 | 197 | 5088 | 21 39 31 |
| 21 43 30 | J1038+0512 | 14 14 14 | 25.2 | 242.5 | 3.6 | | 32.3 | 17 | 5088 | 21 43 30 |
| 21 44 30 | =1036+054 | 14 15 14 | 25.1 | 242.7 | 3.6 | | 32.4 | 60 | 5096 | 21 43 31 |
| 21 44 30 | RYSEX | 14 15 14 | 24.6 | 243.3 | 3.6 | | 32.6 | -13 | 5096 | No stop |
| 21 48 00 | --- | 14 18 44 | 24.2 | 244.1 | 3.7 | | 32.8 | 197 | 5123 | 21 44 31 |
| 21 48 30 | J1038+0512 | 14 19 14 | 24.5 | 243.6 | 3.7 | | 32.7 | 17 | 5123 | 21 48 30 |
| 21 49 30 | =1036+054 | 14 20 15 | 24.4 | 243.8 | 3.7 | | 32.8 | 60 | 5131 | 21 48 31 |
| 21 49 30 | RYSEX | 14 20 15 | 24.0 | 244.4 | 3.7 | | 32.9 | -13 | 5131 | No stop |
| 21 53 00 | --- | 14 23 45 | 23.5 | 245.2 | 3.8 | | 33.2 | 197 | 5158 | 21 49 31 |
| 21 53 00 | J1038+0512 | 14 23 45 | 23.9 | 244.6 | 3.7 | | 33.0 | -13 | 5158 | No stop |
| 21 54 30 | =1036+054 | 14 25 15 | 23.7 | 245.0 | 3.8 | | 33.1 | 77 | 5169 | 21 53 01 |
| 21 54 30 | J1035+0522 | 14 25 15 | 23.3 | 246.0 | 3.8 | | 33.4 | -14 | 5169 | No stop |
| 21 58 00 | --- | 14 28 46 | 22.9 | 246.7 | 3.9 | | 33.6 | 196 | 5196 | 21 54 31 |
| 21 58 30 | J1038+0512 | 14 29 16 | 23.2 | 245.9 | 3.8 | | 33.4 | 16 | 5196 | 21 58 30 |
| 21 59 30 | =1036+054 | 14 30 16 | 23.0 | 246.1 | 3.8 | | 33.5 | 60 | 5204 | 21 58 31 |
| 21 59 30 | RYSEX | 14 30 16 | 22.6 | 246.7 | 3.9 | | 33.6 | -13 | 5204 | No stop |
| 22 03 00 | --- | 14 33 47 | 22.1 | 247.5 | 3.9 | | 33.8 | 197 | 5231 | 21 59 31 |
| 22 03 00 | J1038+0512 | 14 33 47 | 22.6 | 246.9 | 3.9 | | 33.7 | -13 | 5231 | No stop |
| 22 04 30 | =1036+054 | 14 35 17 | 22.3 | 247.3 | 3.9 | | 33.8 | 77 | 5242 | 22 03 01 |

Schedule for TORUN (Code Tr)

Page 20

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|-----|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Tue 10 May 2016 Day 131 --- | | | | | | | | | | |
| 22 04 30 | RYSEX | 14 35 17 | 21.9 | 247.8 | 4.0 | | 33.9 | -13 | 5242 | No stop |
| 22 08 00 | --- | 14 38 48 | 21.4 | 248.6 | 4.0 | | 34.1 | 197 | 5269 | 22 04 31 |
| 22 08 30 | J1038+0512 | 14 39 18 | 21.8 | 248.1 | 4.0 | | 34.0 | 17 | 5269 | 22 08 30 |
| 22 09 30 | =1036+054 | 14 40 18 | 21.6 | 248.4 | 4.0 | | 34.1 | 60 | 5277 | 22 08 31 |
| 22 09 30 | RYSEX | 14 40 18 | 21.2 | 248.9 | 4.1 | | 34.2 | -13 | 5277 | No stop |
| 22 13 00 | --- | 14 43 48 | 20.7 | 249.7 | 4.1 | | 34.4 | 197 | 5304 | 22 09 31 |
| 22 13 00 | J1038+0512 | 14 43 48 | 21.2 | 249.1 | 4.1 | | 34.3 | -13 | 5304 | No stop |
| 22 14 30 | =1036+054 | 14 45 19 | 20.9 | 249.5 | 4.1 | | 34.4 | 77 | 5315 | 22 13 01 |
| 22 14 30 | RYSEX | 14 45 19 | 20.5 | 250.0 | 4.1 | | 34.5 | -13 | 5315 | No stop |
| 22 18 00 | --- | 14 48 49 | 20.0 | 250.8 | 4.2 | | 34.7 | 197 | 5342 | 22 14 31 |
| 22 18 30 | J1038+0512 | 14 49 19 | 20.4 | 250.4 | 4.2 | | 34.6 | 17 | 5342 | 22 18 30 |
| 22 19 30 | =1036+054 | 14 50 19 | 20.2 | 250.6 | 4.2 | | 34.7 | 60 | 5350 | 22 18 31 |
| 22 19 30 | RYSEX | 14 50 19 | 19.8 | 251.1 | 4.2 | | 34.8 | -13 | 5350 | No stop |
| 22 23 00 | --- | 14 53 50 | 19.3 | 251.9 | 4.3 | | 35.0 | 197 | 5377 | 22 19 31 |
| 22 23 30 | J1038+0512 | 14 54 20 | 19.7 | 251.4 | 4.2 | | 34.9 | 17 | 5377 | 22 23 30 |
| 22 24 30 | =1036+054 | 14 55 20 | 19.5 | 251.7 | 4.3 | | 34.9 | 60 | 5385 | 22 23 31 |
| 22 24 30 | RYSEX | 14 55 20 | 19.1 | 252.2 | 4.3 | | 35.0 | -13 | 5385 | No stop |
| 22 28 00 | --- | 14 58 51 | 18.6 | 253.0 | 4.4 | | 35.2 | 197 | 5412 | 22 24 31 |
| 22 28 00 | J1038+0512 | 14 58 51 | 19.0 | 252.4 | 4.3 | | 35.1 | -13 | 5412 | No stop |
| 22 29 30 | =1036+054 | 15 00 21 | 18.8 | 252.7 | 4.3 | | 35.2 | 77 | 5423 | 22 28 01 |
| 22 29 30 | J1035+0522 | 15 00 21 | 18.4 | 253.7 | 4.4 | | 35.4 | -14 | 5423 | No stop |
| 22 33 00 | --- | 15 03 52 | 17.9 | 254.4 | 4.5 | | 35.5 | 196 | 5450 | 22 29 31 |
| 22 33 30 | J1038+0512 | 15 04 22 | 18.2 | 253.6 | 4.4 | | 35.3 | 17 | 5450 | 22 33 30 |
| 22 34 30 | =1036+054 | 15 05 22 | 18.1 | 253.8 | 4.4 | | 35.4 | 60 | 5458 | 22 33 31 |
| 22 34 30 | RYSEX | 15 05 22 | 17.6 | 254.4 | 4.5 | | 35.5 | -13 | 5458 | No stop |
| 22 38 00 | --- | 15 08 52 | 17.1 | 255.1 | 4.5 | | 35.6 | 197 | 5485 | 22 34 31 |
| 22 38 00 | J1038+0512 | 15 08 52 | 17.6 | 254.6 | 4.5 | | 35.5 | -13 | 5485 | No stop |
| 22 39 30 | =1036+054 | 15 10 23 | 17.4 | 254.9 | 4.5 | | 35.6 | 77 | 5496 | 22 38 01 |
| 22 39 30 | RYSEX | 15 10 23 | 16.9 | 255.4 | 4.6 | | 35.7 | -13 | 5496 | No stop |
| 22 43 00 | --- | 15 13 53 | 16.4 | 256.2 | 4.6 | | 35.8 | 197 | 5523 | 22 39 31 |

Schedule for TORUN (Code Tr)

Page 21

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|-----|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Tue 10 May 2016 Day 131 --- | | | | | | | | | | |
| 22 43 30 | J1038+0512 | 15 14 23 | 16.8 | 255.7 | 4.6 | | 35.8 | 17 | 5523 | 22 43 30 |
| 22 44 30 | =1036+054 | 15 15 24 | 16.6 | 256.0 | 4.6 | | 35.8 | 60 | 5531 | 22 43 31 |
| 22 44 30 | RYSEX | 15 15 24 | 16.2 | 256.5 | 4.6 | | 35.9 | -13 | 5531 | No stop |
| 22 48 00 | --- | 15 18 54 | 15.6 | 257.2 | 4.7 | | 36.0 | 197 | 5558 | 22 44 31 |
| 22 48 00 | J1038+0512 | 15 18 54 | 16.1 | 256.7 | 4.7 | | 35.9 | -13 | 5558 | No stop |
| 22 49 30 | =1036+054 | 15 20 24 | 15.9 | 257.0 | 4.7 | | 36.0 | 77 | 5569 | 22 48 01 |
| 22 49 30 | RYSEX | 15 20 24 | 15.4 | 257.5 | 4.7 | | 36.1 | -13 | 5569 | No stop |
| 22 53 00 | --- | 15 23 55 | 14.9 | 258.3 | 4.8 | | 36.2 | 197 | 5596 | 22 49 31 |
| 22 53 30 | J1038+0512 | 15 24 25 | 15.3 | 257.8 | 4.7 | | 36.1 | 17 | 5596 | 22 53 30 |
| 22 54 30 | =1036+054 | 15 25 25 | 15.2 | 258.1 | 4.8 | | 36.1 | 60 | 5604 | 22 53 31 |
| 22 54 30 | RYSEX | 15 25 25 | 14.7 | 258.6 | 4.8 | | 36.2 | -13 | 5604 | No stop |
| 22 58 00 | --- | 15 28 56 | 14.2 | 259.3 | 4.9 | | 36.3 | 197 | 5631 | 22 54 31 |
| 22 58 30 | J1038+0512 | 15 29 26 | 14.6 | 258.9 | 4.8 | | 36.3 | 17 | 5631 | 22 58 30 |
| 22 59 30 | =1036+054 | 15 30 26 | 14.4 | 259.1 | 4.8 | | 36.3 | 60 | 5638 | 22 58 31 |
| 22 59 30 | RYSEX | 15 30 26 | 14.0 | 259.6 | 4.9 | | 36.4 | -13 | 5638 | No stop |
| 23 03 00 | --- | 15 33 57 | 13.4 | 260.3 | 5.0 | | 36.5 | 197 | 5665 | 22 59 31 |
| 23 03 00 | J1038+0512 | 15 33 57 | 13.9 | 259.8 | 4.9 | | 36.4 | -13 | 5665 | No stop |
| 23 04 30 | =1036+054 | 15 35 27 | 13.7 | 260.1 | 4.9 | | 36.4 | 77 | 5677 | 23 03 01 |
| 23 04 30 | J1035+0522 | 15 35 27 | 13.3 | 261.0 | 5.0 | | 36.6 | -14 | 5677 | No stop |
| 23 08 00 | --- | 15 38 57 | 12.7 | 261.7 | 5.1 | | 36.6 | 196 | 5704 | 23 04 31 |
| 23 08 30 | J1038+0512 | 15 39 28 | 13.1 | 261.0 | 5.0 | | 36.5 | 17 | 5704 | 23 08 30 |
| 23 09 30 | =1036+054 | 15 40 28 | 12.9 | 261.2 | 5.0 | | 36.6 | 60 | 5712 | 23 08 31 |
| 23 09 30 | RYSEX | 15 40 28 | 12.5 | 261.7 | 5.1 | | 36.6 | -13 | 5712 | No stop |
| 23 13 00 | --- | 15 43 58 | 11.9 | 262.4 | 5.1 | | 36.7 | 197 | 5738 | 23 09 31 |
| 23 13 00 | J1038+0512 | 15 43 58 | 12.4 | 261.9 | 5.1 | | 36.6 | -13 | 5738 | No stop |
| 23 14 30 | =1036+054 | 15 45 28 | 12.2 | 262.2 | 5.1 | | 36.7 | 77 | 5750 | 23 13 01 |
| 23 14 30 | RYSEX | 15 45 28 | 11.7 | 262.7 | 5.1 | | 36.7 | -13 | 5750 | No stop |
| 23 18 00 | --- | 15 48 59 | 11.2 | 263.4 | 5.2 | | 36.8 | 197 | 5777 | 23 14 31 |
| 23 18 30 | J1038+0512 | 15 49 29 | 11.6 | 263.0 | 5.2 | | 36.8 | 17 | 5777 | 23 18 30 |
| 23 19 30 | =1036+054 | 15 50 29 | 11.5 | 263.2 | 5.2 | | 36.8 | 60 | 5785 | 23 18 31 |

Schedule for TORUN (Code Tr)

Page 22

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|-----|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Tue 10 May 2016 Day 131 --- | | | | | | | | | | |
| 23 19 30 | RYSEX | 15 50 29 | 11.0 | 263.7 | 5.2 | | 36.8 | -13 | 5785 | No stop |
| 23 23 00 | --- | 15 54 00 | 10.5 | 264.4 | 5.3 | | 36.9 | 197 | 5812 | 23 19 31 |
| 23 23 00 | J1038+0512 | 15 54 00 | 10.9 | 263.9 | 5.2 | | 36.8 | -13 | 5812 | No stop |
| 23 24 30 | =1036+054 | 15 55 30 | 10.7 | 264.2 | 5.3 | | 36.9 | 77 | 5823 | 23 23 01 |
| 23 24 30 | RYSEX | 15 55 30 | 10.2 | 264.7 | 5.3 | | 36.9 | -13 | 5823 | No stop |
| 23 28 00 | --- | 15 59 01 | 9.7 | 265.4 | 5.4 | | 36.9 | 197 | 5850 | 23 24 31 |
| 23 28 30 | J1038+0512 | 15 59 31 | 10.1 | 265.0 | 5.3 | | 36.9 | 17 | 5850 | 23 28 30 |
| 23 29 30 | =1036+054 | 16 00 31 | 10.0 | 265.2 | 5.3 | | 36.9 | 60 | 5858 | 23 28 31 |
| 23 29 30 | RYSEX | 16 00 31 | 9.5 | 265.8 | 5.4 | | 37.0 | -13 | 5858 | No stop |
| 23 33 00 | --- | 16 04 02 | 8.9 | 266.5 | 5.5 | | 37.0 | 197 | 5885 | 23 29 31 |
| 23 33 30 | J1038+0512 | 16 04 32 | 9.4 | 266.1 | 5.4 | | 37.0 | 17 | 5885 | 23 33 30 |
| 23 34 30 | =1036+054 | 16 05 32 | 9.2 | 266.3 | 5.4 | | 37.0 | 60 | 5892 | 23 33 31 |
| 23 34 30 | RYSEX | 16 05 32 | 8.7 | 266.8 | 5.5 | | 37.0 | -13 | 5892 | No stop |
| 23 38 00 | --- | 16 09 02 | 8.2 | 267.5 | 5.5 | | 37.0 | 197 | 5919 | 23 34 31 |
| 23 38 00 | J1038+0512 | 16 09 02 | 8.7 | 267.0 | 5.5 | | 37.0 | -13 | 5919 | No stop |
| 23 39 30 | =1036+054 | 16 10 33 | 8.5 | 267.3 | 5.5 | | 37.0 | 77 | 5931 | 23 38 01 |
| 23 39 30 | J1035+0522 | 16 10 33 | 8.0 | 268.1 | 5.6 | | 37.1 | -13 | 5931 | No stop |
| 23 43 00 | --- | 16 14 03 | 7.5 | 268.8 | 5.6 | | 37.1 | 197 | 5958 | 23 39 31 |
| 23 43 00 | J1038+0512 | 16 14 03 | 7.9 | 268.0 | 5.6 | | 37.0 | -13 | 5958 | No stop |
| 23 44 30 | =1036+054 | 16 15 33 | 7.7 | 268.3 | 5.6 | | 37.1 | 77 | 5969 | 23 43 01 |
| 23 44 30 | RYSEX | 16 15 33 | 7.2 | 268.8 | 5.6 | | 37.1 | -13 | 5969 | No stop |
| 23 48 00 | --- | 16 19 04 | 6.7 | 269.5 | 5.7 | | 37.1 | 197 | 5996 | 23 44 31 |
| 23 48 30 | J1038+0512 | 16 19 34 | 7.1 | 269.1 | 5.7 | | 37.1 | 17 | 5996 | 23 48 30 |
| 23 50 00 | =1036+054 | 16 21 04 | 6.9 | 269.4 | 5.7 | | 37.1 | 90 | 6008 | 23 48 31 |
| 23 50 00 | RYSEX | 16 21 04 | 6.4 | 269.9 | 5.7 | | 37.1 | -13 | 6008 | No stop |
| 23 53 30 | --- | 16 24 35 | 5.9 | 270.6 | 5.8 | | 37.1 | 197 | 6035 | 23 50 01 |
| 23 53 30 | J1038+0512 | 16 24 35 | 6.4 | 270.1 | 5.7 | | 37.1 | -13 | 6035 | No stop |
| 23 55 00 | =1036+054 | 16 26 05 | 6.1 | 270.4 | 5.8 | | 37.1 | 77 | 6046 | 23 53 31 |
| 23 55 00 | RYSEX | 16 26 05 | 5.6 | 270.9 | 5.8 | | 37.1 | -13 | 6046 | No stop |
| 23 58 30 | --- | 16 29 36 | 5.1 | 271.6 | 5.9 | | 37.1 | 197 | 6073 | 23 55 01 |

Schedule for TORUN (Code Tr) Page 23

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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
-----
```

--- Start: Tue 10 May 2016 Day 131 -- Stop: Wed 11 May 2016 Day 132 ---

```
23 59 00  J1038+0512  16 30 06   5.5 271.2  5.8      37.1   17   6073  23 59 00
00 00 30  =1036+054   16 31 36   5.3 271.5  5.9      37.1   90   6085  23 59 01

00 00 30  J1035+0522  16 31 36   4.9 272.3  5.9      37.1  -13   6085  No stop
00 04 00  ---          16 35 07   4.3 273.0  6.0      37.0  197   6112  00 00 31

00 04 00  J1038+0512  16 35 07   4.8 272.2  5.9      37.0  -13   6112  No stop
00 05 30  =1036+054   16 36 37   4.5 272.5  5.9      37.0   77   6123  00 04 01

00 08 30  J1310+3220  16 39 37  47.6 261.9  3.5      44.7    4   6123  00 08 30
00 15 00  =1308+326   16 46 08  46.7 263.3  3.6      44.9  390   6173  00 08 31
```

----- RST03 -----

```
00 20 00  J1953+3537  16 51 09  53.8 100.1 -3.0     -46.7  -41   6173  00 20 00
00 24 00  =1951+355   16 55 10  54.4 101.0 -3.0     -46.5  199   6204  00 20 01

00 24 00  CAL1          16 55 10  53.7 100.0 -3.1     -46.7  -14   6204  No stop
00 29 30  ---          17 00 41  54.5 101.3 -3.0     -46.4  316   6246  00 24 01

00 29 30  J1953+3537  17 00 41  55.2 102.3 -2.9     -46.2  -15   6246  No stop
00 31 00  =1951+355   17 02 11  55.4 102.7 -2.9     -46.1   75   6258  00 29 31

00 31 00  CAL2          17 02 11  54.0 102.2 -3.0     -45.7  -19   6258  No stop
00 34 30  ---          17 05 42  54.5 103.1 -2.9     -45.5  191   6285  00 31 01

00 34 30  J1953+3537  17 05 42  55.9 103.6 -2.8     -45.9  -19   6285  No stop
00 36 00  =1951+355   17 07 12  56.1 104.0 -2.8     -45.8   71   6296  00 34 31

00 36 00  CAL3          17 07 12  55.0 103.6 -2.9     -45.4  -17   6296  No stop
00 39 30  ---          17 10 42  55.5 104.5 -2.8     -45.2  193   6323  00 36 01

00 39 30  J1953+3537  17 10 42  56.6 104.9 -2.7     -45.6  -18   6323  No stop
00 41 00  =1951+355   17 12 13  56.9 105.3 -2.7     -45.5   72   6335  00 39 31

00 41 00  CAL4          17 12 13  55.8 105.3 -2.8     -44.9  -17   6335  No stop
00 44 30  ---          17 15 43  56.3 106.2 -2.7     -44.7  193   6362  00 41 01

00 44 30  J1953+3537  17 15 43  57.4 106.2 -2.6     -45.2  -17   6362  No stop
00 46 00  =1951+355   17 17 14  57.6 106.6 -2.6     -45.1   73   6373  00 44 31

00 46 00  CAL5          17 17 14  56.6 106.7 -2.7     -44.6  -16   6373  No stop
00 49 30  ---          17 20 44  57.1 107.6 -2.6     -44.3  194   6400  00 46 01
```

Schedule for TORUN (Code Tr)

Page 24

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|------|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| --- Wed 11 May 2016 Day 132 --- | | | | | | | | | | |
| 00 49 30 | J1953+3537 | 17 20 44 | 58.1 | 107.5 | -2.6 | | -44.8 | -17 | 6400 | No stop |
| 00 51 00 | =1951+355 | 17 22 14 | 58.3 | 107.9 | -2.5 | | -44.7 | 73 | 6412 | 00 49 31 |
| 00 51 00 | CAL6 | 17 22 14 | 57.7 | 107.3 | -2.6 | | -44.8 | -14 | 6412 | No stop |
| 00 54 30 | --- | 17 25 45 | 58.2 | 108.2 | -2.5 | | -44.5 | 196 | 6438 | 00 51 01 |
| 00 54 30 | J1953+3537 | 17 25 45 | 58.8 | 108.9 | -2.5 | | -44.4 | -14 | 6438 | No stop |
| 00 56 00 | =1951+355 | 17 27 15 | 59.0 | 109.3 | -2.4 | | -44.2 | 76 | 6450 | 00 54 31 |
| 00 56 00 | CAL7 | 17 27 15 | 57.9 | 108.9 | -2.5 | | -43.9 | -17 | 6450 | No stop |
| 00 59 30 | --- | 17 30 46 | 58.4 | 109.9 | -2.5 | | -43.6 | 193 | 6477 | 00 56 01 |
| 00 59 30 | J1953+3537 | 17 30 46 | 59.5 | 110.3 | -2.4 | | -43.9 | -17 | 6477 | No stop |
| 01 01 00 | =1951+355 | 17 32 16 | 59.7 | 110.8 | -2.4 | | -43.7 | 73 | 6488 | 00 59 31 |
| 01 04 00 | 3C454.3 | 17 35 16 | 19.0 | 88.0 | -5.3 | | -38.7 | 13 | 6488 | 01 04 00 |
| 01 10 00 | --- | 17 41 17 | 19.9 | 89.2 | -5.2 | | -38.7 | 360 | 6535 | 01 04 01 |
| 01 12 00 | CAL1 | 17 43 18 | 60.6 | 112.8 | -2.3 | | -42.9 | -47 | 6535 | 01 12 00 |
| 01 17 30 | --- | 17 48 49 | 61.4 | 114.5 | -2.2 | | -42.2 | 283 | 6577 | 01 12 01 |
| 01 17 30 | J1953+3537 | 17 48 49 | 62.0 | 115.9 | -2.1 | | -41.7 | -16 | 6577 | No stop |
| 01 19 00 | =1951+355 | 17 50 19 | 62.2 | 116.3 | -2.1 | | -41.5 | 74 | 6588 | 01 17 31 |
| 01 19 00 | CAL2 | 17 50 19 | 60.8 | 115.5 | -2.2 | | -41.4 | -19 | 6588 | No stop |
| 01 22 30 | --- | 17 53 50 | 61.3 | 116.6 | -2.1 | | -40.9 | 191 | 6615 | 01 19 01 |
| 01 22 30 | J1953+3537 | 17 53 50 | 62.7 | 117.5 | -2.0 | | -41.0 | -19 | 6615 | No stop |
| 01 24 00 | =1951+355 | 17 55 20 | 62.9 | 118.0 | -2.0 | | -40.7 | 71 | 6627 | 01 22 31 |
| 01 24 00 | CAL3 | 17 55 20 | 61.7 | 117.3 | -2.1 | | -40.6 | -17 | 6627 | No stop |
| 01 27 30 | --- | 17 58 50 | 62.2 | 118.5 | -2.0 | | -40.1 | 193 | 6654 | 01 24 01 |
| 01 28 00 | J1953+3537 | 17 59 20 | 63.4 | 119.4 | -1.9 | | -40.1 | 12 | 6654 | 01 28 00 |
| 01 29 30 | =1951+355 | 18 00 51 | 63.6 | 119.9 | -1.9 | | -39.9 | 90 | 6665 | 01 28 01 |
| 01 29 30 | CAL4 | 18 00 51 | 62.6 | 119.8 | -1.9 | | -39.5 | -17 | 6665 | No stop |
| 01 33 00 | --- | 18 04 21 | 63.0 | 121.0 | -1.9 | | -38.9 | 193 | 6692 | 01 29 31 |
| 01 33 00 | J1953+3537 | 18 04 21 | 64.1 | 121.1 | -1.8 | | -39.2 | -17 | 6692 | No stop |
| 01 34 30 | =1951+355 | 18 05 51 | 64.2 | 121.7 | -1.8 | | -39.0 | 73 | 6704 | 01 33 01 |
| 01 34 30 | CAL5 | 18 05 51 | 63.2 | 121.5 | -1.9 | | -38.6 | -16 | 6704 | No stop |
| 01 38 00 | --- | 18 09 22 | 63.7 | 122.8 | -1.8 | | -38.0 | 194 | 6731 | 01 34 31 |

Schedule for TORUN (Code Tr)

Page 25

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|------|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Wed 11 May 2016 Day 132 --- | | | | | | | | | | |
| 01 38 00 | J1953+3537 | 18 09 22 | 64.7 | 123.0 | -1.7 | | -38.3 | -17 | 6731 | No stop |
| 01 39 30 | =1951+355 | 18 10 52 | 64.9 | 123.5 | -1.7 | | -38.0 | 73 | 6742 | 01 38 01 |
| 01 39 30 | CAL6 | 18 10 52 | 64.3 | 122.5 | -1.8 | | -38.4 | -14 | 6742 | No stop |
| 01 43 00 | --- | 18 14 23 | 64.8 | 123.9 | -1.7 | | -37.8 | 196 | 6769 | 01 39 31 |
| 01 43 00 | J1953+3537 | 18 14 23 | 65.3 | 124.9 | -1.7 | | -37.3 | -14 | 6769 | No stop |
| 01 44 30 | =1951+355 | 18 15 53 | 65.5 | 125.5 | -1.6 | | -37.0 | 76 | 6781 | 01 43 01 |
| 01 44 30 | CAL7 | 18 15 53 | 64.4 | 124.6 | -1.7 | | -37.2 | -17 | 6781 | No stop |
| 01 48 00 | --- | 18 19 24 | 64.9 | 125.9 | -1.7 | | -36.4 | 193 | 6808 | 01 44 31 |
| 01 48 30 | J1953+3537 | 18 19 54 | 66.0 | 127.1 | -1.6 | | -36.1 | 13 | 6808 | 01 48 30 |
| 01 50 00 | =1951+355 | 18 21 24 | 66.2 | 127.7 | -1.5 | | -35.8 | 90 | 6819 | 01 48 31 |
| 01 50 00 | CAL1 | 18 21 24 | 65.6 | 126.0 | -1.6 | | -36.7 | -16 | 6819 | No stop |
| 01 55 30 | --- | 18 26 55 | 66.3 | 128.2 | -1.5 | | -35.5 | 314 | 6862 | 01 50 01 |
| 01 55 30 | J1953+3537 | 18 26 55 | 66.8 | 130.0 | -1.5 | | -34.5 | -17 | 6862 | No stop |
| 01 57 00 | =1951+355 | 18 28 25 | 67.0 | 130.6 | -1.4 | | -34.1 | 73 | 6873 | 01 55 31 |
| 01 57 00 | CAL2 | 18 28 25 | 65.6 | 129.2 | -1.5 | | -34.6 | -18 | 6873 | No stop |
| 02 00 30 | --- | 18 31 56 | 66.0 | 130.6 | -1.5 | | -33.7 | 192 | 6900 | 01 57 01 |
| 02 00 30 | J1953+3537 | 18 31 56 | 67.4 | 132.1 | -1.4 | | -33.2 | -18 | 6900 | No stop |
| 02 02 00 | =1951+355 | 18 33 26 | 67.5 | 132.8 | -1.3 | | -32.8 | 72 | 6912 | 02 00 31 |
| 02 02 00 | CAL3 | 18 33 26 | 66.4 | 131.6 | -1.4 | | -33.2 | -17 | 6912 | No stop |
| 02 05 30 | --- | 18 36 57 | 66.8 | 133.1 | -1.4 | | -32.3 | 193 | 6938 | 02 02 01 |
| 02 06 00 | J1953+3537 | 18 37 27 | 68.0 | 134.6 | -1.3 | | -31.7 | 13 | 6938 | 02 06 00 |
| 02 07 30 | =1951+355 | 18 38 57 | 68.1 | 135.3 | -1.3 | | -31.3 | 90 | 6950 | 02 06 01 |
| 02 07 30 | CAL4 | 18 38 57 | 67.1 | 134.8 | -1.3 | | -31.3 | -17 | 6950 | No stop |
| 02 11 00 | --- | 18 42 27 | 67.5 | 136.4 | -1.3 | | -30.3 | 193 | 6977 | 02 07 31 |
| 02 11 00 | J1953+3537 | 18 42 27 | 68.5 | 137.0 | -1.2 | | -30.3 | -17 | 6977 | No stop |
| 02 12 30 | =1951+355 | 18 43 58 | 68.7 | 137.7 | -1.2 | | -29.8 | 73 | 6988 | 02 11 01 |
| 02 12 30 | CAL5 | 18 43 58 | 67.7 | 137.1 | -1.2 | | -29.9 | -16 | 6988 | No stop |
| 02 16 00 | --- | 18 47 28 | 68.0 | 138.8 | -1.2 | | -28.9 | 194 | 7015 | 02 12 31 |
| 02 16 00 | J1953+3537 | 18 47 28 | 69.0 | 139.4 | -1.1 | | -28.7 | -17 | 7015 | No stop |
| 02 17 30 | =1951+355 | 18 48 59 | 69.2 | 140.2 | -1.1 | | -28.3 | 73 | 7027 | 02 16 01 |

Schedule for TORUN (Code Tr)

Page 26

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|------|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Wed 11 May 2016 Day 132 --- | | | | | | | | | | |
| 02 17 30 | CAL6 | 18 48 59 | 68.7 | 138.7 | -1.1 | | -29.1 | -15 | 7027 | No stop |
| 02 21 00 | --- | 18 52 29 | 69.0 | 140.5 | -1.1 | | -28.0 | 195 | 7054 | 02 17 31 |
| 02 21 00 | J1953+3537 | 18 52 29 | 69.5 | 142.0 | -1.0 | | -27.1 | -16 | 7054 | No stop |
| 02 22 30 | =1951+355 | 18 53 59 | 69.6 | 142.8 | -1.0 | | -26.6 | 74 | 7065 | 02 21 01 |
| 02 22 30 | CAL7 | 18 53 59 | 68.6 | 141.2 | -1.1 | | -27.4 | -16 | 7065 | No stop |
| 02 26 00 | --- | 18 57 30 | 68.9 | 142.9 | -1.0 | | -26.2 | 194 | 7092 | 02 22 31 |
| 02 26 00 | J1953+3537 | 18 57 30 | 69.9 | 144.6 | -0.9 | | -25.4 | -17 | 7092 | No stop |
| 02 27 30 | =1951+355 | 18 59 00 | 70.1 | 145.4 | -0.9 | | -24.8 | 73 | 7104 | 02 26 01 |
| 02 27 30 | CAL1 | 18 59 00 | 69.6 | 143.1 | -1.0 | | -26.3 | -18 | 7104 | No stop |
| 02 33 00 | --- | 19 04 31 | 70.1 | 146.1 | -0.9 | | -24.3 | 312 | 7146 | 02 27 31 |
| 02 33 00 | J1953+3537 | 19 04 31 | 70.5 | 148.5 | -0.8 | | -22.8 | -19 | 7146 | No stop |
| 02 34 30 | =1951+355 | 19 06 01 | 70.6 | 149.3 | -0.8 | | -22.2 | 71 | 7158 | 02 33 01 |
| 02 36 30 | 3C345 | 19 08 02 | 62.2 | 256.1 | 2.4 | | 49.3 | -109 | 7158 | 02 36 30 |
| 02 42 30 | --- | 19 14 03 | 61.3 | 257.7 | 2.5 | | 49.8 | 251 | 7204 | 02 36 31 |
| 02 44 30 | 0Q208 | 19 16 03 | 29.9 | 278.5 | 5.1 | | 42.5 | -12 | 7204 | 02 44 30 |
| 02 50 30 | --- | 19 22 04 | 29.0 | 279.6 | 5.2 | | 42.3 | 348 | 7250 | 02 44 31 |
| 02 53 30 | 3C454.3 | 19 25 04 | 35.1 | 111.5 | -3.5 | | -35.6 | -170 | 7250 | 02 53 30 |
| 02 59 30 | --- | 19 31 05 | 35.9 | 113.0 | -3.4 | | -35.2 | 190 | 7296 | 02 53 31 |
| ----- RG082I ----- | | | | | | | | | | |
| 03 00 00 | J0147+5840 | 19 31 36 | 41.3 | 43.5 | -6.3 | | -52.9 | -124 | 7296 | 03 00 00 |
| 03 04 00 | =0144+584 | 19 35 36 | 41.7 | 43.9 | -6.2 | | -53.4 | 116 | 7327 | 03 00 01 |
| 03 04 00 | J0151+5454 | 19 35 36 | 39.0 | 47.4 | -6.3 | | -50.4 | -24 | 7327 | No stop |
| 03 07 30 | --- | 19 39 07 | 39.4 | 47.8 | -6.2 | | -50.9 | 186 | 7354 | 03 04 01 |
| 03 08 00 | J0147+5840 | 19 39 37 | 42.2 | 44.4 | -6.2 | | -54.0 | 6 | 7354 | 03 08 00 |
| 03 09 00 | =0144+584 | 19 40 37 | 42.3 | 44.5 | -6.1 | | -54.2 | 60 | 7362 | 03 08 01 |
| 03 09 00 | V596CAS | 19 40 37 | 40.9 | 43.4 | -6.3 | | -52.4 | -18 | 7362 | No stop |
| 03 12 30 | --- | 19 44 08 | 41.3 | 43.8 | -6.3 | | -52.9 | 192 | 7388 | 03 09 01 |
| 03 12 30 | J0147+5840 | 19 44 08 | 42.6 | 44.8 | -6.1 | | -54.7 | -18 | 7388 | No stop |
| 03 14 00 | =0144+584 | 19 45 38 | 42.8 | 45.0 | -6.1 | | -54.9 | 72 | 7400 | 03 12 31 |

Schedule for TORUN (Code Tr)

Page 27

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|------|------|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Wed 11 May 2016 Day 132 --- | | | | | | | | | | |
| 03 14 00 | V596CAS | 19 45 38 | 41.5 | 43.9 | -6.2 | | -53.1 | -18 | 7400 | No stop |
| 03 17 30 | --- | 19 49 08 | 41.8 | 44.3 | -6.2 | | -53.6 | 192 | 7427 | 03 14 01 |
| 03 18 00 | J0147+5840 | 19 49 38 | 43.2 | 45.4 | -6.0 | | -55.5 | 12 | 7427 | 03 18 00 |
| 03 19 00 | =0144+584 | 19 50 39 | 43.3 | 45.5 | -6.0 | | -55.6 | 60 | 7435 | 03 18 01 |
| 03 19 00 | V596CAS | 19 50 39 | 42.0 | 44.5 | -6.2 | | -53.8 | -18 | 7435 | No stop |
| 03 22 30 | --- | 19 54 09 | 42.4 | 44.8 | -6.1 | | -54.3 | 192 | 7462 | 03 19 01 |
| 03 22 30 | J0147+5840 | 19 54 09 | 43.7 | 45.8 | -5.9 | | -56.1 | -18 | 7462 | No stop |
| 03 24 00 | =0144+584 | 19 55 39 | 43.9 | 46.0 | -5.9 | | -56.4 | 72 | 7473 | 03 22 31 |
| 03 24 00 | V596CAS | 19 55 39 | 42.5 | 45.0 | -6.1 | | -54.5 | -18 | 7473 | No stop |
| 03 27 30 | --- | 19 59 10 | 42.9 | 45.3 | -6.0 | | -55.0 | 192 | 7500 | 03 24 01 |
| 03 28 00 | J0147+5840 | 19 59 40 | 44.3 | 46.4 | -5.8 | | -56.9 | 11 | 7500 | 03 28 00 |
| 03 29 00 | =0144+584 | 20 00 40 | 44.4 | 46.5 | -5.8 | | -57.1 | 60 | 7508 | 03 28 01 |
| 03 29 00 | V596CAS | 20 00 40 | 43.1 | 45.5 | -6.0 | | -55.3 | -18 | 7508 | No stop |
| 03 32 30 | --- | 20 04 11 | 43.4 | 45.8 | -5.9 | | -55.8 | 192 | 7535 | 03 29 01 |
| 03 32 30 | J0147+5840 | 20 04 11 | 44.8 | 46.8 | -5.7 | | -57.6 | -19 | 7535 | No stop |
| 03 34 00 | =0144+584 | 20 05 41 | 45.0 | 47.0 | -5.7 | | -57.8 | 71 | 7546 | 03 32 31 |
| 03 34 00 | J0151+5454 | 20 05 41 | 42.4 | 50.9 | -5.8 | | -54.3 | -23 | 7546 | No stop |
| 03 37 30 | --- | 20 09 12 | 42.8 | 51.3 | -5.7 | | -54.7 | 187 | 7573 | 03 34 01 |
| 03 38 00 | J0147+5840 | 20 09 42 | 45.4 | 47.4 | -5.7 | | -58.4 | 7 | 7573 | 03 38 00 |
| 03 39 00 | =0144+584 | 20 10 42 | 45.5 | 47.5 | -5.6 | | -58.5 | 60 | 7581 | 03 38 01 |
| 03 39 00 | V596CAS | 20 10 42 | 44.1 | 46.5 | -5.8 | | -56.7 | -18 | 7581 | No stop |
| 03 42 30 | --- | 20 14 13 | 44.5 | 46.8 | -5.8 | | -57.2 | 192 | 7608 | 03 39 01 |
| 03 42 30 | J0147+5840 | 20 14 13 | 45.9 | 47.8 | -5.6 | | -59.0 | -19 | 7608 | No stop |
| 03 44 00 | =0144+584 | 20 15 43 | 46.1 | 47.9 | -5.6 | | -59.3 | 71 | 7619 | 03 42 31 |
| 03 44 00 | V596CAS | 20 15 43 | 44.7 | 47.0 | -5.7 | | -57.4 | -18 | 7619 | No stop |
| 03 47 30 | --- | 20 19 13 | 45.1 | 47.3 | -5.7 | | -57.9 | 192 | 7646 | 03 44 01 |
| 03 48 00 | J0147+5840 | 20 19 43 | 46.5 | 48.3 | -5.5 | | -59.8 | 11 | 7646 | 03 48 00 |
| 03 49 00 | =0144+584 | 20 20 44 | 46.6 | 48.4 | -5.5 | | -60.0 | 60 | 7654 | 03 48 01 |
| 03 49 00 | V596CAS | 20 20 44 | 45.2 | 47.5 | -5.7 | | -58.2 | -18 | 7654 | No stop |
| 03 52 30 | --- | 20 24 14 | 45.6 | 47.8 | -5.6 | | -58.7 | 192 | 7681 | 03 49 01 |

Schedule for TORUN (Code Tr)

Page 28

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|------|------|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Wed 11 May 2016 Day 132 --- | | | | | | | | | | |
| 03 52 30 | J0147+5840 | 20 24 14 | 47.0 | 48.7 | -5.4 | | -60.5 | -19 | 7681 | No stop |
| 03 54 00 | =0144+584 | 20 25 44 | 47.2 | 48.9 | -5.4 | | -60.7 | 71 | 7692 | 03 52 31 |
| 03 54 00 | V596CAS | 20 25 44 | 45.8 | 48.0 | -5.6 | | -58.9 | -18 | 7692 | No stop |
| 03 57 30 | --- | 20 29 15 | 46.2 | 48.3 | -5.5 | | -59.4 | 192 | 7719 | 03 54 01 |
| 03 58 00 | J0147+5840 | 20 29 45 | 47.6 | 49.3 | -5.3 | | -61.3 | 11 | 7719 | 03 58 00 |
| 03 59 00 | =0144+584 | 20 30 45 | 47.8 | 49.3 | -5.3 | | -61.4 | 60 | 7727 | 03 58 01 |
| 03 59 00 | V596CAS | 20 30 45 | 46.4 | 48.5 | -5.5 | | -59.6 | -19 | 7727 | No stop |
| 04 02 30 | --- | 20 34 16 | 46.8 | 48.8 | -5.4 | | -60.1 | 191 | 7754 | 03 59 01 |
| 04 02 30 | J0147+5840 | 20 34 16 | 48.2 | 49.7 | -5.2 | | -61.9 | -19 | 7754 | No stop |
| 04 04 00 | =0144+584 | 20 35 46 | 48.3 | 49.8 | -5.2 | | -62.2 | 71 | 7765 | 04 02 31 |
| 04 04 00 | J0151+5454 | 20 35 46 | 46.0 | 54.2 | -5.3 | | -58.1 | -24 | 7765 | No stop |
| 04 07 30 | --- | 20 39 17 | 46.4 | 54.6 | -5.2 | | -58.6 | 186 | 7792 | 04 04 01 |
| 04 08 00 | J0147+5840 | 20 39 47 | 48.8 | 50.2 | -5.2 | | -62.8 | 6 | 7792 | 04 08 00 |
| 04 09 00 | =0144+584 | 20 40 47 | 48.9 | 50.3 | -5.1 | | -62.9 | 60 | 7800 | 04 08 01 |
| 04 09 00 | V596CAS | 20 40 47 | 47.5 | 49.4 | -5.3 | | -61.0 | -19 | 7800 | No stop |
| 04 12 30 | --- | 20 44 17 | 47.9 | 49.7 | -5.3 | | -61.6 | 191 | 7827 | 04 09 01 |
| 04 12 30 | J0147+5840 | 20 44 17 | 49.3 | 50.6 | -5.1 | | -63.4 | -19 | 7827 | No stop |
| 04 14 00 | =0144+584 | 20 45 48 | 49.5 | 50.7 | -5.1 | | -63.6 | 71 | 7838 | 04 12 31 |
| 04 14 00 | V596CAS | 20 45 48 | 48.1 | 49.9 | -5.2 | | -61.8 | -19 | 7838 | No stop |
| 04 17 30 | --- | 20 49 18 | 48.5 | 50.2 | -5.2 | | -62.3 | 191 | 7865 | 04 14 01 |
| 04 18 00 | J0147+5840 | 20 49 48 | 50.0 | 51.1 | -5.0 | | -64.2 | 11 | 7865 | 04 18 00 |
| 04 19 00 | =0144+584 | 20 50 49 | 50.1 | 51.1 | -5.0 | | -64.4 | 60 | 7873 | 04 18 01 |
| 04 19 00 | V596CAS | 20 50 49 | 48.6 | 50.3 | -5.2 | | -62.5 | -19 | 7873 | No stop |
| 04 22 30 | --- | 20 54 19 | 49.1 | 50.6 | -5.1 | | -63.0 | 191 | 7900 | 04 19 01 |
| 04 22 30 | J0147+5840 | 20 54 19 | 50.5 | 51.5 | -4.9 | | -64.9 | -19 | 7900 | No stop |
| 04 24 00 | =0144+584 | 20 55 49 | 50.7 | 51.6 | -4.9 | | -65.1 | 71 | 7912 | 04 22 31 |
| 04 24 00 | V596CAS | 20 55 49 | 49.2 | 50.8 | -5.1 | | -63.2 | -19 | 7912 | No stop |
| 04 27 30 | --- | 20 59 20 | 49.6 | 51.1 | -5.0 | | -63.7 | 191 | 7938 | 04 24 01 |
| 04 28 00 | J0147+5840 | 20 59 50 | 51.1 | 51.9 | -4.8 | | -65.7 | 11 | 7938 | 04 28 00 |
| 04 29 00 | =0144+584 | 21 00 50 | 51.2 | 52.0 | -4.8 | | -65.8 | 60 | 7946 | 04 28 01 |

Schedule for TORUN (Code Tr)

Page 29

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|------|------|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Wed 11 May 2016 Day 132 --- | | | | | | | | | | |
| 04 29 00 | V596CAS | 21 00 50 | 49.8 | 51.2 | -5.0 | | -64.0 | -19 | 7946 | No stop |
| 04 32 30 | --- | 21 04 21 | 50.2 | 51.5 | -4.9 | | -64.5 | 191 | 7973 | 04 29 01 |
| 04 32 30 | J0147+5840 | 21 04 21 | 51.7 | 52.3 | -4.7 | | -66.4 | -19 | 7973 | No stop |
| 04 34 00 | =0144+584 | 21 05 51 | 51.8 | 52.4 | -4.7 | | -66.6 | 71 | 7985 | 04 32 31 |
| 04 34 00 | J0151+5454 | 21 05 51 | 49.7 | 57.4 | -4.8 | | -61.9 | -25 | 7985 | No stop |
| 04 37 30 | --- | 21 09 22 | 50.2 | 57.8 | -4.7 | | -62.3 | 185 | 8012 | 04 34 01 |
| 04 38 00 | J0147+5840 | 21 09 52 | 52.3 | 52.8 | -4.6 | | -67.2 | 5 | 8012 | 04 38 00 |
| 04 39 00 | =0144+584 | 21 10 52 | 52.4 | 52.8 | -4.6 | | -67.3 | 60 | 8019 | 04 38 01 |
| 04 39 00 | V596CAS | 21 10 52 | 51.0 | 52.1 | -4.8 | | -65.4 | -19 | 8019 | No stop |
| 04 42 30 | --- | 21 14 22 | 51.4 | 52.4 | -4.8 | | -65.9 | 191 | 8046 | 04 39 01 |
| 04 42 30 | J0147+5840 | 21 14 22 | 52.9 | 53.1 | -4.6 | | -67.9 | -19 | 8046 | No stop |
| 04 44 00 | =0144+584 | 21 15 53 | 53.0 | 53.3 | -4.5 | | -68.1 | 71 | 8058 | 04 42 31 |
| 04 44 00 | V596CAS | 21 15 53 | 51.6 | 52.5 | -4.7 | | -66.2 | -19 | 8058 | No stop |
| 04 47 30 | --- | 21 19 23 | 52.0 | 52.8 | -4.7 | | -66.7 | 191 | 8085 | 04 44 01 |
| 04 48 00 | J0147+5840 | 21 19 53 | 53.5 | 53.6 | -4.5 | | -68.7 | 11 | 8085 | 04 48 00 |
| 04 49 00 | =0144+584 | 21 20 53 | 53.6 | 53.7 | -4.5 | | -68.8 | 60 | 8092 | 04 48 01 |
| 04 49 00 | V596CAS | 21 20 53 | 52.2 | 53.0 | -4.7 | | -66.9 | -19 | 8092 | No stop |
| 04 52 30 | --- | 21 24 24 | 52.6 | 53.2 | -4.6 | | -67.4 | 191 | 8119 | 04 49 01 |
| 04 52 30 | J0147+5840 | 21 24 24 | 54.1 | 53.9 | -4.4 | | -69.4 | -19 | 8119 | No stop |
| 04 54 00 | =0144+584 | 21 25 54 | 54.3 | 54.0 | -4.4 | | -69.6 | 71 | 8131 | 04 52 31 |
| 04 54 00 | V596CAS | 21 25 54 | 52.8 | 53.4 | -4.6 | | -67.6 | -19 | 8131 | No stop |
| 04 57 30 | --- | 21 29 25 | 53.2 | 53.7 | -4.5 | | -68.2 | 191 | 8158 | 04 54 01 |
| 04 58 00 | J0147+5840 | 21 29 55 | 54.7 | 54.4 | -4.3 | | -70.2 | 11 | 8158 | 04 58 00 |
| 04 59 00 | =0144+584 | 21 30 55 | 54.9 | 54.4 | -4.3 | | -70.3 | 60 | 8165 | 04 58 01 |
| 04 59 00 | V596CAS | 21 30 55 | 53.4 | 53.8 | -4.5 | | -68.4 | -19 | 8165 | No stop |
| 05 02 30 | --- | 21 34 26 | 53.8 | 54.1 | -4.4 | | -68.9 | 191 | 8192 | 04 59 01 |
| 05 02 30 | J0147+5840 | 21 34 26 | 55.3 | 54.7 | -4.2 | | -70.9 | -19 | 8192 | No stop |
| 05 04 00 | =0144+584 | 21 35 56 | 55.5 | 54.8 | -4.2 | | -71.1 | 71 | 8204 | 05 02 31 |
| 05 04 00 | J0151+5454 | 21 35 56 | 53.6 | 60.5 | -4.3 | | -65.7 | -26 | 8204 | No stop |
| 05 07 30 | --- | 21 39 26 | 54.1 | 60.9 | -4.2 | | -66.1 | 184 | 8231 | 05 04 01 |

Schedule for TORUN (Code Tr)

Page 30

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|------|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| --- Wed 11 May 2016 Day 132 --- | | | | | | | | | | |
| 05 08 00 | J0147+5840 | 21 39 57 | 56.0 | 55.1 | -4.1 | | -71.7 | 3 | 8231 | 05 08 00 |
| 05 09 00 | =0144+584 | 21 40 57 | 56.1 | 55.2 | -4.1 | | -71.9 | 60 | 8238 | 05 08 01 |
| 05 09 00 | V596CAS | 21 40 57 | 54.6 | 54.6 | -4.3 | | -69.9 | -19 | 8238 | No stop |
| 05 12 30 | --- | 21 44 27 | 55.0 | 54.8 | -4.3 | | -70.4 | 191 | 8265 | 05 09 01 |
| 05 12 30 | J0147+5840 | 21 44 27 | 56.5 | 55.4 | -4.1 | | -72.4 | -19 | 8265 | No stop |
| 05 14 00 | =0144+584 | 21 45 58 | 56.7 | 55.5 | -4.0 | | -72.6 | 71 | 8277 | 05 12 31 |
| 05 14 00 | V596CAS | 21 45 58 | 55.2 | 55.0 | -4.2 | | -70.6 | -19 | 8277 | No stop |
| 05 17 30 | --- | 21 49 28 | 55.7 | 55.2 | -4.2 | | -71.2 | 191 | 8304 | 05 14 01 |
| 05 18 00 | J0147+5840 | 21 49 58 | 57.2 | 55.8 | -4.0 | | -73.3 | 11 | 8304 | 05 18 00 |
| 05 19 00 | =0144+584 | 21 50 58 | 57.3 | 55.9 | -4.0 | | -73.4 | 60 | 8312 | 05 18 01 |
| 05 19 00 | V596CAS | 21 50 58 | 55.8 | 55.3 | -4.2 | | -71.4 | -19 | 8312 | No stop |
| 05 22 30 | --- | 21 54 29 | 56.3 | 55.6 | -4.1 | | -71.9 | 191 | 8338 | 05 19 01 |
| 05 22 30 | J0147+5840 | 21 54 29 | 57.8 | 56.1 | -3.9 | | -74.0 | -19 | 8338 | No stop |
| 05 24 00 | =0144+584 | 21 55 59 | 58.0 | 56.2 | -3.9 | | -74.2 | 71 | 8350 | 05 22 31 |
| 05 24 00 | V596CAS | 21 55 59 | 56.5 | 55.7 | -4.1 | | -72.2 | -19 | 8350 | No stop |
| 05 27 30 | --- | 21 59 30 | 56.9 | 55.9 | -4.0 | | -72.7 | 191 | 8377 | 05 24 01 |
| 05 28 00 | J0147+5840 | 22 00 00 | 58.5 | 56.5 | -3.8 | | -74.8 | 11 | 8377 | 05 28 00 |
| 05 29 00 | =0144+584 | 22 01 00 | 58.6 | 56.5 | -3.8 | | -75.0 | 60 | 8385 | 05 28 01 |
| 05 29 00 | V596CAS | 22 01 00 | 57.1 | 56.1 | -4.0 | | -72.9 | -19 | 8385 | No stop |
| 05 32 30 | --- | 22 04 31 | 57.5 | 56.3 | -3.9 | | -73.5 | 191 | 8412 | 05 29 01 |
| 05 32 30 | J0147+5840 | 22 04 31 | 59.0 | 56.8 | -3.7 | | -75.6 | -19 | 8412 | No stop |
| 05 34 00 | =0144+584 | 22 06 01 | 59.2 | 56.9 | -3.7 | | -75.8 | 71 | 8423 | 05 32 31 |
| 05 34 00 | J0151+5454 | 22 06 01 | 57.6 | 63.4 | -3.8 | | -69.4 | -28 | 8423 | No stop |
| 05 37 30 | --- | 22 09 31 | 58.1 | 63.8 | -3.7 | | -69.8 | 182 | 8450 | 05 34 01 |
| 05 38 00 | J0147+5840 | 22 10 01 | 59.7 | 57.1 | -3.6 | | -76.4 | 2 | 8450 | 05 38 00 |
| 05 40 00 | =0144+584 | 22 12 02 | 60.0 | 57.2 | -3.6 | | -76.8 | 120 | 8465 | 05 38 01 |
| 05 45 00 | BLLAC | 22 17 03 | 79.0 | 193.3 | 0.2 | | 10.8 | 13 | 8465 | 05 45 00 |
| 05 50 00 | --- | 22 22 03 | 78.8 | 198.1 | 0.3 | | 14.6 | 300 | 8504 | 05 45 01 |
| 05 50 30 | BLLAC | 22 22 34 | 78.8 | 198.5 | 0.3 | | 15.0 | 22 | 8504 | 05 50 30 |
| 05 56 30 | --- | 22 28 35 | 78.5 | 203.9 | 0.4 | | 19.2 | 360 | 8550 | 05 50 31 |

Schedule for TORUN (Code Tr)

Page 31

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | Early | Disk | TPStart | | | | |
|---------------------------------|------------|--------------|------|-------|------|---------|------|-------|--------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| --- Wed 11 May 2016 Day 132 --- | | | | | | | | | | |
| 06 00 30 | J2113+4012 | 22 32 35 | 71.5 | 233.9 | 1.3 | | 39.5 | 168 | 8550 | 06 00 30 |
| 06 03 30 | =2111+400 | 22 35 36 | 71.2 | 235.3 | 1.4 | | 40.3 | 180 | 8573 | 06 00 31 |
| 06 03 30 | J2115+3742 | 22 35 36 | 69.3 | 230.2 | 1.3 | | 35.7 | -25 | 8573 | No stop |
| 06 07 00 | --- | 22 39 06 | 68.9 | 231.8 | 1.4 | | 36.6 | 185 | 8600 | 06 03 31 |
| 06 08 00 | J2113+4012 | 22 40 06 | 70.6 | 237.3 | 1.4 | | 41.5 | 34 | 8600 | 06 08 00 |
| 06 09 00 | =2111+400 | 22 41 07 | 70.5 | 237.7 | 1.4 | | 41.7 | 60 | 8608 | 06 08 01 |
| 06 09 00 | V1396CYG | 22 41 07 | 68.6 | 242.8 | 1.7 | | 44.3 | -25 | 8608 | No stop |
| 06 12 30 | --- | 22 44 37 | 68.1 | 244.1 | 1.7 | | 44.9 | 185 | 8635 | 06 09 01 |
| 06 12 30 | J2113+4012 | 22 44 37 | 70.0 | 239.2 | 1.5 | | 42.5 | -25 | 8635 | No stop |
| 06 14 00 | =2111+400 | 22 46 07 | 69.8 | 239.8 | 1.5 | | 42.9 | 65 | 8646 | 06 12 31 |
| 06 14 00 | V1396CYG | 22 46 07 | 67.9 | 244.6 | 1.8 | | 45.2 | -25 | 8646 | No stop |
| 06 17 30 | --- | 22 49 38 | 67.5 | 245.9 | 1.8 | | 45.8 | 185 | 8673 | 06 14 01 |
| 06 18 00 | J2113+4012 | 22 50 08 | 69.3 | 241.4 | 1.6 | | 43.7 | 6 | 8673 | 06 18 00 |
| 06 19 00 | =2111+400 | 22 51 08 | 69.2 | 241.8 | 1.6 | | 43.9 | 60 | 8681 | 06 18 01 |
| 06 19 00 | V1396CYG | 22 51 08 | 67.3 | 246.4 | 1.8 | | 46.0 | -24 | 8681 | No stop |
| 06 22 30 | --- | 22 54 39 | 66.8 | 247.6 | 1.9 | | 46.6 | 186 | 8708 | 06 19 01 |
| 06 22 30 | J2113+4012 | 22 54 39 | 68.7 | 243.1 | 1.7 | | 44.6 | -24 | 8708 | No stop |
| 06 24 00 | =2111+400 | 22 56 09 | 68.5 | 243.7 | 1.7 | | 44.9 | 66 | 8719 | 06 22 31 |
| 06 24 00 | V1396CYG | 22 56 09 | 66.6 | 248.1 | 1.9 | | 46.8 | -24 | 8719 | No stop |
| 06 27 30 | --- | 22 59 40 | 66.1 | 249.2 | 2.0 | | 47.2 | 186 | 8746 | 06 24 01 |
| 06 28 00 | J2113+4012 | 23 00 10 | 68.0 | 245.2 | 1.8 | | 45.6 | 7 | 8746 | 06 28 00 |
| 06 29 00 | =2111+400 | 23 01 10 | 67.8 | 245.5 | 1.8 | | 45.7 | 60 | 8754 | 06 28 01 |
| 06 29 00 | V1396CYG | 23 01 10 | 65.9 | 249.7 | 2.0 | | 47.4 | -24 | 8754 | No stop |
| 06 32 30 | --- | 23 04 40 | 65.4 | 250.8 | 2.1 | | 47.9 | 186 | 8781 | 06 29 01 |
| 06 32 30 | J2113+4012 | 23 04 40 | 67.3 | 246.7 | 1.8 | | 46.3 | -23 | 8781 | No stop |
| 06 34 00 | =2111+400 | 23 06 11 | 67.1 | 247.2 | 1.9 | | 46.5 | 67 | 8792 | 06 32 31 |
| 06 34 00 | J2115+3742 | 23 06 11 | 65.5 | 242.4 | 1.8 | | 42.3 | -24 | 8792 | No stop |
| 06 37 30 | --- | 23 09 41 | 65.0 | 243.6 | 1.9 | | 42.9 | 186 | 8819 | 06 34 01 |
| 06 38 30 | J2113+4012 | 23 10 41 | 66.5 | 248.7 | 1.9 | | 47.2 | 35 | 8819 | 06 38 30 |
| 06 39 30 | =2111+400 | 23 11 42 | 66.4 | 249.1 | 2.0 | | 47.3 | 60 | 8827 | 06 38 31 |

Schedule for TORUN (Code Tr)

Page 32

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|-------|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA UP | ParA | Dwell | GBytes | SYNC |
| --- Wed 11 May 2016 Day 132 --- | | | | | | | | | |
| 06 39 30 | V1396CYG | 23 11 42 | 64.4 | 252.9 | 2.2 | 48.6 | -23 | 8827 | No stop |
| 06 43 00 | --- | 23 15 12 | 63.9 | 253.9 | 2.2 | 49.0 | 187 | 8854 | 06 39 31 |
| 06 43 00 | J2113+4012 | 23 15 12 | 65.9 | 250.2 | 2.0 | 47.8 | -22 | 8854 | No stop |
| 06 44 30 | =2111+400 | 23 16 42 | 65.7 | 250.6 | 2.0 | 48.0 | 68 | 8865 | 06 43 01 |
| 06 44 30 | V1396CYG | 23 16 42 | 63.6 | 254.3 | 2.3 | 49.1 | -22 | 8865 | No stop |
| 06 48 00 | --- | 23 20 13 | 63.1 | 255.3 | 2.3 | 49.4 | 188 | 8892 | 06 44 31 |
| 06 48 30 | J2113+4012 | 23 20 43 | 65.1 | 251.9 | 2.1 | 48.4 | 8 | 8892 | 06 48 30 |
| 06 49 30 | =2111+400 | 23 21 43 | 64.9 | 252.2 | 2.1 | 48.5 | 60 | 8900 | 06 48 31 |
| 06 49 30 | V1396CYG | 23 21 43 | 62.9 | 255.7 | 2.3 | 49.6 | -22 | 8900 | No stop |
| 06 53 00 | --- | 23 25 14 | 62.4 | 256.7 | 2.4 | 49.8 | 188 | 8927 | 06 49 31 |
| 06 53 00 | J2113+4012 | 23 25 14 | 64.4 | 253.2 | 2.2 | 48.9 | -21 | 8927 | No stop |
| 06 54 30 | =2111+400 | 23 26 44 | 64.2 | 253.6 | 2.2 | 49.0 | 69 | 8938 | 06 53 01 |
| 06 54 30 | V1396CYG | 23 26 44 | 62.2 | 257.1 | 2.4 | 49.9 | -22 | 8938 | No stop |
| 06 58 00 | --- | 23 30 15 | 61.7 | 258.0 | 2.5 | 50.2 | 188 | 8965 | 06 54 31 |
| 06 58 30 | J2113+4012 | 23 30 45 | 63.6 | 254.8 | 2.3 | 49.4 | 9 | 8965 | 06 58 30 |
| 06 59 30 | =2111+400 | 23 31 45 | 63.5 | 255.0 | 2.3 | 49.5 | 60 | 8973 | 06 58 31 |
| 06 59 30 | V1396CYG | 23 31 45 | 61.4 | 258.4 | 2.5 | 50.3 | -22 | 8973 | No stop |
| 07 03 00 | --- | 23 35 15 | 60.9 | 259.3 | 2.6 | 50.5 | 188 | 9000 | 06 59 31 |
| 07 03 00 | J2113+4012 | 23 35 15 | 63.0 | 256.0 | 2.4 | 49.8 | -21 | 9000 | No stop |
| 07 04 30 | =2111+400 | 23 36 46 | 62.8 | 256.4 | 2.4 | 49.9 | 69 | 9012 | 07 03 01 |
| 07 04 30 | J2115+3742 | 23 36 46 | 61.3 | 252.1 | 2.4 | 46.3 | -23 | 9012 | No stop |
| 07 08 00 | --- | 23 40 16 | 60.8 | 253.1 | 2.4 | 46.6 | 187 | 9038 | 07 04 31 |
| 07 09 00 | J2113+4012 | 23 41 16 | 62.1 | 257.6 | 2.5 | 50.2 | 36 | 9038 | 07 09 00 |
| 07 10 00 | =2111+400 | 23 42 17 | 62.0 | 257.9 | 2.5 | 50.3 | 60 | 9046 | 07 09 01 |
| 07 10 00 | V1396CYG | 23 42 17 | 59.9 | 261.0 | 2.7 | 50.9 | -22 | 9046 | No stop |
| 07 13 30 | --- | 23 45 47 | 59.4 | 261.8 | 2.8 | 51.0 | 188 | 9073 | 07 10 01 |
| 07 13 30 | J2113+4012 | 23 45 47 | 61.4 | 258.8 | 2.5 | 50.5 | -21 | 9073 | No stop |
| 07 15 00 | =2111+400 | 23 47 17 | 61.2 | 259.2 | 2.6 | 50.6 | 69 | 9085 | 07 13 31 |
| 07 15 00 | V1396CYG | 23 47 17 | 59.1 | 262.2 | 2.8 | 51.1 | -22 | 9085 | No stop |
| 07 18 30 | --- | 23 50 48 | 58.6 | 263.0 | 2.8 | 51.2 | 188 | 9112 | 07 15 01 |

Schedule for TORUN (Code Tr)

Page 33

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|-----|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Wed 11 May 2016 Day 132 --- | | | | | | | | | | |
| 07 19 00 | J2113+4012 | 23 51 18 | 60.6 | 260.1 | 2.6 | | 50.8 | 8 | 9112 | 07 19 00 |
| 07 20 00 | =2111+400 | 23 52 18 | 60.5 | 260.4 | 2.6 | | 50.9 | 60 | 9119 | 07 19 01 |
| 07 20 00 | V1396CYG | 23 52 18 | 58.4 | 263.3 | 2.9 | | 51.3 | -22 | 9119 | No stop |
| 07 23 30 | --- | 23 55 49 | 57.9 | 264.1 | 2.9 | | 51.4 | 188 | 9146 | 07 20 01 |
| 07 23 30 | J2113+4012 | 23 55 49 | 60.0 | 261.2 | 2.7 | | 51.1 | -22 | 9146 | No stop |
| 07 25 00 | =2111+400 | 23 57 19 | 59.7 | 261.6 | 2.7 | | 51.1 | 68 | 9158 | 07 23 31 |
| 07 25 00 | V1396CYG | 23 57 19 | 57.7 | 264.5 | 2.9 | | 51.4 | -22 | 9158 | No stop |
| 07 28 30 | --- | 00 00 50 | 57.1 | 265.2 | 3.0 | | 51.5 | 188 | 9185 | 07 25 01 |
| 07 29 00 | J2113+4012 | 00 01 20 | 59.1 | 262.5 | 2.8 | | 51.3 | 8 | 9185 | 07 29 00 |
| 07 30 00 | =2111+400 | 00 02 20 | 59.0 | 262.8 | 2.8 | | 51.3 | 60 | 9192 | 07 29 01 |
| 07 30 00 | V1396CYG | 00 02 20 | 56.9 | 265.6 | 3.0 | | 51.5 | -22 | 9192 | No stop |
| 07 33 30 | --- | 00 05 50 | 56.4 | 266.3 | 3.1 | | 51.6 | 188 | 9219 | 07 30 01 |
| 07 33 30 | J2113+4012 | 00 05 50 | 58.5 | 263.6 | 2.9 | | 51.5 | -22 | 9219 | No stop |
| 07 35 00 | =2111+400 | 00 07 21 | 58.3 | 263.9 | 2.9 | | 51.5 | 68 | 9231 | 07 33 31 |
| 07 35 00 | J2115+3742 | 00 07 21 | 56.8 | 260.1 | 2.9 | | 48.4 | -22 | 9231 | No stop |
| 07 38 30 | --- | 00 10 51 | 56.3 | 260.9 | 2.9 | | 48.6 | 188 | 9258 | 07 35 01 |
| 07 39 30 | J2113+4012 | 00 11 51 | 57.6 | 264.9 | 3.0 | | 51.6 | 37 | 9258 | 07 39 30 |
| 07 40 30 | =2111+400 | 00 12 52 | 57.4 | 265.1 | 3.0 | | 51.7 | 60 | 9265 | 07 39 31 |
| 07 40 30 | V1396CYG | 00 12 52 | 55.3 | 267.8 | 3.2 | | 51.7 | -22 | 9265 | No stop |
| 07 44 00 | --- | 00 16 22 | 54.8 | 268.5 | 3.3 | | 51.7 | 188 | 9292 | 07 40 31 |
| 07 44 00 | J2113+4012 | 00 16 22 | 56.9 | 265.9 | 3.0 | | 51.7 | -22 | 9292 | No stop |
| 07 45 30 | =2111+400 | 00 17 52 | 56.7 | 266.2 | 3.1 | | 51.8 | 68 | 9304 | 07 44 01 |
| 07 45 30 | V1396CYG | 00 17 52 | 54.6 | 268.8 | 3.3 | | 51.7 | -22 | 9304 | No stop |
| 07 49 00 | --- | 00 21 23 | 54.0 | 269.5 | 3.3 | | 51.8 | 188 | 9331 | 07 45 31 |
| 07 49 30 | J2113+4012 | 00 21 53 | 56.1 | 267.1 | 3.1 | | 51.8 | 8 | 9331 | 07 49 30 |
| 07 50 30 | =2111+400 | 00 22 53 | 55.9 | 267.3 | 3.1 | | 51.8 | 60 | 9338 | 07 49 31 |
| 07 50 30 | V1396CYG | 00 22 53 | 53.8 | 269.9 | 3.4 | | 51.8 | -22 | 9338 | No stop |
| 07 54 00 | --- | 00 26 24 | 53.3 | 270.5 | 3.4 | | 51.8 | 188 | 9365 | 07 50 31 |
| 07 54 00 | J2113+4012 | 00 26 24 | 55.4 | 268.0 | 3.2 | | 51.9 | -22 | 9365 | No stop |
| 07 55 30 | =2111+400 | 00 27 54 | 55.2 | 268.3 | 3.2 | | 51.9 | 68 | 9377 | 07 54 01 |

Schedule for TORUN (Code Tr)

Page 34

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|------|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Wed 11 May 2016 Day 132 --- | | | | | | | | | | |
| 07 55 30 | V1396CYG | 00 27 54 | 53.1 | 270.8 | 3.5 | | 51.7 | -22 | 9377 | No stop |
| 07 59 00 | --- | 00 31 25 | 52.5 | 271.5 | 3.5 | | 51.7 | 188 | 9404 | 07 55 31 |
| 07 59 30 | J2113+4012 | 00 31 55 | 54.6 | 269.2 | 3.3 | | 51.9 | 8 | 9404 | 07 59 30 |
| 08 00 30 | =2111+400 | 00 32 55 | 54.4 | 269.4 | 3.3 | | 51.9 | 60 | 9412 | 07 59 31 |
| 08 00 30 | V1396CYG | 00 32 55 | 52.3 | 271.8 | 3.5 | | 51.7 | -22 | 9412 | No stop |
| 08 04 00 | --- | 00 36 25 | 51.8 | 272.5 | 3.6 | | 51.7 | 188 | 9438 | 08 00 31 |
| 08 04 00 | J2113+4012 | 00 36 25 | 53.9 | 270.1 | 3.4 | | 51.9 | -22 | 9438 | No stop |
| 08 05 30 | =2111+400 | 00 37 56 | 53.7 | 270.4 | 3.4 | | 51.9 | 68 | 9450 | 08 04 01 |
| 08 05 30 | J2115+3742 | 00 37 56 | 52.3 | 266.9 | 3.4 | | 49.3 | -22 | 9450 | No stop |
| 08 09 00 | --- | 00 41 26 | 51.7 | 267.6 | 3.4 | | 49.4 | 188 | 9477 | 08 05 31 |
| 08 10 00 | J2113+4012 | 00 42 26 | 53.0 | 271.3 | 3.5 | | 51.9 | 38 | 9477 | 08 10 00 |
| 08 11 00 | =2111+400 | 00 43 27 | 52.8 | 271.5 | 3.5 | | 51.9 | 60 | 9485 | 08 10 01 |
| 08 11 00 | V1396CYG | 00 43 27 | 50.7 | 273.8 | 3.7 | | 51.6 | -22 | 9485 | No stop |
| 08 14 30 | --- | 00 46 57 | 50.2 | 274.5 | 3.8 | | 51.5 | 188 | 9512 | 08 11 01 |
| 08 14 30 | J2113+4012 | 00 46 57 | 52.3 | 272.1 | 3.5 | | 51.9 | -22 | 9512 | No stop |
| 08 16 00 | =2111+400 | 00 48 27 | 52.1 | 272.4 | 3.6 | | 51.8 | 68 | 9523 | 08 14 31 |
| 08 16 00 | V1396CYG | 00 48 27 | 50.0 | 274.8 | 3.8 | | 51.5 | -22 | 9523 | No stop |
| 08 19 30 | --- | 00 51 58 | 49.5 | 275.4 | 3.9 | | 51.4 | 188 | 9550 | 08 16 01 |
| 08 20 00 | J2113+4012 | 00 52 28 | 51.5 | 273.2 | 3.6 | | 51.8 | 8 | 9550 | 08 20 00 |
| 08 21 00 | =2111+400 | 00 53 28 | 51.3 | 273.4 | 3.7 | | 51.8 | 60 | 9558 | 08 20 01 |
| 08 21 00 | V1396CYG | 00 53 28 | 49.2 | 275.7 | 3.9 | | 51.4 | -22 | 9558 | No stop |
| 08 24 30 | --- | 00 56 59 | 48.7 | 276.3 | 3.9 | | 51.3 | 188 | 9585 | 08 21 01 |
| 08 24 30 | J2113+4012 | 00 56 59 | 50.8 | 274.0 | 3.7 | | 51.7 | -22 | 9585 | No stop |
| 08 26 00 | =2111+400 | 00 58 29 | 50.6 | 274.3 | 3.7 | | 51.7 | 68 | 9596 | 08 24 31 |
| 08 33 00 | J0519+0848 | 01 05 30 | 22.7 | 106.3 | -4.2 | | -35.7 | 68 | 9596 | 08 33 00 |
| 08 36 00 | =0516+087 | 01 08 31 | 23.2 | 106.9 | -4.2 | | -35.5 | 180 | 9619 | 08 33 01 |
| 08 36 30 | J0519+0848 | 01 09 01 | 23.2 | 107.1 | -4.2 | | -35.5 | 24 | 9619 | 08 36 30 |
| 08 38 30 | =0516+087 | 01 11 01 | 23.5 | 107.5 | -4.2 | | -35.4 | 120 | 9635 | 08 36 31 |
| 08 38 30 | J0525+0951 | 01 11 01 | 23.6 | 105.6 | -4.2 | | -36.0 | -17 | 9635 | No stop |
| 08 42 00 | --- | 01 14 32 | 24.1 | 106.4 | -4.2 | | -35.8 | 193 | 9662 | 08 38 31 |

Schedule for TORUN (Code Tr)

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e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|------|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Wed 11 May 2016 Day 132 --- | | | | | | | | | | |
| 08 42 30 | J0519+0848 | 01 15 02 | 24.1 | 108.4 | -4.1 | | -35.2 | 12 | 9662 | 08 42 30 |
| 08 43 30 | =0516+087 | 01 16 02 | 24.2 | 108.6 | -4.1 | | -35.2 | 60 | 9669 | 08 42 31 |
| 08 43 30 | V9980RI | 01 16 02 | 23.2 | 105.1 | -4.3 | | -36.0 | -22 | 9669 | No stop |
| 08 47 00 | --- | 01 19 33 | 23.7 | 105.9 | -4.2 | | -35.9 | 188 | 9696 | 08 43 31 |
| 08 47 00 | J0519+0848 | 01 19 33 | 24.7 | 109.4 | -4.0 | | -35.0 | -22 | 9696 | No stop |
| 08 48 30 | =0516+087 | 01 21 03 | 24.9 | 109.7 | -4.0 | | -34.9 | 68 | 9708 | 08 47 01 |
| 08 48 30 | V9980RI | 01 21 03 | 23.9 | 106.2 | -4.2 | | -35.8 | -22 | 9708 | No stop |
| 08 52 00 | --- | 01 24 33 | 24.4 | 107.0 | -4.1 | | -35.7 | 188 | 9735 | 08 48 31 |
| 08 52 30 | J0519+0848 | 01 25 03 | 25.5 | 110.6 | -3.9 | | -34.7 | 8 | 9735 | 08 52 30 |
| 08 53 30 | =0516+087 | 01 26 04 | 25.6 | 110.8 | -3.9 | | -34.6 | 60 | 9742 | 08 52 31 |
| 08 53 30 | V9980RI | 01 26 04 | 24.6 | 107.3 | -4.1 | | -35.6 | -22 | 9742 | No stop |
| 08 57 00 | --- | 01 29 34 | 25.1 | 108.1 | -4.1 | | -35.4 | 188 | 9769 | 08 53 31 |
| 08 57 00 | J0519+0848 | 01 29 34 | 26.1 | 111.6 | -3.8 | | -34.4 | -22 | 9769 | No stop |
| 08 58 30 | =0516+087 | 01 31 04 | 26.3 | 112.0 | -3.8 | | -34.3 | 68 | 9781 | 08 57 01 |
| 08 58 30 | V9980RI | 01 31 04 | 25.3 | 108.4 | -4.0 | | -35.3 | -22 | 9781 | No stop |
| 09 02 00 | --- | 01 34 35 | 25.8 | 109.2 | -4.0 | | -35.1 | 188 | 9808 | 08 58 31 |
| 09 02 30 | J0519+0848 | 01 35 05 | 26.9 | 112.9 | -3.7 | | -34.0 | 8 | 9808 | 09 02 30 |
| 09 03 30 | =0516+087 | 01 36 05 | 27.0 | 113.1 | -3.7 | | -34.0 | 60 | 9815 | 09 02 31 |
| 09 03 30 | V9980RI | 01 36 05 | 26.0 | 109.5 | -4.0 | | -35.1 | -22 | 9815 | No stop |
| 09 07 00 | --- | 01 39 36 | 26.5 | 110.3 | -3.9 | | -34.9 | 188 | 9842 | 09 03 31 |
| 09 07 00 | J0519+0848 | 01 39 36 | 27.5 | 113.9 | -3.7 | | -33.7 | -22 | 9842 | No stop |
| 09 08 30 | =0516+087 | 01 41 06 | 27.7 | 114.3 | -3.6 | | -33.6 | 68 | 9854 | 09 07 01 |
| 09 08 30 | J0525+0951 | 01 41 06 | 27.8 | 112.3 | -3.7 | | -34.3 | -17 | 9854 | No stop |
| 09 12 00 | --- | 01 44 37 | 28.3 | 113.1 | -3.7 | | -34.1 | 193 | 9881 | 09 08 31 |
| 09 12 30 | J0519+0848 | 01 45 07 | 28.3 | 115.2 | -3.6 | | -33.4 | 12 | 9881 | 09 12 30 |
| 09 13 30 | =0516+087 | 01 46 07 | 28.4 | 115.5 | -3.6 | | -33.3 | 60 | 9888 | 09 12 31 |
| 09 13 30 | V9980RI | 01 46 07 | 27.4 | 111.8 | -3.8 | | -34.5 | -22 | 9888 | No stop |
| 09 17 00 | --- | 01 49 37 | 27.9 | 112.6 | -3.7 | | -34.2 | 188 | 9915 | 09 13 31 |
| 09 17 00 | J0519+0848 | 01 49 37 | 28.9 | 116.3 | -3.5 | | -33.0 | -22 | 9915 | No stop |
| 09 18 30 | =0516+087 | 01 51 08 | 29.1 | 116.6 | -3.5 | | -32.9 | 68 | 9927 | 09 17 01 |

Schedule for TORUN (Code Tr)

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e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|------|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| --- Wed 11 May 2016 Day 132 --- | | | | | | | | | | |
| 09 18 30 | V9980RI | 01 51 08 | 28.1 | 112.9 | -3.7 | | -34.1 | -22 | 9927 | No stop |
| 09 22 00 | --- | 01 54 38 | 28.6 | 113.8 | -3.6 | | -33.9 | 188 | 9954 | 09 18 31 |
| 09 22 30 | J0519+0848 | 01 55 08 | 29.6 | 117.6 | -3.4 | | -32.6 | 8 | 9954 | 09 22 30 |
| 09 23 30 | =0516+087 | 01 56 09 | 29.8 | 117.8 | -3.4 | | -32.5 | 60 | 9962 | 09 22 31 |
| 09 23 30 | V9980RI | 01 56 09 | 28.8 | 114.1 | -3.6 | | -33.8 | -22 | 9962 | No stop |
| 09 27 00 | --- | 01 59 39 | 29.3 | 114.9 | -3.6 | | -33.5 | 188 | 9988 | 09 23 31 |
| 09 27 00 | J0519+0848 | 01 59 39 | 30.2 | 118.7 | -3.3 | | -32.2 | -22 | 9988 | No stop |
| 09 28 30 | =0516+087 | 02 01 09 | 30.4 | 119.0 | -3.3 | | -32.1 | 68 | 10000 | 09 27 01 |
| 09 28 30 | V9980RI | 02 01 09 | 29.5 | 115.3 | -3.5 | | -33.4 | -22 | 10000 | No stop |
| 09 32 00 | --- | 02 04 40 | 30.0 | 116.1 | -3.5 | | -33.2 | 188 | 10027 | 09 28 31 |
| 09 32 30 | J0519+0848 | 02 05 10 | 30.9 | 120.0 | -3.2 | | -31.7 | 7 | 10027 | 09 32 30 |
| 09 33 30 | =0516+087 | 02 06 10 | 31.1 | 120.3 | -3.2 | | -31.7 | 60 | 10035 | 09 32 31 |
| 09 33 30 | V9980RI | 02 06 10 | 30.2 | 116.5 | -3.4 | | -33.1 | -22 | 10035 | No stop |
| 09 37 00 | --- | 02 09 41 | 30.7 | 117.3 | -3.4 | | -32.8 | 188 | 10062 | 09 33 31 |
| 09 37 00 | J0519+0848 | 02 09 41 | 31.5 | 121.1 | -3.2 | | -31.3 | -23 | 10062 | No stop |
| 09 38 30 | =0516+087 | 02 11 11 | 31.7 | 121.5 | -3.1 | | -31.2 | 67 | 10073 | 09 37 01 |
| 09 38 30 | J0525+0951 | 02 11 11 | 31.9 | 119.5 | -3.2 | | -32.1 | -18 | 10073 | No stop |
| 09 42 00 | --- | 02 14 42 | 32.3 | 120.3 | -3.2 | | -31.7 | 192 | 10100 | 09 38 31 |
| 09 42 30 | J0519+0848 | 02 15 12 | 32.2 | 122.5 | -3.1 | | -30.8 | 12 | 10100 | 09 42 30 |
| 09 43 30 | =0516+087 | 02 16 12 | 32.4 | 122.8 | -3.1 | | -30.7 | 60 | 10108 | 09 42 31 |
| 09 43 30 | V9980RI | 02 16 12 | 31.5 | 118.9 | -3.3 | | -32.2 | -22 | 10108 | No stop |
| 09 47 00 | --- | 02 19 42 | 32.0 | 119.8 | -3.2 | | -31.9 | 188 | 10135 | 09 43 31 |
| 09 47 00 | J0519+0848 | 02 19 42 | 32.8 | 123.6 | -3.0 | | -30.4 | -23 | 10135 | No stop |
| 09 48 30 | =0516+087 | 02 21 13 | 33.0 | 124.0 | -3.0 | | -30.2 | 67 | 10146 | 09 47 01 |
| 09 48 30 | V9980RI | 02 21 13 | 32.2 | 120.1 | -3.2 | | -31.8 | -22 | 10146 | No stop |
| 09 52 00 | --- | 02 24 43 | 32.6 | 121.0 | -3.1 | | -31.5 | 188 | 10173 | 09 48 31 |
| 09 52 30 | J0519+0848 | 02 25 13 | 33.5 | 125.1 | -2.9 | | -29.8 | 7 | 10173 | 09 52 30 |
| 09 53 30 | =0516+087 | 02 26 13 | 33.6 | 125.3 | -2.9 | | -29.7 | 60 | 10181 | 09 52 31 |
| 09 53 30 | V9980RI | 02 26 13 | 32.8 | 121.4 | -3.1 | | -31.3 | -23 | 10181 | No stop |
| 09 57 00 | --- | 02 29 44 | 33.3 | 122.3 | -3.1 | | -31.0 | 187 | 10208 | 09 53 31 |

Schedule for TORUN (Code Tr)

Page 37

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|------|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| --- Wed 11 May 2016 Day 132 --- | | | | | | | | | | |
| 09 57 00 | J0519+0848 | 02 29 44 | 34.0 | 126.2 | -2.8 | | -29.4 | -23 | 10208 | No stop |
| 09 58 30 | =0516+087 | 02 31 14 | 34.2 | 126.6 | -2.8 | | -29.2 | 67 | 10219 | 09 57 01 |
| 09 58 30 | V9980RI | 02 31 14 | 33.5 | 122.6 | -3.0 | | -30.9 | -23 | 10219 | No stop |
| 10 02 00 | --- | 02 34 45 | 33.9 | 123.5 | -3.0 | | -30.5 | 187 | 10246 | 09 58 31 |
| 10 02 30 | J0519+0848 | 02 35 15 | 34.7 | 127.7 | -2.7 | | -28.8 | 7 | 10246 | 10 02 30 |
| 10 03 30 | =0516+087 | 02 36 15 | 34.8 | 127.9 | -2.7 | | -28.6 | 60 | 10254 | 10 02 31 |
| 10 03 30 | V9980RI | 02 36 15 | 34.1 | 123.9 | -2.9 | | -30.4 | -23 | 10254 | No stop |
| 10 07 00 | --- | 02 39 46 | 34.5 | 124.8 | -2.9 | | -30.0 | 187 | 10281 | 10 03 31 |
| 10 07 00 | J0519+0848 | 02 39 46 | 35.2 | 128.9 | -2.7 | | -28.2 | -23 | 10281 | No stop |
| 10 08 30 | =0516+087 | 02 41 16 | 35.4 | 129.3 | -2.6 | | -28.1 | 67 | 10292 | 10 07 01 |
| 10 08 30 | J0525+0951 | 02 41 16 | 35.7 | 127.1 | -2.7 | | -29.1 | -18 | 10292 | No stop |
| 10 12 00 | --- | 02 44 47 | 36.1 | 128.1 | -2.7 | | -28.7 | 192 | 10319 | 10 08 31 |
| 10 12 30 | J0519+0848 | 02 45 17 | 35.9 | 130.3 | -2.6 | | -27.6 | 12 | 10319 | 10 12 30 |
| 10 15 30 | =0516+087 | 02 48 17 | 36.2 | 131.2 | -2.5 | | -27.2 | 180 | 10342 | 10 12 31 |
| 10 15 30 | V9980RI | 02 48 17 | 35.6 | 127.1 | -2.7 | | -29.1 | -23 | 10342 | No stop |
| 10 19 00 | --- | 02 51 48 | 36.0 | 128.0 | -2.7 | | -28.7 | 187 | 10369 | 10 15 31 |
| 10 19 30 | J0519+0848 | 02 52 18 | 36.7 | 132.3 | -2.5 | | -26.7 | 7 | 10369 | 10 19 30 |
| 10 20 30 | =0516+087 | 02 53 18 | 36.8 | 132.5 | -2.4 | | -26.6 | 60 | 10377 | 10 19 31 |
| 10 20 30 | V9980RI | 02 53 18 | 36.2 | 128.4 | -2.7 | | -28.5 | -23 | 10377 | No stop |
| 10 24 00 | --- | 02 56 48 | 36.6 | 129.3 | -2.6 | | -28.1 | 187 | 10404 | 10 20 31 |
| 10 24 00 | J0519+0848 | 02 56 48 | 37.2 | 133.5 | -2.4 | | -26.2 | -23 | 10404 | No stop |
| 10 25 30 | =0516+087 | 02 58 19 | 37.3 | 133.9 | -2.4 | | -26.0 | 67 | 10415 | 10 24 01 |
| 10 25 30 | V9980RI | 02 58 19 | 36.7 | 129.8 | -2.6 | | -27.9 | -23 | 10415 | No stop |
| 10 29 00 | --- | 03 01 49 | 37.1 | 130.7 | -2.5 | | -27.5 | 187 | 10442 | 10 25 31 |
| 10 29 30 | J0519+0848 | 03 02 19 | 37.7 | 135.0 | -2.3 | | -25.4 | 6 | 10442 | 10 29 30 |
| 10 30 30 | =0516+087 | 03 03 20 | 37.8 | 135.3 | -2.3 | | -25.3 | 60 | 10450 | 10 29 31 |
| 10 30 30 | V9980RI | 03 03 20 | 37.3 | 131.1 | -2.5 | | -27.3 | -23 | 10450 | No stop |
| 10 34 00 | --- | 03 06 50 | 37.7 | 132.1 | -2.4 | | -26.9 | 187 | 10477 | 10 30 31 |
| 10 34 00 | J0519+0848 | 03 06 50 | 38.2 | 136.3 | -2.2 | | -24.8 | -24 | 10477 | No stop |
| 10 35 30 | =0516+087 | 03 08 20 | 38.4 | 136.8 | -2.2 | | -24.6 | 66 | 10488 | 10 34 01 |

Schedule for TORUN (Code Tr)

Page 38

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|------|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Wed 11 May 2016 Day 132 --- | | | | | | | | | | |
| 10 35 30 | V998ORI | 03 08 20 | 37.9 | 132.5 | -2.4 | | -26.7 | -23 | 10488 | No stop |
| 10 39 00 | --- | 03 11 51 | 38.3 | 133.5 | -2.4 | | -26.2 | 187 | 10515 | 10 35 31 |
| 10 39 30 | J0519+0848 | 03 12 21 | 38.8 | 137.9 | -2.1 | | -24.0 | 6 | 10515 | 10 39 30 |
| 10 40 30 | =0516+087 | 03 13 21 | 38.9 | 138.2 | -2.1 | | -23.9 | 60 | 10523 | 10 39 31 |
| 10 40 30 | V998ORI | 03 13 21 | 38.4 | 133.9 | -2.3 | | -26.0 | -23 | 10523 | No stop |
| 10 44 30 | --- | 03 17 22 | 38.9 | 135.1 | -2.3 | | -25.5 | 217 | 10554 | 10 40 31 |
| 10 44 30 | J0519+0848 | 03 17 22 | 39.3 | 139.4 | -2.0 | | -23.3 | -24 | 10554 | No stop |
| 10 46 00 | =0516+087 | 03 18 52 | 39.4 | 139.8 | -2.0 | | -23.1 | 66 | 10565 | 10 44 31 |
| 10 46 00 | J0525+0951 | 03 18 52 | 39.8 | 137.6 | -2.1 | | -24.3 | -18 | 10565 | No stop |
| 10 49 30 | --- | 03 22 23 | 40.2 | 138.6 | -2.1 | | -23.8 | 192 | 10592 | 10 46 01 |
| 10 49 30 | J0519+0848 | 03 22 23 | 39.8 | 140.8 | -2.0 | | -22.6 | -18 | 10592 | No stop |
| 10 51 00 | =0516+087 | 03 23 53 | 39.9 | 141.3 | -1.9 | | -22.3 | 72 | 10604 | 10 49 31 |
| 10 51 00 | V998ORI | 03 23 53 | 39.5 | 136.9 | -2.2 | | -24.6 | -23 | 10604 | No stop |
| 10 55 00 | --- | 03 27 54 | 39.9 | 138.1 | -2.1 | | -24.0 | 217 | 10635 | 10 51 01 |
| 10 55 00 | J0519+0848 | 03 27 54 | 40.3 | 142.5 | -1.9 | | -21.7 | -24 | 10635 | No stop |
| 10 57 00 | =0516+087 | 03 29 54 | 40.5 | 143.1 | -1.8 | | -21.4 | 96 | 10650 | 10 55 01 |
| ----- RSH01 ----- | | | | | | | | | | |
| 11 00 00 | J0340-2119 | 03 32 54 | 15.6 | 178.0 | -0.1 | | -1.3 | 73 | 10650 | 11 00 00 |
| 11 05 00 | =0338-214 | 03 37 55 | 15.6 | 179.2 | -0.1 | | -0.5 | 300 | 10688 | 11 00 01 |
| 11 05 00 | J0336-2058 | 03 37 55 | 16.0 | 180.1 | 0.0 | | 0.1 | -14 | 10688 | No stop |
| 11 07 30 | --- | 03 40 26 | 16.0 | 180.7 | 0.0 | | 0.5 | 136 | 10708 | 11 05 01 |
| 11 07 30 | J0340-2119 | 03 40 26 | 15.6 | 179.8 | -0.0 | | -0.1 | -13 | 10708 | No stop |
| 11 09 00 | =0338-214 | 03 41 56 | 15.6 | 180.2 | 0.0 | | 0.1 | 77 | 10719 | 11 07 31 |
| 11 09 00 | J0336-2058 | 03 41 56 | 16.0 | 181.1 | 0.1 | | 0.7 | -14 | 10719 | No stop |
| 11 11 30 | --- | 03 44 26 | 16.0 | 181.7 | 0.1 | | 1.1 | 136 | 10738 | 11 09 01 |
| 11 11 30 | J0340-2119 | 03 44 26 | 15.6 | 180.8 | 0.1 | | 0.5 | -14 | 10738 | No stop |
| 11 13 00 | =0338-214 | 03 45 57 | 15.6 | 181.1 | 0.1 | | 0.7 | 76 | 10750 | 11 11 31 |
| 11 13 40 | J0349-2102 | 03 46 37 | 15.9 | 179.0 | -0.1 | | -0.6 | 22 | 10750 | 11 13 40 |
| 11 15 40 | =0347-211 | 03 48 37 | 15.9 | 179.5 | -0.0 | | -0.3 | 120 | 10765 | 11 13 41 |

Schedule for TORUN (Code Tr)

Page 39

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|-----|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Wed 11 May 2016 Day 132 --- | | | | | | | | | | |
| 11 15 40 | J0336-2058 | 03 48 37 | 15.9 | 182.7 | 0.2 | | 1.7 | -21 | 10765 | No stop |
| 11 18 10 | --- | 03 51 07 | 15.9 | 183.3 | 0.2 | | 2.1 | 129 | 10785 | 11 15 41 |
| 11 18 10 | J0340-2119 | 03 51 07 | 15.6 | 182.4 | 0.2 | | 1.5 | -14 | 10785 | No stop |
| 11 19 40 | =0338-214 | 03 52 38 | 15.6 | 182.7 | 0.2 | | 1.8 | 76 | 10796 | 11 18 11 |
| 11 19 40 | J0336-2058 | 03 52 38 | 15.9 | 183.7 | 0.3 | | 2.4 | -14 | 10796 | No stop |
| 11 22 10 | --- | 03 55 08 | 15.9 | 184.3 | 0.3 | | 2.8 | 136 | 10815 | 11 19 41 |
| 11 22 10 | J0340-2119 | 03 55 08 | 15.6 | 183.3 | 0.2 | | 2.2 | -14 | 10815 | No stop |
| 11 23 40 | =0338-214 | 03 56 38 | 15.6 | 183.7 | 0.3 | | 2.4 | 76 | 10827 | 11 22 11 |
| 11 24 20 | J0349-2102 | 03 57 18 | 15.9 | 181.6 | 0.1 | | 1.0 | 22 | 10827 | 11 24 20 |
| 11 26 20 | =0347-211 | 03 59 19 | 15.9 | 182.1 | 0.1 | | 1.4 | 120 | 10842 | 11 24 21 |
| 11 26 20 | J0336-2058 | 03 59 19 | 15.8 | 185.3 | 0.4 | | 3.4 | -21 | 10842 | No stop |
| 11 28 50 | --- | 04 01 49 | 15.8 | 185.9 | 0.4 | | 3.8 | 129 | 10861 | 11 26 21 |
| 11 28 50 | J0340-2119 | 04 01 49 | 15.5 | 185.0 | 0.3 | | 3.2 | -14 | 10861 | No stop |
| 11 30 20 | =0338-214 | 04 03 19 | 15.5 | 185.3 | 0.4 | | 3.4 | 76 | 10873 | 11 28 51 |
| 11 30 20 | J0336-2058 | 04 03 19 | 15.8 | 186.3 | 0.4 | | 4.0 | -14 | 10873 | No stop |
| 11 32 50 | --- | 04 05 50 | 15.7 | 186.9 | 0.5 | | 4.4 | 136 | 10892 | 11 30 21 |
| 11 32 50 | J0340-2119 | 04 05 50 | 15.4 | 185.9 | 0.4 | | 3.8 | -14 | 10892 | No stop |
| 11 34 20 | =0338-214 | 04 07 20 | 15.4 | 186.3 | 0.4 | | 4.1 | 76 | 10904 | 11 32 51 |
| 11 35 00 | J0349-2102 | 04 08 00 | 15.8 | 184.2 | 0.3 | | 2.7 | 22 | 10904 | 11 35 00 |
| 11 37 00 | =0347-211 | 04 10 00 | 15.8 | 184.7 | 0.3 | | 3.0 | 120 | 10919 | 11 35 01 |
| 11 37 00 | J0336-2058 | 04 10 00 | 15.6 | 187.9 | 0.5 | | 5.1 | -21 | 10919 | No stop |
| 11 39 30 | --- | 04 12 31 | 15.6 | 188.5 | 0.6 | | 5.5 | 129 | 10938 | 11 37 01 |
| 11 39 30 | J0340-2119 | 04 12 31 | 15.3 | 187.5 | 0.5 | | 4.9 | -14 | 10938 | No stop |
| 11 41 00 | =0338-214 | 04 14 01 | 15.3 | 187.9 | 0.5 | | 5.1 | 76 | 10950 | 11 39 31 |
| 11 41 00 | J0336-2058 | 04 14 01 | 15.5 | 188.9 | 0.6 | | 5.7 | -14 | 10950 | No stop |
| 11 43 30 | --- | 04 16 32 | 15.5 | 189.5 | 0.7 | | 6.1 | 136 | 10969 | 11 41 01 |
| 11 43 30 | J0340-2119 | 04 16 32 | 15.2 | 188.5 | 0.6 | | 5.5 | -14 | 10969 | No stop |
| 11 45 00 | =0338-214 | 04 18 02 | 15.2 | 188.9 | 0.6 | | 5.7 | 76 | 10981 | 11 43 31 |
| 11 45 40 | J0349-2102 | 04 18 42 | 15.7 | 186.8 | 0.5 | | 4.4 | 22 | 10981 | 11 45 40 |
| 11 47 40 | =0347-211 | 04 20 42 | 15.6 | 187.3 | 0.5 | | 4.7 | 120 | 10996 | 11 45 41 |

Schedule for TORUN (Code Tr)

Page 40

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|-----|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| --- Wed 11 May 2016 Day 132 --- | | | | | | | | | | |
| 11 47 40 | J0336-2058 | 04 20 42 | 15.4 | 190.5 | 0.7 | | 6.7 | -21 | 10996 | No stop |
| 11 50 10 | --- | 04 23 13 | 15.3 | 191.1 | 0.8 | | 7.1 | 129 | 11015 | 11 47 41 |
| 11 50 10 | J0340-2119 | 04 23 13 | 15.1 | 190.1 | 0.7 | | 6.5 | -14 | 11015 | No stop |
| 11 51 40 | =0338-214 | 04 24 43 | 15.0 | 190.5 | 0.7 | | 6.7 | 76 | 11027 | 11 50 11 |
| 11 51 40 | J0336-2058 | 04 24 43 | 15.3 | 191.4 | 0.8 | | 7.3 | -14 | 11027 | No stop |
| 11 54 10 | --- | 04 27 13 | 15.2 | 192.0 | 0.8 | | 7.7 | 136 | 11046 | 11 51 41 |
| 11 54 10 | J0340-2119 | 04 27 13 | 15.0 | 191.1 | 0.8 | | 7.1 | -14 | 11046 | No stop |
| 11 55 40 | =0338-214 | 04 28 44 | 14.9 | 191.4 | 0.8 | | 7.3 | 76 | 11058 | 11 54 11 |
| 11 56 20 | J0349-2102 | 04 29 24 | 15.4 | 189.4 | 0.6 | | 6.0 | 22 | 11058 | 11 56 20 |
| 11 58 20 | =0347-211 | 04 31 24 | 15.4 | 189.9 | 0.7 | | 6.3 | 120 | 11073 | 11 56 21 |
| 11 58 20 | J0336-2058 | 04 31 24 | 15.1 | 193.0 | 0.9 | | 8.3 | -21 | 11073 | No stop |
| 12 00 50 | --- | 04 33 54 | 15.0 | 193.6 | 0.9 | | 8.7 | 129 | 11092 | 11 58 21 |
| 12 00 50 | J0340-2119 | 04 33 54 | 14.8 | 192.7 | 0.9 | | 8.1 | -14 | 11092 | No stop |
| 12 02 20 | =0338-214 | 04 35 25 | 14.7 | 193.0 | 0.9 | | 8.4 | 76 | 11104 | 12 00 51 |
| 12 02 20 | J0336-2058 | 04 35 25 | 14.9 | 194.0 | 1.0 | | 8.9 | -14 | 11104 | No stop |
| 12 04 50 | --- | 04 37 55 | 14.8 | 194.6 | 1.0 | | 9.3 | 136 | 11123 | 12 02 21 |
| 12 04 50 | J0340-2119 | 04 37 55 | 14.6 | 193.6 | 0.9 | | 8.7 | -14 | 11123 | No stop |
| 12 06 20 | =0338-214 | 04 39 25 | 14.6 | 194.0 | 1.0 | | 9.0 | 76 | 11135 | 12 04 51 |
| 12 07 00 | J0349-2102 | 04 40 05 | 15.1 | 191.9 | 0.8 | | 7.7 | 22 | 11135 | 12 07 00 |
| 12 09 00 | =0347-211 | 04 42 06 | 15.1 | 192.4 | 0.9 | | 8.0 | 120 | 11150 | 12 07 01 |
| 12 09 00 | J0336-2058 | 04 42 06 | 14.7 | 195.6 | 1.1 | | 10.0 | -21 | 11150 | No stop |
| 12 11 30 | --- | 04 44 36 | 14.6 | 196.2 | 1.1 | | 10.3 | 129 | 11169 | 12 09 01 |
| 12 11 30 | J0340-2119 | 04 44 36 | 14.4 | 195.2 | 1.1 | | 9.7 | -14 | 11169 | No stop |
| 12 13 00 | =0338-214 | 04 46 06 | 14.3 | 195.6 | 1.1 | | 10.0 | 76 | 11181 | 12 11 31 |
| 12 13 00 | J0336-2058 | 04 46 06 | 14.5 | 196.5 | 1.1 | | 10.5 | -14 | 11181 | No stop |
| 12 15 30 | --- | 04 48 37 | 14.4 | 197.1 | 1.2 | | 10.9 | 136 | 11200 | 12 13 01 |
| 12 15 30 | J0340-2119 | 04 48 37 | 14.2 | 196.2 | 1.1 | | 10.3 | -14 | 11200 | No stop |
| 12 17 00 | =0338-214 | 04 50 07 | 14.1 | 196.5 | 1.1 | | 10.6 | 76 | 11211 | 12 15 31 |
| 12 17 40 | J0349-2102 | 04 50 47 | 14.8 | 194.5 | 1.0 | | 9.3 | 22 | 11211 | 12 17 40 |
| 12 19 40 | =0347-211 | 04 52 47 | 14.7 | 195.0 | 1.0 | | 9.6 | 120 | 11227 | 12 17 41 |

Schedule for TORUN (Code Tr)

Page 41

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|-----|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Wed 11 May 2016 Day 132 --- | | | | | | | | | | |
| 12 19 40 | J0336-2058 | 04 52 47 | 14.2 | 198.1 | 1.3 | | 11.5 | -21 | 11227 | No stop |
| 12 22 10 | --- | 04 55 18 | 14.1 | 198.7 | 1.3 | | 11.9 | 129 | 11246 | 12 19 41 |
| 12 22 10 | J0340-2119 | 04 55 18 | 13.9 | 197.7 | 1.2 | | 11.3 | -14 | 11246 | No stop |
| 12 23 40 | =0338-214 | 04 56 48 | 13.8 | 198.1 | 1.3 | | 11.5 | 76 | 11258 | 12 22 11 |
| 12 23 40 | J0336-2058 | 04 56 48 | 14.0 | 199.1 | 1.3 | | 12.1 | -14 | 11258 | No stop |
| 12 26 10 | --- | 04 59 19 | 13.9 | 199.7 | 1.4 | | 12.5 | 136 | 11277 | 12 23 41 |
| 12 26 10 | J0340-2119 | 04 59 19 | 13.7 | 198.7 | 1.3 | | 11.9 | -14 | 11277 | No stop |
| 12 27 40 | =0338-214 | 05 00 49 | 13.7 | 199.0 | 1.3 | | 12.1 | 76 | 11288 | 12 26 11 |
| 12 28 20 | J0349-2102 | 05 01 29 | 14.3 | 197.0 | 1.2 | | 10.9 | 22 | 11288 | 12 28 20 |
| 12 30 20 | =0347-211 | 05 03 29 | 14.2 | 197.5 | 1.2 | | 11.2 | 120 | 11304 | 12 28 21 |
| 12 30 20 | J0336-2058 | 05 03 29 | 13.7 | 200.6 | 1.4 | | 13.1 | -21 | 11304 | No stop |
| 12 32 50 | --- | 05 06 00 | 13.5 | 201.2 | 1.5 | | 13.5 | 129 | 11323 | 12 30 21 |
| 12 32 50 | J0340-2119 | 05 06 00 | 13.4 | 200.2 | 1.4 | | 12.9 | -14 | 11323 | No stop |
| 12 34 20 | =0338-214 | 05 07 30 | 13.3 | 200.6 | 1.4 | | 13.1 | 76 | 11335 | 12 32 51 |
| 12 34 20 | J0336-2058 | 05 07 30 | 13.4 | 201.6 | 1.5 | | 13.7 | -14 | 11335 | No stop |
| 12 36 50 | --- | 05 10 00 | 13.3 | 202.2 | 1.5 | | 14.0 | 136 | 11354 | 12 34 21 |
| 12 36 50 | J0340-2119 | 05 10 00 | 13.2 | 201.2 | 1.5 | | 13.5 | -14 | 11354 | No stop |
| 12 38 20 | =0338-214 | 05 11 31 | 13.1 | 201.5 | 1.5 | | 13.7 | 76 | 11365 | 12 36 51 |
| 12 39 00 | J0349-2102 | 05 12 11 | 13.8 | 199.6 | 1.4 | | 12.4 | 22 | 11365 | 12 39 00 |
| 12 41 00 | =0347-211 | 05 14 11 | 13.7 | 200.0 | 1.4 | | 12.7 | 120 | 11381 | 12 39 01 |
| 12 41 00 | J0336-2058 | 05 14 11 | 13.1 | 203.1 | 1.6 | | 14.6 | -21 | 11381 | No stop |
| 12 43 30 | --- | 05 16 41 | 12.9 | 203.7 | 1.7 | | 15.0 | 129 | 11400 | 12 41 01 |
| 12 43 30 | J0340-2119 | 05 16 41 | 12.8 | 202.7 | 1.6 | | 14.4 | -14 | 11400 | No stop |
| 12 45 00 | =0338-214 | 05 18 12 | 12.7 | 203.1 | 1.6 | | 14.6 | 76 | 11411 | 12 43 31 |
| 12 45 00 | J0336-2058 | 05 18 12 | 12.8 | 204.1 | 1.7 | | 15.2 | -14 | 11411 | No stop |
| 12 47 30 | --- | 05 20 42 | 12.7 | 204.6 | 1.7 | | 15.5 | 136 | 11431 | 12 45 01 |
| 12 47 30 | J0340-2119 | 05 20 42 | 12.6 | 203.7 | 1.7 | | 15.0 | -14 | 11431 | No stop |
| 12 49 00 | =0338-214 | 05 22 12 | 12.5 | 204.0 | 1.7 | | 15.2 | 76 | 11442 | 12 47 31 |
| 12 49 40 | J0349-2102 | 05 22 52 | 13.3 | 202.1 | 1.5 | | 14.0 | 22 | 11442 | 12 49 40 |
| 12 51 40 | =0347-211 | 05 24 53 | 13.1 | 202.5 | 1.6 | | 14.3 | 120 | 11458 | 12 49 41 |

Schedule for TORUN (Code Tr) Page 42

e-EVN: rg008b, rsp13, eg082i, rst03, rsh01

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Wed 11 May 2016 Day 132 ---

```
12 53 20  J0405-1308  05 26 33  21.6 201.1  1.3      12.8   54   11458  12 53 20
13 00 00  =0403-132     05 33 14  21.2 202.8  1.4      13.8  400   11509  12 53 21
```

SETUP FILE INFORMATION:

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

==== Setup file: sess216.C1024e

```
Setup group:    7      Station: TORUN      Total bit rate: 1024
Format: MARK5B  Bits per sample: 2  Sample rate: 32.000
Number of channels: 16 DBE type: DBBC_DDC  Speedup factor: 1.00
```

Disk used to record data.

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

The following frequency sets based on these setups were used.

```
Frequency Set:  6  Setup file default.  Used with PCAL = off
L0 sum=  4942.49  4942.49  4942.49  4942.49  4974.49  4974.49  4974.49  4974.49
         5006.49  5006.49  5006.49  5006.49  5038.49  5038.49  5038.49  5038.49
BBC fr=   742.49  742.49  742.49  742.49  774.49  774.49  774.49  774.49
         806.49  806.49  806.49  806.49  838.49  838.49  838.49  838.49
Bandwd=   16.00   16.00   16.00   16.00   16.00   16.00   16.00   16.00
         16.00   16.00   16.00   16.00   16.00   16.00   16.00   16.00
Matching frequency sets:  6
```

Track assignments are:

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) | | (Date) | Error |
|--------------|------------------------------------|---------------------------------------|------------------------------------|--------------|
| | (B1950) | (J2000) | | (mas) |
| * FRB150418 | 07 14 22.539479 -18 55 15.38621 | * 07 16 34.555000 *-19 00 39.46600 | 07 17 16.821038 -19 02 45.98315 | 0.00 0.00 |
| * J0718-1813 | 07 16 01.115592 -18 07 33.15134 | * 07 18 14.158000 *-18 13 04.05600 | 07 18 56.767685 -18 15 12.61113 | 0.00 0.00 |
| * J0712-1847 | 07 10 03.093712 -18 42 46.88233 | * 07 12 15.233900 *-18 47 53.01600 | 07 12 57.515225 -18 49 53.65006 | 0.00 0.00 |
| * J0716-1856 | 07 14 27.304531 -18 51 05.47861 | * 07 16 39.408200 *-18 56 29.89000 | 07 17 21.703387 -18 58 36.49937 | 0.00 0.00 |
| * J0716-1900 | 07 13 52.028645 -18 54 53.80060 | * 07 16 04.035500 *-19 00 15.77500 | 07 16 46.295723 -19 02 21.60630 | 0.00 0.00 |
| * NGC3110 | 10 01 31.462207 -06 13 51.60619 | * 10 04 01.572000 *-06 28 25.48000 | 10 04 50.663435 -06 33 22.78252 | 0.00 0.00 |
| * V9980RI | 05 29 29.267106 09 47 04.25688 | * 05 32 14.459880 * 09 49 11.32450 | 05 33 07.091902 09 49 37.40905 | 0.00 0.00 |
| * J0525+0951 | 05 22 04.199602 09 49 24.65085 | * 05 24 49.390800 * 09 52 03.81800 | 05 25 42.007045 09 52 40.31177 | 0.00 0.00 |
| * V1396CYG | 20 58 12.181443 39 52 23.01766 | * 21 00 06.226190 * 40 04 08.91190 | 21 00 43.890309 40 07 49.81306 | 0.00 0.00 |
| * J2115+3742 | 21 12 44.469033 37 29 56.03237 | * 21 14 44.117900 * 37 42 25.72400 | 21 15 23.490641 37 46 20.83561 | 0.00 0.00 |
| * V596CAS | 01 55 57.094358 58 16 40.22771 | * 01 59 24.186480 * 58 31 12.87320 | 02 00 30.515470 58 35 41.61556 | 0.00 0.00 |
| * J0151+5454 | 01 48 18.839204 54 39 48.95530 | * 01 51 36.288800 * 54 54 37.68900 | 01 52 39.555970 54 59 11.57347 | 0.00 0.00 |
| * RYSEX | 10 33 24.497968 05 22 48.37853 | * 10 36 00.483310 * 05 07 14.90370 | 10 36 51.526224 05 02 03.47415 | 0.00 0.00 |
| * J1035+0522 | 10 32 21.484250 05 38 04.61084 | * 10 34 57.605900 * 05 22 32.81500 | 10 35 48.684178 05 17 21.96778 | 0.00 0.00 |
| * CAL1 | 19 56 01.932138 35 27 03.66895 | * 19 57 54.113316 * 35 35 13.16985 | 19 58 31.414152 35 37 47.18189 | 0.00 0.00 |
| * CAL2 | 19 57 39.898501 34 42 10.54074 | * 19 59 33.380000 * 34 50 26.30000 | 20 00 11.084662 34 53 02.44869 | 0.00 0.00 |
| * CAL3 | 19 56 29.812882 34 49 17.09451 | * 19 58 23.000000 * 34 57 28.40000 | 19 59 00.616170 35 00 03.12119 | 0.00 0.00 |
| * CAL4 | 19 55 06.815814 34 44 00.67393 | * 19 57 00.000000 * 34 52 06.70000 | 19 57 37.620320 34 54 39.78068 | 0.00 0.00 |
| * CAL5 | 19 54 59.885855 34 45 09.11686 | * 19 56 53.030000 * 34 53 14.70000 | 19 57 30.638122 34 55 47.63707 | 0.00 0.00 |

| | | | | |
|--------------|---|-------------------|-----------------|------|
| * CAL6 | 19 55 02.021891 | * 19 56 54.310000 | 19 57 31.648179 | 0.00 |
| | 35 18 58.50897 | * 35 27 04.20000 | 35 29 37.04417 | 0.00 |
| * CAL7 | 19 56 19.332159 | * 19 58 12.440000 | 19 58 50.031824 | 0.00 |
| | 34 51 44.66280 | * 34 59 55.30000 | 35 02 29.80175 | 0.00 |
| * J0336-2058 | 03 34 31.041791 | * 03 36 44.000000 | 03 37 25.721568 | 0.00 |
| | -21 08 40.48214 | *-20 58 50.00000 | -20 55 52.44493 | 0.00 |
| 0144+584 | 01 44 23.999659 | * 01 47 46.540837 | 01 48 51.456067 | 0.16 |
| * J0147+5840 | 58 25 48.56475 | * 58 40 44.97092 | 58 45 21.25444 | 0.10 |
| | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc | | | |
| | GSFC 2015a astro solution, unpublished 370 observations. | | | |
| * 0234+285 | 02 34 55.589590 | * 02 37 52.405677 | 02 38 48.846478 | 0.00 |
| J0237+2848 | 28 35 11.40776 | * 28 48 08.99001 | 28 52 07.69776 | 0.00 |
| J0237+28 | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc | | | |
| | GSFC 2015a astro solution, unpublished 54650 observations. | | | |
| 0338-214 | 03 38 23.279005 | * 03 40 35.607856 | 03 41 17.123698 | 0.02 |
| * J0340-2119 | -21 29 07.91319 | *-21 19 31.17204 | -21 16 38.30177 | 0.04 |
| J0340-21 | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc | | | |
| | GSFC 2015a astro solution, unpublished 2582 observations. | | | |
| 0347-211 | 03 47 45.776741 | * 03 49 57.826674 | 03 50 39.270310 | 0.03 |
| * J0349-2102 | -21 11 50.48626 | *-21 02 47.74148 | -21 00 06.47105 | 0.04 |
| | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc | | | |
| | GSFC 2015a astro solution, unpublished 1019 observations. | | | |
| 0403-132 | 04 03 13.979059 | * 04 05 34.003394 | 04 06 18.176895 | 0.02 |
| * J0405-1308 | -13 16 18.08443 | *-13 08 13.69077 | -13 05 52.14329 | 0.03 |
| J0405-13 | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc | | | |
| | GSFC 2015a astro solution, unpublished 1375 observations. | | | |
| 0516+087 | 05 16 26.910746 | * 05 19 10.811129 | 05 20 02.997457 | 0.09 |
| * J0519+0848 | 08 45 53.30182 | * 08 48 56.73464 | 08 49 40.93248 | 0.19 |
| | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc | | | |
| | GSFC 2015a astro solution, unpublished 144 observations. | | | |
| * 0528+134 | 05 28 06.759216 | * 05 30 56.416747 | 05 31 50.490237 | 0.21 |
| J0530+1331 | 13 29 42.28885 | * 13 31 55.14952 | 13 32 23.75649 | 0.24 |
| J0530+13 | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc | | | |
| | GSFC 2015a astro solution, unpublished 135789 observations. | | | |
| 0552+398 | 05 52 01.407169 | * 05 55 30.805611 | 05 56 37.587064 | 0.00 |
| J0555+3948 | 39 48 21.94581 | * 39 48 49.16496 | 39 48 49.02035 | 0.00 |
| * DA193 | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc | | | |
| J0555+39 | GSFC 2015a astro solution, unpublished 394383 observations. | | | |
| * 0J287 | 08 51 57.250615 | * 08 54 48.874926 | 08 55 44.271289 | 0.00 |
| J0854+2006 | 20 17 58.41743 | * 20 06 30.64088 | 20 02 39.96398 | 0.00 |
| 0851+202 | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc | | | |
| J0854+20 | GSFC 2015a astro solution, unpublished 216540 observations. | | | |
| 0957-082 | 09 57 28.850342 | * 09 59 57.647749 | 10 00 46.312280 | 0.89 |
| * J0959-0828 | -08 14 00.98151 | *-08 28 26.04978 | -08 33 21.30824 | 3.04 |
| | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc | | | |
| | GSFC 2015a astro solution, unpublished 23 observations. | | | |
| 1036+054 | 10 36 10.827221 | * 10 38 46.779874 | 10 39 37.826455 | 0.05 |
| * J1038+0512 | 05 28 06.89975 | * 05 12 29.08668 | 05 07 16.40158 | 0.11 |
| | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc | | | |
| | GSFC 2015a astro solution, unpublished 310 observations. | | | |

| | | | | |
|--------------|---|-------------------|-----------------|------|
| * 3C273B | 12 26 33.245833 | * 12 29 06.699729 | 12 29 57.529082 | 1.05 |
| J1229+0203 | 02 19 43.30578 | * 02 03 08.59828 | 01 57 41.76140 | 1.37 |
| 3C273 | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc | | | |
| 1226+023 | GSFC 2015a astro solution, unpublished 31967 observations. | | | |
| J1229+02 | | | | |
| 1308+326 | 13 08 07.560130 | * 13 10 28.663849 | 13 11 15.404644 | 0.21 |
| * J1310+3220 | 32 36 40.23886 | * 32 20 43.78293 | 32 15 37.52323 | 0.20 |
| J1310+32 | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc | | | |
| | GSFC 2015a astro solution, unpublished 114443 observations. | | | |
| * 0Q208 | 14 04 45.615156 | * 14 07 00.394414 | 14 07 45.316517 | 0.24 |
| J1407+2827 | 28 41 29.23518 | * 28 27 14.69022 | 28 22 41.24523 | 0.34 |
| 1404+286 | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc | | | |
| J1407+28 | GSFC 2015a astro solution, unpublished 67871 observations. | | | |
| * 3C345 | 16 41 17.606228 | * 16 42 58.809966 | 16 43 33.163506 | 0.76 |
| J1642+3948 | 39 54 10.81496 | * 39 48 36.99402 | 39 46 50.51988 | 0.52 |
| 1641+399 | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc | | | |
| J1642+39 | GSFC 2015a astro solution, unpublished 53430 observations. | | | |
| 1951+355 | 19 51 39.207554 | * 19 53 30.875718 | 19 54 08.030806 | 0.13 |
| * J1953+3537 | 35 30 06.66640 | * 35 37 59.35934 | 35 40 28.07426 | 0.16 |
| J1953+35 | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc | | | |
| | GSFC 2015a astro solution, unpublished 300 observations. | | | |
| 2111+400 | 21 11 33.259951 | * 21 13 29.486268 | 21 14 07.789916 | 0.38 |
| * J2113+4012 | 40 00 25.23950 | * 40 12 51.38801 | 40 16 44.84290 | 0.32 |
| | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc | | | |
| | GSFC 2015a astro solution, unpublished 120 observations. | | | |
| VR422201 | 22 00 39.362505 | * 22 02 43.291372 | 22 03 23.856620 | 0.00 |
| J2202+4216 | 42 02 08.59077 | * 42 16 39.97990 | 42 21 12.03519 | 0.00 |
| * BLLAC | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc | | | |
| 2200+420 | GSFC 2015a astro solution, unpublished 51226 observations. | | | |
| J2202+42 | | | | |
| * 3C454.3 | 22 51 29.519738 | * 22 53 57.747938 | 22 54 45.644313 | 0.67 |
| J2253+1608 | 15 52 54.34810 | * 16 08 53.56093 | 16 13 58.73723 | 0.70 |
| 2251+158 | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc | | | |
| J2253+16 | GSFC 2015a astro solution, unpublished 40748 observations. | | | |

EFFECT OF SOLAR CORONA

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

| Source | Sun distance (deg) |
|------------|--------------------|
| FRB150418 | 70.4 |
| J0718-1813 | 70.4 |
| J0712-1847 | 69.4 |
| J0716-1856 | 70.4 |
| J0716-1900 | 70.3 |
| NGC3110 | 104.3 |
| V998ORI | 34.9 |
| J0525+0951 | 33.1 |
| V1396CYG | 80.8 |
| J2115+3742 | 78.7 |
| V596CAS | 42.8 |
| J0151+5454 | 40.1 |
| RYSEX | 108.2 |
| J1035+0522 | 107.8 |

| | |
|------------|-------|
| CAL1 | 93.9 |
| CAL2 | 93.9 |
| CAL3 | 94.1 |
| CAL4 | 94.4 |
| CAL5 | 94.4 |
| CAL6 | 94.1 |
| CAL7 | 94.1 |
| J0336-2058 | 39.3 |
| J0147+5840 | 43.6 |
| 0234+285 | 13.5 |
| J0340-2119 | 39.8 |
| J0349-2102 | 40.0 |
| J0405-1308 | 33.7 |
| J0519+0848 | 32.1 |
| 0528+134 | 33.6 |
| DA193 | 41.4 |
| OJ287 | 80.0 |
| J0959-0828 | 103.9 |
| J1038+0512 | 108.8 |
| 3C273B | 135.2 |
| J1310+3220 | 122.0 |
| OQ208 | 131.1 |
| 3C345 | 118.6 |
| J1953+3537 | 94.7 |
| J2113+4012 | 78.3 |
| BLLAC | 68.9 |
| 3C454.3 | 61.4 |

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 |

rk12vstr

RADIOASTRON AGN SURVEY

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

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

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

| | | | | | | | | | | |
|------------------------|----------|----------|---------|---------|------|--|------|-----|-----|----------|
| Next scan frequencies: | 4836.00 | 4836.00 | 4836.00 | 4836.00 | | | | | | |
| Next BBC frequencies: | 736.00 | 736.00 | 736.00 | 736.00 | | | | | | |
| Next scan bandwidths: | 16.00 | 16.00 | 16.00 | 16.00 | | | | | | |
| 18 00 00 | 1055+018 | 10 34 03 | 38.1 | 172.0 | -0.4 | | -4.8 | 0 | 0 | 18 00 00 |
| 18 14 30 | --- | 10 48 36 | 38.3 | 176.6 | -0.2 | | -2.1 | 870 | 28 | 18 00 01 |
| 18 15 00 | 1055+018 | 10 49 06 | 38.3 | 176.7 | -0.2 | | -2.0 | 24 | 28 | 18 15 00 |
| 18 29 30 | --- | 11 03 38 | 38.4 | 181.4 | 0.1 | | 0.8 | 870 | 56 | 18 15 01 |
| 18 30 00 | 1055+018 | 11 04 08 | 38.4 | 181.5 | 0.1 | | 0.9 | 24 | 56 | 18 30 00 |
| 18 44 30 | --- | 11 18 41 | 38.2 | 186.2 | 0.3 | | 3.7 | 870 | 84 | 18 30 01 |
| 18 45 00 | 1055+018 | 11 19 11 | 38.2 | 186.3 | 0.3 | | 3.8 | 24 | 84 | 18 45 00 |
| 19 00 00 | --- | 11 34 13 | 37.9 | 191.1 | 0.6 | | 6.6 | 900 | 112 | 18 45 01 |

SETUP FILE INFORMATION:

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

=====
Setup file: ra6cm2.set

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | (J2000) | (Date) | Error (mas) |
|------------|--|-------------------|-----------------|----------------|
| * FAKERA | 11 57 21.769299 | * 12 00 00.000000 | 12 00 51.523972 | 0.00 |
| | 85 16 41.77889 | * 85 00 00.000000 | 84 54 49.09660 | 0.00 |
| | fake circumpolar target for a TS to look at | | | |
| * 1055+018 | 10 55 55.313729 | * 10 58 29.605207 | 10 59 20.256477 | 0.00 |
| J1058+0133 | 01 50 03.53709 | * 01 33 58.82359 | 01 28 37.19029 | 0.00 |
| | ./rk12vs_sources.radioastron | | | |
| | AGN, rfc_2013d Petrov, 2013, unpublished 8183 observations, RA-A03-04, RA-A02-12 | | | |

EFFECT OF SOLAR CORONA

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

| Source | Sun distance (deg) |
|----------|--------------------|
| 1055+018 | 113.9 |

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

For common VLBI bands, this is:

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

rk12vttr

RADIOASTRON AGN SURVEY
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Fax: +7-495-3332378 Phone during observation: +7-903-6614865

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

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

--- Wed 11 May 2016 Day 132 ---

----- 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 | 1219+285 | 15 34 53 | 46.9 | 254.1 | 3.2 | | 40.9 | 0 | 0 | 23 00 00 | |
| 23 14 30 | --- | 15 49 25 | 44.8 | 257.5 | 3.5 | | 41.7 | 870 | 28 | 23 00 01 | |
| 23 15 00 | 1219+285 | 15 49 55 | 44.7 | 257.6 | 3.5 | | 41.7 | 24 | 28 | 23 15 00 | |
| 23 29 30 | --- | 16 04 28 | 42.6 | 260.9 | 3.7 | | 42.3 | 870 | 56 | 23 15 01 | |
| 23 30 00 | 1219+285 | 16 04 58 | 42.5 | 261.1 | 3.7 | | 42.3 | 24 | 56 | 23 30 00 | |
| 23 44 30 | --- | 16 19 30 | 40.4 | 264.2 | 4.0 | | 42.7 | 870 | 84 | 23 30 01 | |
| 23 45 00 | 1219+285 | 16 20 00 | 40.3 | 264.3 | 4.0 | | 42.7 | 24 | 84 | 23 45 00 | |
| 23 59 59 | --- | 16 35 03 | 38.0 | 267.5 | 4.2 | | 42.9 | 899 | 112 | 23 45 01 | |

SETUP FILE INFORMATION:

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

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

Track assignments are:

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | (J2000) | (Date) | Error (mas) |
|------------|--|-------------------|-----------------|----------------|
| * FAKERA | 11 57 21.769299 | * 12 00 00.000000 | 12 00 51.489391 | 0.00 |
| | 85 16 41.77889 | * 85 00 00.000000 | 84 54 49.12816 | 0.00 |
| | fake circumpolar target for a TS to look at | | | |
| * 1219+285 | 12 19 01.115600 | * 12 21 31.690520 | 12 22 21.278279 | 0.00 |
| J1221+2813 | 28 30 36.52556 | * 28 13 58.50011 | 28 08 37.17189 | 0.00 |
| | ./rk12vt_sources.radioastron AGN, rfc_2013d Petrov, 2013, unpublished 880 observations, RA-A03-04 | | | |

EFFECT OF SOLAR CORONA

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

| Source | Sun distance (deg) |
|----------|--------------------|
| 1219+285 | 117.3 |

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 |

rk12vvtr

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

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

--- Thu 12 May 2016 Day 133 ---

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

| | | | | | | | | | | | |
|------------------------|----------|----------|----------|----------|-----|--|------|-----|----|----------|--|
| Next scan frequencies: | 22236.00 | 22236.00 | 22236.00 | 22236.00 | | | | | | | |
| Next BBC frequencies: | 736.00 | 736.00 | 736.00 | 736.00 | | | | | | | |
| Next scan bandwidths: | 16.00 | 16.00 | 16.00 | 16.00 | | | | | | | |
| 20 10 00 | 1055+018 | 12 48 21 | 33.7 | 213.4 | 1.8 | | 19.3 | 0 | 0 | 20 10 00 | |
| 20 22 00 | --- | 13 00 23 | 32.6 | 216.7 | 2.0 | | 21.1 | 720 | 23 | 20 10 01 | |
| 20 22 30 | 1055+018 | 13 00 53 | 32.6 | 216.9 | 2.0 | | 21.1 | 24 | 23 | 20 22 30 | |
| 20 34 30 | --- | 13 12 55 | 31.5 | 220.2 | 2.2 | | 22.8 | 720 | 46 | 20 22 31 | |
| 20 35 00 | 1055+018 | 13 13 25 | 31.4 | 220.3 | 2.2 | | 22.9 | 24 | 46 | 20 35 00 | |
| 20 47 00 | --- | 13 25 27 | 30.2 | 223.5 | 2.4 | | 24.4 | 720 | 69 | 20 35 01 | |
| 20 47 30 | 1055+018 | 13 25 57 | 30.1 | 223.6 | 2.4 | | 24.5 | 24 | 69 | 20 47 30 | |
| 21 00 00 | --- | 13 38 30 | 28.8 | 226.9 | 2.7 | | 26.0 | 750 | 93 | 20 47 31 | |

SETUP FILE INFORMATION:

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

=====
Setup file: ra1cm2.set

Matching groups in ./rk12vv_freq.dat:

tr1cm

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

Disk used to record data.


```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | (J2000) | (Date) | Error (mas) |
|------------|--|-------------------|-----------------|----------------|
| * FAKERA | 11 57 21.769299 | * 12 00 00.000000 | 12 00 51.344424 | 0.00 |
| | 85 16 41.77889 | * 85 00 00.000000 | 84 54 49.26552 | 0.00 |
| | fake circumpolar target for a TS to look at | | | |
| * 1055+018 | 10 55 55.313729 | * 10 58 29.605207 | 10 59 20.245835 | 0.00 |
| J1058+0133 | 01 50 03.53709 | * 01 33 58.82359 | 01 28 37.24860 | 0.00 |
| | ./rk12vv_sources.radioastron | | | |
| | AGN, rfc_2013d Petrov, 2013, unpublished 8183 observations, RA-A03-04, RA-A02-12 | | | |

EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
1055+018    112.8

```

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

For common VLBI bands, this is:

```

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

```

rk12vwtr

RADIOASTRON AGN SURVEY

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Fri 13 May 2016 Day 134 ---

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

Next scan frequencies: 22236.00 22236.00 22236.00 22236.00

Next BBC frequencies: 736.00 736.00 736.00 736.00

Next scan bandwidths: 16.00 16.00 16.00 16.00

| | | | | | | | | | |
|----------|----------|----------|------|-------|-----|------|-----|-----|----------|
| 05 00 00 | 1732+389 | 21 39 48 | 46.7 | 276.5 | 4.1 | 50.1 | 0 | 0 | 05 00 00 |
| 05 14 30 | --- | 21 54 21 | 44.5 | 279.1 | 4.3 | 49.7 | 870 | 28 | 05 00 01 |
| 05 15 00 | 1732+389 | 21 54 51 | 44.4 | 279.2 | 4.3 | 49.7 | 24 | 28 | 05 15 00 |
| 05 29 30 | --- | 22 09 23 | 42.3 | 281.8 | 4.6 | 49.1 | 870 | 56 | 05 15 01 |
| 05 30 00 | 1732+389 | 22 09 53 | 42.2 | 281.9 | 4.6 | 49.1 | 24 | 56 | 05 30 00 |
| 05 44 30 | --- | 22 24 26 | 40.1 | 284.3 | 4.8 | 48.4 | 870 | 84 | 05 30 01 |
| 05 45 00 | 1732+389 | 22 24 56 | 40.0 | 284.4 | 4.8 | 48.4 | 24 | 84 | 05 45 00 |
| 06 00 00 | --- | 22 39 58 | 37.9 | 286.9 | 5.1 | 47.6 | 900 | 112 | 05 45 01 |

SETUP FILE INFORMATION:

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

=====
Setup file: ra1cm2.set

Matching groups in ./rk12vw_freq.dat:

tr1cm

Setup group: 6

Station: TORUN

Total bit rate: 256

Format: MKIV1:4

Bits per sample: 2

Sample rate: 32.000

Number of channels: 4

DBE type:

Speedup factor: 1.00

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  4  Setup file default.  Used with PCAL = 1MHz
LO sum= 22236.00 22236.00 22236.00 22236.00
BBC fr=  736.00  736.00  736.00  736.00
Bandwd=  16.00  16.00  16.00  16.00
Matching frequency sets:  4

```

Track assignments are:

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | (J2000) | (Date) | Error (mas) |
|------------|--|-------------------|-----------------|----------------|
| * FAKERA | 11 57 21.769299 | * 12 00 00.000000 | 12 00 51.280801 | 0.00 |
| | 85 16 41.77889 | * 85 00 00.000000 | 84 54 49.32776 | 0.00 |
| | fake circumpolar target for a TS to look at | | | |
| * 1732+389 | 17 32 40.487473 | * 17 34 20.578539 | 17 34 54.564413 | 0.00 |
| J1734+3857 | 38 59 46.93235 | * 38 57 51.44303 | 38 57 14.72678 | 0.00 |
| | ./rk12vw_sources.radioastron | | | |
| | AGN, MASIV, rfc_2013d Petrov, 2013, unpublished 5259 observations, RA-A03-04, RA | | | |

EFFECT OF SOLAR CORONA

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

```

Source      Sun distance (deg)
1732+389    114.7

```

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

For common VLBI bands, this is:

```

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

```

rk12vxtr

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

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

--- Thu 19 May 2016 Day 140 ---

----- 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 10 00 | 1219+285 | 11 15 37 | 62.2 | 147.2 | -1.1 | | -21.7 | 0 | 0 | 18 10 00 | |
| 18 22 00 | --- | 11 27 39 | 63.1 | 152.6 | -0.9 | | -18.3 | 720 | 23 | 18 10 01 | |
| 18 22 30 | 1219+285 | 11 28 10 | 63.1 | 152.8 | -0.9 | | -18.1 | 23 | 23 | 18 22 30 | |
| 18 34 30 | --- | 11 40 11 | 63.9 | 158.5 | -0.7 | | -14.4 | 720 | 46 | 18 22 31 | |
| 18 35 00 | 1219+285 | 11 40 42 | 63.9 | 158.8 | -0.7 | | -14.3 | 23 | 46 | 18 35 00 | |
| 18 47 00 | --- | 11 52 44 | 64.5 | 164.7 | -0.5 | | -10.3 | 720 | 69 | 18 35 01 | |
| 18 47 30 | 1219+285 | 11 53 14 | 64.5 | 165.0 | -0.5 | | -10.2 | 23 | 69 | 18 47 30 | |
| 19 00 00 | --- | 12 05 46 | 64.9 | 171.4 | -0.3 | | -5.9 | 750 | 93 | 18 47 31 | |

SETUP FILE INFORMATION:

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

=====
Setup file: ra6cm2.set

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

Disk used to record data.

```

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

```

The following frequency sets based on these setups were used.

```

Frequency Set:  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) (B1950) | (J2000) | (Date) | Error (mas) |
|------------|--|-------------------|-----------------|----------------|
| * FAKERA | 11 57 21.769299 | * 12 00 00.000000 | 12 00 49.962087 | 0.00 |
| | 85 16 41.77889 | * 85 00 00.000000 | 84 54 50.45437 | 0.00 |
| | fake circumpolar target for a TS to look at | | | |
| * 1219+285 | 12 19 01.115600 | * 12 21 31.690520 | 12 22 21.174227 | 0.00 |
| J1221+2813 | 28 30 36.52556 | * 28 13 58.50011 | 28 08 38.49279 | 0.00 |
| | ./rk12vx_sources.radioastron | | | |
| | AGN, rfc_2013d Petrov, 2013, unpublished 880 observations, RA-A03-04 | | | |

EFFECT OF SOLAR CORONA

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

```

Source          Sun distance (deg)
1219+285        110.8

```

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

For common VLBI bands, this is:

```

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

```

rk12vytr

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

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

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

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

--- Fri 20 May 2016 Day 141 ---

----- 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 frequencies 1219+285 and 1668.00.

SETUP FILE INFORMATION:

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

==== Setup file: ra18cm2.set

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

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

Track assignments are:

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | (J2000) | (Date) | Error (mas) |
|------------|--|-------------------|-----------------|----------------|
| * FAKERA | 11 57 21.769299 | * 12 00 00.000000 | 12 00 49.894955 | 0.00 |
| | 85 16 41.77889 | * 85 00 00.000000 | 84 54 50.49593 | 0.00 |
| | fake circumpolar target for a TS to look at | | | |
| * 1219+285 | 12 19 01.115600 | * 12 21 31.690520 | 12 22 21.170061 | 0.00 |
| J1221+2813 | 28 30 36.52556 | * 28 13 58.50011 | 28 08 38.53938 | 0.00 |
| | ./rk12vy_sources.radioastron AGN, rfc_2013d Petrov, 2013, unpublished 880 observations, RA-A03-04 | | | |

EFFECT OF SOLAR CORONA

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

| Source | Sun distance (deg) |
|----------|--------------------|
| 1219+285 | 110.6 |

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

For common VLBI bands, this is:

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

rk12vztr

RADIOASTRON AGN SURVEY

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

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

--- Sat 21 May 2016 Day 142 ---

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

| | | | | | | | | | | | | |
|------------------------|----------|----------|---------|---------|-----|--|------|-----|-----|----------|--|--|
| Next scan frequencies: | 4836.00 | 4836.00 | 4836.00 | 4836.00 | | | | | | | | |
| Next BBC frequencies: | 736.00 | 736.00 | 736.00 | 736.00 | | | | | | | | |
| Next scan bandwidths: | 16.00 | 16.00 | 16.00 | 16.00 | | | | | | | | |
| 00 00 00 | 1156+295 | 17 10 32 | 30.2 | 279.4 | 5.2 | | 42.7 | 0 | 0 | 00 00 00 | | |
| 00 14 30 | --- | 17 25 04 | 28.0 | 282.1 | 5.4 | | 42.2 | 870 | 28 | 00 00 01 | | |
| 00 15 00 | 1156+295 | 17 25 34 | 28.0 | 282.2 | 5.4 | | 42.2 | 24 | 28 | 00 15 00 | | |
| 00 29 30 | --- | 17 40 06 | 25.8 | 284.9 | 5.7 | | 41.7 | 870 | 56 | 00 15 01 | | |
| 00 30 00 | 1156+295 | 17 40 36 | 25.8 | 285.0 | 5.7 | | 41.6 | 24 | 56 | 00 30 00 | | |
| 00 44 30 | --- | 17 55 09 | 23.7 | 287.6 | 5.9 | | 41.0 | 870 | 84 | 00 30 01 | | |
| 00 45 00 | 1156+295 | 17 55 39 | 23.6 | 287.7 | 5.9 | | 40.9 | 24 | 84 | 00 45 00 | | |
| 01 00 00 | --- | 18 10 41 | 21.5 | 290.4 | 6.2 | | 40.1 | 900 | 112 | 00 45 01 | | |

SETUP FILE INFORMATION:

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

=====
Setup file: ra6cm2.set

| | | | | | |
|---------------------|---------|------------------|-------|-----------------|--------|
| Setup group: | 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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | (J2000) | (Date) | Error (mas) |
|------------|--|-------------------|-----------------|----------------|
| * FAKERA | 11 57 21.769299 | * 12 00 00.000000 | 12 00 49.674849 | 0.00 |
| | 85 16 41.77889 | * 85 00 00.000000 | 84 54 50.62142 | 0.00 |
| | fake circumpolar target for a TS to look at | | | |
| * 1156+295 | 11 56 57.786212 | * 11 59 31.833913 | 12 00 22.285902 | 0.00 |
| J1159+2914 | 29 31 25.73868 | * 29 14 43.82678 | 29 09 22.38191 | 0.00 |
| | ./rk12vz_sources.radioastron | | | |
| | AGN, MASIV, rfc_2013d Petrov, 2013, unpublished 70591 observations, RA-A03-04, R | | | |

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)
1156+295    105.3

```

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

```

rp024dtr

E-EVN: FRB121102

PI: *Hessels/Paragi* Address: *JIVE* Observing mode: *realtime e-vlbi*

Schedule for TORUN (Code Tr) Page 2
 e-EVN: FRB121102

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

| Start UT | Source | Start / Stop | | | | Early | Disk | TPStart | | | |
|---------------------------------|------------|--------------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC | |
| --- Tue 24 May 2016 Day 145 --- | | | | | | | | | | | |
| Next scan frequencies: | | 1610.49 | 1610.49 | 1610.49 | 1610.49 | 1610.49 | 1610.49 | 1642.49 | 1642.49 | 1642.49 | 1642.49 |
| | | 1674.49 | 1674.49 | 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 | 689.51 | 689.51 | 657.51 | 657.51 | 657.51 | 657.51 |
| | | 625.51 | 625.51 | 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 | 16.00 | 16.00 | 16.00 | 16.00 |
| | | | | | | | | | | | |
| 13 00 00 | J0126+2559 | 06 24 29 | 29.9 | 274.5 | 4.9 | | 41.8 | 0 | 0 | 13 00 00 | |
| 13 14 20 | =0123+257 | 06 38 52 | 27.7 | 277.3 | 5.2 | | 41.5 | 860 | 110 | 13 00 01 | |
| | | | | | | | | | | | |
| 13 15 00 | J0126+2559 | 06 39 32 | 27.6 | 277.4 | 5.2 | | 41.5 | 34 | 110 | 13 15 00 | |
| 13 29 20 | =0123+257 | 06 53 54 | 25.5 | 280.1 | 5.4 | | 41.2 | 860 | 221 | 13 15 01 | |
| | | | | | | | | | | | |
| 13 29 20 | 0234+285 | 06 53 54 | 38.2 | 268.6 | 4.3 | | 43.3 | -61 | 221 | No stop | |
| 13 44 20 | --- | 07 08 57 | 35.9 | 271.6 | 4.5 | | 43.3 | 839 | 336 | 13 29 21 | |
| | | | | | | | | | | | |
| 13 45 00 | 0234+285 | 07 09 37 | 35.8 | 271.7 | 4.5 | | 43.3 | 34 | 336 | 13 45 00 | |
| 13 59 20 | --- | 07 23 59 | 33.7 | 274.5 | 4.8 | | 43.1 | 860 | 446 | 13 45 01 | |
| | | | | | | | | | | | |
| 14 00 00 | 0234+285 | 07 24 39 | 33.6 | 274.6 | 4.8 | | 43.1 | 34 | 446 | 14 00 00 | |
| 14 14 20 | --- | 07 39 02 | 31.4 | 277.4 | 5.0 | | 42.8 | 860 | 556 | 14 00 01 | |
| | | | | | | | | | | | |
| 14 15 00 | 0234+285 | 07 39 42 | 31.3 | 277.5 | 5.0 | | 42.8 | 34 | 556 | 14 15 00 | |
| 14 29 20 | --- | 07 54 04 | 29.2 | 280.2 | 5.3 | | 42.4 | 860 | 667 | 14 15 01 | |
| | | | | | | | | | | | |
| 14 30 00 | 0234+285 | 07 54 44 | 29.1 | 280.3 | 5.3 | | 42.4 | 34 | 667 | 14 30 00 | |
| 14 44 20 | --- | 08 09 06 | 27.0 | 282.9 | 5.5 | | 41.9 | 860 | 777 | 14 30 01 | |
| | | | | | | | | | | | |
| 14 45 00 | 0234+285 | 08 09 47 | 26.9 | 283.1 | 5.5 | | 41.9 | 34 | 777 | 14 45 00 | |
| 14 59 20 | --- | 08 24 09 | 24.8 | 285.7 | 5.8 | | 41.3 | 860 | 887 | 14 45 01 | |
| | | | | | | | | | | | |
| 15 00 00 | 0234+285 | 08 24 49 | 24.7 | 285.8 | 5.8 | | 41.3 | 34 | 887 | 15 00 00 | |
| 15 14 20 | --- | 08 39 11 | 22.7 | 288.4 | 6.0 | | 40.6 | 860 | 997 | 15 00 01 | |
| | | | | | | | | | | | |
| 15 15 00 | 0234+285 | 08 39 52 | 22.6 | 288.5 | 6.0 | | 40.6 | 34 | 997 | 15 15 00 | |
| 15 29 20 | --- | 08 54 14 | 20.5 | 291.1 | 6.3 | | 39.8 | 860 | 1108 | 15 15 01 | |
| | | | | | | | | | | | |
| 15 30 00 | 0234+285 | 08 54 54 | 20.4 | 291.2 | 6.3 | | 39.7 | 34 | 1108 | 15 30 00 | |
| 15 44 20 | --- | 09 09 16 | 18.4 | 293.8 | 6.5 | | 38.9 | 860 | 1218 | 15 30 01 | |
| | | | | | | | | | | | |
| 15 45 00 | 0234+285 | 09 09 56 | 18.4 | 293.9 | 6.5 | | 38.8 | 34 | 1218 | 15 45 00 | |
| 15 59 20 | --- | 09 24 19 | 16.4 | 296.5 | 6.8 | | 37.9 | 860 | 1328 | 15 45 01 | |

Schedule for TORUN (Code Tr)

Page 3

e-EVN: FRB121102

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | Early | Disk | TPStart | | | |
|----------|-----------------|--------------|------|-------|-----|-------|------|---------|--------|----------|--|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC | |
| ----- | | | | | | | | | | | |
| --- | Tue 24 May 2016 | Day 145 | | | | --- | | | | | |
| 16 02 50 | J0518+3306 | 09 27 49 | 42.2 | 271.2 | 4.1 | | 45.8 | 98 | 1328 | 16 02 50 | |
| 16 09 50 | =0514+330 | 09 34 51 | 41.1 | 272.6 | 4.3 | | 45.7 | 420 | 1382 | 16 02 51 | |
| 16 10 50 | J0529+3209 | 09 35 51 | 42.0 | 269.6 | 4.1 | | 45.2 | 39 | 1382 | 16 10 50 | |
| 16 11 50 | =0526+321 | 09 36 51 | 41.9 | 269.8 | 4.1 | | 45.2 | 60 | 1390 | 16 10 51 | |
| 16 12 50 | J0530+3301 | 09 37 51 | 42.5 | 270.7 | 4.1 | | 45.7 | 45 | 1390 | 16 12 50 | |
| 16 20 50 | =0527+329 | 09 45 52 | 41.3 | 272.2 | 4.2 | | 45.7 | 480 | 1451 | 16 12 51 | |
| 16 21 50 | J0529+3209 | 09 46 52 | 40.4 | 271.8 | 4.3 | | 45.2 | 45 | 1451 | 16 21 50 | |
| 16 22 50 | =0526+321 | 09 47 53 | 40.2 | 272.0 | 4.3 | | 45.2 | 60 | 1459 | 16 21 51 | |
| 16 24 20 | J0521+2112 | 09 49 23 | 30.7 | 264.8 | 4.4 | | 39.9 | 41 | 1459 | 16 24 20 | |
| 16 25 20 | =0518+211 | 09 50 23 | 30.6 | 265.0 | 4.5 | | 39.9 | 60 | 1467 | 16 24 21 | |
| 16 26 20 | J0528+2200 | 09 51 23 | 32.1 | 264.3 | 4.4 | | 40.1 | 40 | 1467 | 16 26 20 | |
| 16 34 20 | --- | 09 59 25 | 30.9 | 266.0 | 4.5 | | 40.2 | 480 | 1528 | 16 26 21 | |
| 16 35 20 | J0521+2112 | 10 00 25 | 29.1 | 267.1 | 4.6 | | 40.0 | 40 | 1528 | 16 35 20 | |
| 16 36 20 | =0518+211 | 10 01 25 | 28.9 | 267.3 | 4.6 | | 40.1 | 60 | 1536 | 16 35 21 | |
| 16 37 20 | J0528+2200 | 10 02 25 | 30.5 | 266.6 | 4.5 | | 40.3 | 40 | 1536 | 16 37 20 | |
| 16 45 20 | --- | 10 10 26 | 29.3 | 268.2 | 4.7 | | 40.3 | 480 | 1597 | 16 37 21 | |
| 16 46 20 | J0521+2112 | 10 11 27 | 27.4 | 269.3 | 4.8 | | 40.1 | 40 | 1597 | 16 46 20 | |
| 16 47 20 | =0518+211 | 10 12 27 | 27.3 | 269.5 | 4.8 | | 40.1 | 60 | 1605 | 16 46 21 | |
| 16 50 20 | J0529+3209 | 10 15 27 | 36.1 | 277.3 | 4.7 | | 44.7 | 132 | 1605 | 16 50 20 | |
| 16 51 20 | =0526+321 | 10 16 27 | 36.0 | 277.4 | 4.8 | | 44.7 | 60 | 1613 | 16 50 21 | |
| 16 51 20 | FRB | 10 16 27 | 37.0 | 277.8 | 4.7 | | 45.3 | -17 | 1613 | No stop | |
| 16 59 40 | --- | 10 24 49 | 35.8 | 279.4 | 4.9 | | 45.0 | 483 | 1677 | 16 51 21 | |
| 17 00 00 | J0529+3209 | 10 25 09 | 34.7 | 279.0 | 4.9 | | 44.5 | 3 | 1677 | 17 00 00 | |
| 17 01 00 | =0526+321 | 10 26 09 | 34.5 | 279.2 | 4.9 | | 44.4 | 60 | 1685 | 17 00 01 | |
| 17 01 00 | FRB | 10 26 09 | 35.6 | 279.6 | 4.9 | | 45.0 | -17 | 1685 | No stop | |
| 17 09 20 | --- | 10 34 30 | 34.3 | 281.1 | 5.0 | | 44.7 | 483 | 1749 | 17 01 01 | |
| 17 09 40 | J0529+3209 | 10 34 50 | 33.2 | 280.8 | 5.1 | | 44.2 | 3 | 1749 | 17 09 40 | |
| 17 10 40 | =0526+321 | 10 35 51 | 33.1 | 281.0 | 5.1 | | 44.1 | 60 | 1756 | 17 09 41 | |
| 17 10 40 | FRB | 10 35 51 | 34.1 | 281.4 | 5.0 | | 44.7 | -17 | 1756 | No stop | |
| 17 19 00 | --- | 10 44 12 | 32.9 | 282.9 | 5.2 | | 44.4 | 483 | 1821 | 17 10 41 | |
| 17 19 40 | J0529+3209 | 10 44 52 | 31.8 | 282.6 | 5.2 | | 43.8 | 23 | 1821 | 17 19 40 | |
| 17 20 40 | =0526+321 | 10 45 52 | 31.6 | 282.8 | 5.3 | | 43.8 | 60 | 1828 | 17 19 41 | |

Schedule for TORUN (Code Tr)

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e-EVN: FRB121102

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|-----|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Tue 24 May 2016 Day 145 --- | | | | | | | | | | |
| 17 20 40 | FRB | 10 45 52 | 32.7 | 283.2 | 5.2 | | 44.3 | -17 | 1828 | No stop |
| 17 29 00 | --- | 10 54 14 | 31.5 | 284.6 | 5.4 | | 43.9 | 483 | 1892 | 17 20 41 |
| 17 29 20 | J0529+3209 | 10 54 34 | 30.3 | 284.4 | 5.4 | | 43.4 | 3 | 1892 | 17 29 20 |
| 17 30 20 | =0526+321 | 10 55 34 | 30.2 | 284.5 | 5.4 | | 43.4 | 60 | 1900 | 17 29 21 |
| 17 30 20 | FRB | 10 55 34 | 31.3 | 284.9 | 5.4 | | 43.9 | -17 | 1900 | No stop |
| 17 38 40 | --- | 11 03 55 | 30.1 | 286.3 | 5.5 | | 43.5 | 483 | 1964 | 17 30 21 |
| 17 39 00 | J0529+3209 | 11 04 15 | 28.9 | 286.1 | 5.6 | | 43.0 | 3 | 1964 | 17 39 00 |
| 17 40 00 | =0526+321 | 11 05 15 | 28.8 | 286.3 | 5.6 | | 42.9 | 60 | 1972 | 17 39 01 |
| 17 40 00 | FRB | 11 05 15 | 29.9 | 286.6 | 5.5 | | 43.4 | -17 | 1972 | No stop |
| 17 48 20 | --- | 11 13 37 | 28.7 | 288.0 | 5.7 | | 43.0 | 483 | 2036 | 17 40 01 |
| 17 49 00 | J0529+3209 | 11 14 17 | 27.5 | 287.8 | 5.7 | | 42.5 | 23 | 2036 | 17 49 00 |
| 17 50 00 | =0526+321 | 11 15 17 | 27.4 | 288.0 | 5.7 | | 42.4 | 60 | 2044 | 17 49 01 |
| 17 50 00 | FRB | 11 15 17 | 28.4 | 288.3 | 5.7 | | 42.9 | -17 | 2044 | No stop |
| 17 58 20 | --- | 11 23 38 | 27.2 | 289.8 | 5.8 | | 42.4 | 483 | 2108 | 17 50 01 |
| 17 58 40 | J0529+3209 | 11 23 58 | 26.1 | 289.5 | 5.9 | | 42.0 | 3 | 2108 | 17 58 40 |
| 17 59 40 | =0526+321 | 11 24 59 | 26.0 | 289.7 | 5.9 | | 41.9 | 60 | 2115 | 17 58 41 |
| 17 59 40 | FRB | 11 24 59 | 27.1 | 290.0 | 5.9 | | 42.4 | -17 | 2115 | No stop |
| 18 08 00 | --- | 11 33 20 | 25.9 | 291.5 | 6.0 | | 41.9 | 483 | 2179 | 17 59 41 |
| 18 08 20 | J0529+3209 | 11 33 40 | 24.8 | 291.2 | 6.1 | | 41.4 | 3 | 2179 | 18 08 20 |
| 18 09 20 | =0526+321 | 11 34 40 | 24.6 | 291.4 | 6.1 | | 41.3 | 60 | 2187 | 18 08 21 |
| 18 09 20 | FRB | 11 34 40 | 25.7 | 291.7 | 6.0 | | 41.8 | -17 | 2187 | No stop |
| 18 17 40 | --- | 11 43 02 | 24.5 | 293.1 | 6.2 | | 41.3 | 483 | 2251 | 18 09 21 |
| 18 18 20 | J0529+3209 | 11 43 42 | 23.4 | 293.0 | 6.2 | | 40.8 | 23 | 2251 | 18 18 20 |
| 18 19 20 | =0526+321 | 11 44 42 | 23.2 | 293.2 | 6.2 | | 40.7 | 60 | 2259 | 18 18 21 |
| 18 19 20 | FRB | 11 44 42 | 24.3 | 293.4 | 6.2 | | 41.1 | -17 | 2259 | No stop |
| 18 27 40 | --- | 11 53 03 | 23.2 | 294.9 | 6.3 | | 40.6 | 483 | 2323 | 18 19 21 |
| 18 28 00 | J0529+3209 | 11 53 23 | 22.0 | 294.7 | 6.4 | | 40.1 | 3 | 2323 | 18 28 00 |
| 18 29 00 | =0526+321 | 11 54 23 | 21.9 | 294.9 | 6.4 | | 40.1 | 60 | 2331 | 18 28 01 |
| 18 29 00 | FRB | 11 54 23 | 23.0 | 295.1 | 6.4 | | 40.5 | -17 | 2331 | No stop |
| 18 37 20 | --- | 12 02 45 | 21.8 | 296.6 | 6.5 | | 39.9 | 483 | 2395 | 18 29 01 |

Schedule for TORUN (Code Tr)

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e-EVN: FRB121102

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

```

-----
Start UT  Source          Start / Stop          Early   Disk   TPStart
Stop UT          LST      EL   AZ   HA  UP   ParA Dwell  GBytes  SYNC
-----
--- Tue 24 May 2016  Day 145 ---

18 37 40  J0529+3209  12 03 05  20.7 296.4  6.5      39.5    3    2395  18 37 40
18 38 40  =0526+321    12 04 05  20.6 296.6  6.6      39.4   60    2403  18 37 41

18 38 40  FRB          12 04 05  21.7 296.8  6.5      39.8  -17    2403  No stop
18 47 00  ---           12 12 26  20.6 298.2  6.7      39.2  483    2467  18 38 41

18 47 40  J0529+3209  12 13 06  19.4 298.1  6.7      38.7   23    2467  18 47 40
18 48 40  =0526+321    12 14 07  19.2 298.3  6.7      38.7   60    2474  18 47 41

18 53 00  J0604+2429  12 18 27  17.6 287.6  6.2      39.0  222    2474  18 53 00
18 53 30  =0601+245    12 18 57  17.5 287.7  6.2      38.9   30    2478  18 53 01

18 54 50  J0614+2229  12 20 18  17.1 284.9  6.1      38.9   59    2478  18 54 50
18 57 50  ---           12 23 18  16.7 285.5  6.1      38.8  180    2501  18 54 51

18 59 30  J0604+2429  12 24 58  16.6 288.8  6.3      38.6   79    2501  18 59 30
19 00 00  =0601+245    12 25 28  16.6 288.9  6.3      38.6   30    2505  18 59 31

```

SETUP FILE INFORMATION:

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

==== Setup file: sess216.L1024e

```

Setup group:    7          Station: TORUN          Total bit rate: 1024
Format: MARK5B  Bits per sample: 2    Sample rate: 32.000
Number of channels: 16  DBE type: DBBC_DDC  Speedup factor: 1.00

```

Disk used to record data.

| | | | | | | | | | |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1st LO= | 2300.00 | 2300.00 | 2300.00 | 2300.00 | 2300.00 | 2300.00 | 2300.00 | 2300.00 | 2300.00 |
| | 2300.00 | 2300.00 | 2300.00 | 2300.00 | 2300.00 | 2300.00 | 2300.00 | 2300.00 | 2300.00 |
| Net SB= | L | L | U | U | L | L | U | U | |
| | L | L | U | U | L | L | U | U | |
| IF SB = | L | L | L | L | L | L | L | L | |
| | L | L | L | L | L | L | L | L | |
| 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. 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, 10, 18, 26, 4, 12, 20, 28, 6, 14, 22, 30, 8, 16, 24, 32

barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | (J2000) | (Date) | Error (mas) |
|--------------|---|-------------------|-----------------|----------------|
| * FRB | 05 28 41.045663 | * 05 31 58.000000 | 05 33 00.786394 | 0.00 |
| | 33 05 54.64087 | * 33 08 04.00000 | 33 08 34.00623 | 0.00 |
| * J0614+2229 | 06 11 15.764703 | * 06 14 17.160000 | 06 15 15.014368 | 0.00 |
| | 22 31 31.81944 | * 22 30 36.00000 | 22 30 05.75185 | 0.00 |
| * J0528+2200 | 05 25 51.827467 | * 05 28 52.264000 | 05 29 49.782248 | 0.00 |
| | 21 57 41.80619 | * 22 00 04.00000 | 22 00 36.96493 | 0.00 |
| * J0126+2559 | 01 23 57.254021 | * 01 26 42.792640 | 01 27 36.075954 | 0.11 |
| 0123+257 | 25 43 27.95555 | * 25 59 01.30009 | 26 03 51.85478 | 0.11 |
| J0126+25 | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.vlba.2012jul rfc_2012b Petrov, 2012, unpublished 1729 observations | | | |
| J0237+2848 | 02 34 55.589591 | * 02 37 52.405678 | 02 38 49.071844 | 0.11 |
| * 0234+285 | 28 35 11.40773 | * 28 48 08.98998 | 28 52 07.37868 | 0.10 |
| J0237+28 | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.vlba.2012jul rfc_2012b Petrov, 2012, unpublished 56811 observations | | | |
| * J0518+3306 | 05 14 48.670952 | * 05 18 05.142474 | 05 19 07.783220 | 0.26 |
| 0514+330 | 33 03 04.11948 | * 33 06 13.36506 | 33 07 02.38738 | 0.32 |
| | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.vlba.2012jul rfc_2012b Petrov, 2012, unpublished 92 observations | | | |

| | | | | |
|--------------|---|-------------------|-----------------|------------------|
| * J0521+2112 | 05 18 46.711010 | * 05 21 45.965845 | 05 22 43.104030 | 0.40 |
| 0518+211 | 21 09 58.62250 | * 21 12 51.45169 | 21 13 34.17055 | 0.60 |
| | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.vlba.2012jul | | | |
| | GSFC 2011B astro solution | | | 104 Observations |
| 0526+321 | 05 26 12.903667 | * 05 29 28.211037 | 05 30 30.475417 | 0.80 |
| * J0529+3209 | 32 07 26.83083 | * 32 09 46.94745 | 32 10 20.27180 | 0.88 |
| | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.vlba.2012jul | | | |
| | rfc_2012b Petrov, 2012, unpublished 36 observations | | | |
| 0527+329 | 05 27 04.333498 | * 05 30 21.061039 | 05 31 23.776134 | 1.08 |
| * J0530+3301 | 32 59 03.55663 | * 33 01 19.90878 | 33 01 52.12302 | 1.28 |
| | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.vlba.2012jul | | | |
| | rfc_2012b Petrov, 2012, unpublished 33 observations | | | |
| * J0604+2429 | 06 01 50.936476 | * 06 04 55.121381 | 06 05 53.855071 | 0.12 |
| 0601+245 | 24 30 09.83044 | * 24 29 55.03637 | 24 29 38.15600 | 0.11 |
| | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.vlba.2012jul | | | |
| | rfc_2012b Petrov, 2012, unpublished 303 observations | | | |

EFFECT OF SOLAR CORONA

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

| Source | Sun distance (deg) |
|------------|--------------------|
| FRB | 22.5 |
| J0614+2229 | 29.6 |
| J0528+2200 | 19.1 |
| J0126+2559 | 36.9 |
| 0234+285 | 21.6 |
| J0518+3306 | 20.0 |
| J0521+2112 | 17.5 |
| J0529+3209 | 21.6 |
| J0530+3301 | 22.2 |
| J0604+2429 | 27.5 |

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 |

rp024etr

E-EVN: FRB121102

PI: *Hessels/Paragi* Address: *JIVE* Observing mode: *realtime e-vlbi*

Schedule for TORUN (Code Tr) Page 2
 e-EVN: FRB121102

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
 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 25 May 2016 Day 146 --- | | | | | | | | | | | |
| Next scan frequencies: | | 1610.49 | 1610.49 | 1610.49 | 1610.49 | 1610.49 | 1610.49 | 1642.49 | 1642.49 | 1642.49 | 1642.49 |
| | | 1674.49 | 1674.49 | 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 | 689.51 | 689.51 | 657.51 | 657.51 | 657.51 | 657.51 |
| | | 625.51 | 625.51 | 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 | 16.00 | 16.00 | 16.00 | 16.00 |
| 13 00 00 | J0126+2559 | 06 28 26 | 29.3 | 275.3 | 5.0 | | 41.7 | 0 | 0 | 13 00 00 | |
| 13 14 20 | =0123+257 | 06 42 48 | 27.1 | 278.0 | 5.3 | | 41.4 | 860 | 110 | 13 00 01 | |
| 13 15 00 | J0126+2559 | 06 43 28 | 27.0 | 278.2 | 5.3 | | 41.4 | 34 | 110 | 13 15 00 | |
| 13 29 20 | =0123+257 | 06 57 51 | 24.9 | 280.9 | 5.5 | | 41.0 | 860 | 221 | 13 15 01 | |
| 13 29 20 | 0234+285 | 06 57 51 | 37.6 | 269.4 | 4.3 | | 43.3 | -61 | 221 | No stop | |
| 13 44 20 | --- | 07 12 53 | 35.4 | 272.4 | 4.6 | | 43.2 | 839 | 336 | 13 29 21 | |
| 13 45 00 | 0234+285 | 07 13 33 | 35.3 | 272.5 | 4.6 | | 43.2 | 34 | 336 | 13 45 00 | |
| 13 59 20 | --- | 07 27 56 | 33.1 | 275.3 | 4.8 | | 43.1 | 860 | 446 | 13 45 01 | |
| 14 00 00 | 0234+285 | 07 28 36 | 33.0 | 275.4 | 4.8 | | 43.1 | 34 | 446 | 14 00 00 | |
| 14 14 20 | --- | 07 42 58 | 30.9 | 278.1 | 5.1 | | 42.8 | 860 | 556 | 14 00 01 | |
| 14 15 00 | 0234+285 | 07 43 38 | 30.8 | 278.2 | 5.1 | | 42.7 | 34 | 556 | 14 15 00 | |
| 14 29 20 | --- | 07 58 01 | 28.6 | 280.9 | 5.3 | | 42.3 | 860 | 667 | 14 15 01 | |
| 14 30 00 | 0234+285 | 07 58 41 | 28.5 | 281.0 | 5.3 | | 42.3 | 34 | 667 | 14 30 00 | |
| 14 44 20 | --- | 08 13 03 | 26.4 | 283.7 | 5.6 | | 41.8 | 860 | 777 | 14 30 01 | |
| 14 45 00 | 0234+285 | 08 13 43 | 26.3 | 283.8 | 5.6 | | 41.8 | 34 | 777 | 14 45 00 | |
| 14 59 20 | --- | 08 28 05 | 24.2 | 286.4 | 5.8 | | 41.1 | 860 | 887 | 14 45 01 | |
| 15 00 00 | 0234+285 | 08 28 46 | 24.2 | 286.5 | 5.8 | | 41.1 | 34 | 887 | 15 00 00 | |
| 15 14 20 | --- | 08 43 08 | 22.1 | 289.1 | 6.1 | | 40.4 | 860 | 997 | 15 00 01 | |
| 15 15 00 | 0234+285 | 08 43 48 | 22.0 | 289.2 | 6.1 | | 40.4 | 34 | 997 | 15 15 00 | |
| 15 29 20 | --- | 08 58 10 | 20.0 | 291.8 | 6.3 | | 39.5 | 860 | 1108 | 15 15 01 | |
| 15 30 00 | 0234+285 | 08 58 51 | 19.9 | 291.9 | 6.3 | | 39.5 | 34 | 1108 | 15 30 00 | |
| 15 44 20 | --- | 09 13 13 | 17.9 | 294.5 | 6.6 | | 38.6 | 860 | 1218 | 15 30 01 | |
| 15 45 00 | 0234+285 | 09 13 53 | 17.8 | 294.6 | 6.6 | | 38.6 | 34 | 1218 | 15 45 00 | |
| 15 59 20 | --- | 09 28 15 | 15.9 | 297.2 | 6.8 | | 37.6 | 860 | 1328 | 15 45 01 | |

Schedule for TORUN (Code Tr)

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e-EVN: FRB121102

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

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 25 May 2016 | Day 146 | | | | --- | | | | | |
| 16 02 50 | J0518+3306 | 09 31 46 | 41.6 | 272.0 | 4.2 | | 45.8 | 99 | 1328 | 16 02 50 | |
| 16 05 50 | =0514+330 | 09 34 46 | 41.2 | 272.6 | 4.3 | | 45.7 | 180 | 1351 | 16 02 51 | |
| 16 06 50 | J0529+3209 | 09 35 47 | 42.0 | 269.6 | 4.1 | | 45.2 | 39 | 1351 | 16 06 50 | |
| 16 07 50 | =0526+321 | 09 36 47 | 41.9 | 269.8 | 4.1 | | 45.2 | 60 | 1359 | 16 06 51 | |
| 16 08 50 | J0530+3301 | 09 37 47 | 42.5 | 270.7 | 4.1 | | 45.7 | 45 | 1359 | 16 08 50 | |
| 16 16 50 | =0527+329 | 09 45 48 | 41.3 | 272.2 | 4.2 | | 45.7 | 480 | 1421 | 16 08 51 | |
| 16 17 50 | J0529+3209 | 09 46 48 | 40.4 | 271.8 | 4.3 | | 45.2 | 45 | 1421 | 16 17 50 | |
| 16 18 50 | =0526+321 | 09 47 49 | 40.2 | 272.0 | 4.3 | | 45.2 | 60 | 1428 | 16 17 51 | |
| 16 20 20 | J0521+2112 | 09 49 19 | 30.8 | 264.8 | 4.4 | | 39.9 | 41 | 1428 | 16 20 20 | |
| 16 21 20 | =0518+211 | 09 50 19 | 30.6 | 265.0 | 4.5 | | 39.9 | 60 | 1436 | 16 20 21 | |
| 16 22 20 | J0528+2200 | 09 51 19 | 32.1 | 264.3 | 4.4 | | 40.1 | 40 | 1436 | 16 22 20 | |
| 16 30 20 | --- | 09 59 20 | 30.9 | 266.0 | 4.5 | | 40.2 | 480 | 1497 | 16 22 21 | |
| 16 31 20 | J0521+2112 | 10 00 21 | 29.1 | 267.1 | 4.6 | | 40.0 | 40 | 1497 | 16 31 20 | |
| 16 32 20 | =0518+211 | 10 01 21 | 29.0 | 267.3 | 4.6 | | 40.0 | 60 | 1505 | 16 31 21 | |
| 16 33 20 | J0528+2200 | 10 02 21 | 30.5 | 266.6 | 4.5 | | 40.3 | 40 | 1505 | 16 33 20 | |
| 16 41 20 | --- | 10 10 22 | 29.3 | 268.2 | 4.7 | | 40.3 | 480 | 1567 | 16 33 21 | |
| 16 42 20 | J0521+2112 | 10 11 22 | 27.4 | 269.3 | 4.8 | | 40.1 | 40 | 1567 | 16 42 20 | |
| 16 43 20 | =0518+211 | 10 12 23 | 27.3 | 269.5 | 4.8 | | 40.1 | 60 | 1574 | 16 42 21 | |
| 16 46 20 | J0529+3209 | 10 15 23 | 36.1 | 277.2 | 4.7 | | 44.7 | 132 | 1574 | 16 46 20 | |
| 16 47 20 | =0526+321 | 10 16 23 | 36.0 | 277.4 | 4.8 | | 44.7 | 60 | 1582 | 16 46 21 | |
| 16 47 20 | FRB | 10 16 23 | 37.0 | 277.8 | 4.7 | | 45.3 | -17 | 1582 | No stop | |
| 16 55 40 | --- | 10 24 45 | 35.8 | 279.3 | 4.9 | | 45.0 | 483 | 1646 | 16 47 21 | |
| 16 56 00 | J0529+3209 | 10 25 05 | 34.7 | 279.0 | 4.9 | | 44.5 | 3 | 1646 | 16 56 00 | |
| 16 57 00 | =0526+321 | 10 26 05 | 34.5 | 279.2 | 4.9 | | 44.4 | 60 | 1654 | 16 56 01 | |
| 16 57 00 | FRB | 10 26 05 | 35.6 | 279.6 | 4.9 | | 45.0 | -17 | 1654 | No stop | |
| 17 05 20 | --- | 10 34 26 | 34.4 | 281.1 | 5.0 | | 44.7 | 483 | 1718 | 16 57 01 | |
| 17 05 40 | J0529+3209 | 10 34 46 | 33.2 | 280.8 | 5.1 | | 44.2 | 3 | 1718 | 17 05 40 | |
| 17 06 40 | =0526+321 | 10 35 46 | 33.1 | 281.0 | 5.1 | | 44.1 | 60 | 1726 | 17 05 41 | |
| 17 06 40 | FRB | 10 35 46 | 34.2 | 281.3 | 5.0 | | 44.7 | -17 | 1726 | No stop | |
| 17 15 00 | --- | 10 44 08 | 32.9 | 282.8 | 5.2 | | 44.4 | 483 | 1790 | 17 06 41 | |
| 17 15 40 | J0529+3209 | 10 44 48 | 31.8 | 282.6 | 5.2 | | 43.8 | 23 | 1790 | 17 15 40 | |
| 17 16 40 | =0526+321 | 10 45 48 | 31.6 | 282.8 | 5.3 | | 43.8 | 60 | 1797 | 17 15 41 | |

Schedule for TORUN (Code Tr)
e-EVN: FRB121102

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UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
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 25 May 2016 Day 146 --- | | | | | | | | | | |
| 17 16 40 | FRB | 10 45 48 | 32.7 | 283.1 | 5.2 | | 44.3 | -17 | 1797 | No stop |
| 17 25 00 | --- | 10 54 09 | 31.5 | 284.6 | 5.4 | | 43.9 | 483 | 1862 | 17 16 41 |
| 17 25 20 | J0529+3209 | 10 54 29 | 30.4 | 284.3 | 5.4 | | 43.4 | 3 | 1862 | 17 25 20 |
| 17 26 20 | =0526+321 | 10 55 30 | 30.2 | 284.5 | 5.4 | | 43.4 | 60 | 1869 | 17 25 21 |
| 17 26 20 | FRB | 10 55 30 | 31.3 | 284.9 | 5.4 | | 43.9 | -17 | 1869 | No stop |
| 17 34 40 | --- | 11 03 51 | 30.1 | 286.3 | 5.5 | | 43.5 | 483 | 1933 | 17 26 21 |
| 17 35 00 | J0529+3209 | 11 04 11 | 28.9 | 286.1 | 5.6 | | 43.0 | 3 | 1933 | 17 35 00 |
| 17 36 00 | =0526+321 | 11 05 11 | 28.8 | 286.2 | 5.6 | | 42.9 | 60 | 1941 | 17 35 01 |
| 17 36 00 | FRB | 11 05 11 | 29.9 | 286.6 | 5.5 | | 43.4 | -17 | 1941 | No stop |
| 17 44 20 | --- | 11 13 33 | 28.7 | 288.0 | 5.7 | | 43.0 | 483 | 2005 | 17 36 01 |
| 17 45 00 | J0529+3209 | 11 14 13 | 27.5 | 287.8 | 5.7 | | 42.5 | 23 | 2005 | 17 45 00 |
| 17 46 00 | =0526+321 | 11 15 13 | 27.4 | 288.0 | 5.7 | | 42.4 | 60 | 2013 | 17 45 01 |
| 17 46 00 | FRB | 11 15 13 | 28.4 | 288.3 | 5.7 | | 42.9 | -17 | 2013 | No stop |
| 17 54 20 | --- | 11 23 34 | 27.3 | 289.8 | 5.8 | | 42.4 | 483 | 2077 | 17 46 01 |
| 17 54 40 | J0529+3209 | 11 23 54 | 26.1 | 289.5 | 5.9 | | 42.0 | 3 | 2077 | 17 54 40 |
| 17 55 40 | =0526+321 | 11 24 54 | 26.0 | 289.7 | 5.9 | | 41.9 | 60 | 2085 | 17 54 41 |
| 17 55 40 | FRB | 11 24 54 | 27.1 | 290.0 | 5.9 | | 42.4 | -17 | 2085 | No stop |
| 18 04 00 | --- | 11 33 16 | 25.9 | 291.5 | 6.0 | | 41.9 | 483 | 2149 | 17 55 41 |
| 18 04 20 | J0529+3209 | 11 33 36 | 24.8 | 291.2 | 6.1 | | 41.4 | 3 | 2149 | 18 04 20 |
| 18 05 20 | =0526+321 | 11 34 36 | 24.6 | 291.4 | 6.1 | | 41.3 | 60 | 2156 | 18 04 21 |
| 18 05 20 | FRB | 11 34 36 | 25.7 | 291.7 | 6.0 | | 41.8 | -17 | 2156 | No stop |
| 18 13 40 | --- | 11 42 57 | 24.5 | 293.1 | 6.2 | | 41.3 | 483 | 2221 | 18 05 21 |
| 18 14 20 | J0529+3209 | 11 43 38 | 23.4 | 293.0 | 6.2 | | 40.8 | 23 | 2221 | 18 14 20 |
| 18 15 20 | =0526+321 | 11 44 38 | 23.2 | 293.2 | 6.2 | | 40.7 | 60 | 2228 | 18 14 21 |
| 18 15 20 | FRB | 11 44 38 | 24.3 | 293.4 | 6.2 | | 41.2 | -17 | 2228 | No stop |
| 18 23 40 | --- | 11 52 59 | 23.2 | 294.9 | 6.3 | | 40.6 | 483 | 2292 | 18 15 21 |
| 18 24 00 | J0529+3209 | 11 53 19 | 22.0 | 294.7 | 6.4 | | 40.1 | 3 | 2292 | 18 24 00 |
| 18 25 00 | =0526+321 | 11 54 19 | 21.9 | 294.9 | 6.4 | | 40.1 | 60 | 2300 | 18 24 01 |
| 18 25 00 | FRB | 11 54 19 | 23.0 | 295.1 | 6.4 | | 40.5 | -17 | 2300 | No stop |
| 18 33 20 | --- | 12 02 41 | 21.9 | 296.5 | 6.5 | | 39.9 | 483 | 2364 | 18 25 01 |

Schedule for TORUN (Code Tr)

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e-EVN: FRB121102

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

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 25 May 2016  Day 146 ---

18 33 40  J0529+3209  12 03 01  20.7 296.4  6.5      39.5    3    2364  18 33 40
18 34 40  =0526+321    12 04 01  20.6 296.5  6.6      39.4   60    2372  18 33 41

18 34 40  FRB          12 04 01  21.7 296.8  6.5      39.8  -17    2372  No stop
18 43 00  ---          12 12 22  20.6 298.2  6.7      39.2  483    2436  18 34 41

18 43 40  J0529+3209  12 13 02  19.4 298.1  6.7      38.7   23    2436  18 43 40
18 44 40  =0526+321    12 14 02  19.3 298.3  6.7      38.7   60    2444  18 43 41

18 49 00  J0604+2429  12 18 23  17.6 287.6  6.2      39.0  222    2444  18 49 00
18 49 30  =0601+245    12 18 53  17.5 287.7  6.2      38.9   30    2447  18 49 01

18 50 50  J0614+2229  12 20 14  17.1 284.9  6.1      38.9   59    2447  18 50 50
18 51 30  ---          12 20 54  17.0 285.0  6.1      38.9   40    2453  18 50 51

18 53 10  J0604+2429  12 22 34  17.0 288.4  6.3      38.8   79    2453  18 53 10
18 53 40  =0601+245    12 23 04  16.9 288.5  6.3      38.7   30    2456  18 53 11

18 56 10  J0637+2319  12 25 34  20.3 282.1  5.8      39.7  121    2456  18 56 10
18 56 40  =0634+233    12 26 04  20.3 282.2  5.8      39.7   30    2460  18 56 11

18 57 50  J0629+2415  12 27 15  19.6 284.6  6.0      39.6   52    2460  18 57 50
18 58 30  ---          12 27 55  19.5 284.7  6.0      39.6   40    2465  18 57 51

18 59 30  J0637+2319  12 28 55  19.8 282.7  5.8      39.6   42    2465  18 59 30
19 00 00  =0634+233    12 29 25  19.8 282.8  5.9      39.6   30    2469  18 59 31

```

SETUP FILE INFORMATION:

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

==== Setup file: sess216.L1024e

```

Setup group:    7          Station: TORUN          Total bit rate: 1024
Format: MARK5B Bits per sample: 2      Sample rate: 32.000
Number of channels: 16    DBE type: DBBC_DDC     Speedup factor: 1.00

```

Disk used to record data.

| | | | | | | | | | |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1st LO= | 2300.00 | 2300.00 | 2300.00 | 2300.00 | 2300.00 | 2300.00 | 2300.00 | 2300.00 | 2300.00 |
| | 2300.00 | 2300.00 | 2300.00 | 2300.00 | 2300.00 | 2300.00 | 2300.00 | 2300.00 | 2300.00 |
| Net SB= | L | L | U | U | L | L | U | U | 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, 10, 18, 26, 4, 12, 20, 28, 6, 14, 22, 30, 8, 16, 24, 32

barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | (J2000) | (Date) | Error (mas) |
|--------------|---|-------------------|-----------------|----------------|
| * FRB | 05 28 41.045663 | * 05 31 58.000000 | 05 33 00.794343 | 0.00 |
| | 33 05 54.64087 | * 33 08 04.00000 | 33 08 33.95347 | 0.00 |
| * J0614+2229 | 06 11 15.764703 | * 06 14 17.160000 | 06 15 15.017992 | 0.00 |
| | 22 31 31.81944 | * 22 30 36.00000 | 22 30 05.75181 | 0.00 |
| * J0629+2415 | 06 26 02.069795 | * 06 29 05.728000 | 06 30 04.322141 | 0.00 |
| | 24 17 43.52461 | * 24 15 43.30000 | 24 14 52.85259 | 0.00 |
| * J0528+2200 | 05 25 51.827467 | * 05 28 52.264000 | 05 29 49.789996 | 0.00 |
| | 21 57 41.80619 | * 22 00 04.00000 | 22 00 36.97416 | 0.00 |
| * J0126+2559 | 01 23 57.254021 | * 01 26 42.792640 | 01 27 36.105752 | 0.11 |
| 0123+257 | 25 43 27.95555 | * 25 59 01.30009 | 26 03 51.93667 | 0.11 |
| J0126+25 | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.vlba.2012jul rfc_2012b Petrov, 2012, unpublished 1729 observations | | | |
| J0237+2848 | 02 34 55.589591 | * 02 37 52.405678 | 02 38 49.096602 | 0.11 |
| * 0234+285 | 28 35 11.40773 | * 28 48 08.98998 | 28 52 07.40717 | 0.10 |
| J0237+28 | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.vlba.2012jul rfc_2012b Petrov, 2012, unpublished 56811 observations | | | |
| * J0518+3306 | 05 14 48.670952 | * 05 18 05.142474 | 05 19 07.792593 | 0.26 |
| 0514+330 | 33 03 04.11948 | * 33 06 13.36506 | 33 07 02.33677 | 0.32 |

/home/guest/rmc/SCHED/sched11.4/catalogs/sources.vlba.2012jul
 rfc_2012b Petrov, 2012, unpublished 92 observations

| | | | | |
|--|-----------------|-------------------|-----------------|------|
| * J0521+2112 | 05 18 46.711010 | * 05 21 45.965845 | 05 22 43.112407 | 0.40 |
| 0518+211 | 21 09 58.62250 | * 21 12 51.45169 | 21 13 34.18555 | 0.60 |
| /home/guest/rmc/SCHED/sched11.4/catalogs/sources.vlba.2012jul GSFC 2011B astro solution 104 Observations | | | | |
| 0526+321 | 05 26 12.903667 | * 05 29 28.211037 | 05 30 30.483587 | 0.80 |
| * J0529+3209 | 32 07 26.83083 | * 32 09 46.94745 | 32 10 20.22472 | 0.88 |
| /home/guest/rmc/SCHED/sched11.4/catalogs/sources.vlba.2012jul rfc_2012b Petrov, 2012, unpublished 36 observations | | | | |
| 0527+329 | 05 27 04.333498 | * 05 30 21.061039 | 05 31 23.784244 | 1.08 |
| * J0530+3301 | 32 59 03.55663 | * 33 01 19.90878 | 33 01 52.07108 | 1.28 |
| /home/guest/rmc/SCHED/sched11.4/catalogs/sources.vlba.2012jul rfc_2012b Petrov, 2012, unpublished 33 observations | | | | |
| * J0604+2429 | 06 01 50.936476 | * 06 04 55.121381 | 06 05 53.859587 | 0.12 |
| 0601+245 | 24 30 09.83044 | * 24 29 55.03637 | 24 29 38.14646 | 0.11 |
| /home/guest/rmc/SCHED/sched11.4/catalogs/sources.vlba.2012jul rfc_2012b Petrov, 2012, unpublished 303 observations | | | | |
| * J0637+2319 | 06 34 24.138792 | * 06 37 26.373600 | 06 38 24.527195 | 0.00 |
| 0634+233 | 23 22 34.59869 | * 23 19 58.19400 | 23 18 56.09916 | 0.00 |
| /home/guest/rmc/SCHED/sched11.4/catalogs/sources.vlba.2012jul JVAS - Wilkinson et al. 1998, mnras, 300, 790; S8.4GHz= 179 mJy | | | | |

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) |
|------------|--------------------|
| FRB | 21.7 |
| J0614+2229 | 28.7 |
| J0629+2415 | 32.0 |
| J0528+2200 | 18.2 |
| J0126+2559 | 37.8 |
| 0234+285 | 22.4 |
| J0518+3306 | 19.2 |
| J0521+2112 | 16.6 |
| J0529+3209 | 20.7 |
| J0530+3301 | 21.3 |
| J0604+2429 | 26.5 |
| J0637+2319 | 33.9 |

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

For common VLBI bands, this is:

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

NETWORK MONITORING EXPERIMENT

PI: Jay Blanchard Address: JIVE

Schedule for TORUN (Code Tr)

Page 2

Network Monitoring Experiment

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

```

-----
Start UT  Source          Start / Stop          Early  Disk  TPStart
Stop UT          LST    EL    AZ    HA  UP    ParA  Dwell  GBytes  SYNC
-----
--- Thu 26 May 2016  Day 147 ---
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  8.00  8.00

11 00 00 0736+017    04 32 03 25.5 125.8 -3.1   -29.1   0     0   11 00 00
11 05 00 ---          04 37 04 26.1 127.1 -3.1   -28.6  300    19   11 00 01

11 07 00 0736+017    04 39 04 26.4 127.6 -3.0   -28.4  114    19   11 07 00
11 12 00 ---          04 44 05 27.0 128.8 -2.9   -27.9  300    38   11 07 01

11 15 00 0736+017    04 47 05 27.3 129.5 -2.9   -27.6  173    38   11 15 00
11 25 00 ---          04 57 07 28.5 132.1 -2.7   -26.5  600    77   11 15 01

11 26 00 0736+017    04 58 07 28.6 132.3 -2.7   -26.4   54    77   11 26 00
11 35 00 ---          05 07 08 29.6 134.6 -2.5   -25.3  540   112   11 26 01

11 36 00 0736+017    05 08 09 29.7 134.9 -2.5   -25.2   54   112   11 36 00
11 45 00 ---          05 17 10 30.6 137.3 -2.4   -24.1  540   146   11 36 01

11 46 00 0736+017    05 18 10 30.7 137.5 -2.4   -23.9   54   146   11 46 00
11 55 00 ---          05 27 12 31.6 140.0 -2.2   -22.7  540   181   11 46 01

11 55 00 0736+017    05 27 12 31.6 140.0 -2.2   -22.7   -5   181  No stop
12 00 00 ---          05 32 13 32.1 141.3 -2.1   -22.0  295   200   11 55 01

12 02 00 0736+017    05 34 13 32.3 141.9 -2.1   -21.8  113   200   12 02 00
12 07 00 ---          05 39 14 32.7 143.3 -2.0   -21.1  300   219   12 02 01

12 10 00 4C39.25     05 42 14 49.5  87.0 -3.8   -50.5   52   219   12 10 00
12 20 00 ---          05 52 16 51.0  88.9 -3.6   -50.6  600   258   12 10 01

12 21 00 4C39.25     05 53 16 51.2  89.1 -3.6   -50.6   54   258   12 21 00
12 30 00 ---          06 02 18 52.6  90.9 -3.4   -50.6  540   292   12 21 01

12 31 00 4C39.25     06 03 18 52.7  91.1 -3.4   -50.6   54   292   12 31 00
12 40 00 ---          06 12 19 54.1  93.0 -3.3   -50.5  540   327   12 31 01

12 41 00 4C39.25     06 13 19 54.2  93.2 -3.2   -50.5   54   327   12 41 00
12 50 00 ---          06 22 21 55.6  95.2 -3.1   -50.3  540   362   12 41 01

12 50 00 4C39.25     06 22 21 55.6  95.2 -3.1   -50.3   -5   362  No stop
12 55 00 ---          06 27 22 56.3  96.3 -3.0   -50.1  295   381   12 50 01
-----

```

Schedule for TORUN (Code Tr)

Page 3

Network Monitoring Experiment

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

```

-----
Start UT  Source          Start / Stop          Early  Disk  TPStart
Stop UT          LST      EL  AZ  HA  UP  ParA  Dwell  GBytes  SYNC
-----
--- Thu 26 May 2016  Day 147 ---

12 57 00  4C39.25      06 29 22  56.6  96.7 -3.0      -50.1  114    381  12 57 00
13 02 00  ---          06 34 23  57.4  97.9 -2.9      -49.9  300    400  12 57 01

13 05 00  4C39.25      06 37 23  57.8  98.6 -2.8      -49.8  173    400  13 05 00
13 15 00  ---          06 47 25  59.3 101.0 -2.7      -49.3  600    438  13 05 01

13 16 00  4C39.25      06 48 25  59.4 101.3 -2.7      -49.2   54    438  13 16 00
13 25 00  ---          06 57 27  60.8 103.6 -2.5      -48.7  540    473  13 16 01

13 26 00  4C39.25      06 58 27  60.9 103.8 -2.5      -48.6   54    473  13 26 00
13 35 00  ---          07 07 28  62.2 106.3 -2.3      -47.8  540    508  13 26 01

13 35 00  1038+064     07 07 28  26.0 117.0 -3.6      -32.6 -148    508  No stop
13 40 00  ---          07 12 29  26.7 118.1 -3.5      -32.2  152    527  13 35 01

13 41 00  1038+064     07 13 29  26.8 118.4 -3.5      -32.1   54    527  13 41 00
13 46 00  ---          07 18 30  27.5 119.6 -3.4      -31.7  300    546  13 41 01

13 49 00  1038+064     07 21 30  27.9 120.3 -3.3      -31.4  173    546  13 49 00
13 54 00  ---          07 26 31  28.5 121.5 -3.3      -31.0  300    565  13 49 01

13 55 00  1038+064     07 27 31  28.6 121.7 -3.2      -30.9   54    565  13 55 00
14 00 00  ---          07 32 32  29.3 123.0 -3.2      -30.4  300    585  13 55 01

```

SETUP FILE INFORMATION:

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

==== Setup file: sess216.L512nme

```

Setup group: 10          Station: TORUN          Total bit rate: 512
Format: MARK5B         Bits per sample: 2      Sample rate: 16.000
Number of channels: 16  DBE type: DBBC_DDC      Speedup factor: 1.00

```

Disk used to record data.

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

The following frequency sets based on these setups were used.

```

Frequency Set: 8 Setup file default. Used with PCAL = off
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: 8

```

Track assignments are:

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | (Date) | Error (mas) | |
|------------|--|-------------------|-----------------|------|
| * 0736+017 | 07 36 42.512337 | * 07 39 18.033895 | 07 40 07.840864 | 0.01 |
| J0739+0137 | 01 44 00.18089 | * 01 37 04.61782 | 01 34 35.23387 | 0.02 |
| J0739+01 | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc GSFC 2015a astro solution, unpublished 3035 observations. | | | |
| * 4C39.25 | 09 23 55.319215 | * 09 27 03.013936 | 09 28 03.212477 | 0.30 |
| J0927+3902 | 39 15 23.56645 | * 39 02 20.85186 | 38 58 07.29309 | 0.16 |
| 0923+392 | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc | | | |
| J0927+39 | GSFC 2015a astro solution, unpublished 245753 observations. | | | |
| * 1038+064 | 10 38 40.885152 | * 10 41 17.162499 | 10 42 08.116980 | 0.02 |
| J1041+0610 | 06 25 58.53293 | * 06 10 16.92371 | 06 05 04.51676 | 0.03 |
| J1041+06 | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc GSFC 2015a astro solution, unpublished 1628 observations. | | | |

DARK MATTER SUBSTRUCTURES IN THE LENS JVAS B1555+375

PI: *Cristiana Spingola*

Address: University of Groningen - Kapteyn Astronomical Institute

Observing mode: 18cm 1024-8-2

Schedule for TORUN (Code Tr)

Page 2

Dark matter substructures in the lens JVAS B1555+375

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | | |
|---------------------------------|------------|--------------|---------|---------|---------|---------|---------|---------|---------|----------|---------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC | |
| ----- | | | | | | | | | | | |
| --- Thu 26 May 2016 Day 147 --- | | | | | | | | | | | |
| Next scan frequencies: | | 1584.00 | 1584.00 | 1584.00 | 1584.00 | 1584.00 | 1584.00 | 1616.00 | 1616.00 | 1616.00 | 1616.00 |
| | | 1648.00 | 1648.00 | 1648.00 | 1648.00 | 1648.00 | 1648.00 | 1680.00 | 1680.00 | 1680.00 | 1680.00 |
| Next BBC frequencies: | | 716.00 | 716.00 | 716.00 | 716.00 | 716.00 | 716.00 | 684.00 | 684.00 | 684.00 | 684.00 |
| | | 652.00 | 652.00 | 652.00 | 652.00 | 652.00 | 652.00 | 620.00 | 620.00 | 620.00 | 620.00 |
| Next scan bandwidths: | | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 |
| | | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 |
| ----- | | | | | | | | | | | |
| 15 30 00 | J1555+3812 | 09 02 47 | 22.7 | 56.1 | -6.9 | | -39.3 | 0 | 0 | 15 30 00 | |
| 15 33 00 | --- | 09 05 48 | 23.1 | 56.6 | -6.8 | | -39.6 | 180 | 23 | 15 30 01 | |
| 15 33 00 | B1555+375 | 09 05 48 | 22.2 | 56.8 | -6.9 | | -39.2 | -16 | 23 | No stop | |
| 15 36 30 | --- | 09 09 18 | 22.6 | 57.4 | -6.8 | | -39.5 | 194 | 50 | 15 33 01 | |
| 15 37 00 | J1555+3812 | 09 09 48 | 23.6 | 57.2 | -6.8 | | -40.0 | 14 | 50 | 15 37 00 | |
| 15 38 30 | --- | 09 11 18 | 23.8 | 57.5 | -6.7 | | -40.1 | 90 | 62 | 15 37 01 | |
| 15 38 30 | B1555+375 | 09 11 18 | 22.9 | 57.7 | -6.8 | | -39.7 | -16 | 62 | No stop | |
| 15 42 00 | --- | 09 14 49 | 23.3 | 58.3 | -6.7 | | -40.0 | 194 | 88 | 15 38 31 | |
| 15 42 30 | J1555+3812 | 09 15 19 | 24.3 | 58.1 | -6.7 | | -40.4 | 14 | 88 | 15 42 30 | |
| 15 44 00 | --- | 09 16 49 | 24.5 | 58.4 | -6.6 | | -40.6 | 90 | 100 | 15 42 31 | |
| 15 44 00 | B1555+375 | 09 16 49 | 23.6 | 58.6 | -6.7 | | -40.1 | -16 | 100 | No stop | |
| 15 47 30 | --- | 09 20 20 | 24.0 | 59.2 | -6.6 | | -40.4 | 194 | 127 | 15 44 01 | |
| 15 48 00 | J1555+3812 | 09 20 50 | 25.0 | 59.0 | -6.6 | | -40.9 | 14 | 127 | 15 48 00 | |
| 15 49 30 | --- | 09 22 20 | 25.2 | 59.3 | -6.6 | | -41.0 | 90 | 138 | 15 48 01 | |
| 15 49 30 | B1555+375 | 09 22 20 | 24.3 | 59.5 | -6.6 | | -40.6 | -16 | 138 | No stop | |
| 15 53 00 | --- | 09 25 51 | 24.7 | 60.1 | -6.5 | | -40.9 | 194 | 165 | 15 49 31 | |
| 15 53 30 | J1555+3812 | 09 26 21 | 25.7 | 59.9 | -6.5 | | -41.4 | 14 | 165 | 15 53 30 | |
| 15 55 00 | --- | 09 27 51 | 25.9 | 60.2 | -6.5 | | -41.5 | 90 | 177 | 15 53 31 | |
| 15 55 00 | B1555+375 | 09 27 51 | 25.0 | 60.5 | -6.5 | | -41.1 | -16 | 177 | No stop | |
| 15 58 30 | --- | 09 31 22 | 25.5 | 61.0 | -6.4 | | -41.3 | 194 | 204 | 15 55 01 | |
| 15 59 00 | J1555+3812 | 09 31 52 | 26.4 | 60.8 | -6.4 | | -41.8 | 14 | 204 | 15 59 00 | |
| 16 00 30 | --- | 09 33 22 | 26.6 | 61.1 | -6.4 | | -42.0 | 90 | 215 | 15 59 01 | |
| 16 00 30 | B1555+375 | 09 33 22 | 25.7 | 61.4 | -6.4 | | -41.5 | -16 | 215 | No stop | |
| 16 04 00 | --- | 09 36 53 | 26.2 | 61.9 | -6.3 | | -41.8 | 194 | 242 | 16 00 31 | |

Schedule for TORUN (Code Tr)

Page 3

Dark matter substructures in the lens JVAS B1555+375

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

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 26 May 2016 | Day 147 | | | | | --- | | | | |
| 16 04 30 | J1555+3812 | 09 37 23 | 27.2 | 61.7 | -6.3 | | -42.3 | 14 | 242 | 16 04 30 | |
| 16 06 00 | --- | 09 38 53 | 27.4 | 62.0 | -6.3 | | -42.4 | 90 | 254 | 16 04 31 | |
| 16 06 00 | B1555+375 | 09 38 53 | 26.4 | 62.3 | -6.3 | | -41.9 | -16 | 254 | No stop | |
| 16 09 30 | --- | 09 42 24 | 26.9 | 62.9 | -6.3 | | -42.2 | 194 | 281 | 16 06 01 | |
| 16 10 00 | J1555+3812 | 09 42 54 | 27.9 | 62.7 | -6.2 | | -42.7 | 14 | 281 | 16 10 00 | |
| 16 11 30 | --- | 09 44 24 | 28.1 | 62.9 | -6.2 | | -42.8 | 90 | 292 | 16 10 01 | |
| 16 11 30 | B1555+375 | 09 44 24 | 27.2 | 63.2 | -6.2 | | -42.4 | -16 | 292 | No stop | |
| 16 15 00 | --- | 09 47 54 | 27.7 | 63.8 | -6.2 | | -42.6 | 194 | 319 | 16 11 31 | |
| 16 15 30 | J1555+3812 | 09 48 25 | 28.6 | 63.6 | -6.1 | | -43.1 | 14 | 319 | 16 15 30 | |
| 16 17 00 | --- | 09 49 55 | 28.8 | 63.8 | -6.1 | | -43.3 | 90 | 331 | 16 15 31 | |
| 16 17 00 | B1555+375 | 09 49 55 | 27.9 | 64.1 | -6.1 | | -42.8 | -16 | 331 | No stop | |
| 16 20 30 | --- | 09 53 25 | 28.4 | 64.7 | -6.1 | | -43.0 | 194 | 358 | 16 17 01 | |
| 16 21 00 | J1555+3812 | 09 53 55 | 29.4 | 64.5 | -6.0 | | -43.6 | 14 | 358 | 16 21 00 | |
| 16 22 30 | --- | 09 55 26 | 29.6 | 64.7 | -6.0 | | -43.7 | 90 | 369 | 16 21 01 | |
| 16 22 30 | B1555+375 | 09 55 26 | 28.7 | 65.0 | -6.0 | | -43.2 | -16 | 369 | No stop | |
| 16 26 00 | --- | 09 58 56 | 29.1 | 65.6 | -6.0 | | -43.4 | 194 | 396 | 16 22 31 | |
| 16 26 30 | J1555+3812 | 09 59 26 | 30.1 | 65.4 | -5.9 | | -44.0 | 14 | 396 | 16 26 30 | |
| 16 28 00 | --- | 10 00 57 | 30.3 | 65.6 | -5.9 | | -44.1 | 90 | 408 | 16 26 31 | |
| 16 28 00 | B1555+375 | 10 00 57 | 29.4 | 65.9 | -5.9 | | -43.6 | -16 | 408 | No stop | |
| 16 31 30 | --- | 10 04 27 | 29.9 | 66.5 | -5.9 | | -43.8 | 194 | 435 | 16 28 01 | |
| 16 32 00 | J1555+3812 | 10 04 57 | 30.9 | 66.3 | -5.8 | | -44.4 | 14 | 435 | 16 32 00 | |
| 16 33 30 | --- | 10 06 28 | 31.1 | 66.5 | -5.8 | | -44.5 | 90 | 446 | 16 32 01 | |
| 16 33 30 | B1555+375 | 10 06 28 | 30.2 | 66.8 | -5.9 | | -44.0 | -16 | 446 | No stop | |
| 16 37 00 | --- | 10 09 58 | 30.7 | 67.4 | -5.8 | | -44.2 | 194 | 473 | 16 33 31 | |
| 16 37 30 | J1555+3812 | 10 10 28 | 31.6 | 67.2 | -5.8 | | -44.7 | 14 | 473 | 16 37 30 | |
| 16 39 00 | --- | 10 11 58 | 31.8 | 67.4 | -5.7 | | -44.8 | 90 | 485 | 16 37 31 | |
| 16 39 00 | B1555+375 | 10 11 58 | 30.9 | 67.7 | -5.8 | | -44.3 | -16 | 485 | No stop | |
| 16 42 30 | --- | 10 15 29 | 31.4 | 68.3 | -5.7 | | -44.6 | 194 | 512 | 16 39 01 | |
| 16 43 00 | J1555+3812 | 10 15 59 | 32.4 | 68.1 | -5.7 | | -45.1 | 14 | 512 | 16 43 00 | |
| 16 44 30 | --- | 10 17 29 | 32.6 | 68.3 | -5.6 | | -45.2 | 90 | 523 | 16 43 01 | |
| 16 44 30 | B1555+375 | 10 17 29 | 31.7 | 68.7 | -5.7 | | -44.7 | -16 | 523 | No stop | |
| 16 48 00 | --- | 10 21 00 | 32.2 | 69.2 | -5.6 | | -44.9 | 194 | 550 | 16 44 31 | |

Schedule for TORUN (Code Tr)

Page 4

Dark matter substructures in the lens JVAS B1555+375

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

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 26 May 2016 Day 147 --- | | | | | | | | | | |
| 16 48 30 | J1555+3812 | 10 21 30 | 33.2 | 69.0 | -5.6 | | -45.5 | 14 | 550 | 16 48 30 |
| 16 50 00 | --- | 10 23 00 | 33.4 | 69.2 | -5.5 | | -45.6 | 90 | 562 | 16 48 31 |
| 16 50 00 | B1555+375 | 10 23 00 | 32.5 | 69.6 | -5.6 | | -45.0 | -16 | 562 | No stop |
| 16 53 30 | --- | 10 26 31 | 33.0 | 70.2 | -5.5 | | -45.3 | 194 | 588 | 16 50 01 |
| 16 54 00 | J1555+3812 | 10 27 01 | 33.9 | 69.9 | -5.5 | | -45.8 | 14 | 588 | 16 54 00 |
| 16 55 30 | --- | 10 28 31 | 34.2 | 70.1 | -5.5 | | -45.9 | 90 | 600 | 16 54 01 |
| 16 55 30 | B1555+375 | 10 28 31 | 33.3 | 70.5 | -5.5 | | -45.4 | -16 | 600 | No stop |
| 16 59 00 | --- | 10 32 02 | 33.8 | 71.1 | -5.4 | | -45.6 | 194 | 627 | 16 55 31 |
| 16 59 30 | J1555+3812 | 10 32 32 | 34.7 | 70.8 | -5.4 | | -46.2 | 14 | 627 | 16 59 30 |
| 17 01 00 | --- | 10 34 02 | 34.9 | 71.0 | -5.4 | | -46.2 | 90 | 638 | 16 59 31 |
| 17 01 00 | B1555+375 | 10 34 02 | 34.0 | 71.4 | -5.4 | | -45.7 | -16 | 638 | No stop |
| 17 04 30 | --- | 10 37 33 | 34.5 | 72.0 | -5.3 | | -45.9 | 194 | 665 | 17 01 01 |
| 17 05 00 | J1555+3812 | 10 38 03 | 35.5 | 71.7 | -5.3 | | -46.5 | 14 | 665 | 17 05 00 |
| 17 06 30 | --- | 10 39 33 | 35.7 | 72.0 | -5.3 | | -46.6 | 90 | 677 | 17 05 01 |
| 17 06 30 | B1555+375 | 10 39 33 | 34.8 | 72.4 | -5.3 | | -46.0 | -16 | 677 | No stop |
| 17 10 00 | --- | 10 43 04 | 35.3 | 72.9 | -5.2 | | -46.2 | 194 | 704 | 17 06 31 |
| 17 10 30 | J1555+3812 | 10 43 34 | 36.3 | 72.6 | -5.2 | | -46.8 | 14 | 704 | 17 10 30 |
| 17 12 00 | --- | 10 45 04 | 36.5 | 72.9 | -5.2 | | -46.9 | 90 | 715 | 17 10 31 |
| 17 12 00 | B1555+375 | 10 45 04 | 35.6 | 73.3 | -5.2 | | -46.3 | -16 | 715 | No stop |
| 17 15 30 | --- | 10 48 34 | 36.1 | 73.9 | -5.2 | | -46.5 | 194 | 742 | 17 12 01 |
| 17 16 00 | J1555+3812 | 10 49 04 | 37.1 | 73.6 | -5.1 | | -47.1 | 14 | 742 | 17 16 00 |
| 17 17 30 | --- | 10 50 35 | 37.3 | 73.8 | -5.1 | | -47.2 | 90 | 754 | 17 16 01 |
| 17 17 30 | B1555+375 | 10 50 35 | 36.4 | 74.2 | -5.1 | | -46.6 | -16 | 754 | No stop |
| 17 21 00 | --- | 10 54 05 | 36.9 | 74.8 | -5.1 | | -46.8 | 194 | 781 | 17 17 31 |
| 17 21 30 | J1555+3812 | 10 54 35 | 37.9 | 74.5 | -5.0 | | -47.4 | 14 | 781 | 17 21 30 |
| 17 23 00 | --- | 10 56 06 | 38.1 | 74.7 | -5.0 | | -47.5 | 90 | 792 | 17 21 31 |
| 17 23 00 | B1555+375 | 10 56 06 | 37.2 | 75.2 | -5.0 | | -46.9 | -16 | 792 | No stop |
| 17 26 30 | --- | 10 59 36 | 37.7 | 75.8 | -5.0 | | -47.0 | 194 | 819 | 17 23 01 |
| 17 27 00 | J1555+3812 | 11 00 06 | 38.7 | 75.4 | -4.9 | | -47.7 | 14 | 819 | 17 27 00 |
| 17 28 30 | --- | 11 01 37 | 38.9 | 75.7 | -4.9 | | -47.7 | 90 | 831 | 17 27 01 |

Schedule for TORUN (Code Tr) Page 5

Dark matter substructures in the lens JVAS B1555+375

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

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 26 May 2016 Day 147 --- | | | | | | | | | | |
| 17 28 30 | B1555+375 | 11 01 37 | 38.0 | 76.1 | -4.9 | | -47.1 | -16 | 831 | No stop |
| 17 32 00 | --- | 11 05 07 | 38.5 | 76.7 | -4.9 | | -47.3 | 194 | 858 | 17 28 31 |
| 17 32 30 | J1555+3812 | 11 05 37 | 39.5 | 76.4 | -4.8 | | -47.9 | 14 | 858 | 17 32 30 |
| 17 34 00 | --- | 11 07 07 | 39.7 | 76.6 | -4.8 | | -48.0 | 90 | 869 | 17 32 31 |
| 17 34 00 | B1555+375 | 11 07 07 | 38.8 | 77.0 | -4.8 | | -47.4 | -16 | 869 | No stop |
| 17 37 30 | --- | 11 10 38 | 39.3 | 77.7 | -4.8 | | -47.5 | 194 | 896 | 17 34 01 |
| 17 38 00 | J1555+3812 | 11 11 08 | 40.3 | 77.3 | -4.7 | | -48.2 | 14 | 896 | 17 38 00 |
| 17 39 30 | --- | 11 12 38 | 40.5 | 77.6 | -4.7 | | -48.2 | 90 | 908 | 17 38 01 |
| 17 39 30 | B1555+375 | 11 12 38 | 39.6 | 78.0 | -4.8 | | -47.6 | -16 | 908 | No stop |
| 17 43 00 | --- | 11 16 09 | 40.2 | 78.6 | -4.7 | | -47.7 | 194 | 935 | 17 39 31 |
| 17 43 30 | J1555+3812 | 11 16 39 | 41.1 | 78.2 | -4.7 | | -48.4 | 14 | 935 | 17 43 30 |
| 17 45 00 | --- | 11 18 09 | 41.3 | 78.5 | -4.6 | | -48.5 | 90 | 946 | 17 43 31 |
| 17 45 00 | B1555+375 | 11 18 09 | 40.4 | 79.0 | -4.7 | | -47.8 | -16 | 946 | No stop |
| 17 48 30 | --- | 11 21 40 | 41.0 | 79.6 | -4.6 | | -48.0 | 194 | 973 | 17 45 01 |
| 17 49 00 | J1555+3812 | 11 22 10 | 41.9 | 79.2 | -4.6 | | -48.6 | 14 | 973 | 17 49 00 |
| 17 50 30 | --- | 11 23 40 | 42.1 | 79.5 | -4.5 | | -48.7 | 90 | 985 | 17 49 01 |
| 17 50 30 | B1555+375 | 11 23 40 | 41.3 | 79.9 | -4.6 | | -48.0 | -16 | 985 | No stop |
| 17 54 00 | --- | 11 27 11 | 41.8 | 80.6 | -4.5 | | -48.1 | 194 | 1012 | 17 50 31 |
| 17 54 30 | J1555+3812 | 11 27 41 | 42.7 | 80.2 | -4.5 | | -48.8 | 14 | 1012 | 17 54 30 |
| 17 56 00 | --- | 11 29 11 | 43.0 | 80.4 | -4.4 | | -48.9 | 90 | 1023 | 17 54 31 |
| 17 56 00 | B1555+375 | 11 29 11 | 42.1 | 80.9 | -4.5 | | -48.2 | -16 | 1023 | No stop |
| 17 59 30 | --- | 11 32 42 | 42.6 | 81.5 | -4.4 | | -48.3 | 194 | 1050 | 17 56 01 |
| 18 00 00 | J1555+3812 | 11 33 12 | 43.5 | 81.2 | -4.4 | | -49.0 | 14 | 1050 | 18 00 00 |
| 18 01 30 | --- | 11 34 42 | 43.8 | 81.4 | -4.3 | | -49.0 | 90 | 1062 | 18 00 01 |
| 18 01 30 | B1555+375 | 11 34 42 | 42.9 | 81.9 | -4.4 | | -48.4 | -16 | 1062 | No stop |
| 18 05 00 | --- | 11 38 13 | 43.4 | 82.5 | -4.3 | | -48.5 | 194 | 1088 | 18 01 31 |
| 18 05 30 | J1555+3812 | 11 38 43 | 44.4 | 82.1 | -4.3 | | -49.2 | 14 | 1088 | 18 05 30 |
| 18 07 00 | --- | 11 40 13 | 44.6 | 82.4 | -4.3 | | -49.2 | 90 | 1100 | 18 05 31 |
| 18 08 46 | 3C345 | 11 41 59 | 38.9 | 72.9 | -5.0 | | -48.3 | 70 | 1100 | 18 08 46 |
| 18 13 36 | --- | 11 47 00 | 39.6 | 73.7 | -4.9 | | -48.6 | 290 | 1137 | 18 08 47 |

Schedule for TORUN (Code Tr)

Page 6

Dark matter substructures in the lens JVAS B1555+375

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

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 26 May 2016 Day 147 --- | | | | | | | | | | |
| 18 15 27 | J1555+3812 | 11 48 41 | 45.9 | 84.0 | -4.1 | | -49.4 | 74 | 1137 | 18 15 27 |
| 18 19 17 | --- | 11 52 41 | 46.5 | 84.7 | -4.0 | | -49.5 | 230 | 1167 | 18 15 28 |
| 18 19 17 | B1555+375 | 11 52 31 | 45.6 | 85.2 | -4.1 | | -48.8 | -16 | 1167 | No stop |
| 18 22 47 | --- | 11 56 02 | 46.1 | 85.8 | -4.0 | | -48.9 | 194 | 1194 | 18 19 18 |
| 18 23 17 | J1555+3812 | 11 56 32 | 47.0 | 85.4 | -4.0 | | -49.6 | 14 | 1194 | 18 23 17 |
| 18 24 47 | --- | 11 58 02 | 47.3 | 85.7 | -4.0 | | -49.6 | 90 | 1205 | 18 23 18 |
| 18 24 47 | B1555+375 | 11 58 02 | 46.4 | 86.2 | -4.0 | | -48.9 | -16 | 1205 | No stop |
| 18 28 17 | --- | 12 01 33 | 46.9 | 86.9 | -3.9 | | -48.9 | 194 | 1232 | 18 24 48 |
| 18 28 47 | J1555+3812 | 12 02 03 | 47.9 | 86.4 | -3.9 | | -49.7 | 14 | 1232 | 18 28 47 |
| 18 30 17 | --- | 12 03 33 | 48.1 | 86.7 | -3.9 | | -49.7 | 90 | 1244 | 18 28 48 |
| 18 30 17 | B1555+375 | 12 03 33 | 47.2 | 87.3 | -3.9 | | -49.0 | -16 | 1244 | No stop |
| 18 33 47 | --- | 12 07 04 | 47.7 | 87.9 | -3.8 | | -49.0 | 194 | 1271 | 18 30 18 |
| 18 34 17 | J1555+3812 | 12 07 34 | 48.7 | 87.5 | -3.8 | | -49.7 | 14 | 1271 | 18 34 17 |
| 18 35 47 | --- | 12 09 04 | 48.9 | 87.8 | -3.8 | | -49.7 | 90 | 1282 | 18 34 18 |
| 18 35 47 | B1555+375 | 12 09 04 | 48.0 | 88.3 | -3.8 | | -49.0 | -16 | 1282 | No stop |
| 18 39 17 | --- | 12 12 35 | 48.6 | 89.0 | -3.8 | | -49.0 | 194 | 1309 | 18 35 48 |
| 18 39 47 | J1555+3812 | 12 13 05 | 49.5 | 88.6 | -3.7 | | -49.8 | 14 | 1309 | 18 39 47 |
| 18 41 17 | --- | 12 14 35 | 49.7 | 88.9 | -3.7 | | -49.8 | 90 | 1321 | 18 39 48 |
| 18 41 17 | B1555+375 | 12 14 35 | 48.9 | 89.4 | -3.7 | | -49.0 | -16 | 1321 | No stop |
| 18 44 47 | --- | 12 18 06 | 49.4 | 90.1 | -3.7 | | -49.0 | 194 | 1347 | 18 41 18 |
| 18 45 17 | J1555+3812 | 12 18 36 | 50.3 | 89.7 | -3.6 | | -49.8 | 14 | 1347 | 18 45 17 |
| 18 46 47 | --- | 12 20 06 | 50.6 | 90.0 | -3.6 | | -49.8 | 90 | 1359 | 18 45 18 |
| 18 46 47 | B1555+375 | 12 20 06 | 49.7 | 90.5 | -3.6 | | -49.0 | -16 | 1359 | No stop |
| 18 50 17 | --- | 12 23 37 | 50.2 | 91.2 | -3.6 | | -49.0 | 194 | 1386 | 18 46 48 |
| 18 50 47 | J1555+3812 | 12 24 07 | 51.2 | 90.8 | -3.5 | | -49.8 | 14 | 1386 | 18 50 47 |
| 18 52 17 | --- | 12 25 37 | 51.4 | 91.1 | -3.5 | | -49.8 | 90 | 1397 | 18 50 48 |
| 18 52 17 | B1555+375 | 12 25 37 | 50.5 | 91.6 | -3.5 | | -49.0 | -16 | 1397 | No stop |
| 18 55 47 | --- | 12 29 07 | 51.0 | 92.4 | -3.5 | | -49.0 | 194 | 1424 | 18 52 18 |
| 18 56 17 | J1555+3812 | 12 29 38 | 52.0 | 91.9 | -3.4 | | -49.8 | 14 | 1424 | 18 56 17 |
| 18 57 47 | --- | 12 31 08 | 52.2 | 92.2 | -3.4 | | -49.7 | 90 | 1436 | 18 56 18 |

Schedule for TORUN (Code Tr) Page 7

Dark matter substructures in the lens JVAS B1555+375

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

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 26 May 2016 Day 147 --- | | | | | | | | | | |
| 18 57 47 | B1555+375 | 12 31 08 | 51.3 | 92.8 | -3.4 | | -49.0 | -16 | 1436 | No stop |
| 19 01 17 | --- | 12 34 38 | 51.9 | 93.5 | -3.4 | | -48.9 | 194 | 1463 | 18 57 48 |
| 19 01 47 | J1555+3812 | 12 35 08 | 52.8 | 93.0 | -3.3 | | -49.7 | 14 | 1463 | 19 01 47 |
| 19 03 17 | --- | 12 36 39 | 53.0 | 93.4 | -3.3 | | -49.7 | 90 | 1474 | 19 01 48 |
| 19 03 17 | B1555+375 | 12 36 39 | 52.2 | 94.0 | -3.4 | | -48.9 | -16 | 1474 | No stop |
| 19 06 47 | --- | 12 40 09 | 52.7 | 94.7 | -3.3 | | -48.8 | 194 | 1501 | 19 03 18 |
| 19 07 17 | J1555+3812 | 12 40 39 | 53.6 | 94.2 | -3.3 | | -49.6 | 14 | 1501 | 19 07 17 |
| 19 08 47 | --- | 12 42 10 | 53.9 | 94.5 | -3.2 | | -49.6 | 90 | 1513 | 19 07 18 |
| 19 08 47 | B1555+375 | 12 42 10 | 53.0 | 95.1 | -3.3 | | -48.8 | -16 | 1513 | No stop |
| 19 12 17 | --- | 12 45 40 | 53.5 | 95.9 | -3.2 | | -48.7 | 194 | 1540 | 19 08 48 |
| 19 12 47 | J1555+3812 | 12 46 10 | 54.5 | 95.4 | -3.2 | | -49.5 | 14 | 1540 | 19 12 47 |
| 19 14 17 | --- | 12 47 40 | 54.7 | 95.7 | -3.1 | | -49.5 | 90 | 1551 | 19 12 48 |
| 19 14 17 | B1555+375 | 12 47 40 | 53.8 | 96.4 | -3.2 | | -48.6 | -16 | 1551 | No stop |
| 19 17 47 | --- | 12 51 11 | 54.3 | 97.1 | -3.1 | | -48.5 | 194 | 1578 | 19 14 18 |
| 19 18 17 | J1555+3812 | 12 51 41 | 55.3 | 96.6 | -3.1 | | -49.3 | 14 | 1578 | 19 18 17 |
| 19 19 47 | --- | 12 53 11 | 55.5 | 97.0 | -3.0 | | -49.3 | 90 | 1590 | 19 18 18 |
| 19 19 47 | B1555+375 | 12 53 11 | 54.6 | 97.6 | -3.1 | | -48.5 | -16 | 1590 | No stop |
| 19 23 17 | --- | 12 56 42 | 55.2 | 98.4 | -3.0 | | -48.3 | 194 | 1617 | 19 19 48 |
| 19 23 47 | J1555+3812 | 12 57 12 | 56.1 | 97.9 | -3.0 | | -49.2 | 14 | 1617 | 19 23 47 |
| 19 25 17 | --- | 12 58 42 | 56.3 | 98.2 | -2.9 | | -49.1 | 90 | 1628 | 19 23 48 |
| 19 25 17 | B1555+375 | 12 58 42 | 55.5 | 98.9 | -3.0 | | -48.2 | -16 | 1628 | No stop |
| 19 28 47 | --- | 13 02 13 | 56.0 | 99.7 | -2.9 | | -48.1 | 194 | 1655 | 19 25 18 |
| 19 29 17 | J1555+3812 | 13 02 43 | 56.9 | 99.2 | -2.9 | | -48.9 | 14 | 1655 | 19 29 17 |
| 19 30 47 | --- | 13 04 13 | 57.2 | 99.5 | -2.9 | | -48.9 | 90 | 1667 | 19 29 18 |
| 19 30 47 | B1555+375 | 13 04 13 | 56.3 | 100.2 | -2.9 | | -48.0 | -16 | 1667 | No stop |
| 19 34 17 | --- | 13 07 44 | 56.8 | 101.0 | -2.8 | | -47.8 | 194 | 1694 | 19 30 48 |
| 19 34 47 | J1555+3812 | 13 08 14 | 57.7 | 100.5 | -2.8 | | -48.7 | 14 | 1694 | 19 34 47 |
| 19 36 17 | --- | 13 09 44 | 58.0 | 100.9 | -2.8 | | -48.6 | 90 | 1705 | 19 34 48 |
| 19 36 17 | B1555+375 | 13 09 44 | 57.1 | 101.5 | -2.8 | | -47.7 | -16 | 1705 | No stop |
| 19 39 47 | --- | 13 13 15 | 57.6 | 102.4 | -2.7 | | -47.5 | 194 | 1732 | 19 36 18 |

Schedule for TORUN (Code Tr) Page 8

Dark matter substructures in the lens JVAS B1555+375

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

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 26 May 2016 Day 147 --- | | | | | | | | | | |
| 19 40 17 | J1555+3812 | 13 13 45 | 58.6 | 101.9 | -2.7 | | -48.4 | 14 | 1732 | 19 40 17 |
| 19 41 47 | --- | 13 15 15 | 58.8 | 102.2 | -2.7 | | -48.3 | 90 | 1744 | 19 40 18 |
| 19 41 47 | B1555+375 | 13 15 15 | 57.9 | 102.9 | -2.7 | | -47.4 | -16 | 1744 | No stop |
| 19 45 17 | --- | 13 18 46 | 58.4 | 103.8 | -2.7 | | -47.2 | 194 | 1771 | 19 41 48 |
| 19 45 47 | J1555+3812 | 13 19 16 | 59.4 | 103.3 | -2.6 | | -48.0 | 14 | 1771 | 19 45 47 |
| 19 47 17 | --- | 13 20 46 | 59.6 | 103.7 | -2.6 | | -47.9 | 90 | 1782 | 19 45 48 |
| 19 47 17 | B1555+375 | 13 20 46 | 58.7 | 104.3 | -2.6 | | -47.0 | -16 | 1782 | No stop |
| 19 50 47 | --- | 13 24 16 | 59.2 | 105.2 | -2.6 | | -46.8 | 194 | 1809 | 19 47 18 |
| 19 51 17 | J1555+3812 | 13 24 47 | 60.2 | 104.7 | -2.5 | | -47.6 | 14 | 1809 | 19 51 17 |
| 19 52 47 | --- | 13 26 17 | 60.4 | 105.1 | -2.5 | | -47.5 | 90 | 1821 | 19 51 18 |
| 19 52 47 | B1555+375 | 13 26 17 | 59.5 | 105.8 | -2.5 | | -46.6 | -16 | 1821 | No stop |
| 19 56 17 | --- | 13 29 47 | 60.0 | 106.7 | -2.5 | | -46.3 | 194 | 1847 | 19 52 48 |
| 19 56 47 | J1555+3812 | 13 30 17 | 61.0 | 106.2 | -2.4 | | -47.2 | 14 | 1847 | 19 56 47 |
| 19 58 17 | --- | 13 31 48 | 61.2 | 106.6 | -2.4 | | -47.0 | 90 | 1859 | 19 56 48 |
| 19 58 17 | B1555+375 | 13 31 48 | 60.3 | 107.3 | -2.4 | | -46.1 | -16 | 1859 | No stop |
| 20 01 47 | --- | 13 35 18 | 60.8 | 108.3 | -2.4 | | -45.8 | 194 | 1886 | 19 58 18 |
| 20 02 17 | J1555+3812 | 13 35 48 | 61.8 | 107.7 | -2.3 | | -46.7 | 14 | 1886 | 20 02 17 |
| 20 03 47 | --- | 13 37 19 | 62.0 | 108.2 | -2.3 | | -46.5 | 90 | 1897 | 20 02 18 |
| 20 03 47 | B1555+375 | 13 37 19 | 61.1 | 108.8 | -2.3 | | -45.6 | -16 | 1897 | No stop |
| 20 07 17 | --- | 13 40 49 | 61.6 | 109.9 | -2.3 | | -45.2 | 194 | 1924 | 20 03 48 |
| 20 07 47 | J1555+3812 | 13 41 19 | 62.5 | 109.3 | -2.2 | | -46.1 | 14 | 1924 | 20 07 47 |
| 20 09 17 | --- | 13 42 50 | 62.8 | 109.8 | -2.2 | | -45.9 | 90 | 1936 | 20 07 48 |
| 20 09 17 | B1555+375 | 13 42 50 | 61.9 | 110.5 | -2.2 | | -45.0 | -16 | 1936 | No stop |
| 20 12 47 | --- | 13 46 20 | 62.4 | 111.5 | -2.2 | | -44.6 | 194 | 1963 | 20 09 18 |
| 20 13 17 | J1555+3812 | 13 46 50 | 63.3 | 111.0 | -2.1 | | -45.5 | 14 | 1963 | 20 13 17 |
| 20 14 47 | --- | 13 48 20 | 63.5 | 111.5 | -2.1 | | -45.3 | 90 | 1974 | 20 13 18 |
| 20 14 47 | B1555+375 | 13 48 20 | 62.6 | 112.1 | -2.2 | | -44.4 | -16 | 1974 | No stop |
| 20 18 17 | --- | 13 51 51 | 63.1 | 113.2 | -2.1 | | -43.9 | 194 | 2001 | 20 14 48 |
| 20 18 47 | J1555+3812 | 13 52 21 | 64.1 | 112.7 | -2.1 | | -44.8 | 14 | 2001 | 20 18 47 |
| 20 20 17 | --- | 13 53 51 | 64.3 | 113.2 | -2.0 | | -44.6 | 90 | 2013 | 20 18 48 |

Schedule for TORUN (Code Tr) Page 9

Dark matter substructures in the lens JVAS B1555+375

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

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 26 May 2016 Day 147 --- | | | | | | | | | | |
| 20 20 17 | B1555+375 | 13 53 51 | 63.4 | 113.9 | -2.1 | | -43.7 | -16 | 2013 | No stop |
| 20 23 47 | --- | 13 57 22 | 63.9 | 115.0 | -2.0 | | -43.2 | 194 | 2040 | 20 20 18 |
| 20 24 17 | J1555+3812 | 13 57 52 | 64.8 | 114.5 | -2.0 | | -44.0 | 14 | 2040 | 20 24 17 |
| 20 25 47 | --- | 13 59 22 | 65.1 | 115.0 | -1.9 | | -43.8 | 90 | 2051 | 20 24 18 |
| 20 25 47 | B1555+375 | 13 59 22 | 64.1 | 115.7 | -2.0 | | -42.9 | -16 | 2051 | No stop |
| 20 29 17 | --- | 14 02 53 | 64.6 | 116.9 | -1.9 | | -42.3 | 194 | 2078 | 20 25 48 |
| 20 29 47 | J1555+3812 | 14 03 23 | 65.6 | 116.4 | -1.9 | | -43.2 | 14 | 2078 | 20 29 47 |
| 20 31 17 | --- | 14 04 53 | 65.8 | 116.9 | -1.8 | | -42.9 | 90 | 2090 | 20 29 48 |
| 20 31 17 | B1555+375 | 14 04 53 | 64.9 | 117.6 | -1.9 | | -42.0 | -16 | 2090 | No stop |
| 20 34 47 | --- | 14 08 24 | 65.4 | 118.8 | -1.8 | | -41.4 | 194 | 2117 | 20 31 18 |
| 20 35 17 | J1555+3812 | 14 08 54 | 66.3 | 118.4 | -1.8 | | -42.2 | 14 | 2117 | 20 35 17 |
| 20 36 47 | --- | 14 10 24 | 66.5 | 118.9 | -1.8 | | -42.0 | 90 | 2128 | 20 35 18 |
| 20 36 47 | B1555+375 | 14 10 24 | 65.6 | 119.5 | -1.8 | | -41.1 | -16 | 2128 | No stop |
| 20 40 17 | --- | 14 13 55 | 66.1 | 120.8 | -1.7 | | -40.4 | 194 | 2155 | 20 36 48 |
| 20 40 47 | J1555+3812 | 14 14 25 | 67.1 | 120.4 | -1.7 | | -41.2 | 14 | 2155 | 20 40 47 |
| 20 42 17 | --- | 14 15 55 | 67.2 | 121.0 | -1.7 | | -40.9 | 90 | 2167 | 20 40 48 |
| 20 42 17 | B1555+375 | 14 15 55 | 66.3 | 121.6 | -1.7 | | -40.0 | -16 | 2167 | No stop |
| 20 45 47 | --- | 14 19 26 | 66.8 | 122.9 | -1.6 | | -39.3 | 194 | 2194 | 20 42 18 |
| 20 46 17 | J1555+3812 | 14 19 56 | 67.8 | 122.6 | -1.6 | | -40.1 | 14 | 2194 | 20 46 17 |
| 20 48 47 | --- | 14 22 26 | 68.1 | 123.6 | -1.6 | | -39.5 | 150 | 2213 | 20 46 18 |
| 20 49 58 | 3C345 | 14 23 37 | 62.8 | 105.1 | -2.3 | | -49.0 | 19 | 2213 | 20 49 58 |
| 20 54 48 | --- | 14 28 38 | 63.6 | 106.6 | -2.2 | | -48.5 | 290 | 2250 | 20 49 59 |
| 20 56 01 | J1555+3812 | 14 29 42 | 69.0 | 126.6 | -1.4 | | -37.8 | 18 | 2250 | 20 56 01 |
| 20 59 51 | --- | 14 33 42 | 69.4 | 128.4 | -1.4 | | -36.8 | 230 | 2279 | 20 56 02 |
| 20 59 51 | B1555+375 | 14 33 32 | 68.5 | 128.7 | -1.4 | | -36.1 | -16 | 2279 | No stop |
| 21 03 21 | --- | 14 37 03 | 68.9 | 130.3 | -1.3 | | -35.2 | 194 | 2306 | 20 59 52 |
| 21 03 51 | J1555+3812 | 14 37 33 | 69.9 | 130.1 | -1.3 | | -35.7 | 14 | 2306 | 21 03 51 |
| 21 05 21 | --- | 14 39 03 | 70.1 | 130.8 | -1.3 | | -35.3 | 90 | 2318 | 21 03 52 |
| 21 05 21 | B1555+375 | 14 39 03 | 69.1 | 131.2 | -1.3 | | -34.6 | -16 | 2318 | No stop |
| 21 08 51 | --- | 14 42 34 | 69.5 | 132.9 | -1.3 | | -33.6 | 194 | 2345 | 21 05 22 |

Schedule for TORUN (Code Tr) Page 10

Dark matter substructures in the lens JVAS B1555+375

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

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 26 May 2016 Day 147 --- | | | | | | | | | | |
| 21 09 21 | J1555+3812 | 14 43 04 | 70.5 | 132.7 | -1.2 | | -34.1 | 14 | 2345 | 21 09 21 |
| 21 10 51 | --- | 14 44 34 | 70.7 | 133.5 | -1.2 | | -33.6 | 90 | 2356 | 21 09 22 |
| 21 10 51 | B1555+375 | 14 44 34 | 69.7 | 133.8 | -1.2 | | -33.0 | -16 | 2356 | No stop |
| 21 14 21 | --- | 14 48 05 | 70.1 | 135.5 | -1.2 | | -31.9 | 194 | 2383 | 21 10 52 |
| 21 14 51 | J1555+3812 | 14 48 35 | 71.1 | 135.5 | -1.1 | | -32.4 | 14 | 2383 | 21 14 51 |
| 21 16 21 | --- | 14 50 05 | 71.3 | 136.3 | -1.1 | | -31.9 | 90 | 2395 | 21 14 52 |
| 21 16 21 | B1555+375 | 14 50 05 | 70.3 | 136.5 | -1.1 | | -31.3 | -16 | 2395 | No stop |
| 21 19 51 | --- | 14 53 35 | 70.7 | 138.3 | -1.1 | | -30.1 | 194 | 2422 | 21 16 22 |
| 21 20 21 | J1555+3812 | 14 54 06 | 71.7 | 138.4 | -1.0 | | -30.5 | 14 | 2422 | 21 20 21 |
| 21 21 51 | --- | 14 55 36 | 71.8 | 139.2 | -1.0 | | -29.9 | 90 | 2433 | 21 20 22 |
| 21 21 51 | B1555+375 | 14 55 36 | 70.9 | 139.4 | -1.0 | | -29.4 | -16 | 2433 | No stop |
| 21 25 21 | --- | 14 59 06 | 71.2 | 141.3 | -1.0 | | -28.2 | 194 | 2460 | 21 21 52 |
| 21 25 51 | J1555+3812 | 14 59 36 | 72.2 | 141.5 | -0.9 | | -28.4 | 14 | 2460 | 21 25 51 |
| 21 27 51 | --- | 15 01 37 | 72.4 | 142.6 | -0.9 | | -27.6 | 120 | 2476 | 21 25 52 |
| 21 27 51 | B1555+375 | 15 01 37 | 71.4 | 142.6 | -0.9 | | -27.3 | -16 | 2476 | No stop |
| 21 31 21 | --- | 15 05 07 | 71.8 | 144.6 | -0.9 | | -25.9 | 194 | 2503 | 21 27 52 |
| 21 31 51 | J1555+3812 | 15 05 37 | 72.7 | 144.9 | -0.8 | | -26.0 | 14 | 2503 | 21 31 51 |
| 21 33 21 | --- | 15 07 08 | 72.9 | 145.8 | -0.8 | | -25.4 | 90 | 2514 | 21 31 52 |
| 21 33 21 | B1555+375 | 15 07 08 | 71.9 | 145.8 | -0.8 | | -25.1 | -16 | 2514 | No stop |
| 21 36 51 | --- | 15 10 38 | 72.2 | 147.8 | -0.8 | | -23.7 | 194 | 2541 | 21 33 22 |
| 21 37 21 | J1555+3812 | 15 11 08 | 73.2 | 148.3 | -0.7 | | -23.7 | 14 | 2541 | 21 37 21 |
| 21 38 51 | --- | 15 12 39 | 73.3 | 149.2 | -0.7 | | -23.0 | 90 | 2553 | 21 37 22 |
| 21 38 51 | B1555+375 | 15 12 39 | 72.4 | 149.0 | -0.8 | | -22.9 | -16 | 2553 | No stop |
| 21 42 21 | --- | 15 16 09 | 72.6 | 151.2 | -0.7 | | -21.3 | 194 | 2579 | 21 38 52 |
| 21 42 51 | J1555+3812 | 15 16 39 | 73.6 | 151.8 | -0.7 | | -21.1 | 14 | 2579 | 21 42 51 |
| 21 44 21 | --- | 15 18 09 | 73.7 | 152.8 | -0.6 | | -20.4 | 90 | 2591 | 21 42 52 |
| 21 44 21 | B1555+375 | 15 18 09 | 72.8 | 152.4 | -0.7 | | -20.4 | -16 | 2591 | No stop |
| 21 47 51 | --- | 15 21 40 | 73.0 | 154.7 | -0.6 | | -18.8 | 194 | 2618 | 21 44 22 |
| 21 48 21 | J1555+3812 | 15 22 10 | 74.0 | 155.5 | -0.6 | | -18.5 | 14 | 2618 | 21 48 21 |
| 21 49 51 | --- | 15 23 40 | 74.1 | 156.5 | -0.5 | | -17.7 | 90 | 2629 | 21 48 22 |

Schedule for TORUN (Code Tr)

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Dark matter substructures in the lens JVAS B1555+375

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

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 26 May 2016 Day 147 --- | | | | | | | | | | |
| 21 49 51 | B1555+375 | 15 23 40 | 73.1 | 156.0 | -0.6 | | -17.9 | -16 | 2629 | No stop |
| 21 53 21 | --- | 15 27 11 | 73.3 | 158.3 | -0.5 | | -16.2 | 194 | 2656 | 21 49 52 |
| 21 53 51 | J1555+3812 | 15 27 41 | 74.3 | 159.3 | -0.5 | | -15.7 | 14 | 2656 | 21 53 51 |
| 21 55 21 | --- | 15 29 11 | 74.4 | 160.3 | -0.4 | | -14.9 | 90 | 2668 | 21 53 52 |
| 21 55 21 | B1555+375 | 15 29 11 | 73.5 | 159.6 | -0.5 | | -15.2 | -16 | 2668 | No stop |
| 21 58 51 | --- | 15 32 42 | 73.6 | 162.0 | -0.4 | | -13.5 | 194 | 2695 | 21 55 22 |
| 21 59 21 | J1555+3812 | 15 33 12 | 74.6 | 163.2 | -0.4 | | -12.8 | 14 | 2695 | 21 59 21 |
| 22 00 51 | --- | 15 34 42 | 74.6 | 164.3 | -0.3 | | -11.9 | 90 | 2706 | 21 59 22 |
| 22 00 51 | B1555+375 | 15 34 42 | 73.7 | 163.4 | -0.4 | | -12.5 | -16 | 2706 | No stop |
| 22 04 21 | --- | 15 38 13 | 73.9 | 165.9 | -0.3 | | -10.6 | 194 | 2733 | 22 00 52 |
| 22 04 51 | J1555+3812 | 15 38 43 | 74.8 | 167.2 | -0.3 | | -9.7 | 14 | 2733 | 22 04 51 |
| 22 06 21 | --- | 15 40 13 | 74.8 | 168.3 | -0.3 | | -8.9 | 90 | 2745 | 22 04 52 |
| 22 06 21 | B1555+375 | 15 40 13 | 73.9 | 167.3 | -0.3 | | -9.6 | -16 | 2745 | No stop |
| 22 09 51 | --- | 15 43 44 | 74.0 | 169.8 | -0.2 | | -7.7 | 194 | 2772 | 22 06 22 |
| 22 10 21 | J1555+3812 | 15 44 14 | 74.9 | 171.3 | -0.2 | | -6.6 | 14 | 2772 | 22 10 21 |
| 22 11 51 | --- | 15 45 44 | 75.0 | 172.4 | -0.2 | | -5.8 | 90 | 2783 | 22 10 22 |
| 22 11 51 | B1555+375 | 15 45 44 | 74.1 | 171.2 | -0.2 | | -6.6 | -16 | 2783 | No stop |
| 22 15 21 | --- | 15 49 15 | 74.1 | 173.7 | -0.1 | | -4.7 | 194 | 2810 | 22 11 52 |
| 22 15 51 | J1555+3812 | 15 49 45 | 75.0 | 175.5 | -0.1 | | -3.4 | 14 | 2810 | 22 15 51 |
| 22 17 21 | --- | 15 51 15 | 75.0 | 176.6 | -0.1 | | -2.6 | 90 | 2822 | 22 15 52 |
| 22 17 21 | B1555+375 | 15 51 15 | 74.2 | 175.2 | -0.1 | | -3.6 | -16 | 2822 | No stop |
| 22 20 51 | --- | 15 54 45 | 74.2 | 177.8 | -0.1 | | -1.7 | 194 | 2849 | 22 17 22 |
| 22 21 21 | J1555+3812 | 15 55 16 | 75.1 | 179.7 | -0.0 | | -0.2 | 13 | 2849 | 22 21 21 |
| 22 22 51 | --- | 15 56 46 | 75.1 | 180.8 | 0.0 | | 0.6 | 90 | 2860 | 22 21 22 |
| 22 22 51 | B1555+375 | 15 56 46 | 74.2 | 179.2 | -0.0 | | -0.6 | -16 | 2860 | No stop |
| 22 25 21 | --- | 15 59 16 | 74.2 | 181.1 | 0.0 | | 0.8 | 134 | 2879 | 22 22 52 |
| 22 25 21 | J1555+3812 | 15 59 16 | 75.1 | 182.7 | 0.1 | | 2.1 | -17 | 2879 | No stop |
| 22 27 21 | --- | 16 01 17 | 75.0 | 184.3 | 0.1 | | 3.3 | 103 | 2895 | 22 25 22 |
| 22 27 21 | B1555+375 | 16 01 17 | 74.2 | 182.5 | 0.1 | | 1.9 | -16 | 2895 | No stop |
| 22 30 51 | --- | 16 04 47 | 74.2 | 185.1 | 0.1 | | 3.8 | 194 | 2922 | 22 27 22 |

Schedule for TORUN (Code Tr)

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Dark matter substructures in the lens JVAS B1555+375

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

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 26 May 2016 Day 147 --- | | | | | | | | | | |
| 22 31 21 | J1555+3812 | 16 05 17 | 75.0 | 187.3 | 0.2 | | 5.6 | 12 | 2922 | 22 31 21 |
| 22 32 51 | --- | 16 06 47 | 74.9 | 188.4 | 0.2 | | 6.4 | 90 | 2933 | 22 31 22 |
| 22 32 51 | B1555+375 | 16 06 47 | 74.1 | 186.5 | 0.1 | | 4.9 | -17 | 2933 | No stop |
| 22 36 21 | --- | 16 10 18 | 74.1 | 189.1 | 0.2 | | 6.8 | 193 | 2960 | 22 32 52 |
| 22 36 51 | J1555+3812 | 16 10 48 | 74.8 | 191.4 | 0.3 | | 8.7 | 12 | 2960 | 22 36 51 |
| 22 38 21 | --- | 16 12 18 | 74.8 | 192.5 | 0.3 | | 9.6 | 90 | 2972 | 22 36 52 |
| 22 38 21 | B1555+375 | 16 12 18 | 74.0 | 190.5 | 0.2 | | 7.9 | -17 | 2972 | No stop |
| 22 41 51 | --- | 16 15 49 | 73.9 | 193.0 | 0.3 | | 9.8 | 193 | 2999 | 22 38 22 |
| 22 42 21 | J1555+3812 | 16 16 19 | 74.6 | 195.5 | 0.3 | | 11.8 | 11 | 2999 | 22 42 21 |
| 22 43 51 | --- | 16 17 49 | 74.6 | 196.6 | 0.4 | | 12.6 | 90 | 3010 | 22 42 22 |
| 22 43 51 | B1555+375 | 16 17 49 | 73.8 | 194.4 | 0.3 | | 10.8 | -18 | 3010 | No stop |
| 22 47 21 | --- | 16 21 20 | 73.7 | 196.9 | 0.4 | | 12.7 | 192 | 3037 | 22 43 52 |
| 22 47 51 | J1555+3812 | 16 21 50 | 74.4 | 199.4 | 0.4 | | 14.7 | 11 | 3037 | 22 47 51 |
| 22 49 21 | --- | 16 23 20 | 74.3 | 200.5 | 0.5 | | 15.5 | 90 | 3049 | 22 47 52 |
| 22 49 21 | B1555+375 | 16 23 20 | 73.6 | 198.2 | 0.4 | | 13.7 | -18 | 3049 | No stop |
| 22 52 51 | --- | 16 26 51 | 73.4 | 200.6 | 0.5 | | 15.4 | 192 | 3076 | 22 49 22 |
| 22 53 21 | J1555+3812 | 16 27 21 | 74.1 | 203.3 | 0.5 | | 17.6 | 11 | 3076 | 22 53 21 |
| 22 54 51 | --- | 16 28 51 | 74.0 | 204.3 | 0.6 | | 18.3 | 90 | 3087 | 22 53 22 |
| 22 54 51 | B1555+375 | 16 28 51 | 73.3 | 202.0 | 0.5 | | 16.4 | -18 | 3087 | No stop |
| 22 58 21 | --- | 16 32 22 | 73.1 | 204.3 | 0.6 | | 18.1 | 192 | 3114 | 22 54 52 |
| 22 58 51 | J1555+3812 | 16 32 52 | 73.7 | 207.0 | 0.6 | | 20.3 | 11 | 3114 | 22 58 51 |
| 23 00 21 | --- | 16 34 22 | 73.6 | 208.0 | 0.6 | | 21.0 | 90 | 3126 | 22 58 52 |
| 23 00 21 | B1555+375 | 16 34 22 | 73.0 | 205.6 | 0.6 | | 19.0 | -18 | 3126 | No stop |
| 23 03 51 | --- | 16 37 53 | 72.8 | 207.8 | 0.7 | | 20.6 | 192 | 3153 | 23 00 22 |
| 23 04 21 | J1555+3812 | 16 38 23 | 73.3 | 210.5 | 0.7 | | 22.8 | 11 | 3153 | 23 04 21 |
| 23 05 51 | --- | 16 39 53 | 73.2 | 211.5 | 0.7 | | 23.5 | 90 | 3164 | 23 04 22 |
| 23 05 51 | B1555+375 | 16 39 53 | 72.6 | 209.1 | 0.7 | | 21.5 | -19 | 3164 | No stop |
| 23 09 21 | --- | 16 43 23 | 72.3 | 211.2 | 0.8 | | 23.0 | 191 | 3191 | 23 05 52 |
| 23 09 51 | J1555+3812 | 16 43 54 | 72.9 | 214.0 | 0.8 | | 25.2 | 11 | 3191 | 23 09 51 |
| 23 11 21 | --- | 16 45 24 | 72.8 | 214.9 | 0.8 | | 25.9 | 90 | 3203 | 23 09 52 |

Schedule for TORUN (Code Tr)

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Dark matter substructures in the lens JVAS B1555+375

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

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 26 May 2016 Day 147 --- | | | | | | | | | | |
| 23 11 21 | B1555+375 | 16 45 24 | 72.2 | 212.4 | 0.8 | | 23.9 | -19 | 3203 | No stop |
| 23 14 51 | --- | 16 48 54 | 71.9 | 214.5 | 0.9 | | 25.3 | 191 | 3229 | 23 11 22 |
| 23 15 21 | J1555+3812 | 16 49 24 | 72.4 | 217.2 | 0.9 | | 27.5 | 11 | 3229 | 23 15 21 |
| 23 16 51 | --- | 16 50 55 | 72.3 | 218.1 | 0.9 | | 28.1 | 90 | 3241 | 23 15 22 |
| 23 16 51 | B1555+375 | 16 50 55 | 71.7 | 215.6 | 0.9 | | 26.1 | -19 | 3241 | No stop |
| 23 20 21 | --- | 16 54 25 | 71.4 | 217.6 | 0.9 | | 27.4 | 191 | 3268 | 23 16 52 |
| 23 20 51 | J1555+3812 | 16 54 55 | 71.9 | 220.3 | 1.0 | | 29.6 | 11 | 3268 | 23 20 51 |
| 23 22 21 | --- | 16 56 26 | 71.8 | 221.1 | 1.0 | | 30.2 | 90 | 3279 | 23 20 52 |
| 23 22 21 | B1555+375 | 16 56 26 | 71.2 | 218.7 | 1.0 | | 28.2 | -19 | 3279 | No stop |
| 23 25 51 | --- | 16 59 56 | 70.9 | 220.6 | 1.0 | | 29.4 | 191 | 3306 | 23 22 22 |
| 23 26 21 | J1555+3812 | 17 00 26 | 71.3 | 223.3 | 1.1 | | 31.6 | 11 | 3306 | 23 26 21 |
| 23 27 51 | --- | 17 01 56 | 71.2 | 224.1 | 1.1 | | 32.1 | 90 | 3318 | 23 26 22 |
| 23 27 51 | B1555+375 | 17 01 56 | 70.7 | 221.6 | 1.1 | | 30.1 | -19 | 3318 | No stop |
| 23 31 21 | --- | 17 05 27 | 70.3 | 223.4 | 1.1 | | 31.3 | 191 | 3345 | 23 27 52 |
| 23 31 21 | J1555+3812 | 17 05 27 | 70.8 | 225.8 | 1.2 | | 33.2 | -19 | 3345 | Stopped |
| 23 32 21 | --- | 17 06 27 | 70.7 | 226.3 | 1.2 | | 33.5 | 41 | 3345 | |
| 23 32 51 | J1555+3812 | 17 06 57 | 70.7 | 226.6 | 1.2 | | 33.7 | 23 | 3345 | 23 32 51 |
| 23 34 21 | --- | 17 08 28 | 70.5 | 227.3 | 1.2 | | 34.2 | 90 | 3356 | 23 32 52 |
| 23 34 21 | B1555+375 | 17 08 28 | 70.0 | 224.9 | 1.2 | | 32.2 | -19 | 3356 | No stop |
| 23 37 51 | --- | 17 11 58 | 69.6 | 226.6 | 1.2 | | 33.3 | 191 | 3383 | 23 34 22 |
| 23 38 21 | J1555+3812 | 17 12 28 | 70.0 | 229.3 | 1.3 | | 35.3 | 11 | 3383 | 23 38 21 |
| 23 39 51 | --- | 17 13 58 | 69.9 | 230.0 | 1.3 | | 35.8 | 90 | 3395 | 23 38 22 |
| 23 39 51 | B1555+375 | 17 13 58 | 69.4 | 227.6 | 1.3 | | 33.9 | -18 | 3395 | No stop |
| 23 43 21 | --- | 17 17 29 | 69.0 | 229.2 | 1.3 | | 34.9 | 192 | 3422 | 23 39 52 |
| 23 43 51 | J1555+3812 | 17 17 59 | 69.4 | 231.8 | 1.4 | | 36.9 | 11 | 3422 | 23 43 51 |
| 23 45 21 | --- | 17 19 29 | 69.2 | 232.4 | 1.4 | | 37.3 | 90 | 3433 | 23 43 52 |
| 23 45 21 | B1555+375 | 17 19 29 | 68.8 | 230.1 | 1.4 | | 35.4 | -18 | 3433 | No stop |
| 23 48 51 | --- | 17 23 00 | 68.4 | 231.6 | 1.4 | | 36.3 | 192 | 3460 | 23 45 22 |
| 23 49 21 | J1555+3812 | 17 23 30 | 68.7 | 234.2 | 1.5 | | 38.3 | 11 | 3460 | 23 49 21 |
| 23 50 51 | --- | 17 25 00 | 68.6 | 234.8 | 1.5 | | 38.6 | 90 | 3472 | 23 49 22 |

Schedule for TORUN (Code Tr) Page 14

Dark matter substructures in the lens JVAS B1555+375

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

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 26 May 2016 Day 147 --- | | | | | | | | | | |
| 23 50 51 | B1555+375 | 17 25 00 | 68.2 | 232.5 | 1.5 | | 36.8 | -18 | 3472 | No stop |
| 23 54 21 | --- | 17 28 31 | 67.7 | 234.0 | 1.5 | | 37.6 | 192 | 3499 | 23 50 52 |
| 23 54 51 | J1555+3812 | 17 29 01 | 68.1 | 236.5 | 1.6 | | 39.5 | 11 | 3499 | 23 54 51 |
| 23 56 21 | --- | 17 30 31 | 67.9 | 237.1 | 1.6 | | 39.9 | 90 | 3510 | 23 54 52 |
| 23 56 21 | B1555+375 | 17 30 31 | 67.5 | 234.8 | 1.5 | | 38.1 | -18 | 3510 | No stop |
| 23 59 51 | --- | 17 34 02 | 67.1 | 236.2 | 1.6 | | 38.9 | 192 | 3537 | 23 56 22 |
| --- Fri 27 May 2016 Day 148 --- | | | | | | | | | | |
| 00 00 21 | J1555+3812 | 17 34 32 | 67.4 | 238.7 | 1.6 | | 40.7 | 11 | 3537 | 00 00 21 |
| 00 01 51 | --- | 17 36 02 | 67.2 | 239.2 | 1.7 | | 41.0 | 90 | 3549 | 00 00 22 |
| 00 05 12 | 3C286 | 17 39 24 | 40.5 | 268.4 | 4.1 | | 44.1 | 88 | 3549 | 00 05 12 |
| 00 10 02 | --- | 17 44 25 | 39.7 | 269.4 | 4.2 | | 44.1 | 290 | 3586 | 00 05 13 |
| 00 13 04 | J1555+3812 | 17 47 17 | 65.7 | 243.4 | 1.9 | | 43.0 | 70 | 3586 | 00 13 04 |
| 00 14 24 | --- | 17 48 47 | 65.5 | 243.9 | 1.9 | | 43.3 | 80 | 3596 | 00 13 05 |
| 00 14 24 | B1555+375 | 17 48 37 | 65.2 | 241.7 | 1.8 | | 41.7 | -18 | 3596 | No stop |
| 00 18 54 | --- | 17 53 08 | 64.6 | 243.3 | 1.9 | | 42.4 | 252 | 3631 | 00 14 25 |
| 00 19 24 | J1555+3812 | 17 53 38 | 64.8 | 245.5 | 2.0 | | 44.0 | 12 | 3631 | 00 19 24 |
| 00 20 54 | --- | 17 55 09 | 64.6 | 246.0 | 2.0 | | 44.2 | 90 | 3642 | 00 19 25 |
| 00 20 54 | B1555+375 | 17 55 09 | 64.3 | 244.0 | 2.0 | | 42.7 | -18 | 3642 | No stop |
| 00 24 24 | --- | 17 58 39 | 63.8 | 245.1 | 2.0 | | 43.2 | 192 | 3669 | 00 20 55 |
| 00 24 54 | J1555+3812 | 17 59 09 | 64.1 | 247.3 | 2.1 | | 44.8 | 12 | 3669 | 00 24 54 |
| 00 26 24 | --- | 18 00 39 | 63.9 | 247.8 | 2.1 | | 45.0 | 90 | 3681 | 00 24 55 |
| 00 26 24 | B1555+375 | 18 00 39 | 63.6 | 245.8 | 2.0 | | 43.5 | -17 | 3681 | No stop |
| 00 29 54 | --- | 18 04 10 | 63.1 | 246.9 | 2.1 | | 44.0 | 193 | 3708 | 00 26 25 |
| 00 30 24 | J1555+3812 | 18 04 40 | 63.3 | 249.0 | 2.1 | | 45.5 | 12 | 3708 | 00 30 24 |
| 00 31 54 | --- | 18 06 10 | 63.1 | 249.5 | 2.2 | | 45.7 | 90 | 3719 | 00 30 25 |
| 00 31 54 | B1555+375 | 18 06 10 | 62.8 | 247.5 | 2.1 | | 44.2 | -17 | 3719 | No stop |
| 00 35 24 | --- | 18 09 41 | 62.3 | 248.6 | 2.2 | | 44.7 | 193 | 3746 | 00 31 55 |
| 00 35 54 | J1555+3812 | 18 10 11 | 62.5 | 250.7 | 2.2 | | 46.1 | 12 | 3746 | 00 35 54 |
| 00 37 24 | --- | 18 11 41 | 62.3 | 251.1 | 2.3 | | 46.3 | 90 | 3758 | 00 35 55 |

Schedule for TORUN (Code Tr)

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Dark matter substructures in the lens JVAS B1555+375

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|-----|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Fri 27 May 2016 Day 148 --- | | | | | | | | | | |
| 00 37 24 | B1555+375 | 18 11 41 | 62.0 | 249.2 | 2.2 | | 44.9 | -17 | 3758 | No stop |
| 00 40 54 | --- | 18 15 12 | 61.5 | 250.3 | 2.3 | | 45.3 | 193 | 3785 | 00 37 25 |
| 00 41 24 | J1555+3812 | 18 15 42 | 61.7 | 252.3 | 2.3 | | 46.7 | 12 | 3785 | 00 41 24 |
| 00 42 54 | --- | 18 17 12 | 61.5 | 252.7 | 2.4 | | 46.8 | 90 | 3796 | 00 41 25 |
| 00 42 54 | B1555+375 | 18 17 12 | 61.2 | 250.8 | 2.3 | | 45.5 | -17 | 3796 | No stop |
| 00 46 24 | --- | 18 20 43 | 60.7 | 251.8 | 2.4 | | 45.8 | 193 | 3823 | 00 42 55 |
| 00 46 54 | J1555+3812 | 18 21 13 | 60.9 | 253.8 | 2.4 | | 47.2 | 13 | 3823 | 00 46 54 |
| 00 48 24 | --- | 18 22 43 | 60.7 | 254.2 | 2.5 | | 47.3 | 90 | 3835 | 00 46 55 |
| 00 48 24 | B1555+375 | 18 22 43 | 60.5 | 252.4 | 2.4 | | 46.0 | -17 | 3835 | No stop |
| 00 51 54 | --- | 18 26 14 | 60.0 | 253.4 | 2.5 | | 46.3 | 193 | 3862 | 00 48 25 |
| 00 52 24 | J1555+3812 | 18 26 44 | 60.1 | 255.3 | 2.5 | | 47.6 | 13 | 3862 | 00 52 24 |
| 00 53 54 | --- | 18 28 14 | 59.9 | 255.7 | 2.5 | | 47.7 | 90 | 3873 | 00 52 25 |
| 00 53 54 | B1555+375 | 18 28 14 | 59.7 | 253.9 | 2.5 | | 46.5 | -17 | 3873 | No stop |
| 00 57 24 | --- | 18 31 45 | 59.2 | 254.9 | 2.6 | | 46.8 | 193 | 3900 | 00 53 55 |
| 00 57 54 | J1555+3812 | 18 32 15 | 59.3 | 256.8 | 2.6 | | 48.0 | 13 | 3900 | 00 57 54 |
| 00 59 24 | --- | 18 33 45 | 59.1 | 257.2 | 2.6 | | 48.1 | 90 | 3912 | 00 57 55 |
| 00 59 24 | B1555+375 | 18 33 45 | 58.9 | 255.4 | 2.6 | | 46.9 | -17 | 3912 | No stop |
| 01 02 54 | --- | 18 37 15 | 58.4 | 256.3 | 2.7 | | 47.2 | 193 | 3938 | 00 59 25 |
| 01 03 24 | J1555+3812 | 18 37 46 | 58.5 | 258.2 | 2.7 | | 48.4 | 13 | 3938 | 01 03 24 |
| 01 04 54 | --- | 18 39 16 | 58.3 | 258.6 | 2.7 | | 48.5 | 90 | 3950 | 01 03 25 |
| 01 04 54 | B1555+375 | 18 39 16 | 58.1 | 256.8 | 2.7 | | 47.3 | -17 | 3950 | No stop |
| 01 08 24 | --- | 18 42 46 | 57.6 | 257.7 | 2.7 | | 47.5 | 193 | 3977 | 01 04 55 |
| 01 08 54 | J1555+3812 | 18 43 16 | 57.7 | 259.5 | 2.8 | | 48.7 | 13 | 3977 | 01 08 54 |
| 01 10 24 | --- | 18 44 47 | 57.5 | 259.9 | 2.8 | | 48.8 | 90 | 3988 | 01 08 55 |
| 01 10 24 | B1555+375 | 18 44 47 | 57.3 | 258.2 | 2.8 | | 47.7 | -16 | 3988 | No stop |
| 01 13 54 | --- | 18 48 17 | 56.7 | 259.1 | 2.8 | | 47.8 | 194 | 4015 | 01 10 25 |
| 01 14 24 | J1555+3812 | 18 48 47 | 56.9 | 260.9 | 2.9 | | 48.9 | 13 | 4015 | 01 14 24 |
| 01 15 54 | --- | 18 50 18 | 56.7 | 261.2 | 2.9 | | 49.0 | 90 | 4027 | 01 14 25 |
| 01 15 54 | B1555+375 | 18 50 18 | 56.4 | 259.6 | 2.9 | | 47.9 | -16 | 4027 | No stop |
| 01 19 24 | --- | 18 53 48 | 55.9 | 260.4 | 2.9 | | 48.1 | 194 | 4054 | 01 15 55 |

Schedule for TORUN (Code Tr)

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Dark matter substructures in the lens JVAS B1555+375

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | Early | Disk | TPStart | | |
|---------------------------------|------------|--------------|------|-------|-----|-------|------|---------|--------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Fri 27 May 2016 Day 148 --- | | | | | | | | | | |
| 01 19 54 | J1555+3812 | 18 54 18 | 56.1 | 262.1 | 3.0 | | 49.2 | 13 | 4054 | 01 19 54 |
| 01 21 24 | --- | 18 55 48 | 55.9 | 262.5 | 3.0 | | 49.2 | 90 | 4065 | 01 19 55 |
| 01 21 24 | B1555+375 | 18 55 48 | 55.6 | 260.9 | 3.0 | | 48.2 | -16 | 4065 | No stop |
| 01 24 54 | --- | 18 59 19 | 55.1 | 261.7 | 3.0 | | 48.3 | 194 | 4092 | 01 21 25 |
| 01 25 24 | J1555+3812 | 18 59 49 | 55.3 | 263.4 | 3.1 | | 49.3 | 14 | 4092 | 01 25 24 |
| 01 26 54 | --- | 19 01 19 | 55.0 | 263.7 | 3.1 | | 49.4 | 90 | 4104 | 01 25 25 |
| 01 26 54 | B1555+375 | 19 01 19 | 54.8 | 262.1 | 3.1 | | 48.4 | -16 | 4104 | No stop |
| 01 30 24 | --- | 19 04 50 | 54.3 | 262.9 | 3.1 | | 48.5 | 194 | 4131 | 01 26 55 |
| 01 30 54 | J1555+3812 | 19 05 20 | 54.4 | 264.6 | 3.2 | | 49.5 | 14 | 4131 | 01 30 54 |
| 01 32 24 | --- | 19 06 50 | 54.2 | 265.0 | 3.2 | | 49.5 | 90 | 4142 | 01 30 55 |
| 01 32 24 | B1555+375 | 19 06 50 | 54.0 | 263.4 | 3.2 | | 48.6 | -16 | 4142 | No stop |
| 01 35 54 | --- | 19 10 21 | 53.5 | 264.2 | 3.2 | | 48.7 | 194 | 4169 | 01 32 25 |
| 01 36 24 | J1555+3812 | 19 10 51 | 53.6 | 265.8 | 3.3 | | 49.6 | 14 | 4169 | 01 36 24 |
| 01 37 54 | --- | 19 12 21 | 53.4 | 266.1 | 3.3 | | 49.6 | 90 | 4181 | 01 36 25 |
| 01 37 54 | B1555+375 | 19 12 21 | 53.2 | 264.6 | 3.2 | | 48.7 | -16 | 4181 | No stop |
| 01 41 24 | --- | 19 15 52 | 52.6 | 265.4 | 3.3 | | 48.8 | 194 | 4208 | 01 37 55 |
| 01 41 54 | J1555+3812 | 19 16 22 | 52.8 | 267.0 | 3.3 | | 49.7 | 14 | 4208 | 01 41 54 |
| 01 43 24 | --- | 19 17 52 | 52.6 | 267.3 | 3.4 | | 49.7 | 90 | 4219 | 01 41 55 |
| 01 43 24 | B1555+375 | 19 17 52 | 52.3 | 265.8 | 3.3 | | 48.9 | -16 | 4219 | No stop |
| 01 46 54 | --- | 19 21 23 | 51.8 | 266.6 | 3.4 | | 48.9 | 194 | 4246 | 01 43 25 |
| 01 47 24 | J1555+3812 | 19 21 53 | 52.0 | 268.1 | 3.4 | | 49.8 | 14 | 4246 | 01 47 24 |
| 01 48 54 | --- | 19 23 23 | 51.7 | 268.5 | 3.5 | | 49.8 | 90 | 4258 | 01 47 25 |
| 01 48 54 | B1555+375 | 19 23 23 | 51.5 | 267.0 | 3.4 | | 48.9 | -16 | 4258 | No stop |
| 01 52 24 | --- | 19 26 54 | 51.0 | 267.7 | 3.5 | | 49.0 | 194 | 4285 | 01 48 55 |
| 01 52 54 | J1555+3812 | 19 27 24 | 51.1 | 269.3 | 3.5 | | 49.8 | 14 | 4285 | 01 52 54 |
| 01 54 24 | --- | 19 28 54 | 50.9 | 269.6 | 3.6 | | 49.8 | 90 | 4296 | 01 52 55 |
| 01 54 24 | B1555+375 | 19 28 54 | 50.7 | 268.1 | 3.5 | | 49.0 | -16 | 4296 | No stop |
| 01 57 54 | --- | 19 32 24 | 50.2 | 268.8 | 3.6 | | 49.0 | 194 | 4323 | 01 54 25 |
| 01 58 24 | J1555+3812 | 19 32 55 | 50.3 | 270.4 | 3.6 | | 49.8 | 14 | 4323 | 01 58 24 |
| 01 59 54 | --- | 19 34 25 | 50.1 | 270.7 | 3.6 | | 49.8 | 90 | 4335 | 01 58 25 |

Schedule for TORUN (Code Tr)

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Dark matter substructures in the lens JVAS B1555+375

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|-----|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Fri 27 May 2016 Day 148 --- | | | | | | | | | | |
| 01 59 54 | B1555+375 | 19 34 25 | 49.9 | 269.2 | 3.6 | | 49.0 | -16 | 4335 | No stop |
| 02 03 24 | --- | 19 37 55 | 49.3 | 270.0 | 3.7 | | 49.0 | 194 | 4362 | 01 59 55 |
| 02 03 54 | J1555+3812 | 19 38 25 | 49.5 | 271.5 | 3.7 | | 49.8 | 14 | 4362 | 02 03 54 |
| 02 05 24 | --- | 19 39 56 | 49.3 | 271.8 | 3.7 | | 49.8 | 90 | 4373 | 02 03 55 |
| 02 05 24 | B1555+375 | 19 39 56 | 49.0 | 270.4 | 3.7 | | 49.0 | -15 | 4373 | No stop |
| 02 08 54 | --- | 19 43 26 | 48.5 | 271.0 | 3.8 | | 49.0 | 195 | 4400 | 02 05 25 |
| 02 09 24 | J1555+3812 | 19 43 56 | 48.7 | 272.5 | 3.8 | | 49.7 | 14 | 4400 | 02 09 24 |
| 02 10 54 | --- | 19 45 27 | 48.4 | 272.8 | 3.8 | | 49.7 | 90 | 4412 | 02 09 25 |
| 02 10 54 | B1555+375 | 19 45 27 | 48.2 | 271.4 | 3.8 | | 49.0 | -15 | 4412 | No stop |
| 02 14 24 | --- | 19 48 57 | 47.7 | 272.1 | 3.9 | | 49.0 | 195 | 4438 | 02 10 55 |
| 02 14 54 | J1555+3812 | 19 49 27 | 47.8 | 273.6 | 3.9 | | 49.7 | 14 | 4438 | 02 14 54 |
| 02 16 24 | --- | 19 50 58 | 47.6 | 273.9 | 3.9 | | 49.6 | 90 | 4450 | 02 14 55 |
| 02 16 24 | B1555+375 | 19 50 58 | 47.4 | 272.5 | 3.9 | | 49.0 | -15 | 4450 | No stop |
| 02 19 54 | --- | 19 54 28 | 46.8 | 273.2 | 3.9 | | 48.9 | 195 | 4477 | 02 16 25 |
| 02 20 24 | J1555+3812 | 19 54 58 | 47.0 | 274.6 | 4.0 | | 49.6 | 15 | 4477 | 02 20 24 |
| 02 21 54 | --- | 19 56 28 | 46.8 | 274.9 | 4.0 | | 49.5 | 90 | 4488 | 02 20 25 |
| 02 21 54 | B1555+375 | 19 56 28 | 46.5 | 273.6 | 4.0 | | 48.9 | -15 | 4488 | No stop |
| 02 24 54 | --- | 19 59 29 | 46.1 | 274.1 | 4.0 | | 48.9 | 165 | 4512 | 02 21 55 |
| 02 25 24 | J1555+3812 | 19 59 59 | 46.3 | 275.6 | 4.1 | | 49.5 | 15 | 4512 | 02 25 24 |
| 02 26 54 | --- | 20 01 29 | 46.0 | 275.8 | 4.1 | | 49.4 | 90 | 4523 | 02 25 25 |
| 02 26 54 | B1555+375 | 20 01 29 | 45.8 | 274.5 | 4.1 | | 48.8 | -15 | 4523 | No stop |
| 02 30 24 | --- | 20 05 00 | 45.3 | 275.2 | 4.1 | | 48.8 | 195 | 4550 | 02 26 55 |
| 02 30 54 | J1555+3812 | 20 05 30 | 45.4 | 276.6 | 4.2 | | 49.3 | 15 | 4550 | 02 30 54 |
| 02 32 24 | --- | 20 07 00 | 45.2 | 276.8 | 4.2 | | 49.3 | 90 | 4562 | 02 30 55 |
| 02 32 24 | B1555+375 | 20 07 00 | 45.0 | 275.5 | 4.2 | | 48.7 | -15 | 4562 | No stop |
| 02 35 54 | --- | 20 10 31 | 44.4 | 276.2 | 4.2 | | 48.6 | 195 | 4588 | 02 32 25 |
| 02 36 24 | J1555+3812 | 20 11 01 | 44.6 | 277.6 | 4.3 | | 49.2 | 15 | 4588 | 02 36 24 |
| 02 37 54 | --- | 20 12 31 | 44.4 | 277.8 | 4.3 | | 49.2 | 90 | 4600 | 02 36 25 |
| 02 37 54 | B1555+375 | 20 12 31 | 44.1 | 276.6 | 4.2 | | 48.6 | -15 | 4600 | No stop |
| 02 41 24 | --- | 20 16 02 | 43.6 | 277.2 | 4.3 | | 48.5 | 195 | 4627 | 02 37 55 |

Schedule for TORUN (Code Tr)

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Dark matter substructures in the lens JVAS B1555+375

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | Early | Disk | TPStart | | |
|---------------------------------|------------|--------------|------|-------|-----|-------|------|---------|--------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Fri 27 May 2016 Day 148 --- | | | | | | | | | | |
| 02 41 54 | J1555+3812 | 20 16 32 | 43.8 | 278.6 | 4.3 | | 49.0 | 15 | 4627 | 02 41 54 |
| 02 43 24 | --- | 20 18 02 | 43.6 | 278.8 | 4.4 | | 49.0 | 90 | 4638 | 02 41 55 |
| 02 43 24 | B1555+375 | 20 18 02 | 43.3 | 277.6 | 4.3 | | 48.5 | -15 | 4638 | No stop |
| 02 46 54 | --- | 20 21 33 | 42.8 | 278.2 | 4.4 | | 48.4 | 195 | 4665 | 02 43 25 |
| 02 47 24 | J1555+3812 | 20 22 03 | 43.0 | 279.5 | 4.4 | | 48.9 | 15 | 4665 | 02 47 24 |
| 02 48 54 | --- | 20 23 33 | 42.7 | 279.8 | 4.5 | | 48.8 | 90 | 4677 | 02 47 25 |
| 02 48 54 | B1555+375 | 20 23 33 | 42.5 | 278.6 | 4.4 | | 48.3 | -15 | 4677 | No stop |
| 02 52 24 | --- | 20 27 03 | 42.0 | 279.2 | 4.5 | | 48.2 | 195 | 4704 | 02 48 55 |
| 02 52 54 | J1555+3812 | 20 27 34 | 42.2 | 280.5 | 4.5 | | 48.7 | 15 | 4704 | 02 52 54 |
| 02 54 24 | --- | 20 29 04 | 41.9 | 280.8 | 4.6 | | 48.6 | 90 | 4715 | 02 52 55 |
| 02 54 24 | B1555+375 | 20 29 04 | 41.7 | 279.5 | 4.5 | | 48.1 | -15 | 4715 | No stop |
| 02 57 54 | --- | 20 32 34 | 41.2 | 280.2 | 4.6 | | 48.0 | 195 | 4742 | 02 54 25 |
| 02 58 24 | J1555+3812 | 20 33 04 | 41.3 | 281.5 | 4.6 | | 48.5 | 15 | 4742 | 02 58 24 |
| 02 59 54 | --- | 20 34 35 | 41.1 | 281.7 | 4.6 | | 48.4 | 90 | 4754 | 02 58 25 |
| 02 59 54 | B1555+375 | 20 34 35 | 40.9 | 280.5 | 4.6 | | 47.9 | -15 | 4754 | No stop |
| 03 03 24 | --- | 20 38 05 | 40.4 | 281.1 | 4.7 | | 47.8 | 195 | 4781 | 02 59 55 |
| 03 03 54 | J1555+3812 | 20 38 35 | 40.5 | 282.4 | 4.7 | | 48.2 | 15 | 4781 | 03 03 54 |
| 03 05 24 | --- | 20 40 06 | 40.3 | 282.7 | 4.7 | | 48.2 | 90 | 4792 | 03 03 55 |
| 03 05 24 | B1555+375 | 20 40 06 | 40.1 | 281.5 | 4.7 | | 47.7 | -15 | 4792 | No stop |
| 03 08 54 | --- | 20 43 36 | 39.5 | 282.1 | 4.8 | | 47.6 | 195 | 4819 | 03 05 25 |
| 03 09 24 | J1555+3812 | 20 44 06 | 39.7 | 283.4 | 4.8 | | 48.0 | 15 | 4819 | 03 09 24 |
| 03 10 54 | --- | 20 45 36 | 39.5 | 283.6 | 4.8 | | 47.9 | 90 | 4831 | 03 09 25 |
| 03 10 54 | B1555+375 | 20 45 36 | 39.3 | 282.4 | 4.8 | | 47.5 | -15 | 4831 | No stop |
| 03 14 24 | --- | 20 49 07 | 38.7 | 283.1 | 4.9 | | 47.4 | 195 | 4858 | 03 10 55 |
| 03 14 54 | J1555+3812 | 20 49 37 | 38.9 | 284.3 | 4.9 | | 47.7 | 15 | 4858 | 03 14 54 |
| 03 16 24 | --- | 20 51 07 | 38.7 | 284.6 | 4.9 | | 47.7 | 90 | 4869 | 03 14 55 |
| 03 16 24 | B1555+375 | 20 51 07 | 38.4 | 283.4 | 4.9 | | 47.3 | -15 | 4869 | No stop |
| 03 19 54 | --- | 20 54 38 | 37.9 | 284.0 | 4.9 | | 47.1 | 195 | 4896 | 03 16 25 |
| 03 20 24 | J1555+3812 | 20 55 08 | 38.1 | 285.2 | 5.0 | | 47.5 | 15 | 4896 | 03 20 24 |
| 03 21 54 | --- | 20 56 38 | 37.9 | 285.5 | 5.0 | | 47.4 | 90 | 4908 | 03 20 25 |

Schedule for TORUN (Code Tr)

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Dark matter substructures in the lens JVAS B1555+375

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|-----|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Fri 27 May 2016 Day 148 --- | | | | | | | | | | |
| 03 21 54 | B1555+375 | 20 56 38 | 37.6 | 284.3 | 5.0 | | 47.0 | -14 | 4908 | No stop |
| 03 25 24 | --- | 21 00 09 | 37.1 | 284.9 | 5.0 | | 46.8 | 196 | 4935 | 03 21 55 |
| 03 25 54 | J1555+3812 | 21 00 39 | 37.3 | 286.2 | 5.1 | | 47.2 | 15 | 4935 | 03 25 54 |
| 03 27 24 | --- | 21 02 09 | 37.1 | 286.4 | 5.1 | | 47.1 | 90 | 4946 | 03 25 55 |
| 03 27 24 | B1555+375 | 21 02 09 | 36.8 | 285.3 | 5.1 | | 46.7 | -14 | 4946 | No stop |
| 03 30 54 | --- | 21 05 40 | 36.3 | 285.9 | 5.1 | | 46.6 | 196 | 4973 | 03 27 25 |
| 03 31 24 | J1555+3812 | 21 06 10 | 36.5 | 287.1 | 5.2 | | 46.9 | 15 | 4973 | 03 31 24 |
| 03 32 54 | --- | 21 07 40 | 36.3 | 287.3 | 5.2 | | 46.8 | 90 | 4985 | 03 31 25 |
| 03 32 54 | B1555+375 | 21 07 40 | 36.0 | 286.2 | 5.2 | | 46.5 | -14 | 4985 | No stop |
| 03 36 24 | --- | 21 11 11 | 35.5 | 286.8 | 5.2 | | 46.3 | 196 | 5012 | 03 32 55 |
| 03 36 54 | J1555+3812 | 21 11 41 | 35.7 | 288.0 | 5.3 | | 46.6 | 15 | 5012 | 03 36 54 |
| 03 38 24 | --- | 21 13 11 | 35.5 | 288.3 | 5.3 | | 46.5 | 90 | 5023 | 03 36 55 |
| 03 38 24 | B1555+375 | 21 13 11 | 35.3 | 287.2 | 5.3 | | 46.2 | -14 | 5023 | No stop |
| 03 41 54 | --- | 21 16 42 | 34.7 | 287.8 | 5.3 | | 46.0 | 196 | 5050 | 03 38 25 |
| 03 42 24 | J1555+3812 | 21 17 12 | 35.0 | 288.9 | 5.4 | | 46.3 | 16 | 5050 | 03 42 24 |
| 03 43 54 | --- | 21 18 42 | 34.7 | 289.2 | 5.4 | | 46.2 | 90 | 5062 | 03 42 25 |
| 03 43 54 | B1555+375 | 21 18 42 | 34.5 | 288.1 | 5.3 | | 45.9 | -14 | 5062 | No stop |
| 03 47 24 | --- | 21 22 12 | 34.0 | 288.7 | 5.4 | | 45.7 | 196 | 5088 | 03 43 55 |
| 03 47 54 | J1555+3812 | 21 22 43 | 34.2 | 289.8 | 5.5 | | 45.9 | 16 | 5088 | 03 47 54 |
| 03 49 24 | --- | 21 24 13 | 34.0 | 290.1 | 5.5 | | 45.8 | 90 | 5100 | 03 47 55 |
| 03 49 24 | B1555+375 | 21 24 13 | 33.7 | 289.0 | 5.4 | | 45.5 | -14 | 5100 | No stop |
| 03 52 54 | --- | 21 27 43 | 33.2 | 289.6 | 5.5 | | 45.3 | 196 | 5127 | 03 49 25 |
| 03 53 24 | J1555+3812 | 21 28 13 | 33.4 | 290.8 | 5.5 | | 45.6 | 16 | 5127 | 03 53 24 |
| 03 54 54 | --- | 21 29 44 | 33.2 | 291.0 | 5.6 | | 45.5 | 90 | 5138 | 03 53 25 |
| 03 54 54 | B1555+375 | 21 29 44 | 32.9 | 289.9 | 5.5 | | 45.2 | -14 | 5138 | No stop |
| 03 58 24 | --- | 21 33 14 | 32.4 | 290.5 | 5.6 | | 45.0 | 196 | 5165 | 03 54 55 |
| 03 58 54 | J1555+3812 | 21 33 44 | 32.6 | 291.7 | 5.6 | | 45.2 | 16 | 5165 | 03 58 54 |
| 04 00 24 | --- | 21 35 15 | 32.4 | 291.9 | 5.7 | | 45.1 | 90 | 5177 | 03 58 55 |
| 04 00 24 | B1555+375 | 21 35 15 | 32.1 | 290.9 | 5.6 | | 44.9 | -14 | 5177 | No stop |
| 04 03 54 | --- | 21 38 45 | 31.6 | 291.4 | 5.7 | | 44.7 | 196 | 5204 | 04 00 25 |

Schedule for TORUN (Code Tr)

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Dark matter substructures in the lens JVAS B1555+375

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|-----|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Fri 27 May 2016 Day 148 --- | | | | | | | | | | |
| 04 04 24 | J1555+3812 | 21 39 15 | 31.9 | 292.6 | 5.7 | | 44.8 | 16 | 5204 | 04 04 24 |
| 04 05 54 | --- | 21 40 45 | 31.7 | 292.8 | 5.8 | | 44.7 | 90 | 5215 | 04 04 25 |
| 04 05 54 | B1555+375 | 21 40 45 | 31.3 | 291.8 | 5.7 | | 44.5 | -14 | 5215 | No stop |
| 04 09 24 | --- | 21 44 16 | 30.9 | 292.4 | 5.8 | | 44.3 | 196 | 5242 | 04 05 55 |
| 04 09 54 | J1555+3812 | 21 44 46 | 31.1 | 293.5 | 5.8 | | 44.5 | 16 | 5242 | 04 09 54 |
| 04 11 24 | --- | 21 46 16 | 30.9 | 293.7 | 5.8 | | 44.4 | 90 | 5254 | 04 09 55 |
| 04 11 24 | B1555+375 | 21 46 16 | 30.6 | 292.7 | 5.8 | | 44.2 | -14 | 5254 | No stop |
| 04 14 54 | --- | 21 49 47 | 30.1 | 293.3 | 5.9 | | 43.9 | 196 | 5281 | 04 11 25 |
| 04 15 24 | J1555+3812 | 21 50 17 | 30.3 | 294.4 | 5.9 | | 44.1 | 16 | 5281 | 04 15 24 |
| 04 16 54 | --- | 21 51 47 | 30.1 | 294.6 | 5.9 | | 44.0 | 90 | 5292 | 04 15 25 |
| 04 16 54 | B1555+375 | 21 51 47 | 29.8 | 293.6 | 5.9 | | 43.8 | -14 | 5292 | No stop |
| 04 20 24 | --- | 21 55 18 | 29.3 | 294.2 | 6.0 | | 43.5 | 196 | 5319 | 04 16 55 |
| 04 20 54 | J1555+3812 | 21 55 48 | 29.6 | 295.3 | 6.0 | | 43.7 | 16 | 5319 | 04 20 54 |
| 04 22 24 | --- | 21 57 18 | 29.4 | 295.5 | 6.0 | | 43.6 | 90 | 5331 | 04 20 55 |
| 04 22 24 | B1555+375 | 21 57 18 | 29.1 | 294.5 | 6.0 | | 43.4 | -14 | 5331 | No stop |
| 04 25 54 | --- | 22 00 49 | 28.6 | 295.1 | 6.0 | | 43.1 | 196 | 5358 | 04 22 25 |
| 04 26 24 | J1555+3812 | 22 01 19 | 28.8 | 296.2 | 6.1 | | 43.3 | 16 | 5358 | 04 26 24 |
| 04 27 54 | --- | 22 02 49 | 28.6 | 296.4 | 6.1 | | 43.1 | 90 | 5369 | 04 26 25 |
| 04 27 54 | B1555+375 | 22 02 49 | 28.3 | 295.4 | 6.1 | | 43.0 | -14 | 5369 | No stop |
| 04 31 24 | --- | 22 06 20 | 27.8 | 296.0 | 6.1 | | 42.7 | 196 | 5396 | 04 27 55 |
| 04 31 54 | J1555+3812 | 22 06 50 | 28.1 | 297.1 | 6.2 | | 42.8 | 16 | 5396 | 04 31 54 |
| 04 33 24 | --- | 22 08 20 | 27.9 | 297.3 | 6.2 | | 42.7 | 90 | 5408 | 04 31 55 |
| 04 33 24 | B1555+375 | 22 08 20 | 27.6 | 296.3 | 6.2 | | 42.6 | -14 | 5408 | No stop |
| 04 36 54 | --- | 22 11 51 | 27.1 | 296.9 | 6.2 | | 42.3 | 196 | 5435 | 04 33 25 |
| 04 37 24 | J1555+3812 | 22 12 21 | 27.4 | 298.0 | 6.3 | | 42.4 | 16 | 5435 | 04 37 24 |
| 04 38 54 | --- | 22 13 51 | 27.2 | 298.2 | 6.3 | | 42.3 | 90 | 5446 | 04 37 25 |
| 04 40 24 | 3C345 | 22 15 21 | 34.6 | 292.0 | 5.5 | | 46.4 | 48 | 5446 | 04 40 24 |
| 04 45 14 | --- | 22 20 22 | 33.9 | 292.8 | 5.6 | | 46.1 | 290 | 5483 | 04 40 25 |
| 04 46 49 | J1555+3812 | 22 21 46 | 26.1 | 299.5 | 6.4 | | 41.6 | 52 | 5483 | 04 46 49 |
| 04 48 09 | --- | 22 23 17 | 25.9 | 299.8 | 6.5 | | 41.5 | 80 | 5494 | 04 46 50 |

Schedule for TORUN (Code Tr)

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Dark matter substructures in the lens JVAS B1555+375

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|-----|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Fri 27 May 2016 Day 148 --- | | | | | | | | | | |
| 04 48 09 | B1555+375 | 22 23 07 | 25.6 | 298.8 | 6.4 | | 41.4 | -14 | 5494 | No stop |
| 04 51 29 | --- | 22 26 27 | 25.2 | 299.3 | 6.5 | | 41.2 | 186 | 5519 | 04 48 10 |
| 04 51 59 | J1555+3812 | 22 26 57 | 25.5 | 300.4 | 6.5 | | 41.2 | 16 | 5519 | 04 51 59 |
| 04 53 29 | --- | 22 28 28 | 25.3 | 300.6 | 6.5 | | 41.1 | 90 | 5531 | 04 52 00 |
| 04 53 29 | B1555+375 | 22 28 28 | 24.9 | 299.7 | 6.5 | | 41.0 | -14 | 5531 | No stop |
| 04 56 49 | --- | 22 31 48 | 24.5 | 300.2 | 6.6 | | 40.7 | 186 | 5556 | 04 53 30 |
| 04 57 19 | J1555+3812 | 22 32 18 | 24.8 | 301.3 | 6.6 | | 40.8 | 16 | 5556 | 04 57 19 |
| 04 58 49 | --- | 22 33 48 | 24.6 | 301.5 | 6.6 | | 40.6 | 90 | 5568 | 04 57 20 |
| 04 58 49 | B1555+375 | 22 33 48 | 24.2 | 300.5 | 6.6 | | 40.6 | -14 | 5568 | No stop |
| 05 02 09 | --- | 22 37 09 | 23.8 | 301.1 | 6.7 | | 40.3 | 186 | 5594 | 04 58 50 |
| 05 02 39 | J1555+3812 | 22 37 39 | 24.1 | 302.1 | 6.7 | | 40.3 | 16 | 5594 | 05 02 39 |
| 05 04 09 | --- | 22 39 09 | 23.9 | 302.4 | 6.7 | | 40.2 | 90 | 5605 | 05 02 40 |
| 05 04 09 | B1555+375 | 22 39 09 | 23.5 | 301.4 | 6.7 | | 40.1 | -14 | 5605 | No stop |
| 05 07 29 | --- | 22 42 30 | 23.1 | 302.0 | 6.7 | | 39.8 | 186 | 5631 | 05 04 10 |
| 05 07 59 | J1555+3812 | 22 43 00 | 23.4 | 303.0 | 6.8 | | 39.8 | 16 | 5631 | 05 07 59 |
| 05 09 29 | --- | 22 44 30 | 23.2 | 303.3 | 6.8 | | 39.7 | 90 | 5642 | 05 08 00 |
| 05 09 29 | B1555+375 | 22 44 30 | 22.8 | 302.3 | 6.8 | | 39.6 | -14 | 5642 | No stop |
| 05 12 49 | --- | 22 47 51 | 22.4 | 302.9 | 6.8 | | 39.4 | 186 | 5668 | 05 09 30 |
| 05 13 19 | J1555+3812 | 22 48 21 | 22.7 | 303.9 | 6.9 | | 39.3 | 16 | 5668 | 05 13 19 |
| 05 14 49 | --- | 22 49 51 | 22.5 | 304.1 | 6.9 | | 39.2 | 90 | 5679 | 05 13 20 |
| 05 14 49 | B1555+375 | 22 49 51 | 22.2 | 303.2 | 6.9 | | 39.2 | -14 | 5679 | No stop |
| 05 18 09 | --- | 22 53 12 | 21.7 | 303.8 | 6.9 | | 38.9 | 186 | 5705 | 05 14 50 |
| 05 18 39 | J1555+3812 | 22 53 42 | 22.1 | 304.8 | 7.0 | | 38.9 | 16 | 5705 | 05 18 39 |
| 05 20 09 | --- | 22 55 12 | 21.9 | 305.0 | 7.0 | | 38.7 | 90 | 5717 | 05 18 40 |
| 05 20 09 | B1555+375 | 22 55 12 | 21.5 | 304.1 | 7.0 | | 38.7 | -13 | 5717 | No stop |
| 05 23 29 | --- | 22 58 33 | 21.1 | 304.7 | 7.0 | | 38.4 | 187 | 5742 | 05 20 10 |
| 05 23 59 | J1555+3812 | 22 59 03 | 21.4 | 305.7 | 7.1 | | 38.4 | 16 | 5742 | 05 23 59 |
| 05 25 29 | --- | 23 00 33 | 21.2 | 305.9 | 7.1 | | 38.2 | 90 | 5754 | 05 24 00 |
| 05 25 29 | B1555+375 | 23 00 33 | 20.8 | 305.0 | 7.0 | | 38.2 | -13 | 5754 | No stop |
| 05 28 49 | --- | 23 03 53 | 20.4 | 305.5 | 7.1 | | 37.9 | 187 | 5779 | 05 25 30 |

Schedule for TORUN (Code Tr) Page 22

Dark matter substructures in the lens JVAS B1555+375

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Fri 27 May 2016 Day 148 ---

```
05 28 49  J1555+3812  23 03 53  20.8 306.5  7.1      37.9  -14   5779  No stop
05 30 19  ---                23 05 24  20.6 306.7  7.2      37.8   76   5791  05 28 50
```

SETUP FILE INFORMATION:

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

==== Setup file: sess216L2Gglob.setini

```
Setup group:  21          Station: TORUN          Total bit rate: 1024
Format: MARK5B          Bits per sample: 2      Sample rate: 32.000
Number of channels: 16  DBE type: DBBC_DDC      Speedup factor:  1.00
```

Disk used to record data.

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

The following frequency sets based on these setups were used.

Frequency Set: 4 Setup file default. Used with PCAL = off

| | | | | | | | | |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| LO sum= | 1584.00 | 1584.00 | 1584.00 | 1584.00 | 1616.00 | 1616.00 | 1616.00 | 1616.00 |
| | 1648.00 | 1648.00 | 1648.00 | 1648.00 | 1680.00 | 1680.00 | 1680.00 | 1680.00 |
| BBC fr= | 716.00 | 716.00 | 716.00 | 716.00 | 684.00 | 684.00 | 684.00 | 684.00 |
| | 652.00 | 652.00 | 652.00 | 652.00 | 620.00 | 620.00 | 620.00 | 620.00 |
| Bandwd= | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 |
| | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 |

Matching frequency sets: 4

Track assignments are:

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

barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | (J2000) | (Date) | Error (mas) |
|--------------|--|-------------------|-----------------|----------------|
| * B1555+375 | 15 55 22.004405 | * 15 57 11.925100 | 15 57 49.182669 | 0.00 |
| | 37 30 10.71406 | * 37 21 35.80000 | 37 18 56.38979 | 0.00 |
| * J1555+3812 | 15 53 14.886518 | * 15 55 03.704500 | 15 55 40.607583 | 0.00 |
| | 38 20 57.83505 | * 38 12 14.96600 | 38 09 33.06613 | 0.00 |
| * 3C345 | 16 41 17.606162 | * 16 42 58.809900 | 16 43 33.368762 | 0.00 |
| | 39 54 10.81394 | * 39 48 36.99300 | 39 46 55.11192 | 0.00 |
| * 3C286 | 13 28 49.657758 | * 13 31 08.288051 | 13 31 54.219740 | 0.18 |
| J1331+3030 | 30 45 58.64059 | * 30 30 32.95924 | 30 25 39.63034 | 0.17 |
| 1328+307 | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc | | | |
| J1331+30 | GSFC 2015a astro solution, unpublished 225 observations. | | | |

eg092btr

VHS1256-1257 -EPOCH 2

PI: Jose C. Guirado

Address: Dpto. Astronomia, Univ. Valencia

Observing mode: Phase-referencing at 18cm (1024 Mb/s)

Schedule for TORUN (Code Tr)

Page 2

vhs1256-1257 -Epoch 2

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|---------|---------|---------|---------|---------|---------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Fri 27 May 2016 Day 148 --- | | | | | | | | | | |
| Next scan frequencies: | | 1610.49 | 1610.49 | 1610.49 | 1610.49 | 1610.49 | 1642.49 | 1642.49 | 1642.49 | 1642.49 |
| | | 1674.49 | 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 | 689.51 | 657.51 | 657.51 | 657.51 | 657.51 |
| | | 625.51 | 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 | 16.00 | 16.00 |
| ----- | | | | | | | | | | |
| 15 30 00 | 4C39.25 | 09 06 44 | 75.4 | 163.3 | -0.4 | | -12.8 | 0 | 0 | 15 30 00 |
| 15 34 00 | --- | 09 10 44 | 75.6 | 166.4 | -0.3 | | -10.5 | 240 | 31 | 15 30 01 |
| | | | | | | | | | | |
| 15 34 00 | 4C39.25 | 09 10 44 | 75.6 | 166.4 | -0.3 | | -10.5 | -5 | 31 | No stop |
| 15 38 00 | --- | 09 14 45 | 75.7 | 169.5 | -0.2 | | -8.1 | 235 | 62 | 15 34 01 |
| | | | | | | | | | | |
| 15 39 00 | 4C39.25 | 09 15 45 | 75.7 | 170.3 | -0.2 | | -7.5 | 52 | 62 | 15 39 00 |
| 15 43 00 | --- | 09 19 46 | 75.8 | 173.4 | -0.1 | | -5.1 | 240 | 92 | 15 39 01 |
| | | | | | | | | | | |
| 15 52 37 | J1303-1051 | 09 29 24 | 11.4 | 126.2 | -3.6 | | -29.6 | 319 | 92 | 15 52 37 |
| 15 54 17 | =1300-105 | 09 31 05 | 11.6 | 126.6 | -3.6 | | -29.4 | 100 | 105 | 15 52 38 |
| | | | | | | | | | | |
| 15 54 17 | VHS1256 | 09 31 05 | 10.6 | 129.2 | -3.4 | | -28.5 | -20 | 105 | No stop |
| 15 57 57 | --- | 09 34 45 | 11.0 | 130.0 | -3.4 | | -28.2 | 200 | 133 | 15 54 18 |
| | | | | | | | | | | |
| 15 57 57 | J1254-1317 | 09 34 45 | 10.9 | 130.5 | -3.3 | | -28.0 | -11 | 133 | No stop |
| 15 59 37 | =1251-130 | 09 36 25 | 11.1 | 130.8 | -3.3 | | -27.8 | 89 | 146 | 15 57 58 |
| | | | | | | | | | | |
| 16 00 12 | J1303-1051 | 09 37 01 | 12.3 | 127.9 | -3.5 | | -28.9 | 14 | 146 | 16 00 12 |
| 16 01 52 | =1300-105 | 09 38 41 | 12.5 | 128.2 | -3.4 | | -28.7 | 100 | 159 | 16 00 13 |
| | | | | | | | | | | |
| 16 01 52 | VHS1256 | 09 38 41 | 11.5 | 130.8 | -3.3 | | -27.8 | -20 | 159 | No stop |
| 16 05 32 | --- | 09 42 21 | 11.9 | 131.7 | -3.2 | | -27.4 | 200 | 187 | 16 01 53 |
| | | | | | | | | | | |
| 16 05 32 | J1254-1317 | 09 42 21 | 11.8 | 132.1 | -3.2 | | -27.2 | -11 | 187 | No stop |
| 16 07 12 | =1251-130 | 09 44 02 | 12.0 | 132.5 | -3.2 | | -27.1 | 89 | 200 | 16 05 33 |
| | | | | | | | | | | |
| 16 07 12 | J1303-1051 | 09 44 02 | 13.1 | 129.4 | -3.3 | | -28.2 | -21 | 200 | No stop |
| 16 08 52 | =1300-105 | 09 45 42 | 13.3 | 129.8 | -3.3 | | -28.0 | 79 | 213 | 16 07 13 |
| | | | | | | | | | | |
| 16 08 52 | VHS1256 | 09 45 42 | 12.3 | 132.4 | -3.2 | | -27.1 | -20 | 213 | No stop |
| 16 12 32 | --- | 09 49 23 | 12.7 | 133.2 | -3.1 | | -26.7 | 200 | 241 | 16 08 53 |
| | | | | | | | | | | |
| 16 12 32 | J1254-1317 | 09 49 23 | 12.5 | 133.7 | -3.1 | | -26.5 | -11 | 241 | No stop |
| 16 14 12 | =1251-130 | 09 51 03 | 12.7 | 134.1 | -3.1 | | -26.3 | 89 | 254 | 16 12 33 |

Schedule for TORUN (Code Tr)

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vhs1256-1257 -Epoch 2

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | | |
|----------|-----------------|--------------|------|-------|------|----|-------|-------|---------|----------|--|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC | |
| ----- | | | | | | | | | | | |
| --- | Fri 27 May 2016 | Day 148 | | | | | --- | | | | |
| 16 14 47 | J1303-1051 | 09 51 38 | 14.0 | 131.1 | -3.2 | | -27.4 | 14 | 254 | 16 14 47 | |
| 16 16 27 | =1300-105 | 09 53 18 | 14.2 | 131.5 | -3.2 | | -27.3 | 100 | 267 | 16 14 48 | |
| 16 16 27 | VHS1256 | 09 53 18 | 13.1 | 134.1 | -3.1 | | -26.3 | -20 | 267 | No stop | |
| 16 20 07 | --- | 09 56 59 | 13.5 | 134.9 | -3.0 | | -25.9 | 200 | 295 | 16 16 28 | |
| 16 20 07 | J1254-1317 | 09 56 59 | 13.4 | 135.4 | -3.0 | | -25.7 | -11 | 295 | No stop | |
| 16 21 47 | =1251-130 | 09 58 39 | 13.5 | 135.8 | -2.9 | | -25.5 | 89 | 308 | 16 20 08 | |
| 16 21 47 | J1303-1051 | 09 58 39 | 14.8 | 132.7 | -3.1 | | -26.7 | -21 | 308 | No stop | |
| 16 23 27 | =1300-105 | 10 00 19 | 15.0 | 133.1 | -3.1 | | -26.5 | 79 | 321 | 16 21 48 | |
| 16 23 27 | VHS1256 | 10 00 19 | 13.8 | 135.7 | -2.9 | | -25.5 | -20 | 321 | No stop | |
| 16 27 07 | --- | 10 04 00 | 14.2 | 136.5 | -2.9 | | -25.1 | 200 | 349 | 16 23 28 | |
| 16 27 07 | J1254-1317 | 10 04 00 | 14.1 | 137.0 | -2.9 | | -24.9 | -11 | 349 | No stop | |
| 16 28 47 | =1251-130 | 10 05 40 | 14.3 | 137.4 | -2.8 | | -24.7 | 89 | 362 | 16 27 08 | |
| 16 29 22 | J1303-1051 | 10 06 15 | 15.6 | 134.4 | -3.0 | | -25.9 | 14 | 362 | 16 29 22 | |
| 16 31 02 | =1300-105 | 10 07 56 | 15.8 | 134.8 | -2.9 | | -25.7 | 100 | 374 | 16 29 23 | |
| 16 31 02 | VHS1256 | 10 07 56 | 14.6 | 137.4 | -2.8 | | -24.7 | -20 | 374 | No stop | |
| 16 34 42 | --- | 10 11 36 | 15.0 | 138.2 | -2.8 | | -24.2 | 200 | 403 | 16 31 03 | |
| 16 34 42 | J1254-1317 | 10 11 36 | 14.8 | 138.7 | -2.7 | | -24.0 | -11 | 403 | No stop | |
| 16 36 22 | =1251-130 | 10 13 17 | 15.0 | 139.1 | -2.7 | | -23.8 | 89 | 415 | 16 34 43 | |
| 16 36 22 | J1303-1051 | 10 13 17 | 16.3 | 136.1 | -2.8 | | -25.1 | -20 | 415 | No stop | |
| 16 38 02 | =1300-105 | 10 14 57 | 16.5 | 136.4 | -2.8 | | -24.9 | 80 | 428 | 16 36 23 | |
| 16 38 02 | VHS1256 | 10 14 57 | 15.3 | 139.0 | -2.7 | | -23.8 | -19 | 428 | No stop | |
| 16 41 42 | --- | 10 18 37 | 15.7 | 139.9 | -2.6 | | -23.4 | 201 | 456 | 16 38 03 | |
| 16 41 42 | J1254-1317 | 10 18 37 | 15.5 | 140.4 | -2.6 | | -23.2 | -11 | 456 | No stop | |
| 16 43 22 | =1251-130 | 10 20 18 | 15.7 | 140.7 | -2.6 | | -23.0 | 89 | 469 | 16 41 43 | |
| 16 43 57 | J1303-1051 | 10 20 53 | 17.1 | 137.8 | -2.7 | | -24.2 | 15 | 469 | 16 43 57 | |
| 16 45 37 | =1300-105 | 10 22 33 | 17.3 | 138.2 | -2.7 | | -24.0 | 100 | 482 | 16 43 58 | |
| 16 45 37 | VHS1256 | 10 22 33 | 16.1 | 140.8 | -2.6 | | -22.9 | -19 | 482 | No stop | |
| 16 49 17 | --- | 10 26 14 | 16.4 | 141.6 | -2.5 | | -22.5 | 201 | 510 | 16 45 38 | |
| 16 49 17 | J1254-1317 | 10 26 14 | 16.2 | 142.1 | -2.5 | | -22.3 | -11 | 510 | No stop | |
| 16 50 57 | =1251-130 | 10 27 54 | 16.4 | 142.5 | -2.5 | | -22.1 | 89 | 523 | 16 49 18 | |
| 16 50 57 | J1303-1051 | 10 27 54 | 17.8 | 139.5 | -2.6 | | -23.4 | -20 | 523 | No stop | |
| 16 52 37 | =1300-105 | 10 29 34 | 18.0 | 139.9 | -2.6 | | -23.2 | 80 | 536 | 16 50 58 | |

Schedule for TORUN (Code Tr)

Page 4

vhs1256-1257 -Epoch 2

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|------|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Fri 27 May 2016 Day 148 --- | | | | | | | | | | |
| 16 52 37 | VHS1256 | 10 29 34 | 16.7 | 142.4 | -2.5 | | -22.1 | -19 | 536 | No stop |
| 16 56 17 | --- | 10 33 15 | 17.1 | 143.3 | -2.4 | | -21.6 | 201 | 564 | 16 52 38 |
| 16 56 17 | J1254-1317 | 10 33 15 | 16.9 | 143.8 | -2.4 | | -21.4 | -11 | 564 | No stop |
| 16 57 57 | =1251-130 | 10 34 55 | 17.0 | 144.2 | -2.3 | | -21.2 | 89 | 577 | 16 56 18 |
| 16 58 32 | J1303-1051 | 10 35 30 | 18.5 | 141.3 | -2.5 | | -22.5 | 15 | 577 | 16 58 32 |
| 17 00 12 | =1300-105 | 10 37 10 | 18.7 | 141.7 | -2.4 | | -22.3 | 100 | 590 | 16 58 33 |
| 17 00 12 | VHS1256 | 10 37 10 | 17.4 | 144.2 | -2.3 | | -21.1 | -19 | 590 | No stop |
| 17 03 52 | --- | 10 40 51 | 17.7 | 145.1 | -2.3 | | -20.6 | 201 | 618 | 17 00 13 |
| 17 03 52 | J1254-1317 | 10 40 51 | 17.5 | 145.6 | -2.2 | | -20.4 | -11 | 618 | No stop |
| 17 05 32 | =1251-130 | 10 42 31 | 17.7 | 146.0 | -2.2 | | -20.2 | 89 | 631 | 17 03 53 |
| 17 05 32 | J1303-1051 | 10 42 31 | 19.2 | 143.0 | -2.4 | | -21.6 | -20 | 631 | No stop |
| 17 07 12 | =1300-105 | 10 44 12 | 19.3 | 143.4 | -2.3 | | -21.4 | 80 | 644 | 17 05 33 |
| 17 07 12 | VHS1256 | 10 44 12 | 18.0 | 145.9 | -2.2 | | -20.2 | -19 | 644 | No stop |
| 17 10 52 | --- | 10 47 52 | 18.3 | 146.8 | -2.2 | | -19.7 | 201 | 672 | 17 07 13 |
| 17 10 52 | J1254-1317 | 10 47 52 | 18.1 | 147.3 | -2.1 | | -19.5 | -11 | 672 | No stop |
| 17 12 32 | =1251-130 | 10 49 32 | 18.3 | 147.7 | -2.1 | | -19.3 | 89 | 685 | 17 10 53 |
| 17 13 07 | J1303-1051 | 10 50 08 | 19.9 | 144.8 | -2.2 | | -20.6 | 15 | 685 | 17 13 07 |
| 17 14 47 | =1300-105 | 10 51 48 | 20.0 | 145.2 | -2.2 | | -20.4 | 100 | 697 | 17 13 08 |
| 17 14 47 | VHS1256 | 10 51 48 | 18.6 | 147.7 | -2.1 | | -19.2 | -19 | 697 | No stop |
| 17 18 27 | --- | 10 55 28 | 18.9 | 148.6 | -2.0 | | -18.7 | 201 | 726 | 17 14 48 |
| 17 18 27 | J1254-1317 | 10 55 28 | 18.7 | 149.1 | -2.0 | | -18.5 | -11 | 726 | No stop |
| 17 20 07 | =1251-130 | 10 57 09 | 18.9 | 149.5 | -2.0 | | -18.2 | 89 | 738 | 17 18 28 |
| 17 20 07 | J1303-1051 | 10 57 09 | 20.5 | 146.5 | -2.1 | | -19.7 | -20 | 738 | No stop |
| 17 21 47 | =1300-105 | 10 58 49 | 20.6 | 147.0 | -2.1 | | -19.5 | 80 | 751 | 17 20 08 |
| 17 21 47 | VHS1256 | 10 58 49 | 19.2 | 149.5 | -2.0 | | -18.3 | -19 | 751 | No stop |
| 17 25 27 | --- | 11 02 30 | 19.5 | 150.4 | -1.9 | | -17.8 | 201 | 779 | 17 21 48 |
| 17 25 27 | J1254-1317 | 11 02 30 | 19.3 | 150.8 | -1.9 | | -17.5 | -11 | 779 | No stop |
| 17 27 07 | =1251-130 | 11 04 10 | 19.4 | 151.2 | -1.9 | | -17.3 | 89 | 792 | 17 25 28 |
| 17 27 42 | J1303-1051 | 11 04 45 | 21.1 | 148.4 | -2.0 | | -18.7 | 15 | 792 | 17 27 42 |
| 17 29 22 | =1300-105 | 11 06 25 | 21.2 | 148.8 | -2.0 | | -18.4 | 100 | 805 | 17 27 43 |

Schedule for TORUN (Code Tr)

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vhs1256-1257 -Epoch 2

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|------|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| --- Fri 27 May 2016 Day 148 --- | | | | | | | | | | |
| 17 29 22 | VHS1256 | 11 06 25 | 19.7 | 151.3 | -1.8 | | -17.2 | -19 | 805 | No stop |
| 17 33 02 | --- | 11 10 06 | 20.0 | 152.2 | -1.8 | | -16.7 | 201 | 833 | 17 29 23 |
| 17 33 02 | J1254-1317 | 11 10 06 | 19.8 | 152.7 | -1.8 | | -16.4 | -11 | 833 | No stop |
| 17 34 42 | =1251-130 | 11 11 46 | 19.9 | 153.1 | -1.7 | | -16.2 | 89 | 846 | 17 33 03 |
| 17 34 42 | J1303-1051 | 11 11 46 | 21.6 | 150.2 | -1.9 | | -17.7 | -20 | 846 | No stop |
| 17 36 22 | =1300-105 | 11 13 26 | 21.7 | 150.6 | -1.8 | | -17.5 | 80 | 859 | 17 34 43 |
| 17 36 22 | VHS1256 | 11 13 26 | 20.2 | 153.1 | -1.7 | | -16.2 | -19 | 859 | No stop |
| 17 40 02 | --- | 11 17 07 | 20.5 | 154.0 | -1.7 | | -15.7 | 201 | 887 | 17 36 23 |
| 17 40 02 | J1254-1317 | 11 17 07 | 20.3 | 154.5 | -1.6 | | -15.4 | -11 | 887 | No stop |
| 17 41 42 | =1251-130 | 11 18 47 | 20.4 | 154.9 | -1.6 | | -15.2 | 89 | 900 | 17 40 03 |
| 17 42 17 | J1303-1051 | 11 19 22 | 22.2 | 152.1 | -1.7 | | -16.6 | 15 | 900 | 17 42 17 |
| 17 43 57 | =1300-105 | 11 21 03 | 22.3 | 152.5 | -1.7 | | -16.4 | 100 | 913 | 17 42 18 |
| 17 43 57 | VHS1256 | 11 21 03 | 20.7 | 155.0 | -1.6 | | -15.1 | -19 | 913 | No stop |
| 17 47 37 | --- | 11 24 43 | 21.0 | 155.9 | -1.5 | | -14.6 | 201 | 941 | 17 43 58 |
| 17 47 37 | J1254-1317 | 11 24 43 | 20.7 | 156.4 | -1.5 | | -14.3 | -11 | 941 | No stop |
| 17 49 17 | =1251-130 | 11 26 23 | 20.8 | 156.8 | -1.5 | | -14.1 | 89 | 954 | 17 47 38 |
| 17 49 17 | J1303-1051 | 11 26 23 | 22.6 | 153.9 | -1.6 | | -15.6 | -21 | 954 | No stop |
| 17 50 57 | =1300-105 | 11 28 04 | 22.8 | 154.3 | -1.6 | | -15.4 | 79 | 967 | 17 49 18 |
| 17 50 57 | VHS1256 | 11 28 04 | 21.2 | 156.7 | -1.5 | | -14.1 | -19 | 967 | No stop |
| 17 54 37 | --- | 11 31 44 | 21.4 | 157.7 | -1.4 | | -13.5 | 201 | 995 | 17 50 58 |
| 17 54 37 | J1254-1317 | 11 31 44 | 21.1 | 158.1 | -1.4 | | -13.3 | -11 | 995 | No stop |
| 17 56 17 | =1251-130 | 11 33 25 | 21.2 | 158.6 | -1.4 | | -13.0 | 89 | 1008 | 17 54 38 |
| 17 56 52 | J1303-1051 | 11 34 00 | 23.1 | 155.9 | -1.5 | | -14.5 | 14 | 1008 | 17 56 52 |
| 17 58 32 | =1300-105 | 11 35 40 | 23.2 | 156.3 | -1.5 | | -14.2 | 100 | 1021 | 17 56 53 |
| 17 58 32 | VHS1256 | 11 35 40 | 21.6 | 158.7 | -1.4 | | -13.0 | -20 | 1021 | No stop |
| 18 02 12 | --- | 11 39 21 | 21.8 | 159.6 | -1.3 | | -12.4 | 200 | 1049 | 17 58 33 |
| 18 02 12 | J1254-1317 | 11 39 21 | 21.5 | 160.1 | -1.3 | | -12.1 | -11 | 1049 | No stop |
| 18 03 52 | =1251-130 | 11 41 01 | 21.6 | 160.5 | -1.2 | | -11.9 | 89 | 1062 | 18 02 13 |
| 18 03 52 | J1303-1051 | 11 41 01 | 23.5 | 157.7 | -1.4 | | -13.4 | -21 | 1062 | No stop |
| 18 05 32 | =1300-105 | 11 42 41 | 23.6 | 158.1 | -1.4 | | -13.2 | 79 | 1074 | 18 03 53 |

Schedule for TORUN (Code Tr) Page 6
 vhs1256-1257 -Epoch 2

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

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|------|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| --- Fri 27 May 2016 Day 148 --- | | | | | | | | | | |
| 18 05 32 | VHS1256 | 11 42 41 | 22.0 | 160.5 | -1.2 | | -11.9 | -20 | 1074 | No stop |
| 18 09 12 | --- | 11 46 22 | 22.1 | 161.4 | -1.2 | | -11.3 | 200 | 1103 | 18 05 33 |
| 18 09 12 | J1254-1317 | 11 46 22 | 21.9 | 161.9 | -1.2 | | -11.1 | -11 | 1103 | No stop |
| 18 10 52 | =1251-130 | 11 48 02 | 22.0 | 162.3 | -1.1 | | -10.8 | 89 | 1115 | 18 09 13 |
| 18 11 27 | J1303-1051 | 11 48 37 | 24.0 | 159.7 | -1.3 | | -12.3 | 14 | 1115 | 18 11 27 |
| 18 13 07 | =1300-105 | 11 50 17 | 24.0 | 160.1 | -1.2 | | -12.0 | 100 | 1128 | 18 11 28 |
| 18 13 07 | VHS1256 | 11 50 17 | 22.3 | 162.4 | -1.1 | | -10.7 | -20 | 1128 | No stop |
| 18 16 47 | --- | 11 53 58 | 22.5 | 163.4 | -1.0 | | -10.2 | 200 | 1156 | 18 13 08 |
| 18 16 47 | J1254-1317 | 11 53 58 | 22.2 | 163.8 | -1.0 | | -9.9 | -11 | 1156 | No stop |
| 18 18 27 | =1251-130 | 11 55 38 | 22.3 | 164.3 | -1.0 | | -9.6 | 89 | 1169 | 18 16 48 |
| 18 18 27 | J1303-1051 | 11 55 38 | 24.3 | 161.5 | -1.1 | | -11.2 | -21 | 1169 | No stop |
| 18 20 07 | =1300-105 | 11 57 19 | 24.4 | 162.0 | -1.1 | | -10.9 | 79 | 1182 | 18 18 28 |
| 18 20 07 | VHS1256 | 11 57 19 | 22.6 | 164.3 | -1.0 | | -9.6 | -20 | 1182 | No stop |
| 18 23 47 | --- | 12 00 59 | 22.8 | 165.2 | -0.9 | | -9.1 | 200 | 1210 | 18 20 08 |
| 18 23 47 | J1254-1317 | 12 00 59 | 22.5 | 165.7 | -0.9 | | -8.8 | -11 | 1210 | No stop |
| 18 25 27 | =1251-130 | 12 02 39 | 22.6 | 166.1 | -0.9 | | -8.5 | 89 | 1223 | 18 23 48 |
| 18 29 27 | 1424+366 | 12 06 40 | 60.4 | 110.2 | -2.3 | | -44.4 | 85 | 1223 | 18 29 27 |
| 18 33 27 | --- | 12 10 41 | 60.9 | 111.4 | -2.3 | | -44.0 | 240 | 1254 | 18 29 28 |
| 18 37 52 | J1303-1051 | 12 15 06 | 25.1 | 166.7 | -0.8 | | -8.1 | 116 | 1254 | 18 37 52 |
| 18 39 32 | =1300-105 | 12 16 47 | 25.2 | 167.1 | -0.8 | | -7.8 | 100 | 1267 | 18 37 53 |
| 18 39 32 | VHS1256 | 12 16 47 | 23.3 | 169.4 | -0.7 | | -6.5 | -21 | 1267 | No stop |
| 18 43 12 | --- | 12 20 27 | 23.4 | 170.3 | -0.6 | | -5.9 | 199 | 1295 | 18 39 33 |
| 18 43 12 | J1254-1317 | 12 20 27 | 23.1 | 170.8 | -0.6 | | -5.7 | -11 | 1295 | No stop |
| 18 44 52 | =1251-130 | 12 22 07 | 23.1 | 171.2 | -0.6 | | -5.4 | 89 | 1308 | 18 43 13 |
| 18 44 52 | J1303-1051 | 12 22 07 | 25.3 | 168.6 | -0.7 | | -7.0 | -22 | 1308 | No stop |
| 18 46 32 | =1300-105 | 12 23 48 | 25.4 | 169.0 | -0.7 | | -6.7 | 78 | 1321 | 18 44 53 |
| 18 46 32 | VHS1256 | 12 23 48 | 23.5 | 171.2 | -0.6 | | -5.4 | -21 | 1321 | No stop |
| 18 50 12 | --- | 12 27 28 | 23.6 | 172.2 | -0.5 | | -4.8 | 199 | 1349 | 18 46 33 |
| 18 50 12 | J1254-1317 | 12 27 28 | 23.3 | 172.6 | -0.5 | | -4.6 | -11 | 1349 | No stop |
| 18 51 52 | =1251-130 | 12 29 09 | 23.3 | 173.0 | -0.4 | | -4.3 | 89 | 1362 | 18 50 13 |

Schedule for TORUN (Code Tr)

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vhs1256-1257 -Epoch 2

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|------|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| --- Fri 27 May 2016 Day 148 --- | | | | | | | | | | |
| 18 52 27 | J1303-1051 | 12 29 44 | 25.5 | 170.6 | -0.6 | | -5.7 | 13 | 1362 | 18 52 27 |
| 18 54 07 | =1300-105 | 12 31 24 | 25.6 | 171.1 | -0.5 | | -5.4 | 100 | 1374 | 18 52 28 |
| 18 54 07 | VHS1256 | 12 31 24 | 23.6 | 173.2 | -0.4 | | -4.2 | -21 | 1374 | No stop |
| 18 57 47 | --- | 12 35 05 | 23.7 | 174.2 | -0.4 | | -3.6 | 199 | 1403 | 18 54 08 |
| 18 57 47 | J1254-1317 | 12 35 05 | 23.4 | 174.6 | -0.3 | | -3.3 | -11 | 1403 | No stop |
| 18 59 27 | =1251-130 | 12 36 45 | 23.4 | 175.1 | -0.3 | | -3.0 | 89 | 1415 | 18 57 48 |
| 18 59 27 | J1303-1051 | 12 36 45 | 25.7 | 172.5 | -0.5 | | -4.6 | -22 | 1415 | No stop |
| 19 01 07 | =1300-105 | 12 38 25 | 25.7 | 173.0 | -0.4 | | -4.3 | 78 | 1428 | 18 59 28 |
| 19 01 07 | VHS1256 | 12 38 25 | 23.7 | 175.1 | -0.3 | | -3.0 | -21 | 1428 | No stop |
| 19 04 47 | --- | 12 42 06 | 23.8 | 176.1 | -0.2 | | -2.4 | 199 | 1456 | 19 01 08 |
| 19 04 47 | J1254-1317 | 12 42 06 | 23.5 | 176.5 | -0.2 | | -2.2 | -11 | 1456 | No stop |
| 19 06 27 | =1251-130 | 12 43 46 | 23.5 | 176.9 | -0.2 | | -1.9 | 89 | 1469 | 19 04 48 |
| 19 07 02 | J1303-1051 | 12 44 21 | 25.8 | 174.6 | -0.3 | | -3.3 | 12 | 1469 | 19 07 02 |
| 19 08 42 | =1300-105 | 12 46 01 | 25.8 | 175.1 | -0.3 | | -3.0 | 100 | 1482 | 19 07 03 |
| 19 08 42 | VHS1256 | 12 46 01 | 23.8 | 177.1 | -0.2 | | -1.8 | -21 | 1482 | No stop |
| 19 12 22 | --- | 12 49 42 | 23.8 | 178.1 | -0.1 | | -1.2 | 199 | 1510 | 19 08 43 |
| 19 12 22 | J1254-1317 | 12 49 42 | 23.5 | 178.5 | -0.1 | | -0.9 | -12 | 1510 | No stop |
| 19 14 02 | =1251-130 | 12 51 22 | 23.5 | 178.9 | -0.1 | | -0.7 | 88 | 1523 | 19 12 23 |
| 19 14 02 | J1303-1051 | 12 51 22 | 25.9 | 176.5 | -0.2 | | -2.1 | -23 | 1523 | No stop |
| 19 15 42 | =1300-105 | 12 53 02 | 25.9 | 177.0 | -0.2 | | -1.8 | 77 | 1536 | 19 14 03 |
| 19 15 42 | VHS1256 | 12 53 02 | 23.9 | 179.0 | -0.1 | | -0.6 | -22 | 1536 | No stop |
| 19 19 22 | --- | 12 56 43 | 23.9 | 180.0 | -0.0 | | -0.0 | 198 | 1564 | 19 15 43 |
| 19 19 22 | J1254-1317 | 12 56 43 | 23.5 | 180.4 | 0.0 | | 0.2 | -12 | 1564 | No stop |
| 19 21 02 | =1251-130 | 12 58 23 | 23.5 | 180.8 | 0.0 | | 0.5 | 88 | 1577 | 19 19 23 |
| 19 21 37 | J1303-1051 | 12 58 58 | 26.0 | 178.6 | -0.1 | | -0.9 | 12 | 1577 | 19 21 37 |
| 19 23 17 | =1300-105 | 13 00 39 | 26.0 | 179.1 | -0.1 | | -0.6 | 100 | 1590 | 19 21 38 |
| 19 23 17 | VHS1256 | 13 00 39 | 23.9 | 181.0 | 0.1 | | 0.6 | -22 | 1590 | No stop |
| 19 26 57 | --- | 13 04 19 | 23.8 | 182.0 | 0.1 | | 1.2 | 198 | 1618 | 19 23 18 |
| 19 26 57 | J1254-1317 | 13 04 19 | 23.5 | 182.4 | 0.1 | | 1.5 | -12 | 1618 | No stop |
| 19 28 37 | =1251-130 | 13 06 00 | 23.5 | 182.8 | 0.2 | | 1.7 | 88 | 1631 | 19 26 58 |

Schedule for TORUN (Code Tr) Page 8
 vhs1256-1257 -Epoch 2

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|-----|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| --- Fri 27 May 2016 Day 148 --- | | | | | | | | | | |
| 19 28 37 | J1303-1051 | 13 06 00 | 26.0 | 180.5 | 0.0 | | 0.3 | -23 | 1631 | No stop |
| 19 30 17 | =1300-105 | 13 07 40 | 26.0 | 181.0 | 0.1 | | 0.6 | 77 | 1644 | 19 28 38 |
| 19 30 17 | VHS1256 | 13 07 40 | 23.8 | 182.9 | 0.2 | | 1.8 | -22 | 1644 | No stop |
| 19 33 57 | --- | 13 11 20 | 23.8 | 183.8 | 0.2 | | 2.4 | 198 | 1672 | 19 30 18 |
| 19 33 57 | J1254-1317 | 13 11 20 | 23.4 | 184.2 | 0.3 | | 2.6 | -12 | 1672 | No stop |
| 19 35 37 | =1251-130 | 13 13 01 | 23.4 | 184.7 | 0.3 | | 2.9 | 88 | 1685 | 19 33 58 |
| 19 36 12 | J1303-1051 | 13 13 36 | 25.9 | 182.6 | 0.2 | | 1.6 | 12 | 1685 | 19 36 12 |
| 19 37 52 | =1300-105 | 13 15 16 | 25.9 | 183.0 | 0.2 | | 1.9 | 100 | 1697 | 19 36 13 |
| 19 37 52 | VHS1256 | 13 15 16 | 23.7 | 184.9 | 0.3 | | 3.0 | -22 | 1697 | No stop |
| 19 41 32 | --- | 13 18 57 | 23.7 | 185.9 | 0.4 | | 3.6 | 198 | 1726 | 19 37 53 |
| 19 41 32 | J1254-1317 | 13 18 57 | 23.3 | 186.2 | 0.4 | | 3.8 | -12 | 1726 | No stop |
| 19 43 12 | =1251-130 | 13 20 37 | 23.3 | 186.7 | 0.4 | | 4.1 | 88 | 1738 | 19 41 33 |
| 19 43 12 | J1303-1051 | 13 20 37 | 25.9 | 184.5 | 0.3 | | 2.8 | -23 | 1738 | No stop |
| 19 44 52 | =1300-105 | 13 22 17 | 25.8 | 185.0 | 0.3 | | 3.0 | 77 | 1751 | 19 43 13 |
| 19 44 52 | VHS1256 | 13 22 17 | 23.6 | 186.7 | 0.4 | | 4.2 | -22 | 1751 | No stop |
| 19 48 32 | --- | 13 25 58 | 23.6 | 187.7 | 0.5 | | 4.8 | 198 | 1779 | 19 44 53 |
| 19 48 32 | J1254-1317 | 13 25 58 | 23.2 | 188.1 | 0.5 | | 5.0 | -12 | 1779 | No stop |
| 19 50 12 | =1251-130 | 13 27 38 | 23.2 | 188.5 | 0.5 | | 5.3 | 88 | 1792 | 19 48 33 |
| 19 50 47 | J1303-1051 | 13 28 13 | 25.8 | 186.6 | 0.4 | | 4.0 | 11 | 1792 | 19 50 47 |
| 19 52 27 | =1300-105 | 13 29 54 | 25.7 | 187.0 | 0.4 | | 4.3 | 100 | 1805 | 19 50 48 |
| 19 52 27 | VHS1256 | 13 29 54 | 23.5 | 188.8 | 0.5 | | 5.4 | -22 | 1805 | No stop |
| 19 56 07 | --- | 13 33 34 | 23.4 | 189.7 | 0.6 | | 6.0 | 198 | 1833 | 19 52 28 |
| 19 56 07 | J1254-1317 | 13 33 34 | 23.0 | 190.1 | 0.6 | | 6.2 | -12 | 1833 | No stop |
| 19 57 47 | =1251-130 | 13 35 14 | 23.0 | 190.5 | 0.7 | | 6.5 | 88 | 1846 | 19 56 08 |
| 19 57 47 | J1303-1051 | 13 35 14 | 25.6 | 188.5 | 0.5 | | 5.2 | -24 | 1846 | No stop |
| 19 59 27 | =1300-105 | 13 36 55 | 25.6 | 188.9 | 0.5 | | 5.5 | 76 | 1859 | 19 57 48 |
| 19 59 27 | VHS1256 | 13 36 55 | 23.3 | 190.6 | 0.7 | | 6.5 | -22 | 1859 | No stop |
| 20 03 07 | --- | 13 40 35 | 23.2 | 191.6 | 0.7 | | 7.1 | 198 | 1887 | 19 59 28 |
| 20 03 07 | J1254-1317 | 13 40 35 | 22.8 | 191.9 | 0.8 | | 7.3 | -12 | 1887 | No stop |
| 20 04 47 | =1251-130 | 13 42 16 | 22.8 | 192.4 | 0.8 | | 7.6 | 88 | 1900 | 20 03 08 |

Schedule for TORUN (Code Tr)

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vhs1256-1257 -Epoch 2

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|-----|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| --- Fri 27 May 2016 Day 148 --- | | | | | | | | | | |
| 20 05 22 | J1303-1051 | 13 42 51 | 25.4 | 190.5 | 0.6 | | 6.4 | 11 | 1900 | 20 05 22 |
| 20 07 02 | =1300-105 | 13 44 31 | 25.4 | 191.0 | 0.7 | | 6.7 | 100 | 1913 | 20 05 23 |
| 20 07 02 | VHS1256 | 13 44 31 | 23.1 | 192.6 | 0.8 | | 7.7 | -23 | 1913 | No stop |
| 20 10 42 | --- | 13 48 12 | 22.9 | 193.6 | 0.9 | | 8.3 | 197 | 1941 | 20 07 03 |
| 20 10 42 | J1254-1317 | 13 48 12 | 22.6 | 193.9 | 0.9 | | 8.5 | -12 | 1941 | No stop |
| 20 12 22 | =1251-130 | 13 49 52 | 22.5 | 194.4 | 0.9 | | 8.8 | 88 | 1954 | 20 10 43 |
| 20 12 22 | J1303-1051 | 13 49 52 | 25.2 | 192.4 | 0.8 | | 7.6 | -24 | 1954 | No stop |
| 20 14 02 | =1300-105 | 13 51 32 | 25.2 | 192.9 | 0.8 | | 7.8 | 76 | 1967 | 20 12 23 |
| 20 14 02 | VHS1256 | 13 51 32 | 22.8 | 194.5 | 0.9 | | 8.8 | -23 | 1967 | No stop |
| 20 17 42 | --- | 13 55 13 | 22.7 | 195.4 | 1.0 | | 9.4 | 197 | 1995 | 20 14 03 |
| 20 17 42 | J1254-1317 | 13 55 13 | 22.3 | 195.7 | 1.0 | | 9.6 | -12 | 1995 | No stop |
| 20 19 22 | =1251-130 | 13 56 53 | 22.2 | 196.2 | 1.0 | | 9.9 | 88 | 2008 | 20 17 43 |
| 20 19 57 | J1303-1051 | 13 57 28 | 25.0 | 194.5 | 0.9 | | 8.8 | 11 | 2008 | 20 19 57 |
| 20 21 37 | =1300-105 | 13 59 08 | 24.9 | 194.9 | 0.9 | | 9.1 | 100 | 2021 | 20 19 58 |
| 20 21 37 | VHS1256 | 13 59 08 | 22.5 | 196.4 | 1.0 | | 10.0 | -23 | 2021 | No stop |
| 20 25 17 | --- | 14 02 49 | 22.4 | 197.4 | 1.1 | | 10.6 | 197 | 2049 | 20 21 38 |
| 20 25 17 | J1254-1317 | 14 02 49 | 22.0 | 197.7 | 1.1 | | 10.8 | -12 | 2049 | No stop |
| 20 26 57 | =1251-130 | 14 04 29 | 21.9 | 198.1 | 1.2 | | 11.1 | 88 | 2062 | 20 25 18 |
| 20 26 57 | J1303-1051 | 14 04 29 | 24.7 | 196.3 | 1.0 | | 9.9 | -24 | 2062 | No stop |
| 20 28 37 | =1300-105 | 14 06 09 | 24.6 | 196.8 | 1.0 | | 10.2 | 76 | 2074 | 20 26 58 |
| 20 28 37 | VHS1256 | 14 06 09 | 22.2 | 198.2 | 1.2 | | 11.1 | -23 | 2074 | No stop |
| 20 32 17 | --- | 14 09 50 | 22.0 | 199.2 | 1.2 | | 11.7 | 197 | 2103 | 20 28 38 |
| 20 32 17 | J1254-1317 | 14 09 50 | 21.6 | 199.5 | 1.2 | | 11.9 | -12 | 2103 | No stop |
| 20 33 57 | =1251-130 | 14 11 30 | 21.5 | 199.9 | 1.3 | | 12.2 | 88 | 2115 | 20 32 18 |
| 20 34 32 | J1303-1051 | 14 12 05 | 24.3 | 198.4 | 1.1 | | 11.1 | 11 | 2115 | 20 34 32 |
| 20 36 12 | =1300-105 | 14 13 46 | 24.3 | 198.8 | 1.2 | | 11.4 | 100 | 2128 | 20 34 33 |
| 20 36 12 | VHS1256 | 14 13 46 | 21.8 | 200.2 | 1.3 | | 12.3 | -23 | 2128 | No stop |
| 20 39 52 | --- | 14 17 26 | 21.6 | 201.1 | 1.3 | | 12.8 | 197 | 2156 | 20 36 13 |
| 20 39 52 | J1254-1317 | 14 17 26 | 21.2 | 201.5 | 1.4 | | 13.0 | -12 | 2156 | No stop |
| 20 41 32 | =1251-130 | 14 19 07 | 21.1 | 201.9 | 1.4 | | 13.3 | 88 | 2169 | 20 39 53 |

Schedule for TORUN (Code Tr) Page 10
 vhs1256-1257 -Epoch 2

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

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|-----|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| --- Fri 27 May 2016 Day 148 --- | | | | | | | | | | |
| 20 41 32 | J1303-1051 | 14 19 07 | 24.0 | 200.2 | 1.3 | | 12.2 | -24 | 2169 | No stop |
| 20 43 12 | =1300-105 | 14 20 47 | 23.9 | 200.6 | 1.3 | | 12.5 | 76 | 2182 | 20 41 33 |
| 20 43 12 | VHS1256 | 14 20 47 | 21.5 | 202.0 | 1.4 | | 13.3 | -23 | 2182 | No stop |
| 20 46 52 | --- | 14 24 27 | 21.2 | 202.9 | 1.5 | | 13.9 | 197 | 2210 | 20 43 13 |
| 20 46 52 | J1254-1317 | 14 24 27 | 20.8 | 203.2 | 1.5 | | 14.1 | -12 | 2210 | No stop |
| 20 48 32 | =1251-130 | 14 26 08 | 20.7 | 203.6 | 1.5 | | 14.3 | 88 | 2223 | 20 46 53 |
| 20 49 07 | J1303-1051 | 14 26 43 | 23.6 | 202.2 | 1.4 | | 13.4 | 10 | 2223 | 20 49 07 |
| 20 50 47 | =1300-105 | 14 28 23 | 23.5 | 202.6 | 1.4 | | 13.6 | 100 | 2236 | 20 49 08 |
| 20 50 47 | VHS1256 | 14 28 23 | 21.0 | 203.9 | 1.5 | | 14.5 | -23 | 2236 | No stop |
| 20 54 27 | --- | 14 32 04 | 20.8 | 204.9 | 1.6 | | 15.0 | 197 | 2264 | 20 50 48 |
| 20 54 27 | J1254-1317 | 14 32 04 | 20.4 | 205.1 | 1.6 | | 15.2 | -13 | 2264 | No stop |
| 20 56 07 | =1251-130 | 14 33 44 | 20.3 | 205.6 | 1.6 | | 15.4 | 87 | 2277 | 20 54 28 |
| 20 56 07 | J1303-1051 | 14 33 44 | 23.2 | 204.0 | 1.5 | | 14.4 | -25 | 2277 | No stop |
| 20 57 47 | =1300-105 | 14 35 24 | 23.1 | 204.5 | 1.5 | | 14.7 | 75 | 2290 | 20 56 08 |
| 20 57 47 | VHS1256 | 14 35 24 | 20.6 | 205.7 | 1.6 | | 15.5 | -23 | 2290 | No stop |
| 21 01 27 | --- | 14 39 05 | 20.3 | 206.6 | 1.7 | | 16.0 | 197 | 2318 | 20 57 48 |
| 21 01 27 | J1254-1317 | 14 39 05 | 19.9 | 206.9 | 1.7 | | 16.2 | -13 | 2318 | No stop |
| 21 03 07 | =1251-130 | 14 40 45 | 19.8 | 207.3 | 1.8 | | 16.4 | 87 | 2331 | 21 01 28 |
| 21 03 42 | J1303-1051 | 14 41 20 | 22.7 | 206.0 | 1.6 | | 15.5 | 10 | 2331 | 21 03 42 |
| 21 05 22 | =1300-105 | 14 43 00 | 22.6 | 206.4 | 1.6 | | 15.8 | 100 | 2344 | 21 03 43 |
| 21 05 22 | VHS1256 | 14 43 00 | 20.1 | 207.6 | 1.8 | | 16.6 | -23 | 2344 | No stop |
| 21 09 02 | --- | 14 46 41 | 19.8 | 208.5 | 1.8 | | 17.1 | 197 | 2372 | 21 05 23 |
| 21 09 02 | J1254-1317 | 14 46 41 | 19.4 | 208.8 | 1.9 | | 17.3 | -13 | 2372 | No stop |
| 21 10 42 | =1251-130 | 14 48 21 | 19.2 | 209.2 | 1.9 | | 17.5 | 87 | 2385 | 21 09 03 |
| 21 10 42 | J1303-1051 | 14 48 21 | 22.2 | 207.8 | 1.7 | | 16.6 | -25 | 2385 | No stop |
| 21 12 22 | =1300-105 | 14 50 02 | 22.1 | 208.2 | 1.8 | | 16.8 | 75 | 2397 | 21 10 43 |
| 21 12 22 | VHS1256 | 14 50 02 | 19.6 | 209.3 | 1.9 | | 17.6 | -23 | 2397 | No stop |
| 21 16 02 | --- | 14 53 42 | 19.3 | 210.2 | 1.9 | | 18.1 | 197 | 2426 | 21 12 23 |
| 21 16 02 | J1254-1317 | 14 53 42 | 18.8 | 210.5 | 2.0 | | 18.3 | -13 | 2426 | No stop |
| 21 17 42 | =1251-130 | 14 55 23 | 18.7 | 210.9 | 2.0 | | 18.5 | 87 | 2438 | 21 16 03 |

Schedule for TORUN (Code Tr)

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vhs1256-1257 -Epoch 2

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | Early | Disk | TPStart | | |
|---------------------------------|------------|--------------|------|-------|-----|-------|------|---------|--------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| --- Fri 27 May 2016 Day 148 --- | | | | | | | | | | |
| 21 18 17 | J1303-1051 | 14 55 58 | 21.6 | 209.7 | 1.9 | | 17.6 | 10 | 2438 | 21 18 17 |
| 21 19 57 | =1300-105 | 14 57 38 | 21.5 | 210.1 | 1.9 | | 17.9 | 100 | 2451 | 21 18 18 |
| 21 19 57 | VHS1256 | 14 57 38 | 19.0 | 211.2 | 2.0 | | 18.6 | -24 | 2451 | No stop |
| 21 23 37 | --- | 15 01 18 | 18.7 | 212.1 | 2.1 | | 19.1 | 196 | 2479 | 21 19 58 |
| 21 23 37 | J1254-1317 | 15 01 18 | 18.3 | 212.3 | 2.1 | | 19.3 | -13 | 2479 | No stop |
| 21 25 17 | =1251-130 | 15 02 59 | 18.1 | 212.7 | 2.1 | | 19.5 | 87 | 2492 | 21 23 38 |
| 21 25 17 | J1303-1051 | 15 02 59 | 21.1 | 211.5 | 2.0 | | 18.6 | -25 | 2492 | No stop |
| 21 26 57 | =1300-105 | 15 04 39 | 21.0 | 211.9 | 2.0 | | 18.8 | 75 | 2505 | 21 25 18 |
| 21 26 57 | VHS1256 | 15 04 39 | 18.4 | 212.9 | 2.1 | | 19.6 | -24 | 2505 | No stop |
| 21 30 37 | --- | 15 08 20 | 18.1 | 213.8 | 2.2 | | 20.0 | 196 | 2533 | 21 26 58 |
| 21 30 37 | J1254-1317 | 15 08 20 | 17.7 | 214.0 | 2.2 | | 20.2 | -13 | 2533 | No stop |
| 21 32 17 | =1251-130 | 15 10 00 | 17.5 | 214.4 | 2.2 | | 20.4 | 87 | 2546 | 21 30 38 |
| 21 32 52 | J1303-1051 | 15 10 35 | 20.5 | 213.3 | 2.1 | | 19.6 | 10 | 2546 | 21 32 52 |
| 21 34 32 | =1300-105 | 15 12 15 | 20.4 | 213.7 | 2.1 | | 19.9 | 100 | 2559 | 21 32 53 |
| 21 34 32 | VHS1256 | 15 12 15 | 17.8 | 214.7 | 2.3 | | 20.6 | -24 | 2559 | No stop |
| 21 38 12 | --- | 15 15 56 | 17.5 | 215.6 | 2.3 | | 21.0 | 196 | 2587 | 21 34 33 |
| 21 38 12 | J1254-1317 | 15 15 56 | 17.0 | 215.8 | 2.3 | | 21.2 | -13 | 2587 | No stop |
| 21 39 52 | =1251-130 | 15 17 36 | 16.9 | 216.2 | 2.4 | | 21.4 | 87 | 2600 | 21 38 13 |
| 21 39 52 | J1303-1051 | 15 17 36 | 19.9 | 215.1 | 2.2 | | 20.6 | -25 | 2600 | No stop |
| 21 41 32 | =1300-105 | 15 19 16 | 19.8 | 215.5 | 2.3 | | 20.8 | 75 | 2613 | 21 39 53 |
| 21 41 32 | VHS1256 | 15 19 16 | 17.2 | 216.4 | 2.4 | | 21.5 | -24 | 2613 | No stop |
| 21 45 12 | --- | 15 22 57 | 16.8 | 217.3 | 2.4 | | 21.9 | 196 | 2641 | 21 41 33 |
| 21 45 12 | J1254-1317 | 15 22 57 | 16.4 | 217.5 | 2.5 | | 22.1 | -13 | 2641 | No stop |
| 21 46 52 | =1251-130 | 15 24 37 | 16.2 | 217.9 | 2.5 | | 22.3 | 87 | 2654 | 21 45 13 |
| 21 47 27 | J1303-1051 | 15 25 12 | 19.2 | 216.9 | 2.4 | | 21.5 | 10 | 2654 | 21 47 27 |
| 21 49 07 | =1300-105 | 15 26 53 | 19.1 | 217.3 | 2.4 | | 21.8 | 100 | 2667 | 21 47 28 |
| 21 49 07 | VHS1256 | 15 26 53 | 16.5 | 218.2 | 2.5 | | 22.4 | -24 | 2667 | No stop |
| 21 52 47 | --- | 15 30 33 | 16.1 | 219.1 | 2.6 | | 22.9 | 196 | 2695 | 21 49 08 |
| 21 52 47 | J1254-1317 | 15 30 33 | 15.7 | 219.3 | 2.6 | | 23.0 | -13 | 2695 | No stop |
| 21 54 27 | =1251-130 | 15 32 14 | 15.5 | 219.7 | 2.6 | | 23.2 | 87 | 2708 | 21 52 48 |

Schedule for TORUN (Code Tr)

Page 12

vhs1256-1257 -Epoch 2

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|-----|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| --- Fri 27 May 2016 Day 148 --- | | | | | | | | | | |
| 21 54 27 | J1303-1051 | 15 32 14 | 18.6 | 218.6 | 2.5 | | 22.4 | -25 | 2708 | No stop |
| 21 56 07 | =1300-105 | 15 33 54 | 18.4 | 219.0 | 2.5 | | 22.6 | 75 | 2721 | 21 54 28 |
| 21 56 07 | VHS1256 | 15 33 54 | 15.8 | 219.8 | 2.6 | | 23.3 | -24 | 2721 | No stop |
| 21 59 47 | --- | 15 37 34 | 15.5 | 220.7 | 2.7 | | 23.7 | 196 | 2749 | 21 56 08 |
| 21 59 47 | J1254-1317 | 15 37 34 | 15.0 | 220.9 | 2.7 | | 23.8 | -13 | 2749 | No stop |
| 22 01 27 | =1251-130 | 15 39 15 | 14.8 | 221.3 | 2.7 | | 24.0 | 87 | 2762 | 21 59 48 |
| 22 02 02 | J1303-1051 | 15 39 50 | 17.9 | 220.4 | 2.6 | | 23.4 | 10 | 2762 | 22 02 02 |
| 22 03 42 | =1300-105 | 15 41 30 | 17.7 | 220.8 | 2.6 | | 23.6 | 100 | 2774 | 22 02 03 |
| 22 03 42 | VHS1256 | 15 41 30 | 15.1 | 221.6 | 2.7 | | 24.2 | -24 | 2774 | No stop |
| 22 07 22 | --- | 15 45 11 | 14.7 | 222.4 | 2.8 | | 24.6 | 196 | 2803 | 22 03 43 |
| 22 07 22 | J1254-1317 | 15 45 11 | 14.2 | 222.6 | 2.8 | | 24.7 | -13 | 2803 | No stop |
| 22 09 02 | =1251-130 | 15 46 51 | 14.1 | 223.0 | 2.9 | | 24.9 | 87 | 2815 | 22 07 23 |
| 22 09 02 | J1303-1051 | 15 46 51 | 17.2 | 222.1 | 2.7 | | 24.2 | -25 | 2815 | No stop |
| 22 10 42 | =1300-105 | 15 48 31 | 17.0 | 222.5 | 2.7 | | 24.4 | 75 | 2828 | 22 09 03 |
| 22 10 42 | VHS1256 | 15 48 31 | 14.4 | 223.2 | 2.9 | | 25.0 | -24 | 2828 | No stop |
| 22 14 22 | --- | 15 52 12 | 14.0 | 224.0 | 2.9 | | 25.4 | 196 | 2856 | 22 10 43 |
| 22 14 22 | J1254-1317 | 15 52 12 | 13.5 | 224.2 | 2.9 | | 25.5 | -13 | 2856 | No stop |
| 22 16 02 | =1251-130 | 15 53 52 | 13.3 | 224.6 | 3.0 | | 25.7 | 87 | 2869 | 22 14 23 |
| 22 16 37 | J1303-1051 | 15 54 27 | 16.4 | 223.8 | 2.8 | | 25.1 | 10 | 2869 | 22 16 37 |
| 22 18 17 | =1300-105 | 15 56 07 | 16.2 | 224.2 | 2.9 | | 25.2 | 100 | 2882 | 22 16 38 |
| 22 18 17 | VHS1256 | 15 56 07 | 13.6 | 224.9 | 3.0 | | 25.8 | -24 | 2882 | No stop |
| 22 21 57 | --- | 15 59 48 | 13.2 | 225.8 | 3.0 | | 26.2 | 196 | 2910 | 22 18 18 |
| 22 21 57 | J1254-1317 | 15 59 48 | 12.7 | 225.9 | 3.1 | | 26.3 | -13 | 2910 | No stop |
| 22 23 37 | =1251-130 | 16 01 28 | 12.5 | 226.3 | 3.1 | | 26.5 | 87 | 2923 | 22 21 58 |
| 22 23 37 | J1303-1051 | 16 01 28 | 15.7 | 225.5 | 3.0 | | 25.8 | -25 | 2923 | No stop |
| 22 25 17 | =1300-105 | 16 03 09 | 15.5 | 225.8 | 3.0 | | 26.0 | 75 | 2936 | 22 23 38 |
| 22 25 17 | VHS1256 | 16 03 09 | 12.8 | 226.5 | 3.1 | | 26.6 | -24 | 2936 | No stop |
| 22 28 57 | --- | 16 06 49 | 12.4 | 227.3 | 3.2 | | 26.9 | 196 | 2964 | 22 25 18 |
| 22 28 57 | J1254-1317 | 16 06 49 | 11.9 | 227.5 | 3.2 | | 27.1 | -13 | 2964 | No stop |
| 22 30 37 | =1251-130 | 16 08 30 | 11.8 | 227.9 | 3.2 | | 27.2 | 87 | 2977 | 22 28 58 |

Schedule for TORUN (Code Tr)

Page 13

vhs1256-1257 -Epoch 2

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|------|-------|-----|----|-------|-------|---------|----------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| --- Fri 27 May 2016 Day 148 --- | | | | | | | | | | |
| 22 31 12 | J1303-1051 | 16 09 05 | 14.8 | 227.2 | 3.1 | | 26.7 | 10 | 2977 | 22 31 12 |
| 22 32 52 | =1300-105 | 16 10 45 | 14.6 | 227.6 | 3.1 | | 26.8 | 100 | 2990 | 22 31 13 |
| 22 32 52 | VHS1256 | 16 10 45 | 12.0 | 228.2 | 3.2 | | 27.4 | -24 | 2990 | No stop |
| 22 36 32 | --- | 16 14 25 | 11.6 | 229.0 | 3.3 | | 27.7 | 196 | 3018 | 22 32 53 |
| 22 36 32 | J1254-1317 | 16 14 25 | 11.1 | 229.2 | 3.3 | | 27.8 | -13 | 3018 | No stop |
| 22 38 12 | =1251-130 | 16 16 06 | 10.9 | 229.5 | 3.3 | | 28.0 | 87 | 3031 | 22 36 33 |
| 22 38 12 | J1303-1051 | 16 16 06 | 14.0 | 228.8 | 3.2 | | 27.4 | -26 | 3031 | No stop |
| 22 39 52 | =1300-105 | 16 17 46 | 13.9 | 229.1 | 3.2 | | 27.6 | 74 | 3044 | 22 38 13 |
| 22 39 52 | VHS1256 | 16 17 46 | 11.2 | 229.7 | 3.3 | | 28.1 | -24 | 3044 | No stop |
| 22 43 32 | --- | 16 21 27 | 10.8 | 230.5 | 3.4 | | 28.4 | 196 | 3072 | 22 39 53 |
| 22 43 32 | J1254-1317 | 16 21 27 | 10.3 | 230.7 | 3.4 | | 28.5 | -13 | 3072 | No stop |
| 22 45 12 | =1251-130 | 16 23 07 | 10.1 | 231.1 | 3.5 | | 28.7 | 87 | 3085 | 22 43 33 |
| 22 45 47 | J1303-1051 | 16 23 42 | 13.2 | 230.5 | 3.3 | | 28.1 | 9 | 3085 | 22 45 47 |
| 22 47 27 | =1300-105 | 16 25 22 | 13.0 | 230.8 | 3.4 | | 28.3 | 100 | 3097 | 22 45 48 |
| 22 47 27 | VHS1256 | 16 25 22 | 10.3 | 231.4 | 3.5 | | 28.8 | -24 | 3097 | No stop |
| 22 51 07 | --- | 16 29 03 | 9.9 | 232.2 | 3.5 | | 29.1 | 196 | 3126 | 22 47 28 |
| 22 51 07 | J1254-1317 | 16 29 03 | 9.4 | 232.4 | 3.6 | | 29.3 | -13 | 3126 | No stop |
| 22 52 47 | =1251-130 | 16 30 43 | 9.2 | 232.7 | 3.6 | | 29.4 | 87 | 3138 | 22 51 08 |
| 22 52 47 | J1303-1051 | 16 30 43 | 12.4 | 232.0 | 3.4 | | 28.8 | -26 | 3138 | No stop |
| 22 54 27 | =1300-105 | 16 32 23 | 12.2 | 232.4 | 3.5 | | 29.0 | 74 | 3151 | 22 52 48 |
| 22 54 27 | VHS1256 | 16 32 23 | 9.5 | 232.9 | 3.6 | | 29.5 | -24 | 3151 | No stop |
| 22 58 07 | --- | 16 36 04 | 9.0 | 233.7 | 3.7 | | 29.8 | 196 | 3179 | 22 54 28 |
| 22 58 07 | J1254-1317 | 16 36 04 | 8.5 | 233.9 | 3.7 | | 29.9 | -13 | 3179 | No stop |
| 22 59 47 | =1251-130 | 16 37 44 | 8.3 | 234.2 | 3.7 | | 30.0 | 87 | 3192 | 22 58 08 |
| 23 00 22 | J1303-1051 | 16 38 19 | 11.4 | 233.7 | 3.6 | | 29.5 | 9 | 3192 | 23 00 22 |
| 23 02 02 | =1300-105 | 16 40 00 | 11.2 | 234.1 | 3.6 | | 29.7 | 100 | 3205 | 23 00 23 |
| 23 02 02 | VHS1256 | 16 40 00 | 8.5 | 234.5 | 3.7 | | 30.1 | -24 | 3205 | No stop |
| 23 05 42 | --- | 16 43 40 | 8.1 | 235.3 | 3.8 | | 30.5 | 196 | 3233 | 23 02 03 |
| 23 05 42 | J1254-1317 | 16 43 40 | 7.6 | 235.5 | 3.8 | | 30.6 | -13 | 3233 | No stop |
| 23 07 22 | =1251-130 | 16 45 21 | 7.4 | 235.8 | 3.8 | | 30.7 | 87 | 3246 | 23 05 43 |

Schedule for TORUN (Code Tr) Page 14
 vhs1256-1257 -Epoch 2

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

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

--- Fri 27 May 2016 Day 148 ---

| | | | | | | | | | |
|----------|------------|----------|------|-------|-----|------|-----|------|----------|
| 23 07 22 | J1303-1051 | 16 45 21 | 10.6 | 235.2 | 3.7 | 30.2 | -26 | 3246 | No stop |
| 23 09 02 | =1300-105 | 16 47 01 | 10.4 | 235.6 | 3.7 | 30.3 | 74 | 3259 | 23 07 23 |
| 23 09 02 | VHS1256 | 16 47 01 | 7.7 | 236.0 | 3.8 | 30.7 | -24 | 3259 | No stop |
| 23 12 42 | --- | 16 50 41 | 7.2 | 236.8 | 3.9 | 31.1 | 196 | 3287 | 23 09 03 |
| 23 12 42 | J1254-1317 | 16 50 41 | 6.7 | 236.9 | 3.9 | 31.2 | -13 | 3287 | No stop |
| 23 14 22 | =1251-130 | 16 52 22 | 6.5 | 237.3 | 3.9 | 31.3 | 87 | 3300 | 23 12 43 |
| 23 18 15 | 1424+366 | 16 56 16 | 59.2 | 252.2 | 2.5 | 45.2 | 22 | 3300 | 23 18 15 |
| 23 22 15 | --- | 17 00 17 | 58.6 | 253.3 | 2.5 | 45.6 | 240 | 3331 | 23 18 16 |
| 23 25 15 | 1424+366 | 17 03 17 | 58.2 | 254.1 | 2.6 | 45.8 | 173 | 3331 | 23 25 15 |
| 23 29 15 | --- | 17 07 18 | 57.6 | 255.1 | 2.7 | 46.1 | 240 | 3362 | 23 25 16 |

SETUP FILE INFORMATION:

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

==== Setup file: sess216.L1024

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

Disk used to record data.

| | | | | | | | | | |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1st 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: 8 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: 8

Track assignments are:

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

barrel=roll_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | (Date) | Error (mas) | |
|--------------|---|-------------------|-----------------|------|
| * VHS1256 | 12 53 24.559862 | * 12 56 01.922000 | 12 56 54.260950 | 0.00 |
| | -12 41 10.24138 | *-12 57 23.99000 | -13 02 45.51989 | 0.00 |
| * 4C39.25 | 09 23 55.319215 | * 09 27 03.013936 | 09 28 03.197563 | 0.30 |
| J0927+3902 | 39 15 23.56645 | * 39 02 20.85186 | 38 58 07.30674 | 0.16 |
| 0923+392 | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc | | | |
| J0927+39 | GSFC 2015a astro solution, unpublished 245753 observations. | | | |
| 1251-130 | 12 51 54.110022 | * 12 54 31.468276 | 12 55 23.804472 | 0.20 |
| * J1254-1317 | -13 01 00.92342 | *-13 17 16.21192 | -13 22 38.42413 | 0.48 |
| | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc | | | |
| | GSFC 2015a astro solution, unpublished 113 observations. | | | |
| 1300-105 | 13 00 36.725057 | * 13 03 13.867950 | 13 04 06.133512 | 0.06 |
| * J1303-1051 | -10 35 11.31965 | *-10 51 17.12968 | -10 56 35.08705 | 0.13 |
| | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc | | | |
| | GSFC 2015a astro solution, unpublished 247 observations. | | | |
| * 1424+366 | 14 24 32.676820 | * 14 26 37.087501 | 14 27 18.684070 | 0.03 |
| J1426+3625 | 36 38 36.02432 | * 36 25 09.57362 | 36 20 56.76072 | 0.03 |
| | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc | | | |
| | GSFC 2015a astro solution, unpublished 1287 observations. | | | |

rk12wbtr

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

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

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

--- Sat 28 May 2016 Day 149 ---

----- 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 | 1055+018 | 14 41 34 | 21.1 | 242.1 | 3.7 | | 32.1 | 0 | 0 | 21 00 00 | |
| 21 14 30 | --- | 14 56 07 | 19.1 | 245.4 | 3.9 | | 33.1 | 870 | 28 | 21 00 01 | |
| 21 15 00 | 1055+018 | 14 56 37 | 19.1 | 245.5 | 4.0 | | 33.1 | 24 | 28 | 21 15 00 | |
| 21 29 30 | --- | 15 11 09 | 17.1 | 248.7 | 4.2 | | 34.0 | 870 | 56 | 21 15 01 | |
| 21 30 00 | 1055+018 | 15 11 39 | 17.0 | 248.8 | 4.2 | | 34.0 | 24 | 56 | 21 30 00 | |
| 21 44 30 | --- | 15 26 12 | 14.9 | 251.9 | 4.4 | | 34.8 | 870 | 84 | 21 30 01 | |
| 21 45 00 | 1055+018 | 15 26 42 | 14.9 | 252.0 | 4.5 | | 34.8 | 24 | 84 | 21 45 00 | |
| 22 00 00 | --- | 15 41 44 | 12.7 | 255.1 | 4.7 | | 35.5 | 900 | 112 | 21 45 01 | |

SETUP FILE INFORMATION:

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

==== Setup file: ra6cm2.set

| | | | | | |
|---------------------|---------|------------------|-------|-----------------|--------|
| Setup group: | 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: 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) (B1950) | (J2000) | (Date) | Error (mas) |
|------------|--|-------------------|-----------------|----------------|
| * FAKERA | 11 57 21.769299 | * 12 00 00.000000 | 12 00 48.055168 | 0.00 |
| | 85 16 41.77889 | * 85 00 00.000000 | 84 54 51.30985 | 0.00 |
| | fake circumpolar target for a TS to look at | | | |
| * 1055+018 | 10 55 55.313729 | * 10 58 29.605207 | 10 59 20.047860 | 0.00 |
| J1058+0133 | 01 50 03.53709 | * 01 33 58.82359 | 01 28 38.31143 | 0.00 |
| | ./rk12wb_sources.radioastron AGN, rfc_2013d Petrov, 2013, unpublished 8183 observations, RA-A03-04, RA-A02-12 | | | |

EFFECT OF SOLAR CORONA

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

| Source | Sun distance (deg) |
|----------|--------------------|
| 1055+018 | 97.5 |

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

For common VLBI bands, this is:

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


```

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

```

The following frequency sets based on these setups were used.

```

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

```

Track assignments are:

```

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

```

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | (J2000) | (Date) | Error (mas) |
|------------|--|-------------------|-----------------|----------------|
| * FAKERA | 11 57 21.769299 | * 12 00 00.000000 | 12 00 48.023233 | 0.00 |
| | 85 16 41.77889 | * 85 00 00.000000 | 84 54 51.32585 | 0.00 |
| | fake circumpolar target for a TS to look at | | | |
| * 1219+285 | 12 19 01.115600 | * 12 21 31.690520 | 12 22 21.082114 | 0.00 |
| J1221+2813 | 28 30 36.52556 | * 28 13 58.50011 | 28 08 39.63908 | 0.00 |
| | ./rk12wc_sources.radioastron | | | |
| | AGN, rfc_2013d Petrov, 2013, unpublished 880 observations, RA-A03-04 | | | |

EFFECT OF SOLAR CORONA

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

| Source | Sun distance (deg) |
|----------|--------------------|
| 1219+285 | 103.1 |

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

For common VLBI bands, this is:

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

rk12wdr

RADIOASTRON AGN SURVEY

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Phone: +7-495-3332512 EMAIL: kirx@scan.sai.msu.ru
Fax: +7-495-3332378 Phone during observation: +7-903-6614865

Observing mode: L-band, dual-pol

Schedule for TORUN (Code Tr) Page 2

RadioAstron AGN Survey

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

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

--- Sun 29 May 2016 Day 150 ---

----- 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 | | | | | | | |
| 15 00 00 | 1149-084 | 08 44 32 | 16.4 | 131.0 | -3.1 | | -27.3 | 0 | 0 | 15 00 00 | |
| 15 14 30 | --- | 08 59 04 | 18.0 | 134.3 | -2.9 | | -25.8 | 870 | 28 | 15 00 01 | |
| 15 15 00 | 1149-084 | 08 59 34 | 18.0 | 134.4 | -2.9 | | -25.7 | 24 | 28 | 15 15 00 | |
| 15 29 30 | --- | 09 14 07 | 19.5 | 137.9 | -2.7 | | -24.0 | 870 | 56 | 15 15 01 | |
| 15 30 00 | 1149-084 | 09 14 37 | 19.6 | 138.0 | -2.6 | | -24.0 | 24 | 56 | 15 30 00 | |
| 15 44 30 | --- | 09 29 09 | 21.0 | 141.5 | -2.4 | | -22.2 | 870 | 84 | 15 30 01 | |
| 15 45 00 | 1149-084 | 09 29 39 | 21.0 | 141.7 | -2.4 | | -22.1 | 24 | 84 | 15 45 00 | |
| 16 00 00 | --- | 09 44 42 | 22.4 | 145.4 | -2.1 | | -20.2 | 900 | 112 | 15 45 01 | |

SETUP FILE INFORMATION:

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

==== Setup file: ra18cm2.set

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

Disk used to record data.

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

The following frequency sets based on these setups were used.

Frequency Set: 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) |
|------------|--|-------------------|-----------------|----------------|
| * FAKERA | 11 57 21.769299 | * 12 00 00.000000 | 12 00 47.906438 | 0.00 |
| | 85 16 41.77889 | * 85 00 00.000000 | 84 54 51.38507 | 0.00 |
| | fake circumpolar target for a TS to look at | | | |
| * 1149-084 | 11 49 43.843431 | * 11 52 17.209511 | 11 53 07.805085 | 0.00 |
| J1152-0841 | -08 24 21.93425 | *-08 41 03.31399 | -08 46 36.32133 | 0.00 |
| | ./rk12wd_sources.radioastron | | | |
| | AGN, rfc_2013d Petrov, 2013, unpublished 6645 observations, RA-A03-04, RA-A02-12 | | | |

EFFECT OF SOLAR CORONA

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

| Source | Sun distance (deg) |
|----------|--------------------|
| 1149-084 | 113.0 |

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

For common VLBI bands, this is:

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

n16c2tr

NETWORK MONITORING EXPERIMENT
PI: *Ross Burns*

Address: JIVE

Observing mode:

Schedule for TORUN (Code Tr)

Page 2

Network Monitoring Experiment

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|---------|---------|---------|---------|---------|---------|----------|---------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Mon 30 May 2016 Day 151 --- | | | | | | | | | | |
| Next scan frequencies: | | 4966.49 | 4966.49 | 4966.49 | 4966.49 | 4966.49 | 4982.49 | 4982.49 | 4982.49 | 4982.49 |
| | | 4998.49 | 4998.49 | 4998.49 | 4998.49 | 4998.49 | 5014.49 | 5014.49 | 5014.49 | 5014.49 |
| Next BBC frequencies: | | 766.49 | 766.49 | 766.49 | 766.49 | 766.49 | 782.49 | 782.49 | 782.49 | 782.49 |
| | | 798.49 | 798.49 | 798.49 | 798.49 | 798.49 | 814.49 | 814.49 | 814.49 | 814.49 |
| Next scan bandwidths: | | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 |
| | | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 |
| ----- | | | | | | | | | | |
| 12 00 00 | J0927+3902 | 05 47 59 | 50.4 | 88.1 | -3.7 | -50.5 | 0 | 0 | 12 00 00 | |
| 12 05 00 | =4C39.25 | 05 53 00 | 51.2 | 89.1 | -3.6 | -50.6 | 300 | 19 | 12 00 01 | |
| | | | | | | | | | | |
| 12 07 00 | J0927+3902 | 05 55 00 | 51.5 | 89.5 | -3.6 | -50.6 | 114 | 19 | 12 07 00 | |
| 12 12 00 | =4C39.25 | 06 00 01 | 52.2 | 90.5 | -3.5 | -50.6 | 300 | 38 | 12 07 01 | |
| | | | | | | | | | | |
| 12 15 00 | J0927+3902 | 06 03 01 | 52.7 | 91.1 | -3.4 | -50.6 | 173 | 38 | 12 15 00 | |
| 12 25 00 | =4C39.25 | 06 13 03 | 54.2 | 93.2 | -3.3 | -50.5 | 600 | 77 | 12 15 01 | |
| | | | | | | | | | | |
| 12 26 00 | J0927+3902 | 06 14 03 | 54.3 | 93.4 | -3.2 | -50.4 | 54 | 77 | 12 26 00 | |
| 12 35 00 | =4C39.25 | 06 23 05 | 55.7 | 95.3 | -3.1 | -50.3 | 540 | 112 | 12 26 01 | |
| | | | | | | | | | | |
| 12 36 00 | J0927+3902 | 06 24 05 | 55.8 | 95.5 | -3.1 | -50.2 | 54 | 112 | 12 36 00 | |
| 12 45 00 | =4C39.25 | 06 33 06 | 57.2 | 97.6 | -2.9 | -50.0 | 540 | 146 | 12 36 01 | |
| | | | | | | | | | | |
| 12 46 00 | J0927+3902 | 06 34 06 | 57.3 | 97.8 | -2.9 | -49.9 | 54 | 146 | 12 46 00 | |
| 12 55 00 | =4C39.25 | 06 43 08 | 58.6 | 100.0 | -2.7 | -49.5 | 540 | 181 | 12 46 01 | |
| | | | | | | | | | | |
| 12 55 00 | J0927+3902 | 06 43 08 | 58.6 | 100.0 | -2.7 | -49.5 | -5 | 181 | No stop | |
| 13 00 00 | =4C39.25 | 06 48 09 | 59.4 | 101.2 | -2.7 | -49.3 | 295 | 200 | 12 55 01 | |
| | | | | | | | | | | |
| 13 02 00 | J0927+3902 | 06 50 09 | 59.7 | 101.7 | -2.6 | -49.1 | 114 | 200 | 13 02 00 | |
| 13 07 00 | =4C39.25 | 06 55 10 | 60.4 | 103.0 | -2.5 | -48.8 | 300 | 219 | 13 02 01 | |
| | | | | | | | | | | |
| 13 10 00 | J0927+3902 | 06 58 10 | 60.9 | 103.8 | -2.5 | -48.6 | 173 | 219 | 13 10 00 | |
| 13 20 00 | =4C39.25 | 07 08 12 | 62.3 | 106.5 | -2.3 | -47.8 | 600 | 258 | 13 10 01 | |
| | | | | | | | | | | |
| 13 21 00 | J0927+3902 | 07 09 12 | 62.5 | 106.8 | -2.3 | -47.7 | 54 | 258 | 13 21 00 | |
| 13 30 00 | =4C39.25 | 07 18 14 | 63.7 | 109.4 | -2.2 | -46.8 | 540 | 292 | 13 21 01 | |
| | | | | | | | | | | |
| 13 31 00 | J0927+3902 | 07 19 14 | 63.9 | 109.7 | -2.1 | -46.6 | 54 | 292 | 13 31 00 | |
| 13 40 00 | =4C39.25 | 07 28 15 | 65.2 | 112.5 | -2.0 | -45.5 | 540 | 327 | 13 31 01 | |
| | | | | | | | | | | |
| 13 41 00 | J0927+3902 | 07 29 15 | 65.3 | 112.9 | -2.0 | -45.4 | 54 | 327 | 13 41 00 | |
| 13 50 00 | =4C39.25 | 07 38 17 | 66.5 | 115.9 | -1.8 | -44.0 | 540 | 362 | 13 41 01 | |

Schedule for TORUN (Code Tr)

Page 3

Network Monitoring Experiment

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

```

-----
Start UT  Source          Start / Stop          Early   Disk   TPStart
Stop UT          LST      EL   AZ   HA  UP   ParA  Dwell  GBytes  SYNC
-----
--- Mon 30 May 2016  Day 151 ---
13 50 00  J0927+3902  07 38 17  66.5 115.9 -1.8   -44.0   -5    362  No stop
13 55 00  =4C39.25    07 43 18  67.2 117.7 -1.7   -43.1  295    381  13 50 01

13 57 00  J0927+3902  07 45 18  67.5 118.5 -1.7   -42.8  113    381  13 57 00
14 02 00  =4C39.25    07 50 19  68.1 120.4 -1.6   -41.8  300    400  13 57 01

14 05 00  J0927+3902  07 53 19  68.5 121.5 -1.6   -41.2  173    400  14 05 00
14 15 00  =4C39.25    08 03 21  69.8 125.7 -1.4   -38.8  600    438  14 05 01

14 16 00  J0927+3902  08 04 21  69.9 126.2 -1.4   -38.6   53    438  14 16 00
14 25 00  =4C39.25    08 13 23  70.9 130.3 -1.2   -36.1  540    473  14 16 01

14 26 00  J0927+3902  08 14 23  71.1 130.8 -1.2   -35.8   53    473  14 26 00
14 35 00  =4C39.25    08 23 24  72.0 135.4 -1.1   -32.8  540    508  14 26 01

14 35 00  J0927+3902  08 23 24  72.0 135.4 -1.1   -32.8   -5    508  No stop
14 40 00  =4C39.25    08 28 25  72.6 138.1 -1.0   -31.0  295    527  14 35 01

14 41 00  J0927+3902  08 29 25  72.7 138.7 -1.0   -30.7   53    527  14 41 00
14 46 00  =4C39.25    08 34 26  73.1 141.6 -0.9   -28.7  300    546  14 41 01

14 49 00  J0927+3902  08 37 27  73.4 143.4 -0.8   -27.4  172    546  14 49 00
14 54 00  =4C39.25    08 42 27  73.9 146.5 -0.8   -25.3  300    565  14 49 01

14 55 00  J0927+3902  08 43 28  73.9 147.1 -0.7   -24.8   53    565  14 55 00
15 00 00  =4C39.25    08 48 28  74.3 150.4 -0.7   -22.5  300    585  14 55 01

```

SETUP FILE INFORMATION:

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

==== Setup file: sess216.C512nme

```

Setup group:      7          Station: TORUN          Total bit rate:  512
Format: MARK5B    Bits per sample:  2    Sample rate: 16.000
Number of channels: 16    DBE type: DBBC_DDC    Speedup factor:  1.00

```

Disk used to record data.

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

The following frequency sets based on these setups were used.

Frequency Set: 8 Setup file default. Used with PCAL = off

| | | | | | | | | |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| LO sum= | 4966.49 | 4966.49 | 4966.49 | 4966.49 | 4982.49 | 4982.49 | 4982.49 | 4982.49 |
| | 4998.49 | 4998.49 | 4998.49 | 4998.49 | 5014.49 | 5014.49 | 5014.49 | 5014.49 |
| BBC fr= | 766.49 | 766.49 | 766.49 | 766.49 | 782.49 | 782.49 | 782.49 | 782.49 |
| | 798.49 | 798.49 | 798.49 | 798.49 | 814.49 | 814.49 | 814.49 | 814.49 |
| Bandwd= | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 |
| | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 |

Matching frequency sets: 8

Track assignments are:

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | (J2000) | (Date) | Error (mas) |
|--------------|---|-------------------|-----------------|----------------|
| 4C39.25 | 09 23 55.319215 | * 09 27 03.013936 | 09 28 03.147291 | 0.30 |
| * J0927+3902 | 39 15 23.56645 | * 39 02 20.85186 | 38 58 07.38345 | 0.16 |
| 0923+392 | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc | | | |
| J0927+39 | GSFC 2015a astro solution, unpublished 245753 observations. | | | |

GEOMETRY AND KINEMATICS OF COLLIDING-WIND BINARY WR 146

PI: Bo Zhang

Address: Shanghai Astronomical Observatory

Observing mode: Phase-referencing at 6 cm (1024 Mb/s)

Schedule for TORUN (Code Tr) Page 2

Geometry and Kinematics of colliding-wind binary WR 146

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | |
|---------------------------------|------------|--------------|---------|---------|---------|---------|---------|---------|----------|---------|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC |
| ----- | | | | | | | | | | |
| --- Mon 30 May 2016 Day 151 --- | | | | | | | | | | |
| Next scan frequencies: | | 4942.49 | 4942.49 | 4942.49 | 4942.49 | 4974.49 | 4974.49 | 4974.49 | 4974.49 | 4974.49 |
| | | 5006.49 | 5006.49 | 5006.49 | 5006.49 | 5038.49 | 5038.49 | 5038.49 | 5038.49 | 5038.49 |
| Next BBC frequencies: | | 742.49 | 742.49 | 742.49 | 742.49 | 774.49 | 774.49 | 774.49 | 774.49 | 774.49 |
| | | 806.49 | 806.49 | 806.49 | 806.49 | 838.49 | 838.49 | 838.49 | 838.49 | 838.49 |
| Next scan bandwidths: | | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 |
| | | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 | 16.00 |
| ----- | | | | | | | | | | |
| 23 00 00 | J2002+4725 | 16 49 47 | 59.3 | 80.7 | -3.2 | -61.2 | 0 | 0 | 23 00 00 | |
| 23 03 00 | =2000+472 | 16 52 48 | 59.7 | 81.2 | -3.2 | -61.4 | 180 | 23 | 23 00 01 | |
| ----- | | | | | | | | | | |
| 23 03 52 | J1955+5131 | 16 53 40 | 62.6 | 74.5 | -3.0 | -68.6 | 24 | 23 | 23 03 52 | |
| 23 06 42 | =1954+513 | 16 56 40 | 63.0 | 74.9 | -3.0 | -68.9 | 170 | 45 | 23 03 53 | |
| ----- | | | | | | | | | | |
| 23 08 03 | J2015+3710 | 16 57 51 | 52.6 | 94.7 | -3.3 | -48.7 | 26 | 45 | 23 08 03 | |
| 23 09 23 | --- | 16 59 21 | 52.8 | 95.0 | -3.3 | -48.7 | 80 | 55 | 23 08 04 | |
| ----- | | | | | | | | | | |
| 23 09 23 | WR146 | 16 59 11 | 52.4 | 85.5 | -3.6 | -53.0 | -34 | 55 | No stop | |
| 23 11 53 | --- | 17 01 42 | 52.7 | 86.0 | -3.6 | -53.0 | 116 | 74 | 23 09 24 | |
| ----- | | | | | | | | | | |
| 23 11 53 | J2015+3710 | 17 01 42 | 53.1 | 95.5 | -3.2 | -48.7 | -34 | 74 | No stop | |
| 23 13 53 | --- | 17 03 42 | 53.4 | 96.0 | -3.2 | -48.6 | 86 | 90 | 23 11 54 | |
| ----- | | | | | | | | | | |
| 23 13 53 | WR146 | 17 03 42 | 53.0 | 86.4 | -3.5 | -53.1 | -34 | 90 | No stop | |
| 23 16 23 | --- | 17 06 12 | 53.4 | 86.8 | -3.5 | -53.1 | 116 | 109 | 23 13 54 | |
| ----- | | | | | | | | | | |
| 23 17 03 | J2015+3710 | 17 06 53 | 53.9 | 96.7 | -3.2 | -48.5 | 5 | 109 | 23 17 03 | |
| 23 18 53 | --- | 17 08 43 | 54.2 | 97.1 | -3.1 | -48.5 | 110 | 123 | 23 17 04 | |
| ----- | | | | | | | | | | |
| 23 18 53 | WR146 | 17 08 43 | 53.8 | 87.3 | -3.5 | -53.1 | -34 | 123 | No stop | |
| 23 21 23 | --- | 17 11 13 | 54.2 | 87.8 | -3.4 | -53.2 | 116 | 142 | 23 18 54 | |
| ----- | | | | | | | | | | |
| 23 21 23 | J2015+3710 | 17 11 13 | 54.5 | 97.6 | -3.1 | -48.4 | -35 | 142 | No stop | |
| 23 23 23 | --- | 17 13 14 | 54.8 | 98.1 | -3.0 | -48.3 | 85 | 158 | 23 21 24 | |
| ----- | | | | | | | | | | |
| 23 23 23 | WR146 | 17 13 14 | 54.5 | 88.2 | -3.4 | -53.2 | -35 | 158 | No stop | |
| 23 25 53 | --- | 17 15 44 | 54.8 | 88.7 | -3.3 | -53.2 | 115 | 177 | 23 23 24 | |
| ----- | | | | | | | | | | |
| 23 26 33 | J2015+3710 | 17 16 24 | 55.3 | 98.8 | -3.0 | -48.2 | 5 | 177 | 23 26 33 | |
| 23 28 23 | --- | 17 18 14 | 55.6 | 99.3 | -3.0 | -48.1 | 110 | 191 | 23 26 34 | |
| ----- | | | | | | | | | | |
| 23 28 23 | WR146 | 17 18 14 | 55.2 | 89.2 | -3.3 | -53.2 | -35 | 191 | No stop | |
| 23 30 53 | --- | 17 20 45 | 55.6 | 89.7 | -3.3 | -53.2 | 115 | 210 | 23 28 24 | |

Schedule for TORUN (Code Tr)

Page 3

Geometry and Kinematics of colliding-wind binary WR 146

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

| Start UT | Source | Start / Stop | | | | | Early | Disk | TPStart | | | |
|----------|------------------------|--------------|------|-------|------|----|-------|-----------------------|---------|----------|--|-----|
| Stop UT | | LST | EL | AZ | HA | UP | ParA | Dwell | GBytes | SYNC | | |
| ----- | | | | | | | | | | | | |
| --- | Mon 30 May 2016 | Day 151 | | | | | --- | | | | | |
| 23 30 53 | J2015+3710 | 17 20 45 | 56.0 | 99.9 | -2.9 | | -48.0 | -36 | 210 | No stop | | |
| 23 32 53 | --- | 17 22 45 | 56.3 | 100.3 | -2.9 | | -47.9 | 84 | 226 | 23 30 54 | | |
| 23 32 53 | WR146 | 17 22 45 | 55.9 | 90.1 | -3.2 | | -53.2 | -35 | 226 | No stop | | |
| 23 35 23 | --- | 17 25 16 | 56.3 | 90.6 | -3.2 | | -53.2 | 115 | 245 | 23 32 54 | | |
| 23 36 03 | J2015+3710 | 17 25 56 | 56.7 | 101.1 | -2.8 | | -47.7 | 4 | 245 | 23 36 03 | | |
| 23 37 53 | --- | 17 27 46 | 57.0 | 101.6 | -2.8 | | -47.6 | 110 | 259 | 23 36 04 | | |
| 23 37 53 | WR146 | 17 27 46 | 56.6 | 91.1 | -3.1 | | -53.2 | -36 | 259 | No stop | | |
| 23 40 23 | --- | 17 30 16 | 57.0 | 91.6 | -3.1 | | -53.2 | 114 | 278 | 23 37 54 | | |
| 23 40 23 | J2015+3710 | 17 30 16 | 57.4 | 102.2 | -2.8 | | -47.5 | -36 | 278 | No stop | | |
| 23 42 23 | --- | 17 32 17 | 57.7 | 102.7 | -2.7 | | -47.4 | 84 | 294 | 23 40 24 | | |
| 23 42 23 | WR146 | 17 32 17 | 57.3 | 92.0 | -3.1 | | -53.2 | -36 | 294 | No stop | | |
| 23 44 53 | --- | 17 34 47 | 57.7 | 92.5 | -3.0 | | -53.1 | 114 | 313 | 23 42 24 | | |
| 23 45 33 | J2015+3710 | 17 35 27 | 58.1 | 103.5 | -2.7 | | -47.2 | 3 | 313 | 23 45 33 | | |
| 23 47 23 | --- | 17 37 18 | 58.4 | 104.0 | -2.6 | | -47.0 | 110 | 327 | 23 45 34 | | |
| 23 48 07 | J2007+4029 | 17 38 02 | 61.8 | 101.1 | -2.5 | | -50.8 | 18 | 327 | 23 48 07 | | |
| 23 49 27 | --- | 17 39 32 | 62.0 | 101.5 | -2.5 | | -50.7 | 80 | 337 | 23 48 08 | | |
| 23 49 27 | WR146 | 17 39 22 | 58.4 | 93.5 | -3.0 | | -53.1 | -31 | 337 | No stop | | |
| 23 51 57 | --- | 17 41 53 | 58.8 | 94.0 | -2.9 | | -53.0 | 119 | 356 | 23 49 28 | | |
| 23 51 57 | J2007+4029 | 17 41 53 | 62.4 | 102.1 | -2.4 | | -50.6 | -31 | 356 | No stop | | |
| 23 53 57 | --- | 17 43 53 | 62.7 | 102.7 | -2.4 | | -50.4 | 89 | 372 | 23 51 58 | | |
| 23 53 57 | WR146 | 17 43 53 | 59.1 | 94.5 | -2.9 | | -53.0 | -31 | 372 | No stop | | |
| 23 56 27 | --- | 17 46 23 | 59.4 | 95.0 | -2.8 | | -52.9 | 119 | 391 | 23 53 58 | | |
| 23 57 07 | J2007+4029 | 17 47 04 | 63.1 | 103.5 | -2.4 | | -50.2 | 8 | 391 | 23 57 07 | | |
| 23 58 57 | --- | 17 48 54 | 63.4 | 104.0 | -2.3 | | -50.1 | 110 | 405 | 23 57 08 | | |
| ----- | | | | | | | | | | | | |
| --- | Start: Mon 30 May 2016 | Day 151 | | | | | -- | Stop: Tue 31 May 2016 | Day 152 | | | --- |
| 23 58 57 | WR146 | 17 48 54 | 59.8 | 95.6 | -2.8 | | -52.9 | -32 | 405 | No stop | | |
| 00 01 27 | --- | 17 51 24 | 60.2 | 96.2 | -2.7 | | -52.8 | 118 | 424 | 23 58 58 | | |
| 00 01 27 | J2007+4029 | 17 51 24 | 63.8 | 104.7 | -2.3 | | -49.9 | -32 | 424 | No stop | | |
| 00 03 27 | --- | 17 53 25 | 64.1 | 105.2 | -2.2 | | -49.7 | 88 | 440 | 00 01 28 | | |
| 00 03 27 | WR146 | 17 53 25 | 60.5 | 96.6 | -2.7 | | -52.7 | -32 | 440 | No stop | | |
| 00 05 57 | --- | 17 55 55 | 60.9 | 97.2 | -2.7 | | -52.6 | 118 | 459 | 00 03 28 | | |

Schedule for TORUN (Code Tr) Page 4

Geometry and Kinematics of colliding-wind binary WR 146

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

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 31 May 2016 Day 152 --- | | | | | | | | | | |
| 00 06 37 | J2007+4029 | 17 56 35 | 64.5 | 106.1 | -2.2 | | -49.4 | 7 | 459 | 00 06 37 |
| 00 08 27 | --- | 17 58 25 | 64.8 | 106.7 | -2.2 | | -49.2 | 110 | 473 | 00 06 38 |
| 00 08 27 | WR146 | 17 58 25 | 61.2 | 97.8 | -2.6 | | -52.5 | -33 | 473 | No stop |
| 00 10 57 | --- | 18 00 56 | 61.6 | 98.4 | -2.6 | | -52.4 | 117 | 492 | 00 08 28 |
| 00 10 57 | J2007+4029 | 18 00 56 | 65.1 | 107.4 | -2.1 | | -48.9 | -33 | 492 | No stop |
| 00 12 57 | --- | 18 02 56 | 65.4 | 108.0 | -2.1 | | -48.7 | 87 | 508 | 00 10 58 |
| 00 12 57 | WR146 | 18 02 56 | 61.9 | 98.9 | -2.6 | | -52.3 | -33 | 508 | No stop |
| 00 15 27 | --- | 18 05 27 | 62.3 | 99.5 | -2.5 | | -52.2 | 117 | 527 | 00 12 58 |
| 00 16 07 | J2007+4029 | 18 06 07 | 65.9 | 109.0 | -2.0 | | -48.3 | 6 | 527 | 00 16 07 |
| 00 17 57 | --- | 18 07 57 | 66.1 | 109.6 | -2.0 | | -48.1 | 110 | 541 | 00 16 08 |
| 00 17 57 | WR146 | 18 07 57 | 62.6 | 100.1 | -2.5 | | -52.0 | -34 | 541 | No stop |
| 00 20 27 | --- | 18 10 27 | 63.0 | 100.7 | -2.4 | | -51.9 | 116 | 560 | 00 17 58 |
| 00 20 27 | J2007+4029 | 18 10 27 | 66.5 | 110.4 | -2.0 | | -47.8 | -35 | 560 | No stop |
| 00 22 27 | --- | 18 12 28 | 66.8 | 111.0 | -1.9 | | -47.5 | 85 | 576 | 00 20 28 |
| 00 22 27 | WR146 | 18 12 28 | 63.3 | 101.3 | -2.4 | | -51.8 | -34 | 576 | No stop |
| 00 24 57 | --- | 18 14 58 | 63.7 | 101.9 | -2.4 | | -51.6 | 116 | 595 | 00 22 28 |
| 00 25 37 | J2007+4029 | 18 15 38 | 67.2 | 112.0 | -1.9 | | -47.1 | 5 | 595 | 00 25 37 |
| 00 27 27 | --- | 18 17 28 | 67.5 | 112.7 | -1.8 | | -46.8 | 110 | 609 | 00 25 38 |
| 00 27 27 | WR146 | 18 17 28 | 64.0 | 102.6 | -2.3 | | -51.4 | -35 | 609 | No stop |
| 00 29 57 | --- | 18 19 59 | 64.4 | 103.3 | -2.3 | | -51.2 | 115 | 628 | 00 27 28 |
| 00 29 57 | J2007+4029 | 18 19 59 | 67.8 | 113.5 | -1.8 | | -46.4 | -36 | 628 | No stop |
| 00 31 57 | --- | 18 21 59 | 68.1 | 114.2 | -1.8 | | -46.1 | 84 | 644 | 00 29 58 |
| 00 31 57 | WR146 | 18 21 59 | 64.7 | 103.8 | -2.2 | | -51.1 | -36 | 644 | No stop |
| 00 34 27 | --- | 18 24 30 | 65.1 | 104.5 | -2.2 | | -50.8 | 114 | 663 | 00 31 58 |
| 00 35 07 | J2007+4029 | 18 25 10 | 68.5 | 115.4 | -1.7 | | -45.6 | 3 | 663 | 00 35 07 |
| 00 36 57 | --- | 18 27 00 | 68.8 | 116.0 | -1.7 | | -45.2 | 110 | 677 | 00 35 08 |
| 00 37 43 | J2015+3710 | 18 27 47 | 65.4 | 119.3 | -1.8 | | -41.1 | 20 | 677 | 00 37 43 |
| 00 39 03 | --- | 18 29 17 | 65.6 | 119.9 | -1.8 | | -40.9 | 80 | 687 | 00 37 44 |
| 00 39 03 | WR146 | 18 29 07 | 65.7 | 105.8 | -2.1 | | -50.4 | -43 | 687 | No stop |
| 00 41 33 | --- | 18 31 37 | 66.1 | 106.6 | -2.1 | | -50.2 | 107 | 706 | 00 39 04 |

Schedule for TORUN (Code Tr) Page 5

Geometry and Kinematics of colliding-wind binary WR 146

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

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 31 May 2016 Day 152 --- | | | | | | | | | | |
| 00 41 33 | J2015+3710 | 18 31 37 | 65.9 | 120.7 | -1.7 | | -40.4 | -44 | 706 | No stop |
| 00 43 33 | --- | 18 33 38 | 66.2 | 121.5 | -1.7 | | -40.0 | 76 | 722 | 00 41 34 |
| 00 43 33 | WR146 | 18 33 38 | 66.4 | 107.2 | -2.0 | | -49.9 | -43 | 722 | No stop |
| 00 46 03 | --- | 18 36 08 | 66.8 | 107.9 | -2.0 | | -49.6 | 107 | 741 | 00 43 34 |
| 00 46 43 | J2015+3710 | 18 36 48 | 66.6 | 122.7 | -1.7 | | -39.4 | -5 | 741 | 00 46 43 |
| 00 48 33 | --- | 18 38 39 | 66.8 | 123.4 | -1.6 | | -39.0 | 105 | 755 | 00 46 44 |
| 00 48 33 | WR146 | 18 38 39 | 67.1 | 108.7 | -2.0 | | -49.3 | -44 | 755 | No stop |
| 00 51 03 | --- | 18 41 09 | 67.5 | 109.5 | -1.9 | | -49.0 | 106 | 774 | 00 48 34 |
| 00 51 03 | J2015+3710 | 18 41 09 | 67.1 | 124.4 | -1.6 | | -38.5 | -45 | 774 | No stop |
| 00 53 03 | --- | 18 43 09 | 67.4 | 125.2 | -1.5 | | -38.0 | 75 | 790 | 00 51 04 |
| 00 53 03 | WR146 | 18 43 09 | 67.7 | 110.1 | -1.9 | | -48.8 | -45 | 790 | No stop |
| 00 55 33 | --- | 18 45 40 | 68.1 | 111.0 | -1.8 | | -48.4 | 105 | 809 | 00 53 04 |
| 00 56 13 | J2015+3710 | 18 46 20 | 67.8 | 126.5 | -1.5 | | -37.3 | -6 | 809 | 00 56 13 |
| 00 58 03 | --- | 18 48 10 | 68.0 | 127.3 | -1.5 | | -36.9 | 104 | 823 | 00 56 14 |
| 00 58 03 | WR146 | 18 48 10 | 68.4 | 111.8 | -1.8 | | -48.0 | -45 | 823 | No stop |
| 01 00 33 | --- | 18 50 40 | 68.8 | 112.7 | -1.8 | | -47.6 | 105 | 842 | 00 58 04 |
| 01 00 33 | J2015+3710 | 18 50 40 | 68.3 | 128.4 | -1.4 | | -36.2 | -47 | 842 | No stop |
| 01 02 33 | --- | 18 52 41 | 68.5 | 129.3 | -1.4 | | -35.7 | 73 | 858 | 01 00 34 |
| 01 02 33 | WR146 | 18 52 41 | 69.1 | 113.4 | -1.7 | | -47.3 | -46 | 858 | No stop |
| 01 05 03 | --- | 18 55 11 | 69.4 | 114.3 | -1.7 | | -46.9 | 104 | 877 | 01 02 34 |
| 01 05 43 | J2015+3710 | 18 55 51 | 68.9 | 130.7 | -1.3 | | -34.9 | -8 | 877 | 01 05 43 |
| 01 07 33 | --- | 18 57 42 | 69.1 | 131.5 | -1.3 | | -34.4 | 102 | 891 | 01 05 44 |
| 01 07 33 | WR146 | 18 57 42 | 69.8 | 115.2 | -1.6 | | -46.4 | -47 | 891 | No stop |
| 01 10 03 | --- | 19 00 12 | 70.1 | 116.2 | -1.6 | | -46.0 | 103 | 910 | 01 07 34 |
| 01 10 03 | J2015+3710 | 19 00 12 | 69.4 | 132.7 | -1.3 | | -33.7 | -49 | 910 | No stop |
| 01 12 03 | --- | 19 02 12 | 69.6 | 133.6 | -1.2 | | -33.1 | 71 | 926 | 01 10 04 |
| 01 12 03 | WR146 | 19 02 12 | 70.4 | 116.9 | -1.6 | | -45.6 | -48 | 926 | No stop |
| 01 14 33 | --- | 19 04 43 | 70.7 | 117.9 | -1.5 | | -45.0 | 102 | 945 | 01 12 04 |
| 01 15 13 | J2015+3710 | 19 05 23 | 69.9 | 135.2 | -1.2 | | -32.1 | -10 | 945 | 01 15 13 |
| 01 17 03 | --- | 19 07 13 | 70.1 | 136.1 | -1.1 | | -31.5 | 100 | 959 | 01 15 14 |

Schedule for TORUN (Code Tr) Page 6

Geometry and Kinematics of colliding-wind binary WR 146

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

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 31 May 2016 Day 152 --- | | | | | | | | | | |
| 01 17 03 | WR146 | 19 07 13 | 71.0 | 118.9 | -1.5 | | -44.5 | -49 | 959 | No stop |
| 01 19 33 | --- | 19 09 44 | 71.4 | 120.0 | -1.4 | | -43.9 | 101 | 978 | 01 17 04 |
| 01 19 33 | J2015+3710 | 19 09 44 | 70.4 | 137.3 | -1.1 | | -30.7 | -50 | 978 | No stop |
| 01 21 33 | --- | 19 11 44 | 70.6 | 138.4 | -1.1 | | -30.1 | 70 | 994 | 01 19 34 |
| 01 21 33 | WR146 | 19 11 44 | 71.6 | 120.8 | -1.4 | | -43.4 | -49 | 994 | No stop |
| 01 24 03 | --- | 19 14 14 | 71.9 | 121.9 | -1.4 | | -42.8 | 101 | 1013 | 01 21 34 |
| 01 24 43 | J2015+3710 | 19 14 54 | 70.9 | 140.0 | -1.0 | | -29.0 | -11 | 1013 | 01 24 43 |
| 01 26 33 | --- | 19 16 45 | 71.1 | 141.0 | -1.0 | | -28.3 | 99 | 1027 | 01 24 44 |
| 01 27 21 | J2007+4029 | 19 17 32 | 74.8 | 140.5 | -0.8 | | -30.2 | 19 | 1027 | 01 27 21 |
| 01 28 41 | --- | 19 19 02 | 74.9 | 141.4 | -0.8 | | -29.5 | 80 | 1037 | 01 27 22 |
| 01 28 41 | WR146 | 19 18 52 | 72.5 | 124.1 | -1.3 | | -41.6 | -49 | 1037 | No stop |
| 01 31 11 | --- | 19 21 23 | 72.8 | 125.2 | -1.3 | | -40.9 | 101 | 1056 | 01 28 42 |
| 01 31 11 | J2007+4029 | 19 21 23 | 75.1 | 142.9 | -0.8 | | -28.5 | -51 | 1056 | No stop |
| 01 33 11 | --- | 19 23 23 | 75.3 | 144.2 | -0.7 | | -27.5 | 69 | 1072 | 01 31 12 |
| 01 33 11 | WR146 | 19 23 23 | 73.1 | 126.2 | -1.2 | | -40.3 | -50 | 1072 | No stop |
| 01 35 41 | --- | 19 25 53 | 73.4 | 127.5 | -1.2 | | -39.5 | 100 | 1091 | 01 33 12 |
| 01 36 21 | J2007+4029 | 19 26 33 | 75.6 | 146.4 | -0.7 | | -25.9 | -13 | 1091 | 01 36 21 |
| 01 38 11 | --- | 19 28 24 | 75.7 | 147.7 | -0.7 | | -25.0 | 97 | 1105 | 01 36 22 |
| 01 38 11 | WR146 | 19 28 24 | 73.7 | 128.8 | -1.1 | | -38.7 | -52 | 1105 | No stop |
| 01 40 41 | --- | 19 30 54 | 74.0 | 130.1 | -1.1 | | -37.8 | 98 | 1124 | 01 38 12 |
| 01 40 41 | J2007+4029 | 19 30 54 | 75.9 | 149.4 | -0.6 | | -23.7 | -55 | 1124 | No stop |
| 01 42 41 | --- | 19 32 54 | 76.1 | 150.9 | -0.6 | | -22.6 | 65 | 1140 | 01 40 42 |
| 01 42 41 | WR146 | 19 32 54 | 74.2 | 131.2 | -1.1 | | -37.1 | -54 | 1140 | No stop |
| 01 45 11 | --- | 19 35 25 | 74.5 | 132.6 | -1.0 | | -36.2 | 96 | 1159 | 01 42 42 |
| 01 45 51 | J2007+4029 | 19 36 05 | 76.3 | 153.2 | -0.5 | | -20.9 | -17 | 1159 | 01 45 51 |
| 01 47 41 | --- | 19 37 55 | 76.4 | 154.6 | -0.5 | | -19.8 | 93 | 1173 | 01 45 52 |
| 01 47 41 | WR146 | 19 37 55 | 74.8 | 134.0 | -1.0 | | -35.2 | -55 | 1173 | No stop |
| 01 50 11 | --- | 19 40 26 | 75.0 | 135.5 | -0.9 | | -34.2 | 95 | 1192 | 01 47 42 |
| 01 50 11 | J2007+4029 | 19 40 26 | 76.6 | 156.5 | -0.5 | | -18.3 | -58 | 1192 | No stop |
| 01 52 11 | --- | 19 42 26 | 76.7 | 158.1 | -0.4 | | -17.1 | 62 | 1208 | 01 50 12 |

Schedule for TORUN (Code Tr) Page 7

Geometry and Kinematics of colliding-wind binary WR 146

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

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 31 May 2016 Day 152 --- | | | | | | | | | | |
| 01 52 11 | WR146 | 19 42 26 | 75.2 | 136.7 | -0.9 | | -33.3 | -57 | 1208 | No stop |
| 01 54 41 | --- | 19 44 56 | 75.5 | 138.3 | -0.9 | | -32.2 | 93 | 1227 | 01 52 12 |
| 01 55 21 | J2007+4029 | 19 45 37 | 76.9 | 160.7 | -0.4 | | -15.2 | -20 | 1227 | 01 55 21 |
| 01 57 11 | --- | 19 47 27 | 77.0 | 162.1 | -0.3 | | -14.0 | 90 | 1241 | 01 55 22 |
| 01 57 11 | WR146 | 19 47 27 | 75.7 | 139.9 | -0.8 | | -31.1 | -58 | 1241 | No stop |
| 01 59 41 | --- | 19 49 57 | 76.0 | 141.5 | -0.8 | | -29.9 | 92 | 1260 | 01 57 12 |
| 01 59 41 | J2007+4029 | 19 49 57 | 77.1 | 164.2 | -0.3 | | -12.4 | -62 | 1260 | No stop |
| 02 01 41 | --- | 19 51 58 | 77.1 | 165.9 | -0.3 | | -11.1 | 58 | 1276 | 01 59 42 |
| 02 01 41 | WR146 | 19 51 58 | 76.2 | 142.9 | -0.7 | | -28.9 | -60 | 1276 | No stop |
| 02 04 11 | --- | 19 54 28 | 76.4 | 144.6 | -0.7 | | -27.6 | 90 | 1295 | 02 01 42 |
| 02 04 51 | J2007+4029 | 19 55 08 | 77.3 | 168.6 | -0.2 | | -9.0 | -23 | 1295 | 02 04 51 |
| 02 06 41 | --- | 19 56 58 | 77.3 | 170.1 | -0.2 | | -7.8 | 87 | 1309 | 02 04 52 |
| 02 06 41 | WR146 | 19 56 58 | 76.6 | 146.4 | -0.7 | | -26.3 | -61 | 1309 | No stop |
| 02 09 11 | --- | 19 59 29 | 76.8 | 148.3 | -0.6 | | -24.9 | 89 | 1328 | 02 06 42 |
| 02 09 11 | J2007+4029 | 19 59 29 | 77.4 | 172.3 | -0.1 | | -6.1 | -65 | 1328 | No stop |
| 02 11 11 | --- | 20 01 29 | 77.4 | 174.0 | -0.1 | | -4.7 | 55 | 1344 | 02 09 12 |
| 02 11 11 | WR146 | 20 01 29 | 76.9 | 149.8 | -0.6 | | -23.8 | -62 | 1344 | No stop |
| 02 13 41 | --- | 20 04 00 | 77.1 | 151.7 | -0.5 | | -22.3 | 88 | 1363 | 02 11 12 |
| 02 14 21 | J2007+4029 | 20 04 40 | 77.4 | 176.8 | -0.1 | | -2.5 | -26 | 1363 | 02 14 21 |
| 02 16 11 | --- | 20 06 30 | 77.4 | 178.4 | -0.0 | | -1.3 | 84 | 1377 | 02 14 22 |
| 02 16 56 | J2015+3710 | 20 07 16 | 74.1 | 173.6 | -0.1 | | -4.8 | 19 | 1377 | 02 16 56 |
| 02 18 16 | --- | 20 08 46 | 74.1 | 174.7 | -0.1 | | -4.0 | 80 | 1387 | 02 16 57 |
| 02 18 16 | WR146 | 20 08 36 | 77.4 | 155.4 | -0.5 | | -19.5 | -52 | 1387 | No stop |
| 02 20 46 | --- | 20 11 06 | 77.6 | 157.4 | -0.4 | | -17.9 | 98 | 1406 | 02 18 17 |
| 02 20 46 | J2015+3710 | 20 11 06 | 74.1 | 176.4 | -0.1 | | -2.7 | -54 | 1406 | No stop |
| 02 22 46 | --- | 20 13 07 | 74.1 | 177.8 | -0.0 | | -1.6 | 66 | 1422 | 02 20 47 |
| 02 22 46 | WR146 | 20 13 07 | 77.7 | 159.1 | -0.4 | | -16.6 | -51 | 1422 | No stop |
| 02 25 16 | --- | 20 15 37 | 77.8 | 161.2 | -0.3 | | -14.9 | 99 | 1441 | 02 22 47 |
| 02 25 56 | J2015+3710 | 20 16 17 | 74.1 | 180.1 | 0.0 | | 0.1 | -13 | 1441 | 02 25 56 |
| 02 27 46 | --- | 20 18 08 | 74.1 | 181.5 | 0.0 | | 1.1 | 97 | 1455 | 02 25 57 |

Schedule for TORUN (Code Tr) Page 8

Geometry and Kinematics of colliding-wind binary WR 146

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

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 31 May 2016 Day 152 --- | | | | | | | | | | |
| 02 27 46 | WR146 | 20 18 08 | 77.9 | 163.4 | -0.3 | | -13.2 | -50 | 1455 | No stop |
| 02 30 16 | --- | 20 20 38 | 78.0 | 165.6 | -0.3 | | -11.5 | 100 | 1474 | 02 27 47 |
| 02 30 16 | J2015+3710 | 20 20 38 | 74.1 | 183.3 | 0.1 | | 2.5 | -51 | 1474 | No stop |
| 02 32 16 | --- | 20 22 38 | 74.1 | 184.7 | 0.1 | | 3.6 | 69 | 1490 | 02 30 17 |
| 02 32 16 | WR146 | 20 22 38 | 78.1 | 167.4 | -0.2 | | -10.1 | -48 | 1490 | No stop |
| 02 34 46 | --- | 20 25 09 | 78.2 | 169.6 | -0.2 | | -8.3 | 102 | 1509 | 02 32 17 |
| 02 35 26 | J2015+3710 | 20 25 49 | 74.0 | 187.0 | 0.2 | | 5.3 | -10 | 1509 | 02 35 26 |
| 02 37 16 | --- | 20 27 39 | 74.0 | 188.4 | 0.2 | | 6.3 | 100 | 1523 | 02 35 27 |
| 02 37 16 | WR146 | 20 27 39 | 78.2 | 171.9 | -0.1 | | -6.5 | -47 | 1523 | No stop |
| 02 39 46 | --- | 20 30 10 | 78.3 | 174.2 | -0.1 | | -4.6 | 103 | 1542 | 02 37 17 |
| 02 39 46 | J2015+3710 | 20 30 10 | 74.0 | 190.2 | 0.2 | | 7.6 | -48 | 1542 | No stop |
| 02 41 46 | --- | 20 32 10 | 73.9 | 191.6 | 0.3 | | 8.7 | 72 | 1558 | 02 39 47 |
| 02 41 46 | WR146 | 20 32 10 | 78.3 | 176.1 | -0.1 | | -3.1 | -45 | 1558 | No stop |
| 02 44 16 | --- | 20 34 40 | 78.3 | 178.4 | -0.0 | | -1.3 | 105 | 1577 | 02 41 47 |
| 02 44 56 | J2015+3710 | 20 35 20 | 73.8 | 193.8 | 0.3 | | 10.4 | -6 | 1577 | 02 44 56 |
| 02 46 46 | --- | 20 37 11 | 73.7 | 195.1 | 0.4 | | 11.3 | 104 | 1591 | 02 44 57 |
| 02 46 46 | WR146 | 20 37 11 | 78.3 | 180.7 | 0.0 | | 0.6 | -43 | 1591 | No stop |
| 02 49 16 | --- | 20 39 41 | 78.3 | 183.0 | 0.1 | | 2.4 | 107 | 1610 | 02 46 47 |
| 02 49 16 | J2015+3710 | 20 39 41 | 73.6 | 196.8 | 0.4 | | 12.6 | -43 | 1610 | No stop |
| 02 51 16 | --- | 20 41 41 | 73.5 | 198.2 | 0.4 | | 13.6 | 77 | 1626 | 02 49 17 |
| 02 51 16 | WR146 | 20 41 41 | 78.3 | 184.9 | 0.1 | | 3.9 | -41 | 1626 | No stop |
| 02 53 46 | --- | 20 44 12 | 78.3 | 187.2 | 0.1 | | 5.8 | 109 | 1645 | 02 51 17 |
| 02 54 26 | J2015+3710 | 20 44 52 | 73.4 | 200.4 | 0.5 | | 15.2 | -1 | 1645 | 02 54 26 |
| 02 56 16 | --- | 20 46 42 | 73.3 | 201.6 | 0.5 | | 16.1 | 109 | 1659 | 02 54 27 |
| 02 57 07 | J2007+4029 | 20 47 34 | 75.8 | 211.8 | 0.7 | | 24.6 | 16 | 1659 | 02 57 07 |
| 02 58 27 | --- | 20 49 04 | 75.7 | 212.9 | 0.7 | | 25.4 | 80 | 1669 | 02 57 08 |
| 02 58 27 | WR146 | 20 48 54 | 78.2 | 191.5 | 0.2 | | 9.2 | -56 | 1669 | No stop |
| 03 00 57 | --- | 20 51 24 | 78.1 | 193.7 | 0.3 | | 11.0 | 94 | 1688 | 02 58 28 |
| 03 00 57 | J2007+4029 | 20 51 24 | 75.5 | 214.5 | 0.7 | | 26.6 | -58 | 1688 | No stop |
| 03 02 57 | --- | 20 53 25 | 75.3 | 215.8 | 0.8 | | 27.6 | 62 | 1704 | 03 00 58 |

Schedule for TORUN (Code Tr) Page 9

Geometry and Kinematics of colliding-wind binary WR 146

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

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 31 May 2016 Day 152 --- | | | | | | | | | | |
| 03 02 57 | WR146 | 20 53 25 | 78.0 | 195.5 | 0.3 | | 12.4 | -54 | 1704 | No stop |
| 03 05 27 | --- | 20 55 55 | 77.9 | 197.7 | 0.3 | | 14.1 | 96 | 1723 | 03 02 58 |
| 03 06 07 | J2007+4029 | 20 56 35 | 75.0 | 217.9 | 0.8 | | 29.0 | -16 | 1723 | 03 06 07 |
| 03 07 57 | --- | 20 58 25 | 74.9 | 219.1 | 0.8 | | 29.9 | 94 | 1737 | 03 06 08 |
| 03 07 57 | WR146 | 20 58 25 | 77.8 | 199.8 | 0.4 | | 15.8 | -52 | 1737 | No stop |
| 03 10 27 | --- | 21 00 56 | 77.6 | 202.0 | 0.4 | | 17.4 | 98 | 1756 | 03 07 58 |
| 03 10 27 | J2007+4029 | 21 00 56 | 74.6 | 220.6 | 0.9 | | 31.0 | -53 | 1756 | No stop |
| 03 12 27 | --- | 21 02 56 | 74.4 | 221.9 | 0.9 | | 31.8 | 67 | 1772 | 03 10 28 |
| 03 12 27 | WR146 | 21 02 56 | 77.5 | 203.6 | 0.4 | | 18.7 | -50 | 1772 | No stop |
| 03 14 57 | --- | 21 05 27 | 77.4 | 205.7 | 0.5 | | 20.3 | 100 | 1791 | 03 12 28 |
| 03 15 37 | J2007+4029 | 21 06 07 | 74.1 | 223.7 | 1.0 | | 33.1 | -11 | 1791 | 03 15 37 |
| 03 17 27 | --- | 21 07 57 | 73.9 | 224.8 | 1.0 | | 33.8 | 99 | 1805 | 03 15 38 |
| 03 17 27 | WR146 | 21 07 57 | 77.2 | 207.6 | 0.5 | | 21.8 | -48 | 1805 | No stop |
| 03 19 57 | --- | 21 10 27 | 77.0 | 209.6 | 0.6 | | 23.3 | 102 | 1824 | 03 17 28 |
| 03 19 57 | J2007+4029 | 21 10 27 | 73.6 | 226.2 | 1.0 | | 34.8 | -49 | 1824 | No stop |
| 03 21 57 | --- | 21 12 28 | 73.4 | 227.3 | 1.1 | | 35.5 | 71 | 1840 | 03 19 58 |
| 03 21 57 | WR146 | 21 12 28 | 76.9 | 211.1 | 0.6 | | 24.4 | -46 | 1840 | No stop |
| 03 24 27 | --- | 21 14 58 | 76.7 | 213.0 | 0.6 | | 25.8 | 104 | 1859 | 03 21 58 |
| 03 25 07 | J2007+4029 | 21 15 38 | 73.1 | 229.0 | 1.1 | | 36.6 | -7 | 1859 | 03 25 07 |
| 03 26 57 | --- | 21 17 29 | 72.8 | 229.9 | 1.2 | | 37.2 | 103 | 1873 | 03 25 08 |
| 03 26 57 | WR146 | 21 17 29 | 76.4 | 214.8 | 0.7 | | 27.2 | -44 | 1873 | No stop |
| 03 29 27 | --- | 21 19 59 | 76.2 | 216.5 | 0.7 | | 28.5 | 106 | 1892 | 03 26 58 |
| 03 29 27 | J2007+4029 | 21 19 59 | 72.6 | 231.2 | 1.2 | | 38.0 | -45 | 1892 | No stop |
| 03 31 27 | --- | 21 21 59 | 72.3 | 232.2 | 1.2 | | 38.6 | 75 | 1908 | 03 29 28 |
| 03 31 27 | WR146 | 21 21 59 | 76.0 | 217.9 | 0.8 | | 29.5 | -43 | 1908 | No stop |
| 03 33 57 | --- | 21 24 30 | 75.8 | 219.6 | 0.8 | | 30.7 | 107 | 1927 | 03 31 28 |
| 03 34 37 | J2007+4029 | 21 25 10 | 71.9 | 233.7 | 1.3 | | 39.6 | -3 | 1927 | 03 34 37 |
| 03 36 27 | --- | 21 27 00 | 71.7 | 234.6 | 1.3 | | 40.1 | 107 | 1941 | 03 34 38 |
| 03 36 27 | WR146 | 21 27 00 | 75.6 | 221.2 | 0.8 | | 31.8 | -41 | 1941 | No stop |
| 03 38 57 | --- | 21 29 31 | 75.3 | 222.8 | 0.9 | | 33.0 | 109 | 1960 | 03 36 28 |

Schedule for TORUN (Code Tr)

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Geometry and Kinematics of colliding-wind binary WR 146

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

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 31 May 2016 Day 152 --- | | | | | | | | | |
| 03 38 57 | J2007+4029 | 21 29 31 | 71.4 | 235.7 | 1.4 | 40.8 | -41 | 1960 | No stop |
| 03 40 57 | --- | 21 31 31 | 71.2 | 236.6 | 1.4 | 41.3 | 79 | 1976 | 03 38 58 |
| 03 40 57 | WR146 | 21 31 31 | 75.1 | 224.0 | 0.9 | 33.8 | -40 | 1976 | No stop |
| 03 43 27 | --- | 21 34 01 | 74.8 | 225.5 | 1.0 | 34.8 | 110 | 1995 | 03 40 58 |
| 03 44 07 | J2007+4029 | 21 34 41 | 70.8 | 238.0 | 1.4 | 42.1 | 0 | 1995 | 03 44 07 |
| 03 45 57 | --- | 21 36 32 | 70.5 | 238.8 | 1.5 | 42.5 | 110 | 2009 | 03 44 08 |
| 03 49 28 | J1955+5131 | 21 40 03 | 74.1 | 275.0 | 1.7 | 74.3 | 124 | 2009 | 03 49 28 |
| 03 52 18 | =1954+513 | 21 43 04 | 73.7 | 275.4 | 1.8 | 74.1 | 170 | 2031 | 03 49 29 |
| 03 56 11 | J2015+3710 | 21 46 47 | 67.7 | 233.9 | 1.5 | 37.5 | 133 | 2031 | 03 56 11 |
| 03 57 31 | --- | 21 48 17 | 67.5 | 234.5 | 1.5 | 37.9 | 80 | 2041 | 03 56 12 |
| 03 57 31 | WR146 | 21 48 07 | 73.2 | 233.1 | 1.2 | 39.9 | -35 | 2041 | No stop |
| 04 00 01 | --- | 21 50 38 | 72.9 | 234.4 | 1.2 | 40.6 | 115 | 2060 | 03 57 32 |
| 04 00 01 | J2015+3710 | 21 50 38 | 67.2 | 235.4 | 1.6 | 38.4 | -36 | 2060 | No stop |
| 04 02 01 | --- | 21 52 38 | 66.9 | 236.2 | 1.6 | 38.8 | 84 | 2076 | 04 00 02 |
| 04 02 01 | WR146 | 21 52 38 | 72.7 | 235.3 | 1.3 | 41.2 | -35 | 2076 | No stop |
| 04 04 31 | --- | 21 55 08 | 72.4 | 236.5 | 1.3 | 41.9 | 115 | 2095 | 04 02 02 |
| 04 05 11 | J2015+3710 | 21 55 48 | 66.5 | 237.5 | 1.7 | 39.5 | 4 | 2095 | 04 05 11 |
| 04 07 01 | --- | 21 57 39 | 66.3 | 238.2 | 1.7 | 39.9 | 110 | 2109 | 04 05 12 |
| 04 07 01 | WR146 | 21 57 39 | 72.1 | 237.7 | 1.4 | 42.6 | -35 | 2109 | No stop |
| 04 09 31 | --- | 22 00 09 | 71.7 | 238.8 | 1.4 | 43.2 | 115 | 2128 | 04 07 02 |
| 04 09 31 | J2015+3710 | 22 00 09 | 66.0 | 239.1 | 1.7 | 40.3 | -36 | 2128 | No stop |
| 04 11 31 | --- | 22 02 09 | 65.7 | 239.9 | 1.8 | 40.7 | 84 | 2144 | 04 09 32 |
| 04 11 31 | WR146 | 22 02 09 | 71.5 | 239.6 | 1.4 | 43.7 | -35 | 2144 | No stop |
| 04 14 01 | --- | 22 04 40 | 71.2 | 240.7 | 1.5 | 44.3 | 115 | 2163 | 04 11 32 |
| 04 14 41 | J2015+3710 | 22 05 20 | 65.3 | 241.0 | 1.8 | 41.3 | 4 | 2163 | 04 14 41 |
| 04 16 31 | --- | 22 07 10 | 65.1 | 241.7 | 1.9 | 41.6 | 110 | 2177 | 04 14 42 |
| 04 16 31 | WR146 | 22 07 10 | 70.8 | 241.7 | 1.5 | 44.9 | -35 | 2177 | No stop |
| 04 19 01 | --- | 22 09 41 | 70.5 | 242.7 | 1.6 | 45.4 | 115 | 2196 | 04 16 32 |
| 04 19 01 | J2015+3710 | 22 09 41 | 64.7 | 242.5 | 1.9 | 42.0 | -36 | 2196 | No stop |
| 04 21 01 | --- | 22 11 41 | 64.5 | 243.2 | 1.9 | 42.3 | 84 | 2212 | 04 19 02 |

Schedule for TORUN (Code Tr)

Page 11

Geometry and Kinematics of colliding-wind binary WR 146

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

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 31 May 2016 Day 152 --- | | | | | | | | | | |
| 04 21 01 | WR146 | 22 11 41 | 70.2 | 243.5 | 1.6 | | 45.8 | -35 | 2212 | No stop |
| 04 23 31 | --- | 22 14 11 | 69.9 | 244.4 | 1.6 | | 46.3 | 115 | 2231 | 04 21 02 |
| 04 24 11 | J2015+3710 | 22 14 51 | 64.0 | 244.3 | 2.0 | | 42.8 | 4 | 2231 | 04 24 11 |
| 04 26 01 | --- | 22 16 42 | 63.8 | 244.9 | 2.0 | | 43.1 | 110 | 2245 | 04 24 12 |
| 04 26 01 | WR146 | 22 16 42 | 69.5 | 245.4 | 1.7 | | 46.7 | -35 | 2245 | No stop |
| 04 28 31 | --- | 22 19 12 | 69.2 | 246.3 | 1.7 | | 47.2 | 115 | 2264 | 04 26 02 |
| 04 28 31 | J2015+3710 | 22 19 12 | 63.5 | 245.7 | 2.1 | | 43.4 | -36 | 2264 | No stop |
| 04 30 31 | --- | 22 21 13 | 63.2 | 246.4 | 2.1 | | 43.7 | 84 | 2279 | 04 28 32 |
| 04 30 31 | WR146 | 22 21 13 | 68.9 | 247.0 | 1.7 | | 47.5 | -35 | 2279 | No stop |
| 04 33 01 | --- | 22 23 43 | 68.6 | 247.9 | 1.8 | | 47.9 | 115 | 2299 | 04 30 32 |
| 04 33 41 | J2015+3710 | 22 24 23 | 62.7 | 247.4 | 2.1 | | 44.1 | 4 | 2299 | 04 33 41 |
| 04 35 31 | --- | 22 26 13 | 62.5 | 247.9 | 2.2 | | 44.3 | 110 | 2313 | 04 33 42 |
| 04 35 31 | WR146 | 22 26 13 | 68.2 | 248.7 | 1.8 | | 48.3 | -35 | 2313 | No stop |
| 04 38 01 | --- | 22 28 44 | 67.9 | 249.6 | 1.9 | | 48.6 | 115 | 2332 | 04 35 32 |
| 04 38 01 | J2015+3710 | 22 28 44 | 62.1 | 248.7 | 2.2 | | 44.6 | -36 | 2332 | No stop |
| 04 40 01 | --- | 22 30 44 | 61.9 | 249.3 | 2.2 | | 44.9 | 84 | 2347 | 04 38 02 |
| 04 40 01 | WR146 | 22 30 44 | 67.6 | 250.2 | 1.9 | | 48.9 | -35 | 2347 | No stop |
| 04 42 31 | --- | 22 33 14 | 67.2 | 251.0 | 1.9 | | 49.2 | 115 | 2367 | 04 40 02 |
| 04 43 11 | J2015+3710 | 22 33 55 | 61.4 | 250.3 | 2.3 | | 45.2 | 4 | 2367 | 04 43 11 |
| 04 45 01 | --- | 22 35 45 | 61.2 | 250.8 | 2.3 | | 45.4 | 110 | 2381 | 04 43 12 |
| 04 46 05 | J2007+4029 | 22 36 49 | 62.1 | 258.4 | 2.5 | | 50.7 | 34 | 2381 | 04 46 05 |
| 04 47 25 | --- | 22 38 19 | 61.9 | 258.8 | 2.5 | | 50.8 | 80 | 2391 | 04 46 06 |
| 04 47 25 | WR146 | 22 38 09 | 66.5 | 252.5 | 2.0 | | 49.8 | -31 | 2391 | No stop |
| 04 49 55 | --- | 22 40 40 | 66.2 | 253.3 | 2.1 | | 50.1 | 119 | 2410 | 04 47 26 |
| 04 49 55 | J2007+4029 | 22 40 40 | 61.5 | 259.4 | 2.5 | | 51.0 | -32 | 2410 | No stop |
| 04 51 55 | --- | 22 42 40 | 61.2 | 259.9 | 2.6 | | 51.1 | 88 | 2426 | 04 49 56 |
| 04 51 55 | WR146 | 22 42 40 | 65.9 | 253.9 | 2.1 | | 50.3 | -31 | 2426 | No stop |
| 04 54 25 | --- | 22 45 10 | 65.5 | 254.6 | 2.1 | | 50.6 | 119 | 2445 | 04 51 56 |
| 04 55 05 | J2007+4029 | 22 45 51 | 60.8 | 260.6 | 2.6 | | 51.2 | 8 | 2445 | 04 55 05 |
| 04 56 55 | --- | 22 47 41 | 60.5 | 261.1 | 2.7 | | 51.3 | 110 | 2459 | 04 55 06 |

Schedule for TORUN (Code Tr)

Page 12

Geometry and Kinematics of colliding-wind binary WR 146

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

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 31 May 2016 Day 152 --- | | | | | | | | | | |
| 04 56 55 | WR146 | 22 47 41 | 65.2 | 255.3 | 2.2 | | 50.8 | -31 | 2459 | No stop |
| 04 59 25 | --- | 22 50 11 | 64.8 | 256.0 | 2.2 | | 51.0 | 119 | 2478 | 04 56 56 |
| 04 59 25 | J2007+4029 | 22 50 11 | 60.1 | 261.7 | 2.7 | | 51.4 | -32 | 2478 | No stop |
| 05 01 25 | --- | 22 52 12 | 59.8 | 262.2 | 2.7 | | 51.5 | 88 | 2494 | 04 59 26 |
| 05 01 25 | WR146 | 22 52 12 | 64.5 | 256.6 | 2.3 | | 51.2 | -31 | 2494 | No stop |
| 05 03 55 | --- | 22 54 42 | 64.1 | 257.3 | 2.3 | | 51.4 | 119 | 2513 | 05 01 26 |
| 05 04 35 | J2007+4029 | 22 55 22 | 59.3 | 262.9 | 2.8 | | 51.6 | 8 | 2513 | 05 04 35 |
| 05 06 25 | --- | 22 57 12 | 59.1 | 263.3 | 2.8 | | 51.7 | 110 | 2527 | 05 04 36 |
| 05 06 25 | WR146 | 22 57 12 | 63.8 | 257.9 | 2.3 | | 51.6 | -31 | 2527 | No stop |
| 05 08 55 | --- | 22 59 43 | 63.4 | 258.6 | 2.4 | | 51.7 | 119 | 2546 | 05 06 26 |
| 05 08 55 | J2007+4029 | 22 59 43 | 58.7 | 263.9 | 2.9 | | 51.8 | -32 | 2546 | No stop |
| 05 10 55 | --- | 23 01 43 | 58.4 | 264.4 | 2.9 | | 51.8 | 88 | 2562 | 05 08 56 |
| 05 10 55 | WR146 | 23 01 43 | 63.1 | 259.1 | 2.4 | | 51.9 | -31 | 2562 | No stop |
| 05 13 25 | --- | 23 04 14 | 62.7 | 259.7 | 2.5 | | 52.0 | 119 | 2581 | 05 10 56 |
| 05 14 05 | J2007+4029 | 23 04 54 | 57.9 | 265.1 | 2.9 | | 51.9 | 8 | 2581 | 05 14 05 |
| 05 15 55 | --- | 23 06 44 | 57.6 | 265.5 | 3.0 | | 52.0 | 110 | 2595 | 05 14 06 |
| 05 15 55 | WR146 | 23 06 44 | 62.4 | 260.4 | 2.5 | | 52.2 | -31 | 2595 | No stop |
| 05 18 25 | --- | 23 09 14 | 62.0 | 261.0 | 2.5 | | 52.3 | 119 | 2614 | 05 15 56 |
| 05 18 25 | J2007+4029 | 23 09 14 | 57.3 | 266.0 | 3.0 | | 52.0 | -32 | 2614 | No stop |
| 05 20 25 | --- | 23 11 15 | 57.0 | 266.4 | 3.0 | | 52.1 | 88 | 2629 | 05 18 26 |
| 05 20 25 | WR146 | 23 11 15 | 61.7 | 261.5 | 2.6 | | 52.4 | -31 | 2629 | No stop |
| 05 22 55 | --- | 23 13 45 | 61.3 | 262.1 | 2.6 | | 52.5 | 119 | 2649 | 05 20 26 |
| 05 23 35 | J2007+4029 | 23 14 25 | 56.5 | 267.1 | 3.1 | | 52.1 | 8 | 2649 | 05 23 35 |
| 05 25 25 | --- | 23 16 16 | 56.2 | 267.5 | 3.1 | | 52.1 | 110 | 2663 | 05 23 36 |
| 05 25 25 | WR146 | 23 16 16 | 61.0 | 262.7 | 2.7 | | 52.6 | -31 | 2663 | No stop |
| 05 27 55 | --- | 23 18 46 | 60.6 | 263.2 | 2.7 | | 52.7 | 119 | 2682 | 05 25 26 |
| 05 27 55 | J2007+4029 | 23 18 46 | 55.8 | 268.0 | 3.2 | | 52.2 | -32 | 2682 | No stop |
| 05 29 55 | --- | 23 20 46 | 55.5 | 268.4 | 3.2 | | 52.2 | 88 | 2697 | 05 27 56 |
| 05 29 55 | WR146 | 23 20 46 | 60.3 | 263.7 | 2.7 | | 52.8 | -31 | 2697 | No stop |
| 05 32 25 | --- | 23 23 17 | 59.9 | 264.3 | 2.8 | | 52.8 | 119 | 2717 | 05 29 56 |

Schedule for TORUN (Code Tr)

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Geometry and Kinematics of colliding-wind binary WR 146

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

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 31 May 2016 Day 152 --- | | | | | | | | | | |
| 05 33 05 | J2007+4029 | 23 23 57 | 55.1 | 269.1 | 3.3 | | 52.2 | 8 | 2717 | 05 33 05 |
| 05 34 55 | --- | 23 25 47 | 54.8 | 269.5 | 3.3 | | 52.2 | 110 | 2731 | 05 33 06 |
| 05 35 52 | J2015+3710 | 23 26 45 | 53.7 | 263.7 | 3.2 | | 48.6 | 30 | 2731 | 05 35 52 |
| 05 37 12 | --- | 23 28 15 | 53.5 | 264.0 | 3.2 | | 48.6 | 80 | 2741 | 05 35 53 |
| 05 37 12 | WR146 | 23 28 05 | 59.2 | 265.3 | 2.9 | | 53.0 | -35 | 2741 | No stop |
| 05 39 42 | --- | 23 30 35 | 58.8 | 265.9 | 2.9 | | 53.0 | 115 | 2760 | 05 37 13 |
| 05 39 42 | J2015+3710 | 23 30 35 | 53.1 | 264.5 | 3.2 | | 48.7 | -36 | 2760 | No stop |
| 05 41 42 | --- | 23 32 36 | 52.8 | 264.9 | 3.3 | | 48.7 | 84 | 2776 | 05 39 43 |
| 05 41 42 | WR146 | 23 32 36 | 58.5 | 266.3 | 2.9 | | 53.1 | -35 | 2776 | No stop |
| 05 44 12 | --- | 23 35 06 | 58.1 | 266.9 | 3.0 | | 53.1 | 115 | 2795 | 05 41 43 |
| 05 44 52 | J2015+3710 | 23 35 46 | 52.3 | 265.6 | 3.3 | | 48.8 | 4 | 2795 | 05 44 52 |
| 05 46 42 | --- | 23 37 36 | 52.1 | 266.0 | 3.4 | | 48.8 | 110 | 2809 | 05 44 53 |
| 05 46 42 | WR146 | 23 37 36 | 57.8 | 267.4 | 3.0 | | 53.1 | -35 | 2809 | No stop |
| 05 49 12 | --- | 23 40 07 | 57.4 | 267.9 | 3.1 | | 53.2 | 115 | 2828 | 05 46 43 |
| 05 49 12 | J2015+3710 | 23 40 07 | 51.7 | 266.5 | 3.4 | | 48.8 | -36 | 2828 | No stop |
| 05 51 12 | --- | 23 42 07 | 51.4 | 267.0 | 3.4 | | 48.9 | 84 | 2844 | 05 49 13 |
| 05 51 12 | WR146 | 23 42 07 | 57.1 | 268.3 | 3.1 | | 53.2 | -35 | 2844 | No stop |
| 05 53 42 | --- | 23 44 38 | 56.7 | 268.8 | 3.1 | | 53.2 | 115 | 2863 | 05 51 13 |
| 05 54 22 | J2015+3710 | 23 45 18 | 50.9 | 267.6 | 3.5 | | 48.9 | 4 | 2863 | 05 54 22 |
| 05 56 12 | --- | 23 47 08 | 50.6 | 268.0 | 3.5 | | 48.9 | 110 | 2877 | 05 54 23 |
| 05 56 12 | WR146 | 23 47 08 | 56.3 | 269.4 | 3.2 | | 53.2 | -35 | 2877 | No stop |
| 05 58 42 | --- | 23 49 38 | 56.0 | 269.9 | 3.2 | | 53.2 | 115 | 2896 | 05 56 13 |
| 05 58 42 | J2015+3710 | 23 49 38 | 50.3 | 268.5 | 3.6 | | 48.9 | -36 | 2896 | No stop |
| 06 00 42 | --- | 23 51 39 | 50.0 | 268.9 | 3.6 | | 48.9 | 84 | 2912 | 05 58 43 |
| 06 00 42 | WR146 | 23 51 39 | 55.7 | 270.3 | 3.3 | | 53.2 | -35 | 2912 | No stop |
| 06 03 12 | --- | 23 54 09 | 55.3 | 270.8 | 3.3 | | 53.2 | 115 | 2931 | 06 00 43 |
| 06 03 52 | J2015+3710 | 23 54 49 | 49.5 | 269.6 | 3.6 | | 49.0 | 4 | 2931 | 06 03 52 |
| 06 05 42 | --- | 23 56 40 | 49.2 | 269.9 | 3.7 | | 49.0 | 110 | 2945 | 06 03 53 |
| 06 05 42 | WR146 | 23 56 40 | 54.9 | 271.3 | 3.3 | | 53.2 | -35 | 2945 | No stop |
| 06 08 12 | --- | 23 59 10 | 54.5 | 271.7 | 3.4 | | 53.2 | 115 | 2964 | 06 05 43 |

Schedule for TORUN (Code Tr)

Page 14

Geometry and Kinematics of colliding-wind binary WR 146

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

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 31 May 2016 Day 152 --- | | | | | | | | | | |
| 06 08 12 | J2015+3710 | 23 59 10 | 48.8 | 270.4 | 3.7 | | 49.0 | -36 | 2964 | No stop |
| 06 10 12 | --- | 00 01 10 | 48.5 | 270.8 | 3.8 | | 48.9 | 84 | 2979 | 06 08 13 |
| 06 10 12 | WR146 | 00 01 10 | 54.2 | 272.1 | 3.4 | | 53.2 | -35 | 2979 | No stop |
| 06 12 42 | --- | 00 03 41 | 53.8 | 272.6 | 3.5 | | 53.1 | 115 | 2999 | 06 10 13 |
| 06 13 22 | J2015+3710 | 00 04 21 | 48.1 | 271.5 | 3.8 | | 48.9 | 4 | 2999 | 06 13 22 |
| 06 15 12 | --- | 00 06 11 | 47.8 | 271.8 | 3.8 | | 48.9 | 110 | 3013 | 06 13 23 |
| 06 15 12 | WR146 | 00 06 11 | 53.5 | 273.1 | 3.5 | | 53.1 | -35 | 3013 | No stop |
| 06 17 42 | --- | 00 08 42 | 53.1 | 273.6 | 3.5 | | 53.1 | 115 | 3032 | 06 15 13 |
| 06 17 42 | J2015+3710 | 00 08 42 | 47.4 | 272.3 | 3.9 | | 48.9 | -36 | 3032 | No stop |
| 06 19 42 | --- | 00 10 42 | 47.1 | 272.7 | 3.9 | | 48.9 | 84 | 3047 | 06 17 43 |
| 06 19 42 | WR146 | 00 10 42 | 52.8 | 273.9 | 3.6 | | 53.0 | -35 | 3047 | No stop |
| 06 22 12 | --- | 00 13 12 | 52.4 | 274.4 | 3.6 | | 53.0 | 115 | 3067 | 06 19 43 |
| 06 22 52 | J2015+3710 | 00 13 52 | 46.6 | 273.3 | 4.0 | | 48.8 | 4 | 3067 | 06 22 52 |
| 06 24 42 | --- | 00 15 43 | 46.4 | 273.7 | 4.0 | | 48.8 | 110 | 3081 | 06 22 53 |
| 06 25 37 | J2007+4029 | 00 16 37 | 47.2 | 278.9 | 4.1 | | 51.3 | 29 | 3081 | 06 25 37 |
| 06 26 57 | --- | 00 18 07 | 47.0 | 279.2 | 4.2 | | 51.3 | 80 | 3091 | 06 25 38 |
| 06 26 57 | WR146 | 00 17 57 | 51.7 | 275.3 | 3.7 | | 52.9 | -31 | 3091 | No stop |
| 06 29 27 | --- | 00 20 28 | 51.3 | 275.7 | 3.7 | | 52.8 | 119 | 3110 | 06 26 58 |
| 06 29 27 | J2007+4029 | 00 20 28 | 46.6 | 279.6 | 4.2 | | 51.2 | -32 | 3110 | No stop |
| 06 31 27 | --- | 00 22 28 | 46.3 | 280.0 | 4.2 | | 51.1 | 88 | 3126 | 06 29 28 |
| 06 31 27 | WR146 | 00 22 28 | 51.0 | 276.1 | 3.8 | | 52.8 | -31 | 3126 | No stop |
| 06 33 57 | --- | 00 24 58 | 50.7 | 276.5 | 3.8 | | 52.7 | 119 | 3145 | 06 31 28 |
| 06 34 37 | J2007+4029 | 00 25 38 | 45.8 | 280.5 | 4.3 | | 51.0 | 8 | 3145 | 06 34 37 |
| 06 36 27 | --- | 00 27 29 | 45.6 | 280.8 | 4.3 | | 50.9 | 110 | 3159 | 06 34 38 |
| 06 36 27 | WR146 | 00 27 29 | 50.3 | 277.0 | 3.9 | | 52.7 | -31 | 3159 | No stop |
| 06 38 57 | --- | 00 29 59 | 49.9 | 277.4 | 3.9 | | 52.6 | 119 | 3178 | 06 36 28 |
| 06 38 57 | J2007+4029 | 00 29 59 | 45.2 | 281.3 | 4.4 | | 50.8 | -32 | 3178 | No stop |
| 06 40 57 | --- | 00 31 59 | 44.9 | 281.6 | 4.4 | | 50.7 | 88 | 3194 | 06 38 58 |
| 06 40 57 | WR146 | 00 31 59 | 49.6 | 277.8 | 3.9 | | 52.5 | -31 | 3194 | No stop |
| 06 43 27 | --- | 00 34 30 | 49.2 | 278.2 | 4.0 | | 52.4 | 119 | 3213 | 06 40 58 |

Schedule for TORUN (Code Tr)

Page 15

Geometry and Kinematics of colliding-wind binary WR 146

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
 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 31 May 2016 Day 152 --- | | | | | | | | | | |
| 06 44 07 | J2007+4029 | 00 35 10 | 44.4 | 282.1 | 4.4 | | 50.6 | 8 | 3213 | 06 44 07 |
| 06 45 57 | --- | 00 37 00 | 44.2 | 282.4 | 4.5 | | 50.5 | 110 | 3227 | 06 44 08 |
| 06 45 57 | WR146 | 00 37 00 | 48.9 | 278.7 | 4.0 | | 52.4 | -31 | 3227 | No stop |
| 06 48 27 | --- | 00 39 31 | 48.5 | 279.1 | 4.1 | | 52.3 | 119 | 3246 | 06 45 58 |
| 06 48 27 | J2007+4029 | 00 39 31 | 43.8 | 282.9 | 4.5 | | 50.4 | -32 | 3246 | No stop |
| 06 50 27 | --- | 00 41 31 | 43.5 | 283.2 | 4.6 | | 50.3 | 88 | 3262 | 06 48 28 |
| 06 50 27 | WR146 | 00 41 31 | 48.2 | 279.4 | 4.1 | | 52.2 | -31 | 3262 | No stop |
| 06 52 57 | --- | 00 44 01 | 47.8 | 279.9 | 4.1 | | 52.1 | 119 | 3281 | 06 50 28 |
| 06 53 37 | J2007+4029 | 00 44 42 | 43.1 | 283.7 | 4.6 | | 50.1 | 8 | 3281 | 06 53 37 |
| 06 55 27 | --- | 00 46 32 | 42.8 | 284.0 | 4.6 | | 50.1 | 110 | 3295 | 06 53 38 |
| 06 55 27 | WR146 | 00 46 32 | 47.5 | 280.3 | 4.2 | | 52.0 | -31 | 3295 | No stop |
| 06 57 57 | --- | 00 49 02 | 47.1 | 280.7 | 4.2 | | 51.9 | 119 | 3314 | 06 55 28 |
| 06 57 57 | J2007+4029 | 00 49 02 | 42.4 | 284.5 | 4.7 | | 49.9 | -32 | 3314 | No stop |
| 06 59 57 | --- | 00 51 03 | 42.1 | 284.8 | 4.7 | | 49.8 | 88 | 3329 | 06 57 58 |
| 06 59 57 | WR146 | 00 51 03 | 46.8 | 281.1 | 4.2 | | 51.8 | -31 | 3329 | No stop |
| 07 02 27 | --- | 00 53 33 | 46.4 | 281.5 | 4.3 | | 51.7 | 119 | 3349 | 06 59 58 |
| 07 03 07 | J2007+4029 | 00 54 13 | 41.7 | 285.3 | 4.8 | | 49.7 | 8 | 3349 | 07 03 07 |
| 07 04 57 | --- | 00 56 03 | 41.4 | 285.6 | 4.8 | | 49.6 | 110 | 3363 | 07 03 08 |
| 07 04 57 | WR146 | 00 56 03 | 46.1 | 281.9 | 4.3 | | 51.6 | -31 | 3363 | No stop |
| 07 07 27 | --- | 00 58 34 | 45.7 | 282.3 | 4.4 | | 51.5 | 119 | 3382 | 07 04 58 |
| 07 07 27 | J2007+4029 | 00 58 34 | 41.0 | 286.0 | 4.8 | | 49.4 | -32 | 3382 | No stop |
| 07 09 27 | --- | 01 00 34 | 40.8 | 286.3 | 4.9 | | 49.3 | 88 | 3397 | 07 07 28 |
| 07 09 27 | WR146 | 01 00 34 | 45.4 | 282.7 | 4.4 | | 51.4 | -31 | 3397 | No stop |
| 07 11 57 | --- | 01 03 05 | 45.0 | 283.1 | 4.4 | | 51.3 | 119 | 3417 | 07 09 28 |
| 07 12 37 | J2007+4029 | 01 03 45 | 40.3 | 286.9 | 4.9 | | 49.1 | 8 | 3417 | 07 12 37 |
| 07 14 27 | --- | 01 05 35 | 40.0 | 287.2 | 5.0 | | 49.0 | 110 | 3431 | 07 12 38 |
| 07 15 17 | J2015+3710 | 01 06 26 | 38.8 | 282.8 | 4.8 | | 47.3 | 27 | 3431 | 07 15 17 |
| 07 16 37 | --- | 01 07 56 | 38.6 | 283.1 | 4.9 | | 47.3 | 80 | 3441 | 07 15 18 |
| 07 16 37 | WR146 | 01 07 46 | 44.3 | 283.9 | 4.5 | | 51.0 | -35 | 3441 | No stop |
| 07 19 07 | --- | 01 10 16 | 44.0 | 284.3 | 4.6 | | 50.9 | 115 | 3460 | 07 16 38 |

Schedule for TORUN (Code Tr)

Page 16

Geometry and Kinematics of colliding-wind binary WR 146

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

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 31 May 2016 Day 152 --- | | | | | | | | | | |
| 07 19 07 | J2015+3710 | 01 10 16 | 38.3 | 283.5 | 4.9 | | 47.2 | -36 | 3460 | No stop |
| 07 21 07 | --- | 01 12 17 | 38.0 | 283.8 | 4.9 | | 47.1 | 84 | 3476 | 07 19 08 |
| 07 21 07 | WR146 | 01 12 17 | 43.7 | 284.6 | 4.6 | | 50.8 | -35 | 3476 | No stop |
| 07 23 37 | --- | 01 14 47 | 43.3 | 285.0 | 4.6 | | 50.7 | 115 | 3495 | 07 21 08 |
| 07 24 17 | J2015+3710 | 01 15 27 | 37.5 | 284.4 | 5.0 | | 46.9 | 4 | 3495 | 07 24 17 |
| 07 26 07 | --- | 01 17 18 | 37.2 | 284.7 | 5.0 | | 46.9 | 110 | 3509 | 07 24 18 |
| 07 26 07 | WR146 | 01 17 18 | 43.0 | 285.4 | 4.7 | | 50.5 | -35 | 3509 | No stop |
| 07 28 37 | --- | 01 19 48 | 42.6 | 285.8 | 4.7 | | 50.4 | 115 | 3528 | 07 26 08 |
| 07 28 37 | J2015+3710 | 01 19 48 | 36.9 | 285.1 | 5.1 | | 46.7 | -36 | 3528 | No stop |
| 07 30 37 | --- | 01 21 48 | 36.6 | 285.4 | 5.1 | | 46.6 | 84 | 3544 | 07 28 38 |
| 07 30 37 | WR146 | 01 21 48 | 42.3 | 286.1 | 4.8 | | 50.3 | -35 | 3544 | No stop |
| 07 33 07 | --- | 01 24 19 | 41.9 | 286.6 | 4.8 | | 50.2 | 115 | 3563 | 07 30 38 |
| 07 33 47 | J2015+3710 | 01 24 59 | 36.1 | 286.0 | 5.1 | | 46.5 | 4 | 3563 | 07 33 47 |
| 07 35 37 | --- | 01 26 49 | 35.9 | 286.3 | 5.2 | | 46.4 | 110 | 3577 | 07 33 48 |
| 07 35 37 | WR146 | 01 26 49 | 41.6 | 287.0 | 4.8 | | 50.0 | -35 | 3577 | No stop |
| 07 38 07 | --- | 01 29 20 | 41.2 | 287.4 | 4.9 | | 49.9 | 115 | 3596 | 07 35 38 |
| 07 38 07 | J2015+3710 | 01 29 20 | 35.5 | 286.7 | 5.2 | | 46.2 | -36 | 3596 | No stop |
| 07 40 07 | --- | 01 31 20 | 35.2 | 287.1 | 5.3 | | 46.1 | 84 | 3612 | 07 38 08 |
| 07 40 07 | WR146 | 01 31 20 | 40.9 | 287.7 | 4.9 | | 49.7 | -35 | 3612 | No stop |
| 07 42 37 | --- | 01 33 50 | 40.6 | 288.1 | 5.0 | | 49.6 | 115 | 3631 | 07 40 08 |
| 07 43 17 | J2015+3710 | 01 34 30 | 34.8 | 287.6 | 5.3 | | 46.0 | 4 | 3631 | 07 43 17 |
| 07 45 07 | --- | 01 36 21 | 34.5 | 287.9 | 5.3 | | 45.9 | 110 | 3645 | 07 43 18 |
| 07 45 07 | WR146 | 01 36 21 | 40.2 | 288.5 | 5.0 | | 49.4 | -35 | 3645 | No stop |
| 07 47 37 | --- | 01 38 51 | 39.9 | 288.9 | 5.0 | | 49.3 | 115 | 3664 | 07 45 08 |
| 07 47 37 | J2015+3710 | 01 38 51 | 34.1 | 288.3 | 5.4 | | 45.7 | -36 | 3664 | No stop |
| 07 49 37 | --- | 01 40 52 | 33.9 | 288.7 | 5.4 | | 45.6 | 84 | 3679 | 07 47 38 |
| 07 49 37 | WR146 | 01 40 52 | 39.6 | 289.2 | 5.1 | | 49.1 | -35 | 3679 | No stop |
| 07 52 07 | --- | 01 43 22 | 39.2 | 289.6 | 5.1 | | 49.0 | 115 | 3699 | 07 49 38 |
| 07 52 47 | J2015+3710 | 01 44 02 | 33.4 | 289.2 | 5.5 | | 45.4 | 4 | 3699 | 07 52 47 |
| 07 54 37 | --- | 01 45 52 | 33.1 | 289.5 | 5.5 | | 45.3 | 110 | 3713 | 07 52 48 |

Schedule for TORUN (Code Tr)

Page 17

Geometry and Kinematics of colliding-wind binary WR 146

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.
 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 31 May 2016 Day 152 --- | | | | | | | | | | |
| 07 54 37 | WR146 | 01 45 52 | 38.9 | 290.0 | 5.2 | | 48.8 | -35 | 3713 | No stop |
| 07 57 07 | --- | 01 48 23 | 38.5 | 290.4 | 5.2 | | 48.7 | 115 | 3732 | 07 54 38 |
| 07 57 07 | J2015+3710 | 01 48 23 | 32.8 | 289.9 | 5.5 | | 45.2 | -36 | 3732 | No stop |
| 07 59 07 | --- | 01 50 23 | 32.5 | 290.3 | 5.6 | | 45.0 | 84 | 3747 | 07 57 08 |
| 07 59 07 | WR146 | 01 50 23 | 38.2 | 290.7 | 5.2 | | 48.5 | -35 | 3747 | No stop |
| 08 01 37 | --- | 01 52 53 | 37.9 | 291.1 | 5.3 | | 48.3 | 115 | 3767 | 07 59 08 |
| 08 02 17 | J2015+3710 | 01 53 34 | 32.1 | 290.8 | 5.6 | | 44.8 | 4 | 3767 | 08 02 17 |
| 08 04 07 | --- | 01 55 24 | 31.8 | 291.1 | 5.7 | | 44.7 | 110 | 3781 | 08 02 18 |
| 08 04 57 | J2007+4029 | 01 56 13 | 33.0 | 295.3 | 5.8 | | 45.6 | 26 | 3781 | 08 04 57 |
| 08 06 17 | --- | 01 57 44 | 32.7 | 295.5 | 5.8 | | 45.5 | 80 | 3791 | 08 04 58 |
| 08 06 17 | WR146 | 01 57 33 | 37.2 | 291.8 | 5.4 | | 48.0 | -30 | 3791 | No stop |
| 08 08 47 | --- | 02 00 04 | 36.9 | 292.2 | 5.4 | | 47.8 | 120 | 3810 | 08 06 18 |
| 08 08 47 | J2007+4029 | 02 00 04 | 32.4 | 295.9 | 5.9 | | 45.3 | -31 | 3810 | No stop |
| 08 10 47 | --- | 02 02 04 | 32.2 | 296.2 | 5.9 | | 45.2 | 89 | 3826 | 08 08 48 |
| 08 10 47 | WR146 | 02 02 04 | 36.6 | 292.6 | 5.4 | | 47.7 | -30 | 3826 | No stop |
| 08 13 17 | --- | 02 04 35 | 36.3 | 293.0 | 5.5 | | 47.5 | 120 | 3845 | 08 10 48 |
| 08 13 57 | J2007+4029 | 02 05 15 | 31.7 | 296.7 | 5.9 | | 44.9 | 9 | 3845 | 08 13 57 |
| 08 15 47 | --- | 02 07 05 | 31.5 | 297.0 | 6.0 | | 44.8 | 110 | 3859 | 08 13 58 |
| 08 15 47 | WR146 | 02 07 05 | 35.9 | 293.3 | 5.5 | | 47.3 | -30 | 3859 | No stop |
| 08 18 17 | --- | 02 09 35 | 35.6 | 293.7 | 5.6 | | 47.2 | 120 | 3878 | 08 15 48 |
| 08 18 17 | J2007+4029 | 02 09 35 | 31.2 | 297.4 | 6.0 | | 44.6 | -31 | 3878 | No stop |
| 08 20 17 | --- | 02 11 36 | 30.9 | 297.7 | 6.1 | | 44.4 | 89 | 3894 | 08 18 18 |
| 08 20 17 | WR146 | 02 11 36 | 35.3 | 294.1 | 5.6 | | 47.0 | -30 | 3894 | No stop |
| 08 22 47 | --- | 02 14 06 | 35.0 | 294.4 | 5.6 | | 46.8 | 120 | 3913 | 08 20 18 |
| 08 23 27 | J2007+4029 | 02 14 46 | 30.5 | 298.2 | 6.1 | | 44.1 | 9 | 3913 | 08 23 27 |
| 08 25 17 | --- | 02 16 37 | 30.2 | 298.5 | 6.1 | | 44.0 | 110 | 3927 | 08 23 28 |
| 08 25 17 | WR146 | 02 16 37 | 34.6 | 294.8 | 5.7 | | 46.6 | -30 | 3927 | No stop |
| 08 27 47 | --- | 02 19 07 | 34.3 | 295.2 | 5.7 | | 46.4 | 120 | 3946 | 08 25 18 |
| 08 27 47 | J2007+4029 | 02 19 07 | 29.9 | 298.9 | 6.2 | | 43.8 | -31 | 3946 | No stop |
| 08 29 47 | --- | 02 21 07 | 29.6 | 299.2 | 6.2 | | 43.6 | 89 | 3962 | 08 27 48 |

Schedule for TORUN (Code Tr)

Page 18

Geometry and Kinematics of colliding-wind binary WR 146

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

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 31 May 2016 Day 152 --- | | | | | | | | | | |
| 08 29 47 | WR146 | 02 21 07 | 34.0 | 295.5 | 5.7 | | 46.3 | -30 | 3962 | No stop |
| 08 32 17 | --- | 02 23 38 | 33.7 | 295.9 | 5.8 | | 46.1 | 120 | 3981 | 08 29 48 |
| 08 32 57 | J2007+4029 | 02 24 18 | 29.2 | 299.7 | 6.3 | | 43.3 | 10 | 3981 | 08 32 57 |
| 08 34 47 | --- | 02 26 08 | 29.0 | 300.0 | 6.3 | | 43.2 | 110 | 3995 | 08 32 58 |
| 08 34 47 | WR146 | 02 26 08 | 33.3 | 296.3 | 5.8 | | 45.9 | -30 | 3995 | No stop |
| 08 37 17 | --- | 02 28 39 | 33.0 | 296.7 | 5.9 | | 45.7 | 120 | 4014 | 08 34 48 |
| 08 37 17 | J2007+4029 | 02 28 39 | 28.6 | 300.4 | 6.3 | | 43.0 | -30 | 4014 | No stop |
| 08 39 17 | --- | 02 30 39 | 28.4 | 300.7 | 6.4 | | 42.8 | 90 | 4029 | 08 37 18 |
| 08 39 17 | WR146 | 02 30 39 | 32.7 | 297.0 | 5.9 | | 45.5 | -30 | 4029 | No stop |
| 08 41 47 | --- | 02 33 09 | 32.4 | 297.4 | 5.9 | | 45.3 | 120 | 4049 | 08 39 18 |
| 08 42 27 | J2007+4029 | 02 33 49 | 28.0 | 301.2 | 6.4 | | 42.5 | 10 | 4049 | 08 42 27 |
| 08 44 17 | --- | 02 35 40 | 27.7 | 301.5 | 6.5 | | 42.4 | 110 | 4063 | 08 42 28 |
| 08 44 17 | WR146 | 02 35 40 | 32.0 | 297.8 | 6.0 | | 45.1 | -30 | 4063 | No stop |
| 08 46 47 | --- | 02 38 10 | 31.7 | 298.2 | 6.0 | | 44.9 | 120 | 4082 | 08 44 18 |
| 08 46 47 | J2007+4029 | 02 38 10 | 27.4 | 301.9 | 6.5 | | 42.1 | -30 | 4082 | No stop |
| 08 48 47 | --- | 02 40 10 | 27.2 | 302.2 | 6.5 | | 41.9 | 90 | 4097 | 08 46 48 |
| 08 48 47 | WR146 | 02 40 10 | 31.4 | 298.5 | 6.1 | | 44.7 | -30 | 4097 | No stop |
| 08 51 17 | --- | 02 42 41 | 31.1 | 298.9 | 6.1 | | 44.5 | 120 | 4117 | 08 48 48 |
| 08 51 57 | J2007+4029 | 02 43 21 | 26.8 | 302.7 | 6.6 | | 41.7 | 10 | 4117 | 08 51 57 |
| 08 53 47 | --- | 02 45 11 | 26.5 | 303.0 | 6.6 | | 41.5 | 110 | 4131 | 08 51 58 |
| 08 56 19 | J2212+2355 | 02 47 44 | 31.6 | 268.6 | 4.6 | | 41.1 | 68 | 4131 | 08 56 19 |
| 08 59 09 | =2209+236 | 02 50 44 | 31.2 | 269.2 | 4.6 | | 41.1 | 170 | 4153 | 08 56 20 |

SETUP FILE INFORMATION:

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

==== Setup file: sess216.C1024

| | | |
|------------------------|--------------------|----------------------|
| Setup group: 6 | Station: TORUN | Total bit rate: 1024 |
| Format: MARK5B | Bits per sample: 2 | Sample rate: 32.000 |
| Number of channels: 16 | DBE type: DBBC_DDC | Speedup factor: 1.00 |

Disk used to record data.

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

The following frequency sets based on these setups were used.

Frequency Set: 8 Setup file default. Used with PCAL = off

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

Matching frequency sets: 8

Track assignments are:

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

POSITIONS OF SOURCES USED IN RECORDING SCANS

| Source | Source position (RA/Dec) (B1950) | (J2000) | (Date) | Error (mas) |
|--------------|--|-------------------|-----------------|----------------|
| * WR146 | 20 33 59.067204 | * 20 35 47.080001 | 20 36 23.613167 | 0.00 |
| | 41 12 17.81638 | * 41 22 44.60002 | 41 26 04.48315 | 0.00 |
| * J2015+3710 | 20 13 37.014508 | * 20 15 28.729794 | 20 16 06.452899 | 0.00 |
| | 37 01 44.45892 | * 37 10 59.51480 | 37 13 58.05203 | 0.00 |
| * J2007+4029 | 20 05 59.558892 | * 20 07 44.944843 | 20 08 20.712065 | 0.00 |
| | 40 21 01.80237 | * 40 29 48.60422 | 40 32 37.69557 | 0.00 |
| 1954+513 | 19 54 22.470020 | * 19 55 42.738250 | 19 56 10.715708 | 0.02 |
| * J1955+5131 | 51 23 46.42518 | * 51 31 48.54619 | 51 34 21.86139 | 0.01 |
| J1955+51 | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc | | | |
| | GSFC 2015a astro solution, unpublished 4136 observations. | | | |
| 2000+472 | 20 00 39.216060 | * 20 02 10.418245 | 20 02 41.783686 | 0.01 |
| * J2002+4725 | 47 17 02.42459 | * 47 25 28.77380 | 47 28 10.25656 | 0.00 |
| J2002+47 | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc | | | |
| | GSFC 2015a astro solution, unpublished 34118 observations. | | | |
| 2209+236 | 22 09 45.687920 | * 22 12 05.966315 | 22 12 52.213541 | 0.00 |
| * J2212+2355 | 23 40 49.85188 | * 23 55 40.54382 | 24 00 25.88541 | 0.01 |
| J2212+23 | /home/guest/rmc/SCHED/sched11.4/catalogs/sources.gsfc | | | |
| | GSFC 2015a astro solution, unpublished 20356 observations. | | | |

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