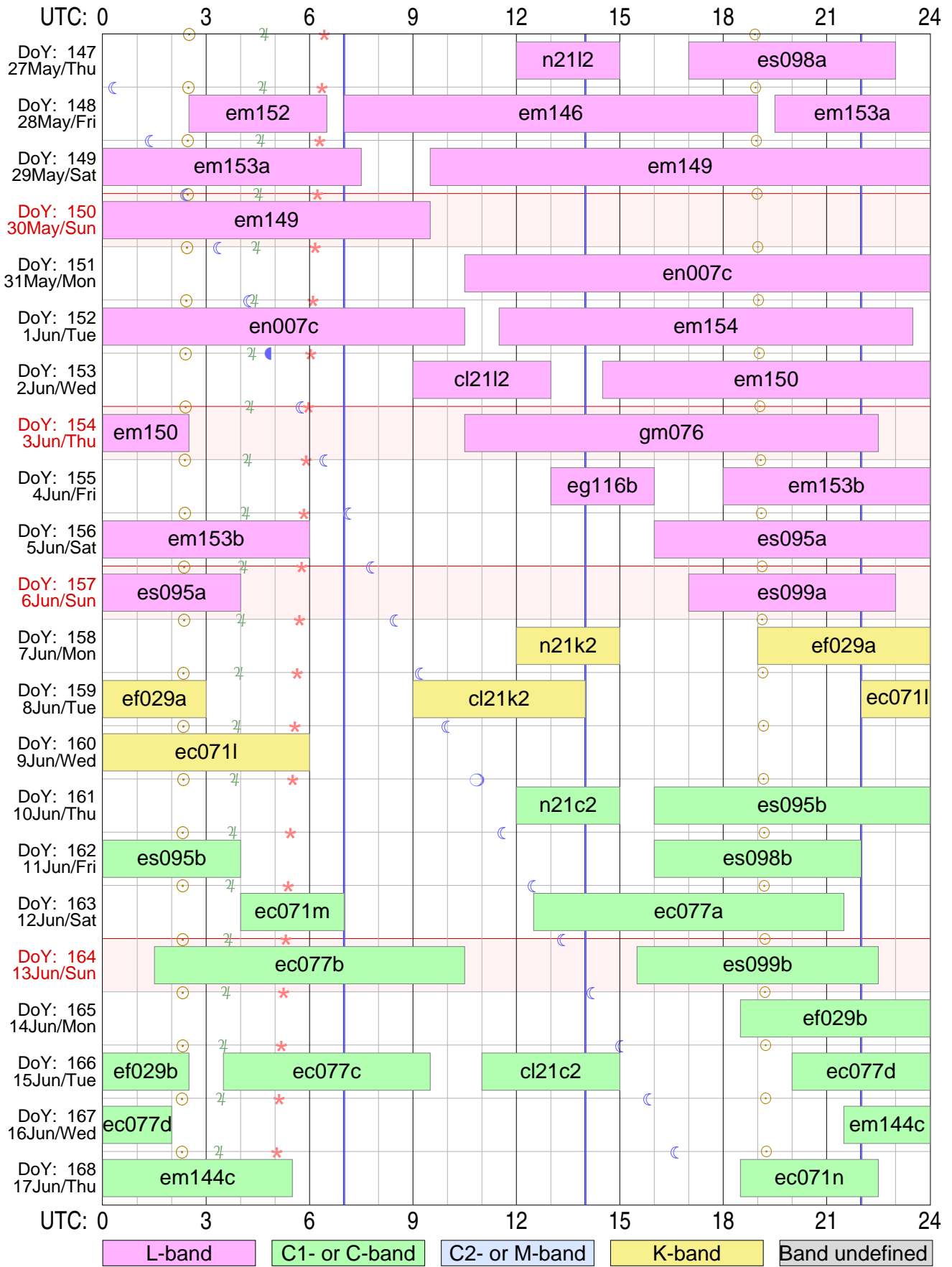


# Tr VLBI plan for May/June 2021



Strona zostawiona celowo pusta

# EVN Experiments

## May 2021

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

1	27.05	3.0	n2112	L
2	27.05	6.0	es098a	L
3	28.05	4.0	em152	L
4	28.05	12.0	em146	L
5	28.05	4.5	em153a	L
6	29.05	14.5	em149	L
7	31.05	13.5	en007c	L
8	1.06	12.0	em154	L
9	2.06	4.0	c12112	L
10	2.06	9.5	em150	L
11	3.06	12.0	gm076	L
12	4.06	3.0	eg116b	L
13	4.06	6.0	em153b	L
14	5.06	8.0	es095a	L
15	6.06	6.0	es099a	L
16	7.06	3.0	n21k2	K
17	7.06	5.0	ef029a	K
18	8.06	5.0	c121k2	K
19	8.06	2.0	ec071l	K
20	10.06	3.0	n21c2	C
21	10.06	8.0	es095b	C
22	11.06	6.0	es098b	C
23	12.06	3.0	ec071m	C
24	12.06	9.0	ec077a	C
25	13.06	9.0	ec077b	C
26	13.06	7.0	es099b	C
27	14.06	5.5	ef029b	C
28	15.06	6.0	ec077c	C
29	15.06	4.0	c121c2	C
30	15.06	4.0	ec077d	C
31	16.06	2.5	em144c	C
32	17.06	4.0	ec071n	C

Summer time (DST): Mar 28 to Oct 31, 2021

Total observing time: 267.0 hours in 32 experiments

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

<http://paulo.astro.uni.torun.pl/~pw/VLBI/schedules/may21.pdf>

n2112tr

NETWORK MONITORING EXPERIMENT

PI: Benito Marcote

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 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 27 May 2021 Day 147 ---										
Next scan frequencies:		1626.49	1626.49	1626.49	1626.49	1690.49	1690.49	1690.49	1690.49	1690.49
Next BBC frequencies:		673.51	673.51	673.51	673.51	609.51	609.51	609.51	609.51	609.51
Next scan bandwidths:		32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
12 00 00	J0956+2515	05 35 19	34.3	93.0	-4.4	-41.5	0	0	12 00 00	
12 02 00	=0K290	05 37 20	34.6	93.4	-4.3	-41.5	120	15	12 00 01	
12 07 00	J0956+2515	05 42 20	35.4	94.4	-4.3	-41.4	293	15	12 07 00	
12 12 00	=0K290	05 47 21	36.1	95.5	-4.2	-41.3	300	54	12 07 01	
12 15 00	J0956+2515	05 50 22	36.6	96.1	-4.1	-41.3	173	54	12 15 00	
12 27 00	=0K290	06 02 24	38.4	98.7	-3.9	-41.0	720	147	12 15 01	
12 30 00	J0956+2515	06 05 24	38.8	99.4	-3.9	-40.9	173	147	12 30 00	
12 42 00	=0K290	06 17 26	40.6	102.0	-3.7	-40.5	720	240	12 30 01	
12 45 00	J0956+2515	06 20 27	41.0	102.7	-3.6	-40.3	173	240	12 45 00	
12 57 00	=0K290	06 32 29	42.8	105.5	-3.4	-39.7	720	332	12 45 01	
13 00 00	J0956+2515	06 35 29	43.2	106.2	-3.4	-39.6	173	332	13 00 00	
13 12 00	=0K290	06 47 31	44.9	109.2	-3.2	-38.8	720	425	13 00 01	
13 15 00	J0956+2515	06 50 32	45.4	109.9	-3.1	-38.6	173	425	13 15 00	
13 27 00	=0K290	07 02 34	47.0	113.0	-2.9	-37.6	720	518	13 15 01	
13 30 00	J0956+2515	07 05 34	47.4	113.8	-2.9	-37.4	173	518	13 30 00	
13 42 00	=0K290	07 17 36	49.1	117.1	-2.7	-36.2	720	611	13 30 01	
13 45 00	J0956+2515	07 20 36	49.5	117.9	-2.6	-35.9	173	611	13 45 00	
13 57 00	=0K290	07 32 38	51.1	121.4	-2.4	-34.5	720	703	13 45 01	
14 00 00	J0956+2515	07 35 39	51.4	122.3	-2.4	-34.1	173	703	14 00 00	
14 12 00	=0K290	07 47 41	52.9	126.0	-2.2	-32.4	720	796	14 00 01	
14 15 00	J0956+2515	07 50 41	53.3	127.0	-2.1	-32.0	173	796	14 15 00	
14 27 00	=0K290	08 02 43	54.7	131.0	-1.9	-30.1	720	889	14 15 01	
14 30 00	J0956+2515	08 05 44	55.0	132.0	-1.9	-29.5	173	889	14 30 00	
14 42 00	=0K290	08 17 46	56.3	136.2	-1.7	-27.3	720	982	14 30 01	
14 45 00	J0956+2515	08 20 46	56.6	137.3	-1.6	-26.7	173	982	14 45 00	
14 57 00	=0K290	08 32 48	57.8	141.9	-1.4	-24.2	720	1074	14 45 01	
14 58 00	J0956+2515	08 33 48	57.9	142.3	-1.4	-24.0	53	1074	14 58 00	

15 00 00 =OK290            08 35 49 58.1 143.1 -1.4        -23.5 120        1090 14 58 01

SETUP FILE INFORMATION:

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

=====  
Setup file: sess221.L1024

Setup group: 11	Station: TORUN	Total bit rate: 1024
Format: VDIF	Bits per sample: 2	Sample rate: 64.000
Number of channels: 8	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
Net SB=	L	L	U	U	L	L	U	U
IF SB =	L	L	L	L	L	L	L	L
Pol. =	RCP	LCP	RCP	LCP	RCP	LCP	RCP	LCP
BBC =	1	9	1	9	2	10	2	10
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: 9 Setup file default. Used with PCAL = off  
 LO sum= 1626.49 1626.49 1626.49 1626.49 1690.49 1690.49 1690.49 1690.49  
 BBC fr= 673.51 673.51 673.51 673.51 609.51 609.51 609.51 609.51  
 Bandwd= 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00  
 Matching frequency sets: 9

Track assignments are:

track1= 1, 2, 3, 4, 5, 6, 7, 8  
 barrel=roll\_off

#### POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
OK290	09 53 59.738482	* 09 56 49.875376	09 58 01.250003	0.41
* J0956+2515	25 29 33.58581	* 25 15 16.04991	25 09 19.59708	0.37
0953+254	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
J0956+25	GSFC 2016a X/S astro solution, 26975 observations.			

es098atr

ES098A  
PI: Shu, Xinwen

Address: Department of Physics

Observing mode: evn

Schedule for TORUN (Code Tr )

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ES098A

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 27 May 2021 Day 147 ---										
Next scan frequencies:		1626.49	1626.49	1626.49	1626.49	1626.49	1690.49	1690.49	1690.49	1690.49
Next BBC frequencies:		673.51	673.51	673.51	673.51	673.51	609.51	609.51	609.51	609.51
Next scan bandwidths:		32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
-----										
17 00 00	3C286	10 36 09	51.0	107.8	-2.9		-41.5	0	0	17 00 00
17 04 00	---	10 40 09	51.6	108.8	-2.9		-41.2	240	31	17 00 01
17 05 00	J1547+2052	10 41 09	24.3	87.3	-5.1		-39.9	-56	31	17 05 00
17 06 50	=1545+210	10 43 00	24.6	87.6	-5.1		-39.9	54	45	17 05 01
17 07 20	J1545+2006	10 43 30	24.4	88.7	-5.1		-39.7	16	45	17 07 20
17 09 20	=1543+202	10 45 30	24.7	89.1	-5.0		-39.7	120	61	17 07 21
17 09 20	J1547+2052	10 45 30	24.9	88.1	-5.1		-39.9	-14	61	No stop
17 10 50	=1545+210	10 47 00	25.2	88.4	-5.0		-40.0	76	72	17 09 21
17 10 50	J1548	10 47 00	26.0	87.3	-5.0		-40.3	-16	72	No stop
17 14 20	---	10 50 31	26.5	88.0	-5.0		-40.4	194	99	17 10 51
17 14 50	J1547+2052	10 51 01	25.8	89.2	-5.0		-40.0	15	99	17 14 50
17 16 20	=1545+210	10 52 31	26.0	89.5	-4.9		-40.0	90	111	17 14 51
17 16 20	J1548	10 52 31	26.8	88.4	-5.0		-40.4	-16	111	No stop
17 19 50	---	10 56 02	27.3	89.1	-4.9		-40.4	194	138	17 16 21
17 19 50	J1547+2052	10 56 02	26.5	90.2	-4.9		-40.0	-15	138	No stop
17 21 20	=1545+210	10 57 32	26.8	90.5	-4.9		-40.0	75	149	17 19 51
17 21 20	J1548	10 57 32	27.6	89.4	-4.9		-40.4	-16	149	No stop
17 24 50	---	11 01 03	28.1	90.1	-4.8		-40.4	194	176	17 21 21
17 25 20	J1547+2052	11 01 33	27.4	91.3	-4.8		-40.0	15	176	17 25 20
17 26 50	=1545+210	11 03 03	27.6	91.6	-4.8		-40.0	90	188	17 25 21
17 26 50	J1548	11 03 03	28.4	90.5	-4.8		-40.4	-16	188	No stop
17 30 20	---	11 06 34	28.9	91.2	-4.7		-40.4	194	215	17 26 51
17 30 20	J1547+2052	11 06 34	28.1	92.3	-4.7		-39.9	-15	215	No stop
17 31 50	=1545+210	11 08 04	28.3	92.6	-4.7		-39.9	75	227	17 30 21

Schedule for TORUN (Code Tr )

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ES098A

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 27 May 2021	Day 147					---				
17 32 20	J1545+2006	11 08 34	28.1	93.7	-4.6		-39.6	16	227	17 32 20	
17 34 20	=1543+202	11 10 34	28.4	94.1	-4.6		-39.6	120	242	17 32 21	
17 34 20	J1547+2052	11 10 34	28.7	93.1	-4.6		-39.9	-14	242	No stop	
17 35 50	=1545+210	11 12 04	28.9	93.5	-4.6		-39.9	76	254	17 34 21	
17 35 50	J1548	11 12 04	29.8	92.3	-4.6		-40.3	-16	254	No stop	
17 39 20	---	11 15 35	30.3	93.0	-4.6		-40.3	194	281	17 35 51	
17 39 50	J1547+2052	11 16 05	29.5	94.3	-4.5		-39.8	15	281	17 39 50	
17 41 20	=1545+210	11 17 35	29.8	94.6	-4.5		-39.8	90	292	17 39 51	
17 41 20	J1548	11 17 35	30.6	93.4	-4.5		-40.3	-16	292	No stop	
17 44 50	---	11 21 06	31.1	94.2	-4.5		-40.3	194	319	17 41 21	
17 44 50	J1547+2052	11 21 06	30.3	95.3	-4.5		-39.8	-15	319	No stop	
17 46 20	=1545+210	11 22 36	30.5	95.6	-4.4		-39.7	75	331	17 44 51	
17 46 20	J1548	11 22 36	31.3	94.5	-4.5		-40.2	-16	331	No stop	
17 49 50	---	11 26 07	31.9	95.2	-4.4		-40.2	194	358	17 46 21	
17 50 20	J1547+2052	11 26 37	31.1	96.5	-4.4		-39.7	15	358	17 50 20	
17 51 50	=1545+210	11 28 07	31.3	96.8	-4.3		-39.6	90	370	17 50 21	
17 51 50	J1548	11 28 07	32.2	95.6	-4.4		-40.2	-16	370	No stop	
17 55 20	---	11 31 38	32.7	96.4	-4.3		-40.1	194	397	17 51 51	
17 55 20	J1547+2052	11 31 38	31.9	97.5	-4.3		-39.6	-15	397	No stop	
17 56 50	=1545+210	11 33 08	32.1	97.8	-4.3		-39.5	75	408	17 55 21	
17 57 20	J1545+2006	11 33 38	31.9	99.0	-4.2		-39.2	16	408	17 57 20	
17 59 20	=1543+202	11 35 38	32.2	99.4	-4.2		-39.1	120	424	17 57 21	
17 59 20	J1547+2052	11 35 38	32.5	98.4	-4.2		-39.5	-14	424	No stop	
18 00 50	=1545+210	11 37 09	32.7	98.7	-4.2		-39.4	76	435	17 59 21	
18 00 50	J1548	11 37 09	33.5	97.5	-4.2		-40.0	-16	435	No stop	
18 04 20	---	11 40 39	34.0	98.3	-4.2		-39.9	194	462	18 00 51	
18 04 50	J1547+2052	11 41 09	33.3	99.6	-4.1		-39.3	15	462	18 04 50	
18 06 20	=1545+210	11 42 39	33.5	99.9	-4.1		-39.3	90	474	18 04 51	
18 06 20	J1548	11 42 39	34.3	98.7	-4.1		-39.8	-16	474	No stop	
18 09 50	---	11 46 10	34.8	99.5	-4.1		-39.7	194	501	18 06 21	
18 09 50	J1547+2052	11 46 10	34.0	100.7	-4.0		-39.1	-15	501	No stop	
18 11 20	=1545+210	11 47 40	34.2	101.0	-4.0		-39.1	75	513	18 09 51	
18 11 20	J1548	11 47 40	35.1	99.8	-4.0		-39.7	-16	513	No stop	
18 14 50	---	11 51 11	35.6	100.6	-4.0		-39.6	194	540	18 11 21	



Schedule for TORUN (Code Tr )

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ES098A

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 27 May 2021 Day 147 ---										
18 15 20	J1547+2052	11 51 41	34.8	101.9	-3.9		-38.9	15	540	18 15 20
18 16 50	=1545+210	11 53 11	35.0	102.2	-3.9		-38.9	90	551	18 15 21
18 16 50	J1548	11 53 11	35.9	101.0	-3.9		-39.5	-16	551	No stop
18 20 20	---	11 56 42	36.4	101.8	-3.9		-39.4	194	578	18 16 51
18 20 20	J1547+2052	11 56 42	35.6	103.0	-3.9		-38.8	-15	578	No stop
18 21 50	=1545+210	11 58 12	35.8	103.3	-3.8		-38.7	75	590	18 20 21
18 22 20	J1545+2006	11 58 42	35.6	104.5	-3.8		-38.2	16	590	18 22 20
18 24 20	=1543+202	12 00 42	35.9	105.0	-3.8		-38.1	120	605	18 22 21
18 24 20	J1547+2052	12 00 42	36.1	103.9	-3.8		-38.6	-14	605	No stop
18 25 50	=1545+210	12 02 13	36.4	104.2	-3.8		-38.5	76	617	18 24 21
18 25 50	J1548	12 02 13	37.2	103.0	-3.8		-39.1	-16	617	No stop
18 29 20	---	12 05 43	37.7	103.8	-3.7		-39.0	194	644	18 25 51
18 29 50	J1547+2052	12 06 13	36.9	105.1	-3.7		-38.3	15	644	18 29 50
18 31 20	=1545+210	12 07 44	37.2	105.5	-3.7		-38.2	90	656	18 29 51
18 31 20	J1548	12 07 44	38.0	104.3	-3.7		-38.9	-16	656	No stop
18 34 50	---	12 11 14	38.5	105.1	-3.6		-38.7	194	683	18 31 21
18 34 50	J1547+2052	12 11 14	37.7	106.3	-3.6		-38.1	-15	683	No stop
18 36 20	=1545+210	12 12 44	37.9	106.7	-3.6		-38.0	75	694	18 34 51
18 36 20	J1548	12 12 44	38.7	105.4	-3.6		-38.7	-16	694	No stop
18 39 50	---	12 16 15	39.2	106.2	-3.6		-38.5	194	721	18 36 21
18 40 20	J1547+2052	12 16 45	38.5	107.6	-3.5		-37.8	14	721	18 40 20
18 41 50	=1545+210	12 18 15	38.7	108.0	-3.5		-37.7	90	733	18 40 21
18 41 50	J1548	12 18 15	39.5	106.7	-3.5		-38.4	-16	733	No stop
18 45 20	---	12 21 46	40.0	107.5	-3.5		-38.2	194	760	18 41 51
18 45 20	J1547+2052	12 21 46	39.2	108.8	-3.4		-37.5	-16	760	No stop
18 46 50	=1545+210	12 23 16	39.4	109.2	-3.4		-37.4	74	772	18 45 21
18 47 20	J1545+2006	12 23 46	39.2	110.4	-3.4		-36.8	15	772	18 47 20
18 49 20	=1543+202	12 25 46	39.4	110.9	-3.3		-36.7	120	787	18 47 21
18 49 20	J1547+2052	12 25 46	39.7	109.8	-3.4		-37.2	-14	787	No stop
18 50 50	=1545+210	12 27 17	40.0	110.1	-3.4		-37.1	76	799	18 49 21

Schedule for TORUN (Code Tr )

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ES098A

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

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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 27 May 2021 Day 147 ---										
18 50 50	J1548	12 27 17	40.8	108.9	-3.4		-37.8	-16	799	No stop
18 54 20	---	12 30 47	41.3	109.7	-3.3		-37.6	194	826	18 50 51
18 54 50	J1547+2052	12 31 17	40.5	111.1	-3.3		-36.8	14	826	18 54 50
18 56 20	=1545+210	12 32 48	40.7	111.5	-3.3		-36.7	90	837	18 54 51
18 56 20	J1548	12 32 48	41.6	110.2	-3.3		-37.4	-16	837	No stop
18 59 50	---	12 36 18	42.1	111.1	-3.2		-37.2	194	864	18 56 21
18 59 50	J1547+2052	12 36 18	41.2	112.3	-3.2		-36.5	-16	864	No stop
19 01 20	=1545+210	12 37 48	41.4	112.7	-3.2		-36.3	74	876	18 59 51
19 01 20	J1548	12 37 48	42.3	111.5	-3.2		-37.1	-16	876	No stop
19 04 50	---	12 41 19	42.8	112.3	-3.1		-36.8	194	903	19 01 21
19 05 20	J1547+2052	12 41 49	42.0	113.7	-3.1		-36.0	14	903	19 05 20
19 06 50	=1545+210	12 43 19	42.2	114.1	-3.1		-35.9	90	915	19 05 21
19 06 50	J1548	12 43 19	43.1	112.8	-3.1		-36.7	-16	915	No stop
19 10 20	---	12 46 50	43.6	113.7	-3.0		-36.4	194	942	19 06 51
19 10 20	J1547+2052	12 46 50	42.7	115.0	-3.0		-35.6	-16	942	No stop
19 11 50	=1545+210	12 48 20	42.9	115.4	-3.0		-35.5	74	953	19 10 21
19 12 20	J1545+2006	12 48 50	42.6	116.7	-3.0		-34.8	15	953	19 12 20
19 14 20	=1543+202	12 50 51	42.9	117.2	-2.9		-34.6	120	969	19 12 21
19 14 20	J1547+2052	12 50 51	43.2	116.1	-3.0		-35.2	-14	969	No stop
19 15 50	=1545+210	12 52 21	43.4	116.5	-2.9		-35.1	76	980	19 14 21
19 15 50	J1548	12 52 21	44.3	115.2	-3.0		-35.9	-16	980	No stop
19 19 20	---	12 55 51	44.8	116.1	-2.9		-35.6	194	1007	19 15 51
19 19 50	J1547+2052	12 56 21	43.9	117.5	-2.9		-34.7	14	1007	19 19 50
19 21 20	=1545+210	12 57 52	44.1	117.9	-2.8		-34.6	90	1019	19 19 51
19 21 20	J1548	12 57 52	45.1	116.6	-2.9		-35.4	-16	1019	No stop
19 24 50	---	13 01 22	45.5	117.6	-2.8		-35.1	194	1046	19 21 21
19 24 50	J1547+2052	13 01 22	44.6	118.9	-2.8		-34.2	-16	1046	No stop
19 26 20	=1545+210	13 02 53	44.8	119.3	-2.8		-34.1	74	1058	19 24 51
19 26 20	J1548	13 02 53	45.7	118.0	-2.8		-34.9	-16	1058	No stop
19 29 50	---	13 06 23	46.2	119.0	-2.7		-34.5	194	1085	19 26 21

Schedule for TORUN (Code Tr )  
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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
-----										
--- Thu 27 May 2021 Day 147 ---										
19 30 20	J1547+2052	13 06 53	45.3	120.4	-2.7		-33.7	14	1085	19 30 20
19 31 50	=1545+210	13 08 23	45.5	120.8	-2.7		-33.5	90	1096	19 30 21
19 31 50	J1548	13 08 23	46.5	119.5	-2.7		-34.3	-16	1096	No stop
19 35 20	---	13 11 54	46.9	120.5	-2.6		-33.9	194	1123	19 31 51
19 35 20	J1547+2052	13 11 54	46.0	121.8	-2.6		-33.1	-16	1123	No stop
19 36 50	=1545+210	13 13 24	46.2	122.2	-2.6		-32.9	74	1135	19 35 21
19 37 20	J1545+2006	13 13 54	45.9	123.5	-2.5		-32.2	15	1135	19 37 20
19 39 20	=1543+202	13 15 55	46.1	124.1	-2.5		-31.9	120	1150	19 37 21
19 39 20	J1547+2052	13 15 55	46.5	122.9	-2.5		-32.6	-15	1150	No stop
19 40 50	=1545+210	13 17 25	46.7	123.4	-2.5		-32.5	75	1162	19 39 21
19 40 50	J1548	13 17 25	47.6	122.1	-2.5		-33.3	-16	1162	No stop
19 44 20	---	13 20 56	48.1	123.1	-2.5		-32.9	194	1189	19 40 51
19 44 50	J1547+2052	13 21 26	47.2	124.5	-2.5		-32.0	14	1189	19 44 50
19 46 20	=1545+210	13 22 56	47.4	125.0	-2.4		-31.8	90	1201	19 44 51
19 46 20	J1548	13 22 56	48.3	123.7	-2.4		-32.6	-16	1201	No stop
19 49 50	---	13 26 26	48.7	124.7	-2.4		-32.2	194	1228	19 46 21
19 49 50	J1547+2052	13 26 26	47.8	126.0	-2.4		-31.3	-16	1228	No stop
19 51 20	=1545+210	13 27 57	48.0	126.4	-2.3		-31.1	74	1239	19 49 51
19 51 20	J1548	13 27 57	48.9	125.1	-2.4		-32.0	-16	1239	No stop
19 54 50	---	13 31 27	49.4	126.2	-2.3		-31.5	194	1266	19 51 21
19 55 20	J1547+2052	13 31 57	48.5	127.6	-2.3		-30.6	14	1266	19 55 20
19 56 50	=1545+210	13 33 28	48.6	128.1	-2.3		-30.4	90	1278	19 55 21
19 56 50	J1548	13 33 28	49.6	126.8	-2.3		-31.3	-17	1278	No stop
20 00 20	---	13 36 58	50.0	127.9	-2.2		-30.8	193	1305	19 56 51
20 00 20	J1547+2052	13 36 58	49.0	129.2	-2.2		-29.9	-16	1305	No stop
20 01 50	=1545+210	13 38 28	49.2	129.6	-2.2		-29.6	74	1317	20 00 21
20 03 20	3C345	13 39 59	56.4	94.5	-3.1		-51.2	5	1317	20 03 20
20 07 20	---	13 43 59	57.0	95.4	-3.0		-51.1	240	1347	20 03 21
20 08 50	J1547+2052	13 45 30	50.0	131.9	-2.1		-28.6	2	1347	20 08 50
20 10 40	=1545+210	13 47 20	50.2	132.4	-2.0		-28.3	110	1362	20 08 51

Schedule for TORUN (Code Tr )

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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
-----										
--- Thu 27 May 2021 Day 147 ---										
20 11 10	J1545+2006	13 47 50	49.8	133.9	-2.0		-27.4	15	1362	20 11 10
20 13 10	=1543+202	13 49 50	50.1	134.5	-1.9		-27.1	120	1377	20 11 11
20 13 10	J1547+2052	13 49 50	50.5	133.3	-2.0		-27.9	-15	1377	No stop
20 14 40	=1545+210	13 51 20	50.7	133.7	-2.0		-27.6	75	1389	20 13 11
20 14 40	J1548	13 51 20	51.7	132.5	-2.0		-28.6	-17	1389	No stop
20 18 10	---	13 54 51	52.1	133.6	-1.9		-28.0	193	1416	20 14 41
20 18 40	J1547+2052	13 55 21	51.1	135.1	-1.9		-27.0	13	1416	20 18 40
20 20 10	=1545+210	13 56 51	51.2	135.6	-1.9		-26.7	90	1427	20 18 41
20 20 10	J1548	13 56 51	52.3	134.3	-1.9		-27.6	-17	1427	No stop
20 23 40	---	14 00 22	52.6	135.5	-1.8		-27.0	193	1454	20 20 11
20 23 40	J1547+2052	14 00 22	51.6	136.7	-1.8		-26.1	-17	1454	No stop
20 25 10	=1545+210	14 01 52	51.8	137.3	-1.8		-25.8	73	1466	20 23 41
20 25 10	J1548	14 01 52	52.8	136.0	-1.8		-26.8	-17	1466	No stop
20 28 40	---	14 05 23	53.2	137.2	-1.7		-26.1	193	1493	20 25 11
20 29 10	J1547+2052	14 05 53	52.2	138.6	-1.7		-25.1	13	1493	20 29 10
20 30 40	=1545+210	14 07 23	52.3	139.1	-1.7		-24.8	90	1505	20 29 11
20 30 40	J1548	14 07 23	53.4	137.9	-1.7		-25.7	-17	1505	No stop
20 34 10	---	14 10 54	53.7	139.1	-1.6		-25.1	193	1532	20 30 41
20 34 10	J1547+2052	14 10 54	52.7	140.4	-1.6		-24.2	-17	1532	No stop
20 35 40	=1545+210	14 12 24	52.8	140.9	-1.6		-23.9	73	1543	20 34 11
20 36 10	J1545+2006	14 12 54	52.4	142.3	-1.6		-23.0	15	1543	20 36 10
20 38 10	=1543+202	14 14 54	52.5	143.1	-1.5		-22.6	120	1559	20 36 11
20 38 10	J1547+2052	14 14 54	53.0	141.8	-1.6		-23.4	-15	1559	No stop
20 39 40	=1545+210	14 16 25	53.2	142.3	-1.5		-23.1	75	1570	20 38 11
20 39 40	J1548	14 16 25	54.2	141.1	-1.6		-24.0	-17	1570	No stop
20 43 10	---	14 19 55	54.6	142.4	-1.5		-23.3	193	1597	20 39 41
20 43 40	J1547+2052	14 20 25	53.5	143.8	-1.5		-22.3	13	1597	20 43 40
20 45 10	=1545+210	14 21 56	53.7	144.3	-1.4		-22.0	90	1609	20 43 41
20 45 10	J1548	14 21 56	54.8	143.1	-1.5		-22.9	-17	1609	No stop
20 48 40	---	14 25 26	55.1	144.4	-1.4		-22.1	193	1636	20 45 11

Schedule for TORUN (Code Tr )  
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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
-----										
--- Thu 27 May 2021 Day 147 ---										
20 48 40	J1547+2052	14 25 26	54.0	145.6	-1.4		-21.3	-17	1636	No stop
20 50 10	=1545+210	14 26 56	54.1	146.2	-1.4		-20.9	73	1648	20 48 41
20 50 10	J1548	14 26 56	55.2	145.0	-1.4		-21.8	-17	1648	No stop
20 53 40	---	14 30 27	55.5	146.3	-1.3		-21.0	193	1675	20 50 11
20 54 10	J1547+2052	14 30 57	54.4	147.7	-1.3		-20.1	13	1675	20 54 10
20 55 40	=1545+210	14 32 27	54.5	148.3	-1.3		-19.8	90	1686	20 54 11
20 55 40	J1548	14 32 27	55.7	147.1	-1.3		-20.6	-17	1686	No stop
20 59 10	---	14 35 58	55.9	148.5	-1.2		-19.8	193	1713	20 55 41
20 59 10	J1547+2052	14 35 58	54.8	149.6	-1.2		-19.0	-17	1713	No stop
21 00 40	=1545+210	14 37 28	54.9	150.2	-1.2		-18.6	73	1725	20 59 11
21 01 10	J1545+2006	14 37 58	54.4	151.6	-1.1		-17.7	15	1725	21 01 10
21 03 10	=1543+202	14 39 58	54.5	152.4	-1.1		-17.2	120	1740	21 01 11
21 03 10	J1547+2052	14 39 58	55.1	151.1	-1.1		-18.1	-15	1740	No stop
21 04 40	=1545+210	14 41 29	55.2	151.7	-1.1		-17.7	75	1752	21 03 11
21 04 40	J1548	14 41 29	56.4	150.6	-1.1		-18.5	-17	1752	No stop
21 08 10	---	14 44 59	56.6	152.0	-1.1		-17.7	193	1779	21 04 41
21 08 40	J1547+2052	14 45 29	55.5	153.3	-1.1		-16.8	13	1779	21 08 40
21 10 10	=1545+210	14 47 00	55.6	153.9	-1.0		-16.4	90	1791	21 08 41
21 10 10	J1548	14 47 00	56.8	152.8	-1.0		-17.2	-17	1791	No stop
21 13 40	---	14 50 30	57.0	154.3	-1.0		-16.3	193	1818	21 10 11
21 13 40	J1547+2052	14 50 30	55.8	155.3	-1.0		-15.6	-17	1818	No stop
21 15 10	=1545+210	14 52 00	55.9	155.9	-0.9		-15.2	73	1829	21 13 41
21 15 10	J1548	14 52 00	57.1	154.9	-1.0		-16.0	-17	1829	No stop
21 18 40	---	14 55 31	57.3	156.3	-0.9		-15.1	193	1856	21 15 11
21 19 10	J1547+2052	14 56 01	56.2	157.5	-0.9		-14.2	13	1856	21 19 10
21 20 40	=1545+210	14 57 31	56.2	158.1	-0.9		-13.8	90	1868	21 19 11
21 20 40	J1548	14 57 31	57.4	157.2	-0.9		-14.6	-18	1868	No stop
21 24 10	---	15 01 02	57.6	158.6	-0.8		-13.7	192	1895	21 20 41
21 24 10	J1547+2052	15 01 02	56.4	159.6	-0.8		-13.0	-17	1895	No stop
21 25 40	=1545+210	15 02 32	56.5	160.2	-0.8		-12.6	73	1907	21 24 11

Schedule for TORUN (Code Tr )  
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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
-----										
--- Thu 27 May 2021 Day 147 ---										
21 26 10	J1545+2006	15 03 02	55.9	161.6	-0.7		-11.7	15	1907	21 26 10
21 28 10	=1543+202	15 05 03	56.0	162.4	-0.7		-11.1	120	1922	21 26 11
21 28 10	J1547+2052	15 05 03	56.6	161.2	-0.7		-11.9	-14	1922	No stop
21 29 40	=1545+210	15 06 33	56.7	161.9	-0.7		-11.5	76	1934	21 28 11
21 29 40	J1548	15 06 33	57.9	161.0	-0.7		-12.2	-18	1934	No stop
21 33 10	---	15 10 03	58.1	162.5	-0.7		-11.3	192	1961	21 29 41
21 33 40	J1547+2052	15 10 33	56.9	163.5	-0.6		-10.5	12	1961	21 33 40
21 35 10	=1545+210	15 12 04	57.0	164.2	-0.6		-10.1	90	1972	21 33 41
21 35 10	J1548	15 12 04	58.2	163.3	-0.6		-10.7	-18	1972	No stop
21 38 40	---	15 15 34	58.3	164.8	-0.6		-9.8	192	1999	21 35 11
21 38 40	J1547+2052	15 15 34	57.1	165.7	-0.6		-9.2	-18	1999	No stop
21 40 10	=1545+210	15 17 05	57.1	166.3	-0.5		-8.8	72	2011	21 38 41
21 40 10	J1548	15 17 05	58.4	165.5	-0.5		-9.3	-18	2011	No stop
21 43 40	---	15 20 35	58.5	167.0	-0.5		-8.4	192	2038	21 40 11
21 44 10	J1547+2052	15 21 05	57.3	168.0	-0.5		-7.7	12	2038	21 44 10
21 45 40	=1545+210	15 22 35	57.3	168.7	-0.4		-7.3	90	2050	21 44 11
21 45 40	J1548	15 22 35	58.5	167.9	-0.5		-7.8	-18	2050	No stop
21 49 10	---	15 26 06	58.7	169.5	-0.4		-6.8	192	2077	21 45 41
21 49 10	J1547+2052	15 26 06	57.4	170.2	-0.4		-6.3	-18	2077	No stop
21 50 40	=1545+210	15 27 36	57.5	170.8	-0.4		-5.9	72	2088	21 49 11
21 51 10	J1545+2006	15 28 06	56.8	172.1	-0.3		-5.0	15	2088	21 51 10
21 53 10	=1543+202	15 30 07	56.8	172.9	-0.3		-4.5	120	2104	21 51 11
21 53 10	J1547+2052	15 30 07	57.5	171.9	-0.3		-5.2	-15	2104	No stop
21 54 40	=1545+210	15 31 37	57.5	172.6	-0.3		-4.8	75	2115	21 53 11
21 54 40	J1548	15 31 37	58.8	171.9	-0.3		-5.2	-18	2115	No stop
21 58 10	---	15 35 08	58.9	173.5	-0.2		-4.2	192	2142	21 54 41
21 58 40	J1547+2052	15 35 38	57.6	174.3	-0.2		-3.7	12	2142	21 58 40
22 00 10	=1545+210	15 37 08	57.6	175.0	-0.2		-3.2	90	2154	21 58 41
22 00 10	J1548	15 37 08	58.9	174.4	-0.2		-3.6	-18	2154	No stop
22 03 40	---	15 40 38	58.9	175.9	-0.2		-2.6	192	2181	22 00 11

Schedule for TORUN (Code Tr )

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ES098A

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 27 May 2021 Day 147 ---										
22 03 40	J1547+2052	15 40 38	57.7	176.5	-0.1		-2.3	-18	2181	No stop
22 05 10	=1545+210	15 42 09	57.7	177.1	-0.1		-1.8	72	2193	22 03 41
22 05 10	J1548	15 42 09	58.9	176.6	-0.1		-2.2	-18	2193	No stop
22 08 40	---	15 45 39	59.0	178.2	-0.1		-1.2	192	2220	22 05 11
22 09 10	J1547+2052	15 46 09	57.7	178.9	-0.0		-0.7	12	2220	22 09 10
22 10 40	=1545+210	15 47 40	57.7	179.6	-0.0		-0.3	90	2231	22 09 11
22 10 40	J1548	15 47 40	59.0	179.1	-0.0		-0.6	-18	2231	No stop
22 14 10	---	15 51 10	59.0	180.7	0.0		0.4	192	2258	22 10 41
22 14 10	J1547+2052	15 51 10	57.7	181.1	0.0		0.7	-18	2258	No stop
22 15 40	=1545+210	15 52 40	57.7	181.7	0.1		1.1	72	2270	22 14 11
22 16 10	J1545+2006	15 53 10	56.9	182.9	0.1		1.8	15	2270	22 16 10
22 18 10	=1543+202	15 55 11	56.9	183.7	0.1		2.4	120	2285	22 16 11
22 18 10	J1547+2052	15 55 11	57.7	182.8	0.1		1.8	-15	2285	No stop
22 19 40	=1545+210	15 56 41	57.7	183.5	0.1		2.2	75	2297	22 18 11
22 19 40	J1548	15 56 41	58.9	183.2	0.1		2.0	-18	2297	No stop
22 23 10	---	16 00 12	58.9	184.7	0.2		3.1	192	2324	22 19 41
22 23 40	J1547+2052	16 00 42	57.6	185.2	0.2		3.4	12	2324	22 23 40
22 25 10	=1545+210	16 02 12	57.6	185.9	0.2		3.8	90	2335	22 23 41
22 25 10	J1548	16 02 12	58.9	185.6	0.2		3.6	-18	2335	No stop
22 28 40	---	16 05 43	58.8	187.2	0.3		4.7	192	2363	22 25 11
22 28 40	J1547+2052	16 05 43	57.5	187.4	0.3		4.8	-18	2363	No stop
22 30 10	=1545+210	16 07 13	57.5	188.1	0.3		5.2	72	2374	22 28 41
22 30 10	J1548	16 07 13	58.8	187.9	0.3		5.1	-18	2374	No stop
22 33 40	---	16 10 43	58.7	189.4	0.4		6.1	192	2401	22 30 11
22 34 10	J1547+2052	16 11 13	57.4	189.8	0.4		6.3	12	2401	22 34 10
22 35 40	=1545+210	16 12 44	57.4	190.5	0.4		6.7	90	2413	22 34 11
22 35 40	J1548	16 12 44	58.7	190.3	0.4		6.7	-18	2413	No stop
22 39 10	---	16 16 14	58.6	191.9	0.4		7.7	192	2440	22 35 41
22 39 10	J1547+2052	16 16 14	57.3	192.0	0.5		7.7	-18	2440	No stop
22 40 40	=1545+210	16 17 44	57.2	192.6	0.5		8.1	72	2451	22 39 11

Schedule for TORUN (Code Tr )

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ES098A

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.

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```

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Thu 27 May 2021 Day 147 ---										
22 41 10	J1545+2006	16 18 15	56.4	193.5	0.5		8.6	14	2451	22 41 10
22 43 10	=1543+202	16 20 15	56.3	194.4	0.6		9.1	120	2467	22 41 11
22 43 10	J1547+2052	16 20 15	57.1	193.7	0.5		8.7	-15	2467	No stop
22 44 40	=1545+210	16 21 45	57.1	194.3	0.6		9.1	75	2478	22 43 11
22 44 40	J1548	16 21 45	58.4	194.3	0.5		9.2	-18	2478	No stop
22 48 10	---	16 25 16	58.2	195.8	0.6		10.2	192	2506	22 44 41
22 48 40	J1547+2052	16 25 46	56.9	196.0	0.6		10.2	12	2506	22 48 40
22 50 10	=1545+210	16 27 16	56.9	196.7	0.6		10.6	90	2517	22 48 41
22 50 10	J1548	16 27 16	58.2	196.7	0.6		10.7	-18	2517	No stop
22 53 40	---	16 30 47	58.0	198.2	0.7		11.7	192	2544	22 50 11
22 53 40	J1547+2052	16 30 47	56.7	198.1	0.7		11.5	-18	2544	No stop
22 55 10	=1545+210	16 32 17	56.6	198.8	0.7		11.9	72	2556	22 53 41
22 56 40	3C345	16 33 47	76.6	171.8	-0.2		-6.4	1	2556	22 56 40
23 00 40	---	16 37 48	76.6	175.1	-0.1		-3.9	240	2587	22 56 41

```
-----
```

SETUP FILE INFORMATION:

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

==== Setup file: sess221.L1024

```

Setup group: 11          Station: TORUN          Total bit rate: 1024
Format: VDIF           Bits per sample: 2          Sample rate: 64.000
Number of channels: 8   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
Net SB=	L	L	U	U	L	L	U	U
IF SB =	L	L	L	L	L	L	L	L
Pol. =	RCP	LCP	RCP	LCP	RCP	LCP	RCP	LCP
BBC =	1	9	1	9	2	10	2	10
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: 9 Setup file default. Used with PCAL = off  
 LO sum= 1626.49 1626.49 1626.49 1626.49 1690.49 1690.49 1690.49 1690.49  
 BBC fr= 673.51 673.51 673.51 673.51 609.51 609.51 609.51 609.51  
 Bandwd= 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00  
 Matching frequency sets: 9

Track assignments are:

track1= 1, 2, 3, 4, 5, 6, 7, 8  
 barrel=roll\_off

#### POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* J1548	15 46 32.152438	* 15 48 43.079100	15 49 39.675530	0.00
	22 17 19.86166	* 22 08 12.81100	22 04 20.90525	0.00
1545+210	15 45 31.120610	* 15 47 43.537755	15 48 40.747937	0.21
* J1547+2052	21 01 27.34370	* 20 52 16.61322	20 48 23.11522	0.43
	Main calibrator, Fs/x~50 mJy, 1.3 deg			
1543+202	15 43 20.954571	* 15 45 34.343114	15 46 31.952926	0.15
* J1545+2006	20 15 59.07342	* 20 06 40.47056	20 02 43.67504	0.20
	Phase checker, close to CAL1, 2.15deg from target			
* 3C286	13 28 49.657769	* 13 31 08.288061	13 32 07.799949	0.17
J1331+3030	30 45 58.64066	* 30 30 32.95930	30 24 07.41325	0.16
1328+307	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
J1331+30	GSFC 2016a X/S astro solution, 269 observations.			
* 3C345	16 41 17.606229	* 16 42 58.809967	16 43 43.209346	0.79
J1642+3948	39 54 10.81492	* 39 48 36.99399	39 46 12.79160	0.59
1641+399	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
J1642+39	GSFC 2016a X/S astro solution, 53724 observations.			

HAS THE JET IN J0028+0035 BEEN RESTARTED AT MULTIPLE TIMES?

PI: *Andrzej Marecki*

Address: Institute of Astronomy

Observing mode:

Schedule for TORUN (Code Tr ) Page 2

Has the jet in J0028+0035 been restarted at multiple times?

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 28 May 2021 Day 148 ---									
Next scan frequencies:		1626.49	1626.49	1626.49	1626.49	1690.49	1690.49	1690.49	1690.49
Next BBC frequencies:		673.51	673.51	673.51	673.51	609.51	609.51	609.51	609.51
Next scan bandwidths:		32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
-----									
02 30 00	3C454.3	20 07 42	40.8	122.3	-2.8	-31.9	0	0	02 30 00
02 34 00	---	20 11 43	41.3	123.3	-2.7	-31.5	240	31	02 30 01
02 37 00	J0029-0113	20 14 43	14.4	112.1	-4.3	-33.8	65	31	02 37 00
02 39 00	=0026-015	20 16 44	14.7	112.5	-4.2	-33.7	120	46	02 37 01
02 39 20	J0028+0035	20 17 04	16.3	111.6	-4.2	-33.9	0	46	02 39 20
02 47 00	---	20 24 45	17.4	113.3	-4.1	-33.5	460	106	02 39 21
02 47 20	J0029-0113	20 25 05	15.9	114.3	-4.1	-33.2	1	106	02 47 20
02 49 00	=0026-015	20 26 45	16.1	114.7	-4.1	-33.1	100	119	02 47 21
02 49 20	J0028+0035	20 27 05	17.7	113.8	-4.0	-33.3	0	119	02 49 20
02 57 00	---	20 34 47	18.8	115.5	-3.9	-32.8	460	178	02 49 21
02 57 20	J0029-0113	20 35 07	17.2	116.5	-3.9	-32.5	1	178	02 57 20
02 59 00	=0026-015	20 36 47	17.4	116.9	-3.9	-32.4	100	191	02 57 21
02 59 20	J0028+0035	20 37 07	19.1	116.0	-3.9	-32.7	0	191	02 59 20
03 07 00	---	20 44 48	20.1	117.7	-3.7	-32.1	460	250	02 59 21
03 07 20	J0029-0113	20 45 08	18.6	118.7	-3.7	-31.8	1	250	03 07 20
03 09 00	=0026-015	20 46 49	18.8	119.1	-3.7	-31.6	100	263	03 07 21
03 09 20	J0028+0035	20 47 09	20.4	118.3	-3.7	-31.9	0	263	03 09 20
03 17 00	---	20 54 50	21.4	120.0	-3.6	-31.3	460	322	03 09 21
03 17 20	J0029-0113	20 55 10	19.9	121.0	-3.6	-31.0	1	322	03 17 20
03 19 00	=0026-015	20 56 50	20.1	121.4	-3.6	-30.8	100	335	03 17 21
03 19 20	J0028+0035	20 57 10	21.7	120.6	-3.5	-31.1	0	335	03 19 20
03 27 00	---	21 04 52	22.7	122.3	-3.4	-30.5	460	394	03 19 21
03 27 20	J0029-0113	21 05 12	21.1	123.3	-3.4	-30.1	0	394	03 27 20
03 29 00	=0026-015	21 06 52	21.3	123.7	-3.4	-30.0	100	407	03 27 21

Schedule for TORUN (Code Tr )

Page 3

Has the jet in J0028+0035 been restarted at multiple times?

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 28 May 2021	Day 148					---				
03 29 20	J0028+0035	21 07 12	23.0	122.9	-3.4		-30.3	0	407	03 29 20	
03 37 00	---	21 14 53	24.0	124.7	-3.2		-29.6	460	466	03 29 21	
03 37 20	J0029-0113	21 15 13	22.4	125.7	-3.2		-29.2	0	466	03 37 20	
03 39 00	=0026-015	21 16 53	22.6	126.1	-3.2		-29.0	100	479	03 37 21	
03 39 20	J0028+0035	21 17 14	24.3	125.3	-3.2		-29.4	0	479	03 39 20	
03 47 00	---	21 24 55	25.2	127.1	-3.1		-28.6	460	538	03 39 21	
03 47 20	J0029-0113	21 25 15	23.6	128.1	-3.1		-28.2	0	538	03 47 20	
03 49 00	=0026-015	21 26 55	23.8	128.5	-3.1		-28.1	100	551	03 47 21	
03 49 20	J0028+0035	21 27 15	25.5	127.7	-3.0		-28.4	0	551	03 49 20	
03 57 00	---	21 34 56	26.4	129.6	-2.9		-27.6	460	611	03 49 21	
03 57 20	J0029-0113	21 35 17	24.7	130.5	-2.9		-27.2	0	611	03 57 20	
03 59 00	=0026-015	21 36 57	24.9	130.9	-2.9		-27.0	100	623	03 57 21	
03 59 20	J0028+0035	21 37 17	26.6	130.1	-2.9		-27.3	0	623	03 59 20	
04 07 00	---	21 44 58	27.5	132.1	-2.7		-26.5	460	683	03 59 21	
04 07 20	J0029-0113	21 45 18	25.9	133.0	-2.7		-26.1	0	683	04 07 20	
04 09 00	=0026-015	21 46 58	26.0	133.4	-2.7		-25.9	100	696	04 07 21	
04 09 20	J0028+0035	21 47 18	27.8	132.7	-2.7		-26.2	0	696	04 09 20	
04 17 00	---	21 55 00	28.6	134.6	-2.6		-25.3	460	755	04 09 21	
04 17 20	J0029-0113	21 55 20	26.9	135.5	-2.6		-24.9	0	755	04 17 20	
04 19 00	=0026-015	21 57 00	27.1	135.9	-2.6		-24.7	100	768	04 17 21	
04 19 20	J0028+0035	21 57 20	28.8	135.2	-2.5		-25.0	0	768	04 19 20	
04 27 00	---	22 05 01	29.6	137.2	-2.4		-24.1	460	827	04 19 21	
04 27 20	J0029-0113	22 05 21	28.0	138.1	-2.4		-23.7	0	827	04 27 20	
04 29 00	=0026-015	22 07 02	28.1	138.5	-2.4		-23.5	100	840	04 27 21	
04 31 00	3C454.3	22 09 02	52.1	161.9	-0.8		-11.2	16	840	04 31 00	
04 35 00	---	22 13 03	52.3	163.4	-0.7		-10.3	240	871	04 31 01	
04 38 00	J0029-0113	22 16 03	29.0	140.9	-2.2		-22.3	78	871	04 38 00	
04 40 00	=0026-015	22 18 04	29.2	141.4	-2.2		-22.0	120	886	04 38 01	
04 40 20	J0028+0035	22 18 24	31.0	140.8	-2.2		-22.3	0	886	04 40 20	
04 48 00	---	22 26 05	31.7	142.9	-2.1		-21.2	460	946	04 40 21	
04 48 20	J0029-0113	22 26 25	30.0	143.6	-2.1		-20.9	0	946	04 48 20	
04 50 00	=0026-015	22 28 05	30.1	144.1	-2.0		-20.6	100	958	04 48 21	
04 50 20	J0028+0035	22 28 25	31.9	143.5	-2.0		-20.9	0	958	04 50 20	
04 58 00	---	22 36 06	32.6	145.6	-1.9		-19.8	460	1018	04 50 21	

Schedule for TORUN (Code Tr )

Page 4

Has the jet in J0028+0035 been restarted at multiple times?

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 28 May 2021 Day 148 ---										
04 58 20	J0029-0113	22 36 27	30.8	146.4	-1.9		-19.4	0	1018	04 58 20
05 00 00	=0026-015	22 38 07	31.0	146.8	-1.9		-19.2	100	1031	04 58 21
05 00 20	J0028+0035	22 38 27	32.7	146.3	-1.9		-19.5	0	1031	05 00 20
05 08 00	---	22 46 08	33.4	148.5	-1.7		-18.3	460	1090	05 00 21
05 08 20	J0029-0113	22 46 28	31.6	149.1	-1.7		-17.9	0	1090	05 08 20
05 10 00	=0026-015	22 48 08	31.8	149.6	-1.7		-17.7	100	1103	05 08 21
05 10 20	J0028+0035	22 48 28	33.6	149.1	-1.7		-17.9	0	1103	05 10 20
05 18 00	---	22 56 10	34.1	151.3	-1.6		-16.7	460	1162	05 10 21
05 18 20	J0029-0113	22 56 30	32.4	152.0	-1.6		-16.4	0	1162	05 18 20
05 20 00	=0026-015	22 58 10	32.5	152.4	-1.5		-16.1	100	1175	05 18 21
05 20 20	J0028+0035	22 58 30	34.3	152.0	-1.5		-16.4	0	1175	05 20 20
05 28 00	---	23 06 11	34.8	154.3	-1.4		-15.1	460	1234	05 20 21
05 28 20	J0029-0113	23 06 31	33.1	154.8	-1.4		-14.8	0	1234	05 28 20
05 30 00	=0026-015	23 08 12	33.2	155.3	-1.4		-14.5	100	1247	05 28 21
05 30 20	J0028+0035	23 08 32	35.0	155.0	-1.4		-14.7	-1	1247	05 30 20
05 38 00	---	23 16 13	35.4	157.2	-1.2		-13.4	459	1306	05 30 21
05 38 20	J0029-0113	23 16 33	33.7	157.7	-1.2		-13.2	0	1306	05 38 20
05 40 00	=0026-015	23 18 13	33.8	158.2	-1.2		-12.9	100	1319	05 38 21
05 40 20	J0028+0035	23 18 33	35.6	157.9	-1.2		-13.0	-1	1319	05 40 20
05 48 00	---	23 26 15	36.0	160.3	-1.1		-11.7	459	1378	05 40 21
05 48 20	J0029-0113	23 26 35	34.2	160.7	-1.1		-11.5	0	1378	05 48 20
05 50 00	=0026-015	23 28 15	34.3	161.2	-1.0		-11.2	100	1391	05 48 21
05 50 20	J0028+0035	23 28 35	36.1	161.0	-1.0		-11.3	-1	1391	05 50 20
05 58 00	---	23 36 16	36.4	163.3	-0.9		-9.9	459	1451	05 50 21
05 58 20	J0029-0113	23 36 36	34.7	163.7	-0.9		-9.7	0	1451	05 58 20
06 00 00	=0026-015	23 38 17	34.7	164.2	-0.9		-9.4	100	1463	05 58 21
06 00 20	J0028+0035	23 38 37	36.5	164.0	-0.9		-9.5	-1	1463	06 00 20
06 08 00	---	23 46 18	36.8	166.4	-0.7		-8.1	459	1523	06 00 21
06 08 20	J0029-0113	23 46 38	35.0	166.7	-0.7		-7.9	-1	1523	06 08 20
06 10 00	=0026-015	23 48 18	35.1	167.2	-0.7		-7.6	99	1536	06 08 21

Schedule for TORUN (Code Tr ) Page 5

Has the jet in J0028+0035 been restarted at multiple times?

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 28 May 2021 Day 148 ---

06 10 20	J0028+0035	23 48 38	36.9	167.1	-0.7	-7.7	-1	1536	06 10 20
06 18 00	---	23 56 20	37.2	169.5	-0.6	-6.3	459	1595	06 10 21
06 18 20	J0029-0113	23 56 40	35.3	169.7	-0.6	-6.1	-1	1595	06 18 20
06 20 00	=0026-015	23 58 20	35.4	170.2	-0.5	-5.8	99	1608	06 18 21
06 20 20	J0028+0035	23 58 40	37.2	170.2	-0.5	-5.8	-1	1608	06 20 20
06 28 00	---	00 06 21	37.4	172.6	-0.4	-4.4	459	1667	06 20 21
06 28 20	J0029-0113	00 06 41	35.6	172.8	-0.4	-4.3	-1	1667	06 28 20
06 30 00	=0026-015	00 08 22	35.6	173.3	-0.4	-4.0	99	1680	06 28 21

SETUP FILE INFORMATION:

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

==== Setup file: sess221.L1024

Setup group: 11	Station: TORUN	Total bit rate: 1024
Format: VDIF	Bits per sample: 2	Sample rate: 64.000
Number of channels: 8	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
Net SB=	L	L	U	U	L	L	U	U
IF SB =	L	L	L	L	L	L	L	L
Pol. =	RCP	LCP	RCP	LCP	RCP	LCP	RCP	LCP
BBC =	1	9	1	9	2	10	2	10
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: 9 Setup file default. Used with PCAL = off  
 LO sum= 1626.49 1626.49 1626.49 1626.49 1690.49 1690.49 1690.49 1690.49  
 BBC fr= 673.51 673.51 673.51 673.51 609.51 609.51 609.51 609.51  
 Bandwd= 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00  
 Matching frequency sets: 9

Track assignments are:

track1= 1, 2, 3, 4, 5, 6, 7, 8  
 barrel=roll\_off

#### POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* J0028+0035	00 26 05.030490	* 00 28 38.861000	00 29 43.022677	0.00
	00 19 04.63073	* 00 35 39.65300	00 42 35.30245	0.00
0026-015	00 26 27.411318	* 00 29 00.986037	00 30 05.036482	0.17
* J0029-0113	-01 30 16.59853	*-01 13 41.75993	-01 06 45.63952	0.35
	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 66 observations.			
* 3C454.3	22 51 29.519739	* 22 53 57.747939	22 55 00.032595	0.65
J2253+1608	15 52 54.34808	* 16 08 53.56091	16 15 29.24478	0.73
2251+158	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
J2253+16	GSFC 2016a X/S astro solution, 41272 observations.			

**em146tr**

COMPACT STEEP-SPECTRUM SOURCE AT THE CENTRE OF A GIANT RADIO GALAXY  
PI: *Andrzej Marecki*

Address: Institute of Astronomy

Observing mode:

Schedule for TORUN (Code Tr )

Page 2

Compact steep-spectrum source at the centre of a giant radio galaxy

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 28 May 2021 Day 148 ---										
Next scan frequencies:		1626.49	1626.49	1626.49	1626.49	1690.49	1690.49	1690.49	1690.49	1690.49
Next BBC frequencies:		673.51	673.51	673.51	673.51	609.51	609.51	609.51	609.51	609.51
Next scan bandwidths:		32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
-----										
07 00 00	J0847+4609	00 38 27	20.6	38.6	-8.2		-32.7	0	0	07 00 00
07 02 00	=0844+463	00 40 27	20.8	38.9	-8.1		-32.9	120	15	07 00 01
07 02 20	J084408+4627	00 40 47	21.4	39.3	-8.1		-33.5	6	15	07 02 20
07 10 00	---	00 48 28	22.1	40.5	-8.0		-34.4	460	75	07 02 21
07 10 20	J0847+4609	00 48 48	21.6	40.2	-8.0		-34.0	6	75	07 10 20
07 12 00	=0844+463	00 50 28	21.7	40.5	-8.0		-34.2	100	88	07 10 21
07 12 20	J084408+4627	00 50 49	22.3	40.9	-7.9		-34.7	6	88	07 12 20
07 20 00	---	00 58 30	23.1	42.0	-7.8		-35.7	460	147	07 12 21
07 20 20	J0847+4609	00 58 50	22.5	41.8	-7.8		-35.2	6	147	07 20 20
07 22 00	=0844+463	01 00 30	22.7	42.0	-7.8		-35.4	100	160	07 20 21
07 22 20	J084408+4627	01 00 50	23.3	42.4	-7.7		-35.9	6	160	07 22 20
07 30 00	---	01 08 31	24.1	43.6	-7.6		-36.9	460	219	07 22 21
07 30 20	J0847+4609	01 08 51	23.6	43.3	-7.7		-36.4	6	219	07 30 20
07 32 00	=0844+463	01 10 32	23.7	43.5	-7.6		-36.6	100	232	07 30 21
07 32 20	J084408+4627	01 10 52	24.4	43.9	-7.6		-37.1	6	232	07 32 20
07 40 00	---	01 18 33	25.2	45.1	-7.5		-38.0	460	291	07 32 21
07 40 20	J0847+4609	01 18 53	24.6	44.8	-7.5		-37.6	6	291	07 40 20
07 42 00	=0844+463	01 20 33	24.8	45.1	-7.5		-37.8	100	304	07 40 21
07 42 20	J084408+4627	01 20 53	25.4	45.4	-7.4		-38.3	6	304	07 42 20
07 50 00	---	01 28 35	26.3	46.6	-7.3		-39.2	460	363	07 42 21
07 50 20	J0847+4609	01 28 55	25.7	46.3	-7.3		-38.8	6	363	07 50 20
07 52 00	=0844+463	01 30 35	25.9	46.6	-7.3		-39.0	100	376	07 50 21
07 52 20	J084408+4627	01 30 55	26.5	46.9	-7.2		-39.5	6	376	07 52 20
08 00 00	---	01 38 36	27.4	48.1	-7.1		-40.4	460	435	07 52 21

Schedule for TORUN (Code Tr )

Page 3

Compact steep-spectrum source at the centre of a giant radio galaxy

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 28 May 2021	Day 148					---				
08 00 20	J0847+4609	01 38 56	26.8	47.8	-7.2		-39.9	6	435	08 00 20	
08 02 00	=0844+463	01 40 37	27.0	48.1	-7.1		-40.1	100	448	08 00 21	
08 02 20	J084408+4627	01 40 57	27.6	48.4	-7.1		-40.6	6	448	08 02 20	
08 10 00	---	01 48 38	28.5	49.5	-6.9		-41.5	460	508	08 02 21	
08 10 20	J0847+4609	01 48 58	27.9	49.3	-7.0		-41.0	6	508	08 10 20	
08 12 00	=0844+463	01 50 38	28.1	49.6	-7.0		-41.2	100	520	08 10 21	
08 12 20	J084408+4627	01 50 58	28.8	49.9	-6.9		-41.7	6	520	08 12 20	
08 20 00	---	01 58 40	29.7	51.0	-6.8		-42.6	460	580	08 12 21	
08 20 20	J0847+4609	01 59 00	29.1	50.8	-6.8		-42.1	6	580	08 20 20	
08 22 00	=0844+463	02 00 40	29.3	51.0	-6.8		-42.3	100	593	08 20 21	
08 22 20	J084408+4627	02 01 00	29.9	51.3	-6.7		-42.8	6	593	08 22 20	
08 30 00	---	02 08 41	30.8	52.5	-6.6		-43.7	460	652	08 22 21	
08 30 20	J0847+4609	02 09 01	30.2	52.3	-6.7		-43.2	6	652	08 30 20	
08 32 00	=0844+463	02 10 42	30.4	52.5	-6.6		-43.4	100	665	08 30 21	
08 32 20	J084408+4627	02 11 02	31.1	52.8	-6.6		-43.9	6	665	08 32 20	
08 40 00	---	02 18 43	32.0	53.9	-6.4		-44.7	460	724	08 32 21	
08 40 20	J0847+4609	02 19 03	31.4	53.7	-6.5		-44.3	6	724	08 40 20	
08 42 00	=0844+463	02 20 43	31.7	54.0	-6.5		-44.4	100	737	08 40 21	
08 42 20	J084408+4627	02 21 03	32.3	54.3	-6.4		-45.0	6	737	08 42 20	
08 50 00	---	02 28 45	33.3	55.4	-6.3		-45.7	460	796	08 42 21	
08 50 20	J0847+4609	02 29 05	32.7	55.2	-6.3		-45.3	6	796	08 50 20	
08 52 00	=0844+463	02 30 45	32.9	55.4	-6.3		-45.5	100	809	08 50 21	
08 52 20	J084408+4627	02 31 05	33.6	55.7	-6.2		-46.0	6	809	08 52 20	
09 00 00	---	02 38 46	34.5	56.8	-6.1		-46.8	460	868	08 52 21	
09 00 20	J0847+4609	02 39 06	33.9	56.6	-6.2		-46.3	6	868	09 00 20	
09 02 00	=0844+463	02 40 47	34.1	56.9	-6.1		-46.5	100	881	09 00 21	
09 02 20	J084408+4627	02 41 07	34.8	57.1	-6.1		-47.0	6	881	09 02 20	
09 10 00	---	02 48 48	35.8	58.2	-5.9		-47.7	460	940	09 02 21	
09 10 20	J0847+4609	02 49 08	35.2	58.1	-6.0		-47.3	6	940	09 10 20	
09 12 00	=0844+463	02 50 48	35.4	58.3	-6.0		-47.4	100	953	09 10 21	
09 12 20	J084408+4627	02 51 08	36.1	58.6	-5.9		-48.0	6	953	09 12 20	
09 20 00	---	02 58 50	37.1	59.7	-5.8		-48.7	460	1013	09 12 21	
09 20 20	J0847+4609	02 59 10	36.5	59.5	-5.8		-48.2	6	1013	09 20 20	
09 22 00	=0844+463	03 00 50	36.7	59.8	-5.8		-48.4	100	1025	09 20 21	



Schedule for TORUN (Code Tr )

Page 4

Compact steep-spectrum source at the centre of a giant radio galaxy

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 28 May 2021 Day 148 ---										
09 22 20	J084408+4627	03 01 10	37.4	60.0	-5.7		-48.9	6	1025	09 22 20
09 30 00	---	03 08 51	38.4	61.1	-5.6		-49.7	460	1085	09 22 21
09 30 20	J0847+4609	03 09 11	37.8	61.0	-5.7		-49.2	6	1085	09 30 20
09 32 00	=0844+463	03 10 51	38.0	61.2	-5.6		-49.3	100	1098	09 30 21
09 32 20	J084408+4627	03 11 12	38.7	61.4	-5.6		-49.9	6	1098	09 32 20
09 40 00	---	03 18 53	39.7	62.5	-5.4		-50.6	460	1157	09 32 21
09 40 20	J0847+4609	03 19 13	39.1	62.4	-5.5		-50.1	6	1157	09 40 20
09 42 00	=0844+463	03 20 53	39.3	62.6	-5.5		-50.2	100	1170	09 40 21
09 42 20	J084408+4627	03 21 13	40.0	62.9	-5.4		-50.8	6	1170	09 42 20
09 50 00	---	03 28 54	41.1	64.0	-5.3		-51.5	460	1229	09 42 21
09 50 20	J0847+4609	03 29 14	40.4	63.8	-5.3		-51.0	6	1229	09 50 20
09 52 00	=0844+463	03 30 55	40.7	64.1	-5.3		-51.1	100	1242	09 50 21
09 52 20	J084408+4627	03 31 15	41.4	64.3	-5.2		-51.7	6	1242	09 52 20
10 00 00	---	03 38 56	42.4	65.4	-5.1		-52.3	460	1301	09 52 21
10 00 20	J0847+4609	03 39 16	41.8	65.3	-5.2		-51.8	6	1301	10 00 20
10 02 00	=0844+463	03 40 56	42.0	65.5	-5.1		-52.0	100	1314	10 00 21
10 02 20	J084408+4627	03 41 16	42.7	65.7	-5.1		-52.5	6	1314	10 02 20
10 10 00	---	03 48 58	43.8	66.8	-4.9		-53.2	460	1373	10 02 21
10 10 20	J0847+4609	03 49 18	43.2	66.7	-5.0		-52.7	6	1373	10 10 20
10 12 00	=0844+463	03 50 58	43.4	67.0	-5.0		-52.8	100	1386	10 10 21
10 12 20	J084408+4627	03 51 18	44.1	67.2	-4.9		-53.3	5	1386	10 12 20
10 20 00	---	03 58 59	45.2	68.3	-4.8		-54.0	460	1445	10 12 21
10 20 20	J0847+4609	03 59 19	44.6	68.2	-4.8		-53.5	6	1445	10 20 20
10 22 00	=0844+463	04 01 00	44.8	68.4	-4.8		-53.6	100	1458	10 20 21
10 22 20	J084408+4627	04 01 20	45.5	68.6	-4.7		-54.1	5	1458	10 22 20
10 30 00	---	04 09 01	46.6	69.7	-4.6		-54.7	460	1517	10 22 21
10 30 20	J0847+4609	04 09 21	46.0	69.6	-4.7		-54.2	6	1517	10 30 20
10 32 00	=0844+463	04 11 01	46.2	69.9	-4.6		-54.4	100	1530	10 30 21
10 32 20	J084408+4627	04 11 21	46.9	70.0	-4.6		-54.9	5	1530	10 32 20
10 40 00	---	04 19 03	48.0	71.2	-4.4		-55.5	460	1590	10 32 21

Schedule for TORUN (Code Tr )

Page 5

Compact steep-spectrum source at the centre of a giant radio galaxy

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 28 May 2021 Day 148 ---										
10 40 20	J0847+4609	04 19 23	47.4	71.1	-4.5		-55.0	6	1590	10 40 20
10 42 00	=0844+463	04 21 03	47.6	71.3	-4.5		-55.1	100	1603	10 40 21
10 42 20	J084408+4627	04 21 23	48.3	71.5	-4.4		-55.6	5	1603	10 42 20
10 50 00	---	04 29 04	49.4	72.6	-4.3		-56.2	460	1662	10 42 21
10 50 20	J0847+4609	04 29 24	48.8	72.6	-4.3		-55.7	6	1662	10 50 20
10 52 00	=0844+463	04 31 05	49.1	72.8	-4.3		-55.8	100	1675	10 50 21
10 54 00	J0927+39	04 33 05	39.3	74.7	-4.9		-48.1	69	1675	10 54 00
11 01 00	---	04 40 06	40.3	75.9	-4.8		-48.5	420	1729	10 54 01
11 04 00	J0847+4609	04 43 07	50.8	74.6	-4.1		-56.6	128	1729	11 04 00
11 06 00	=0844+463	04 45 07	51.1	74.9	-4.1		-56.7	120	1744	11 04 01
11 06 20	J084408+4627	04 45 27	51.8	75.1	-4.0		-57.3	5	1744	11 06 20
11 14 00	---	04 53 08	52.9	76.2	-3.9		-57.7	460	1803	11 06 21
11 14 20	J0847+4609	04 53 28	52.3	76.2	-3.9		-57.2	6	1803	11 14 20
11 16 00	=0844+463	04 55 09	52.5	76.5	-3.9		-57.3	100	1816	11 14 21
11 16 20	J084408+4627	04 55 29	53.3	76.6	-3.8		-57.9	5	1816	11 16 20
11 24 00	---	05 03 10	54.4	77.8	-3.7		-58.3	460	1876	11 16 21
11 24 20	J0847+4609	05 03 30	53.8	77.7	-3.8		-57.8	6	1876	11 24 20
11 26 00	=0844+463	05 05 10	54.0	78.0	-3.7		-57.9	100	1888	11 24 21
11 26 20	J084408+4627	05 05 30	54.7	78.2	-3.7		-58.4	5	1888	11 26 20
11 34 00	---	05 13 12	55.9	79.4	-3.5		-58.8	460	1948	11 26 21
11 34 20	J0847+4609	05 13 32	55.2	79.3	-3.6		-58.3	6	1948	11 34 20
11 36 00	=0844+463	05 15 12	55.5	79.6	-3.6		-58.4	100	1961	11 34 21
11 36 20	J084408+4627	05 15 32	56.2	79.7	-3.5		-58.9	5	1961	11 36 20
11 44 00	---	05 23 13	57.3	81.0	-3.4		-59.3	460	2020	11 36 21
11 44 20	J0847+4609	05 23 33	56.7	81.0	-3.4		-58.8	6	2020	11 44 20
11 46 00	=0844+463	05 25 13	57.0	81.2	-3.4		-58.8	100	2033	11 44 21
11 46 20	J084408+4627	05 25 34	57.7	81.4	-3.3		-59.4	5	2033	11 46 20
11 54 00	---	05 33 15	58.8	82.6	-3.2		-59.7	460	2092	11 46 21
11 54 20	J0847+4609	05 33 35	58.2	82.6	-3.3		-59.2	6	2092	11 54 20
11 56 00	=0844+463	05 35 15	58.5	82.9	-3.2		-59.2	100	2105	11 54 21

Schedule for TORUN (Code Tr )

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Compact steep-spectrum source at the centre of a giant radio galaxy

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 28 May 2021 Day 148 ---										
11 56 20	J084408+4627	05 35 35	59.2	83.0	-3.2		-59.8	5	2105	11 56 20
12 04 00	---	05 43 16	60.3	84.4	-3.0		-60.0	460	2164	11 56 21
12 04 20	J0847+4609	05 43 37	59.7	84.3	-3.1		-59.5	6	2164	12 04 20
12 06 00	=0844+463	05 45 17	60.0	84.6	-3.1		-59.5	100	2177	12 04 21
12 06 20	J084408+4627	05 45 37	60.7	84.8	-3.0		-60.1	5	2177	12 06 20
12 14 00	---	05 53 18	61.8	86.1	-2.9		-60.3	460	2236	12 06 21
12 14 20	J0847+4609	05 53 38	61.2	86.1	-2.9		-59.7	6	2236	12 14 20
12 16 00	=0844+463	05 55 18	61.5	86.4	-2.9		-59.8	100	2249	12 14 21
12 16 20	J084408+4627	05 55 38	62.2	86.6	-2.8		-60.3	5	2249	12 16 20
12 24 00	---	06 03 20	63.3	88.0	-2.7		-60.5	460	2308	12 16 21
12 24 20	J0847+4609	06 03 40	62.7	88.0	-2.8		-59.9	6	2308	12 24 20
12 26 00	=0844+463	06 05 20	63.0	88.3	-2.7		-59.9	100	2321	12 24 21
12 26 20	J084408+4627	06 05 40	63.7	88.4	-2.7		-60.5	5	2321	12 26 20
12 34 00	---	06 13 21	64.8	89.9	-2.5		-60.5	460	2381	12 26 21
12 34 20	J0847+4609	06 13 41	64.2	89.9	-2.6		-60.0	6	2381	12 34 20
12 36 00	=0844+463	06 15 22	64.5	90.3	-2.6		-60.0	100	2393	12 34 21
12 36 20	J084408+4627	06 15 42	65.2	90.4	-2.5		-60.5	5	2393	12 36 20
12 44 00	---	06 23 23	66.3	92.0	-2.4		-60.5	460	2453	12 36 21
12 44 20	J0847+4609	06 23 43	65.7	92.0	-2.4		-59.9	6	2453	12 44 20
12 46 00	=0844+463	06 25 23	66.0	92.4	-2.4		-59.9	100	2466	12 44 21
12 46 20	J084408+4627	06 25 43	66.7	92.5	-2.3		-60.4	5	2466	12 46 20
12 54 00	---	06 33 25	67.8	94.2	-2.2		-60.3	460	2525	12 46 21
12 54 20	J0847+4609	06 33 45	67.2	94.2	-2.3		-59.7	6	2525	12 54 20
12 56 00	=0844+463	06 35 25	67.5	94.6	-2.2		-59.7	100	2538	12 54 21
12 56 20	J084408+4627	06 35 45	68.2	94.7	-2.2		-60.2	5	2538	12 56 20
13 04 00	---	06 43 26	69.3	96.6	-2.0		-59.9	460	2597	12 56 21
13 04 20	J0847+4609	06 43 46	68.7	96.5	-2.1		-59.3	6	2597	13 04 20
13 06 00	=0844+463	06 45 27	69.0	97.0	-2.1		-59.2	100	2610	13 04 21
13 06 20	J084408+4627	06 45 47	69.7	97.1	-2.0		-59.7	5	2610	13 06 20
13 14 00	---	06 53 28	70.8	99.1	-1.9		-59.3	460	2669	13 06 21

Schedule for TORUN (Code Tr )

Page 7

Compact steep-spectrum source at the centre of a giant radio galaxy

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 28 May 2021 Day 148 ---										
13 14 20	J0847+4609	06 53 48	70.2	99.1	-1.9		-58.7	6	2669	13 14 20
13 16 00	=0844+463	06 55 28	70.5	99.5	-1.9		-58.6	100	2682	13 14 21
13 16 20	J084408+4627	06 55 48	71.2	99.8	-1.8		-59.1	5	2682	13 16 20
13 24 00	---	07 03 30	72.3	102.0	-1.7		-58.4	460	2741	13 16 21
13 24 20	J0847+4609	07 03 50	71.7	101.9	-1.8		-57.9	6	2741	13 24 20
13 26 00	=0844+463	07 05 30	71.9	102.4	-1.7		-57.7	100	2754	13 24 21
13 26 20	J084408+4627	07 05 50	72.7	102.7	-1.7		-58.1	5	2754	13 26 20
13 34 00	---	07 13 31	73.8	105.1	-1.5		-57.2	460	2813	13 26 21
13 34 20	J0847+4609	07 13 51	73.2	105.0	-1.6		-56.7	6	2813	13 34 20
13 36 00	=0844+463	07 15 32	73.4	105.6	-1.6		-56.5	100	2826	13 34 21
13 36 20	J084408+4627	07 15 52	74.1	105.9	-1.5		-56.8	5	2826	13 36 20
13 44 00	---	07 23 33	75.2	108.7	-1.4		-55.5	460	2886	13 36 21
13 44 20	J0847+4609	07 23 53	74.6	108.5	-1.4		-55.2	6	2886	13 44 20
13 46 00	=0844+463	07 25 33	74.8	109.1	-1.4		-54.9	100	2898	13 44 21
13 46 20	J084408+4627	07 25 53	75.5	109.6	-1.3		-55.1	5	2898	13 46 20
13 54 00	---	07 33 35	76.6	112.8	-1.2		-53.4	460	2958	13 46 21
13 54 20	J0847+4609	07 33 55	76.0	112.5	-1.3		-53.1	6	2958	13 54 20
13 56 00	=0844+463	07 35 35	76.2	113.3	-1.2		-52.7	100	2971	13 54 21
13 56 20	J084408+4627	07 35 55	76.9	113.9	-1.2		-52.7	5	2971	13 56 20
14 04 00	---	07 43 36	78.0	117.7	-1.0		-50.4	460	3030	13 56 21
14 04 20	J0847+4609	07 43 56	77.4	117.2	-1.1		-50.3	6	3030	14 04 20
14 06 00	=0844+463	07 45 36	77.6	118.1	-1.1		-49.8	100	3043	14 04 21
14 06 20	J084408+4627	07 45 57	78.3	119.0	-1.0		-49.6	6	3043	14 06 20
14 14 00	---	07 53 38	79.3	123.5	-0.9		-46.5	460	3102	14 06 21
14 14 20	J0847+4609	07 53 58	78.7	122.8	-0.9		-46.7	6	3102	14 14 20
14 16 00	=0844+463	07 55 38	78.9	123.8	-0.9		-46.0	100	3115	14 14 21
14 16 20	J084408+4627	07 55 58	79.6	125.0	-0.8		-45.5	5	3115	14 16 20
14 24 00	---	08 03 39	80.5	130.6	-0.7		-41.4	460	3174	14 16 21
14 24 20	J0847+4609	08 04 00	79.9	129.5	-0.8		-41.9	5	3174	14 24 20
14 26 00	=0844+463	08 05 40	80.1	130.7	-0.7		-41.0	100	3187	14 24 21

Schedule for TORUN (Code Tr )

Page 8

Compact steep-spectrum source at the centre of a giant radio galaxy

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 28 May 2021 Day 148 ---										
14 26 20	J084408+4627	08 06 00	80.7	132.5	-0.7		-39.9	3	3187	14 26 20
14 34 00	---	08 13 41	81.6	139.3	-0.5		-34.6	460	3246	14 26 21
14 34 20	J0847+4609	08 14 01	81.0	137.6	-0.6		-35.7	3	3246	14 34 20
14 36 00	=0844+463	08 15 41	81.2	139.2	-0.6		-34.5	100	3259	14 34 21
14 36 20	J084408+4627	08 16 01	81.8	141.7	-0.5		-32.7	1	3259	14 36 20
14 44 00	---	08 23 43	82.4	150.1	-0.4		-25.7	460	3318	14 36 21
14 44 20	J0847+4609	08 24 03	81.9	147.6	-0.4		-27.6	1	3318	14 44 20
14 46 00	=0844+463	08 25 43	82.0	149.5	-0.4		-26.1	100	3331	14 44 21
14 46 20	J084408+4627	08 26 03	82.6	152.9	-0.3		-23.4	-1	3331	14 46 20
14 54 00	---	08 33 44	83.0	162.9	-0.2		-14.8	459	3391	14 46 21
14 54 20	J0847+4609	08 34 04	82.6	159.5	-0.2		-17.6	-2	3391	14 54 20
14 56 00	=0844+463	08 35 45	82.7	161.7	-0.2		-15.8	98	3403	14 54 21
14 58 00	J0927+39	08 37 45	73.4	143.4	-0.8		-27.4	67	3403	14 58 00
15 05 00	---	08 44 46	74.0	147.8	-0.7		-24.3	420	3458	14 58 01
15 08 00	J0847+4609	08 47 47	83.0	178.3	-0.0		-1.5	109	3458	15 08 00
15 10 00	=0844+463	08 49 47	83.0	181.1	0.0		1.0	120	3473	15 08 01
15 10 20	J084408+4627	08 50 07	83.3	186.7	0.1		5.8	-6	3473	15 10 20
15 18 00	---	08 57 48	83.0	197.6	0.2		15.2	454	3532	15 10 21
15 18 20	J0847+4609	08 58 08	82.8	192.8	0.2		11.1	-5	3532	15 18 20
15 20 00	=0844+463	08 59 49	82.8	195.1	0.2		13.0	95	3545	15 18 21
15 20 20	J084408+4627	09 00 09	82.9	200.7	0.2		18.0	-6	3545	15 20 20
15 28 00	---	09 07 50	82.4	210.3	0.4		26.1	454	3604	15 20 21
15 28 20	J0847+4609	09 08 10	82.3	205.7	0.3		22.1	-4	3604	15 28 20
15 30 00	=0844+463	09 09 50	82.2	207.7	0.3		23.8	96	3617	15 28 21
15 30 20	J084408+4627	09 10 10	82.2	213.0	0.4		28.3	-6	3617	15 30 20
15 38 00	---	09 17 52	81.5	221.0	0.5		34.8	454	3676	15 30 21
15 38 20	J0847+4609	09 18 12	81.6	216.8	0.5		31.3	-3	3676	15 38 20
15 40 00	=0844+463	09 19 52	81.4	218.5	0.5		32.6	97	3689	15 38 21
15 40 20	J084408+4627	09 20 12	81.3	223.2	0.6		36.6	-4	3689	15 40 20
15 48 00	---	09 27 53	80.4	229.7	0.7		41.6	456	3749	15 40 21

Schedule for TORUN (Code Tr )

Page 9

Compact steep-spectrum source at the centre of a giant radio galaxy

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 28 May 2021 Day 148 ---										
15 48 20	J0847+4609	09 28 13	80.6	226.0	0.7		38.5	-2	3749	15 48 20
15 50 00	=0844+463	09 29 54	80.4	227.4	0.7		39.6	98	3762	15 48 21
15 50 20	J084408+4627	09 30 14	80.2	231.5	0.7		42.9	-3	3762	15 50 20
15 58 00	---	09 37 55	79.2	236.7	0.9		46.7	457	3821	15 50 21
15 58 20	J0847+4609	09 38 15	79.4	233.5	0.8		44.1	-1	3821	15 58 20
16 00 00	=0844+463	09 39 55	79.2	234.6	0.8		44.9	99	3834	15 58 21
16 00 20	J084408+4627	09 40 15	78.9	238.2	0.9		47.7	-2	3834	16 00 20
16 08 00	---	09 47 57	77.9	242.5	1.0		50.6	458	3893	16 00 21
16 08 20	J0847+4609	09 48 17	78.1	239.7	1.0		48.4	0	3893	16 08 20
16 10 00	=0844+463	09 49 57	77.9	240.6	1.0		49.0	100	3906	16 08 21
16 10 20	J084408+4627	09 50 17	77.6	243.7	1.1		51.3	-1	3906	16 10 20
16 18 00	---	09 57 58	76.6	247.3	1.2		53.4	459	3965	16 10 21
16 18 20	J0847+4609	09 58 18	76.8	244.9	1.2		51.6	1	3965	16 18 20
16 20 00	=0844+463	09 59 59	76.6	245.6	1.2		52.1	100	3978	16 18 21
16 20 20	J084408+4627	10 00 19	76.2	248.3	1.2		54.0	0	3978	16 20 20
16 28 00	---	10 08 00	75.2	251.4	1.4		55.6	460	4037	16 20 21
16 28 20	J0847+4609	10 08 20	75.4	249.2	1.3		54.0	2	4037	16 28 20
16 30 00	=0844+463	10 10 00	75.2	249.9	1.4		54.4	100	4050	16 28 21
16 30 20	J084408+4627	10 10 20	74.8	252.3	1.4		56.0	1	4050	16 30 20
16 38 00	---	10 18 01	73.7	255.0	1.5		57.2	460	4109	16 30 21
16 38 20	J0847+4609	10 18 22	74.0	253.0	1.5		55.9	2	4109	16 38 20
16 40 00	=0844+463	10 20 02	73.8	253.6	1.5		56.2	100	4122	16 38 21
16 40 20	J084408+4627	10 20 22	73.4	255.8	1.6		57.5	2	4122	16 40 20
16 48 00	---	10 28 03	72.3	258.1	1.7		58.4	460	4181	16 40 21
16 48 20	J0847+4609	10 28 23	72.5	256.4	1.7		57.3	3	4181	16 48 20
16 50 00	=0844+463	10 30 03	72.3	256.9	1.7		57.5	100	4194	16 48 21
16 50 20	J084408+4627	10 30 23	71.9	258.8	1.7		58.7	3	4194	16 50 20
16 58 00	---	10 38 05	70.8	261.0	1.9		59.3	460	4254	16 50 21
16 58 20	J0847+4609	10 38 25	71.1	259.3	1.8		58.3	3	4254	16 58 20
17 00 00	=0844+463	10 40 05	70.8	259.8	1.9		58.4	100	4266	16 58 21

Schedule for TORUN (Code Tr )

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Compact steep-spectrum source at the centre of a giant radio galaxy

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 28 May 2021 Day 148 ---										
17 00 20	J084408+4627	10 40 25	70.4	261.6	1.9		59.5	3	4266	17 00 20
17 08 00	---	10 48 06	69.3	263.5	2.0		59.9	460	4326	17 00 21
17 08 20	J0847+4609	10 48 26	69.6	262.0	2.0		59.0	4	4326	17 08 20
17 10 00	=0844+463	10 50 07	69.3	262.4	2.0		59.1	100	4339	17 08 21
17 10 20	J084408+4627	10 50 27	68.9	264.1	2.1		60.0	4	4339	17 10 20
17 18 00	---	10 58 08	67.8	265.9	2.2		60.3	460	4398	17 10 21
17 18 20	J0847+4609	10 58 28	68.1	264.5	2.2		59.5	4	4398	17 18 20
17 20 00	=0844+463	11 00 08	67.8	264.9	2.2		59.6	100	4411	17 18 21
17 20 20	J084408+4627	11 00 28	67.4	266.4	2.2		60.3	4	4411	17 20 20
17 28 00	---	11 08 10	66.3	268.1	2.4		60.5	460	4470	17 20 21
17 28 20	J0847+4609	11 08 30	66.6	266.8	2.3		59.8	5	4470	17 28 20
17 30 00	=0844+463	11 10 10	66.3	267.1	2.4		59.8	100	4483	17 28 21
17 30 20	J084408+4627	11 10 30	65.9	268.6	2.4		60.5	4	4483	17 30 20
17 38 00	---	11 18 11	64.8	270.1	2.5		60.5	460	4542	17 30 21
17 38 20	J0847+4609	11 18 31	65.1	268.9	2.5		59.9	5	4542	17 38 20
17 40 00	=0844+463	11 20 12	64.8	269.2	2.5		60.0	100	4555	17 38 21
17 40 20	J084408+4627	11 20 32	64.4	270.6	2.6		60.5	5	4555	17 40 20
17 48 00	---	11 28 13	63.3	272.1	2.7		60.5	460	4614	17 40 21
17 48 20	J0847+4609	11 28 33	63.6	270.9	2.7		60.0	5	4614	17 48 20
17 50 00	=0844+463	11 30 13	63.3	271.2	2.7		59.9	100	4627	17 48 21
17 50 20	J084408+4627	11 30 33	62.9	272.5	2.7		60.4	5	4627	17 50 20
17 58 00	---	11 38 15	61.8	273.9	2.9		60.3	460	4686	17 50 21
17 58 20	J0847+4609	11 38 35	62.1	272.8	2.8		59.8	5	4686	17 58 20
18 00 00	=0844+463	11 40 15	61.8	273.1	2.9		59.8	100	4699	17 58 21
18 00 20	J084408+4627	11 40 35	61.4	274.4	2.9		60.2	5	4699	18 00 20
18 08 00	---	11 48 16	60.3	275.7	3.0		60.0	460	4759	18 00 21
18 08 20	J0847+4609	11 48 36	60.6	274.6	3.0		59.6	6	4759	18 08 20
18 10 00	=0844+463	11 50 17	60.3	274.9	3.0		59.6	100	4771	18 08 21
18 10 20	J084408+4627	11 50 37	59.9	276.1	3.1		60.0	5	4771	18 10 20
18 18 00	---	11 58 18	58.8	277.4	3.2		59.7	460	4831	18 10 21

Schedule for TORUN (Code Tr )

Page 11

Compact steep-spectrum source at the centre of a giant radio galaxy

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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```

Start UT	Source	Start / Stop				Early	Disk	TPStart		
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Fri 28 May 2021 Day 148 ---										
18 18 20	J0847+4609	11 58 38	59.1	276.4	3.2		59.4	6	4831	18 18 20
18 20 00	=0844+463	12 00 18	58.8	276.7	3.2		59.3	100	4844	18 18 21
18 20 20	J084408+4627	12 00 38	58.4	277.8	3.3		59.6	6	4844	18 20 20
18 28 00	---	12 08 20	57.3	279.1	3.4		59.3	460	4903	18 20 21
18 28 20	J0847+4609	12 08 40	57.6	278.1	3.3		59.0	6	4903	18 28 20
18 30 00	=0844+463	12 10 20	57.3	278.4	3.4		58.9	100	4916	18 28 21
18 30 20	J084408+4627	12 10 40	56.9	279.5	3.4		59.2	6	4916	18 30 20
18 38 00	---	12 18 21	55.8	280.7	3.5		58.8	460	4975	18 30 21
18 38 20	J0847+4609	12 18 41	56.1	279.7	3.5		58.6	6	4975	18 38 20
18 40 00	=0844+463	12 20 22	55.9	280.0	3.5		58.5	100	4988	18 38 21
18 40 20	J084408+4627	12 20 42	55.5	281.1	3.6		58.7	6	4988	18 40 20
18 48 00	---	12 28 23	54.3	282.3	3.7		58.3	460	5047	18 40 21
18 48 20	J0847+4609	12 28 43	54.6	281.3	3.7		58.1	6	5047	18 48 20
18 50 00	=0844+463	12 30 23	54.4	281.6	3.7		58.0	100	5060	18 48 21
18 50 20	J084408+4627	12 30 43	54.0	282.6	3.8		58.2	6	5060	18 50 20
18 58 00	---	12 38 24	52.9	283.8	3.9		57.7	460	5119	18 50 21
18 58 20	J0847+4609	12 38 45	53.1	282.9	3.8		57.5	6	5119	18 58 20
19 00 00	=0844+463	12 40 25	52.9	283.2	3.9		57.5	100	5132	18 58 21

```
-----
```

## SETUP FILE INFORMATION:

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

==== Setup file: sess221.L1024

Setup group: 10	Station: TORUN	Total bit rate: 1024
Format: VDIF	Bits per sample: 2	Sample rate: 64.000
Number of channels: 8	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
Net SB=	L	L	U	U	L	L	U	U
IF SB =	L	L	L	L	L	L	L	L
Pol. =	RCP	LCP	RCP	LCP	RCP	LCP	RCP	LCP
BBC =	1	9	1	9	2	10	2	10
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: 8 Setup file default. Used with PCAL = off  
 LO sum= 1626.49 1626.49 1626.49 1626.49 1690.49 1690.49 1690.49 1690.49  
 BBC fr= 673.51 673.51 673.51 673.51 609.51 609.51 609.51 609.51  
 Bandwd= 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00  
 Matching frequency sets: 8

Track assignments are:

track1= 1, 2, 3, 4, 5, 6, 7, 8  
 barrel=roll\_off

#### POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* J084408+4627	08 40 41.594643	* 08 44 08.880000	08 45 35.153784	0.00
	46 38 36.48987	* 46 27 44.40000	46 23 18.77687	0.00
0844+463	08 44 08.263314	* 08 47 34.298529	08 49 00.077233	0.15
* J0847+4609	46 20 31.41929	* 46 09 28.00561	46 04 57.66778	0.14
	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 132 observations.			
4C39.25	09 23 55.319216	* 09 27 03.013937	09 28 21.473876	0.31
J0927+3902	39 15 23.56644	* 39 02 20.85185	38 56 59.59963	0.16
0923+392	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
* J0927+39	GSFC 2016a X/S astro solution, 250526 observations.			

**em153atr**

RESOLVING A GRAVITATIONALLY LENSED DUAL BACK-HOLE SYSTEM AT  $z = 2.3$   
PI: *John McKean*

Address: ASTRON

Observing mode: 18cm 1024-8-2

Schedule for TORUN (Code Tr )

Page 2

Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$

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 28 May 2021 Day 148 ---										
Next scan frequencies: 1626.49 1626.49 1626.49 1626.49 1690.49 1690.49 1690.49 1690.49										
Next BBC frequencies: 673.51 673.51 673.51 673.51 609.51 609.51 609.51 609.51										
Next scan bandwidths: 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00										
-----										
19 30 00	J1639+8631	13 10 30	55.2	4.8	-3.4		-125.3	0	0	19 30 00
19 31 30	=1654+866	13 12 00	55.2	4.7	-3.4		-125.7	90	12	19 30 01
19 31 30	PSJ1721+8842	13 12 00	53.8	1.9	-3.9		-120.6	-20	12	No stop
19 34 55	---	13 15 26	53.8	1.9	-3.8		-121.4	185	38	19 31 31
19 35 40	J1639+8631	13 16 11	55.3	4.7	-3.3		-126.8	25	38	19 35 40
19 37 05	=1654+866	13 17 36	55.3	4.7	-3.3		-127.2	85	49	19 35 41
19 37 05	PSJ1721+8842	13 17 36	53.8	1.9	-3.8		-122.0	-20	49	No stop
19 40 30	---	13 21 01	53.8	1.8	-3.7		-122.9	185	75	19 37 06
19 40 30	J1639+8631	13 21 01	55.4	4.6	-3.2		-128.1	-20	75	No stop
19 42 00	=1654+866	13 22 32	55.4	4.6	-3.2		-128.5	70	87	19 40 31
19 42 00	PSJ1721+8842	13 22 32	53.8	1.8	-3.7		-123.2	-20	87	No stop
19 45 25	---	13 25 57	53.8	1.8	-3.6		-124.1	185	113	19 42 01
19 46 10	J1639+8631	13 26 42	55.4	4.5	-3.1		-129.6	25	113	19 46 10
19 47 35	=1654+866	13 28 08	55.4	4.5	-3.1		-130.0	85	124	19 46 11
19 47 35	PSJ1721+8842	13 28 08	53.9	1.8	-3.6		-124.7	-20	124	No stop
19 51 00	---	13 31 33	53.9	1.8	-3.5		-125.5	185	151	19 47 36
19 51 00	J1639+8631	13 31 33	55.5	4.4	-3.0		-130.9	-20	151	No stop
19 52 30	=1654+866	13 33 03	55.5	4.4	-3.0		-131.3	70	162	19 51 01
19 52 30	PSJ1721+8842	13 33 03	53.9	1.8	-3.5		-125.9	-20	162	No stop
19 55 55	---	13 36 29	53.9	1.8	-3.5		-126.8	185	189	19 52 31
19 56 40	J1639+8631	13 37 14	55.5	4.3	-2.9		-132.4	25	189	19 56 40
19 58 05	=1654+866	13 38 39	55.6	4.3	-2.9		-132.8	85	200	19 56 41
19 58 05	PSJ1721+8842	13 38 39	53.9	1.7	-3.4		-127.3	-20	200	No stop
20 01 30	---	13 42 05	53.9	1.7	-3.4		-128.2	185	226	19 58 06
20 01 30	J1639+8631	13 42 05	55.6	4.2	-2.9		-133.7	-20	226	No stop
20 03 00	=1654+866	13 43 35	55.6	4.2	-2.8		-134.1	70	238	20 01 31

---

Schedule for TORUN (Code Tr )

Page 3

Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 28 May 2021	Day 148					---				
20 03 00	PSJ1721+8842	13 43 35	53.9	1.7	-3.3		-128.6	-20	238	No stop	
20 06 25	---	13 47 01	53.9	1.7	-3.3		-129.5	185	264	20 03 01	
20 07 10	J1639+8631	13 47 46	55.7	4.1	-2.8		-135.2	25	264	20 07 10	
20 08 35	=1654+866	13 49 11	55.7	4.1	-2.7		-135.5	85	275	20 07 11	
20 08 35	PSJ1721+8842	13 49 11	54.0	1.7	-3.2		-130.0	-20	275	No stop	
20 12 00	---	13 52 37	54.0	1.7	-3.2		-130.9	185	301	20 08 36	
20 12 00	J1639+8631	13 52 37	55.7	4.0	-2.7		-136.5	-20	301	No stop	
20 13 30	=1654+866	13 54 07	55.7	4.0	-2.7		-136.9	70	313	20 12 01	
20 13 30	PSJ1721+8842	13 54 07	54.0	1.7	-3.2		-131.3	-20	313	No stop	
20 16 55	---	13 57 32	54.0	1.6	-3.1		-132.2	185	339	20 13 31	
20 17 40	J1639+8631	13 58 18	55.8	3.9	-2.6		-138.0	25	339	20 17 40	
20 19 05	=1654+866	13 59 43	55.8	3.9	-2.6		-138.3	85	350	20 17 41	
20 19 05	PSJ1721+8842	13 59 43	54.0	1.6	-3.1		-132.7	-20	350	No stop	
20 22 30	---	14 03 08	54.0	1.6	-3.0		-133.6	185	377	20 19 06	
20 22 30	J1639+8631	14 03 08	55.8	3.8	-2.5		-139.3	-21	377	No stop	
20 24 00	=1654+866	14 04 39	55.8	3.8	-2.5		-139.7	69	388	20 22 31	
20 24 00	PSJ1721+8842	14 04 39	54.0	1.6	-3.0		-134.0	-21	388	No stop	
20 27 25	---	14 08 04	54.0	1.6	-2.9		-134.8	184	415	20 24 01	
20 28 10	J1639+8631	14 08 49	55.9	3.7	-2.4		-140.8	24	415	20 28 10	
20 29 35	=1654+866	14 10 15	55.9	3.7	-2.4		-141.2	85	426	20 28 11	
20 29 35	PSJ1721+8842	14 10 15	54.0	1.5	-2.9		-135.4	-21	426	No stop	
20 33 00	---	14 13 40	54.1	1.5	-2.8		-136.3	184	452	20 29 36	
20 33 00	J1639+8631	14 13 40	55.9	3.6	-2.3		-142.1	-21	452	No stop	
20 34 30	=1654+866	14 15 10	55.9	3.6	-2.3		-142.5	69	464	20 33 01	
20 34 30	PSJ1721+8842	14 15 10	54.1	1.5	-2.8		-136.7	-21	464	No stop	
20 37 55	---	14 18 36	54.1	1.5	-2.8		-137.5	184	490	20 34 31	
20 38 40	J1639+8631	14 19 21	56.0	3.5	-2.2		-143.6	24	490	20 38 40	
20 40 05	=1654+866	14 20 46	56.0	3.4	-2.2		-144.0	85	501	20 38 41	
20 40 05	PSJ1721+8842	14 20 46	54.1	1.5	-2.7		-138.1	-21	501	No stop	
20 43 30	---	14 24 12	54.1	1.4	-2.7		-139.0	184	528	20 40 06	
20 43 30	J1639+8631	14 24 12	56.0	3.4	-2.2		-144.9	-21	528	No stop	
20 45 00	=1654+866	14 25 42	56.0	3.3	-2.1		-145.3	69	539	20 43 31	

Schedule for TORUN (Code Tr )

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Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 28 May 2021 Day 148 ---										
20 45 00	PSJ1721+8842	14 25 42	54.1	1.4	-2.6		-139.4	-21	539	No stop
20 48 25	---	14 29 08	54.1	1.4	-2.6		-140.2	184	566	20 45 01
20 49 10	J1639+8631	14 29 53	56.1	3.2	-2.1		-146.4	24	566	20 49 10
20 50 35	=1654+866	14 31 18	56.1	3.2	-2.0		-146.8	85	576	20 49 11
20 50 35	PSJ1721+8842	14 31 18	54.1	1.4	-2.5		-140.8	-21	576	No stop
20 54 00	---	14 34 44	54.1	1.4	-2.5		-141.7	184	603	20 50 36
20 54 00	J1639+8631	14 34 44	56.1	3.1	-2.0		-147.7	-21	603	No stop
20 55 30	=1654+866	14 36 14	56.1	3.1	-2.0		-148.1	69	614	20 54 01
21 00 30	3C345	14 41 15	65.3	110.3	-2.0		-47.1	71	614	21 00 30
21 05 30	---	14 46 15	66.0	111.9	-2.0		-46.5	300	653	21 00 31
21 10 30	J1639+8631	14 51 16	56.2	2.7	-1.7		-152.2	67	653	21 10 30
21 15 30	=1654+866	14 56 17	56.3	2.6	-1.6		-153.5	300	692	21 10 31
21 15 30	PSJ1721+8842	14 56 17	54.2	1.2	-2.1		-147.2	-22	692	No stop
21 18 55	---	14 59 43	54.2	1.2	-2.1		-148.1	183	718	21 15 31
21 19 40	J1639+8631	15 00 28	56.3	2.5	-1.6		-154.7	23	718	21 19 40
21 21 05	=1654+866	15 01 53	56.3	2.5	-1.5		-155.0	85	729	21 19 41
21 21 05	PSJ1721+8842	15 01 53	54.2	1.1	-2.0		-148.6	-22	729	No stop
21 24 30	---	15 05 19	54.2	1.1	-2.0		-149.5	183	756	21 21 06
21 24 30	J1639+8631	15 05 19	56.3	2.4	-1.5		-156.0	-22	756	No stop
21 26 00	=1654+866	15 06 49	56.3	2.3	-1.4		-156.4	68	767	21 24 31
21 26 00	PSJ1721+8842	15 06 49	54.2	1.1	-1.9		-149.9	-22	767	No stop
21 29 25	---	15 10 14	54.3	1.1	-1.9		-150.8	183	794	21 26 01
21 30 10	J1639+8631	15 10 59	56.4	2.2	-1.4		-157.5	23	794	21 30 10
21 31 35	=1654+866	15 12 25	56.4	2.2	-1.4		-157.9	85	804	21 30 11
21 31 35	PSJ1721+8842	15 12 25	54.3	1.1	-1.9		-151.3	-22	804	No stop
21 35 00	---	15 15 50	54.3	1.0	-1.8		-152.2	183	831	21 31 36
21 35 00	J1639+8631	15 15 50	56.4	2.1	-1.3		-158.8	-22	831	No stop
21 36 30	=1654+866	15 17 20	56.4	2.1	-1.3		-159.2	68	842	21 35 01
21 36 30	PSJ1721+8842	15 17 20	54.3	1.0	-1.8		-152.6	-22	842	No stop
21 39 55	---	15 20 46	54.3	1.0	-1.7		-153.5	183	869	21 36 31

Schedule for TORUN (Code Tr )

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Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 28 May 2021 Day 148 ---										
21 40 40	J1639+8631	15 21 31	56.4	2.0	-1.2		-160.4	23	869	21 40 40
21 42 05	=1654+866	15 22 56	56.4	1.9	-1.2		-160.7	85	880	21 40 41
21 42 05	PSJ1721+8842	15 22 56	54.3	1.0	-1.7		-154.0	-22	880	No stop
21 45 30	---	15 26 22	54.3	0.9	-1.6		-154.9	183	906	21 42 06
21 45 30	J1639+8631	15 26 22	56.4	1.8	-1.1		-161.7	-22	906	No stop
21 47 00	=1654+866	15 27 52	56.5	1.8	-1.1		-162.1	68	918	21 45 31
21 47 00	PSJ1721+8842	15 27 52	54.3	0.9	-1.6		-155.3	-22	918	No stop
21 50 25	---	15 31 18	54.3	0.9	-1.5		-156.2	183	944	21 47 01
21 51 10	J1639+8631	15 32 03	56.5	1.7	-1.0		-163.2	23	944	21 51 10
21 52 35	=1654+866	15 33 28	56.5	1.7	-1.0		-163.6	85	955	21 51 11
21 52 35	PSJ1721+8842	15 33 28	54.3	0.9	-1.5		-156.8	-22	955	No stop
21 56 00	---	15 36 54	54.3	0.8	-1.4		-157.6	183	982	21 52 36
21 56 00	J1639+8631	15 36 54	56.5	1.6	-0.9		-164.5	-22	982	No stop
21 57 30	=1654+866	15 38 24	56.5	1.5	-0.9		-164.9	68	993	21 56 01
21 57 30	PSJ1721+8842	15 38 24	54.3	0.8	-1.4		-158.0	-22	993	No stop
22 00 55	---	15 41 50	54.3	0.8	-1.4		-158.9	183	1020	21 57 31
22 01 40	J1639+8631	15 42 35	56.5	1.4	-0.9		-166.1	23	1020	22 01 40
22 03 05	=1654+866	15 44 00	56.5	1.4	-0.8		-166.5	85	1031	22 01 41
22 03 05	PSJ1721+8842	15 44 00	54.3	0.8	-1.3		-159.5	-22	1031	No stop
22 06 30	---	15 47 25	54.3	0.7	-1.3		-160.3	183	1057	22 03 06
22 06 30	J1639+8631	15 47 25	56.5	1.3	-0.8		-167.4	-22	1057	No stop
22 08 00	=1654+866	15 48 56	56.5	1.2	-0.7		-167.8	68	1069	22 06 31
22 08 00	PSJ1721+8842	15 48 56	54.3	0.7	-1.2		-160.7	-22	1069	No stop
22 11 25	---	15 52 21	54.3	0.7	-1.2		-161.6	183	1095	22 08 01
22 12 10	J1639+8631	15 53 06	56.5	1.1	-0.7		-168.9	23	1095	22 12 10
22 13 35	=1654+866	15 54 32	56.6	1.1	-0.7		-169.3	85	1106	22 12 11
22 13 35	PSJ1721+8842	15 54 32	54.4	0.7	-1.2		-162.2	-22	1106	No stop
22 17 00	---	15 57 57	54.4	0.6	-1.1		-163.1	183	1132	22 13 36
22 17 00	J1639+8631	15 57 57	56.6	1.0	-0.6		-170.3	-22	1132	No stop
22 18 30	=1654+866	15 59 27	56.6	0.9	-0.6		-170.7	68	1144	22 17 01

Schedule for TORUN (Code Tr ) Page 6

Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 28 May 2021 Day 148 ---										
22 18 30	PSJ1721+8842	15 59 27	54.4	0.6	-1.1		-163.4	-22	1144	No stop
22 21 55	---	16 02 53	54.4	0.6	-1.0		-164.3	183	1170	22 18 31
22 22 40	J1639+8631	16 03 38	56.6	0.8	-0.5		-171.8	23	1170	22 22 40
22 24 05	=1654+866	16 05 03	56.6	0.8	-0.5		-172.2	85	1181	22 22 41
22 24 05	PSJ1721+8842	16 05 03	54.4	0.6	-1.0		-164.9	-22	1181	No stop
22 27 30	---	16 08 29	54.4	0.5	-0.9		-165.8	183	1208	22 24 06
22 27 30	J1639+8631	16 08 29	56.6	0.7	-0.4		-173.1	-22	1208	No stop
22 29 00	=1654+866	16 09 59	56.6	0.7	-0.4		-173.5	68	1219	22 27 31
22 29 00	PSJ1721+8842	16 09 59	54.4	0.5	-0.9		-166.2	-22	1219	No stop
22 32 25	---	16 13 25	54.4	0.5	-0.8		-167.0	183	1246	22 29 01
22 33 10	J1639+8631	16 14 10	56.6	0.5	-0.3		-174.7	23	1246	22 33 10
22 34 35	=1654+866	16 15 35	56.6	0.5	-0.3		-175.1	85	1257	22 33 11
22 34 35	PSJ1721+8842	16 15 35	54.4	0.5	-0.8		-167.6	-22	1257	No stop
22 38 00	---	16 19 01	54.4	0.4	-0.7		-168.5	183	1283	22 34 36
22 38 00	J1639+8631	16 19 01	56.6	0.4	-0.2		-176.0	-22	1283	No stop
22 39 30	=1654+866	16 20 31	56.6	0.4	-0.2		-176.4	68	1295	22 38 01
22 39 30	PSJ1721+8842	16 20 31	54.4	0.4	-0.7		-168.9	-22	1295	No stop
22 42 55	---	16 23 56	54.4	0.4	-0.7		-169.8	183	1321	22 39 31
22 43 40	J1639+8631	16 24 42	56.6	0.3	-0.1		-177.5	23	1321	22 43 40
22 45 05	=1654+866	16 26 07	56.6	0.2	-0.1		-177.9	85	1332	22 43 41
22 45 05	PSJ1721+8842	16 26 07	54.4	0.4	-0.6		-170.3	-22	1332	No stop
22 48 30	---	16 29 32	54.4	0.3	-0.6		-171.2	183	1358	22 45 06
22 48 30	J1639+8631	16 29 32	56.6	0.1	-0.1		-178.9	-22	1358	No stop
22 50 00	=1654+866	16 31 03	56.6	0.1	-0.0		-179.3	68	1370	22 48 31
22 50 00	PSJ1721+8842	16 31 03	54.4	0.3	-0.5		-171.6	-22	1370	No stop
22 53 25	---	16 34 28	54.4	0.3	-0.5		-172.5	183	1396	22 50 01
22 54 10	J1639+8631	16 35 13	56.6	-0.0	0.0		179.6	23	1396	22 54 10
22 55 35	=1654+866	16 36 38	56.6	-0.1	0.0		179.2	85	1407	22 54 11
22 55 35	PSJ1721+8842	16 36 38	54.4	0.3	-0.5		-173.0	-22	1407	No stop
22 59 00	---	16 40 04	54.4	0.2	-0.4		-173.9	183	1434	22 55 36

Schedule for TORUN (Code Tr )

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Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 28 May 2021 Day 148 ---										
22 59 00	J1639+8631	16 40 04	56.6	-0.2	0.1		178.3	-22	1434	No stop
23 00 30	=1654+866	16 41 34	56.6	-0.2	0.1		177.8	68	1445	22 59 01
23 00 30	PSJ1721+8842	16 41 34	54.4	0.2	-0.4		-174.3	-22	1445	No stop
23 03 55	---	16 45 00	54.4	0.2	-0.3		-175.2	183	1472	23 00 31
23 04 40	J1639+8631	16 45 45	56.6	-0.3	0.2		176.7	23	1472	23 04 40
23 06 05	=1654+866	16 47 10	56.6	-0.4	0.2		176.3	85	1483	23 04 41
23 06 05	PSJ1721+8842	16 47 10	54.4	0.2	-0.3		-175.7	-22	1483	No stop
23 09 30	---	16 50 36	54.4	0.1	-0.2		-176.6	183	1509	23 06 06
23 09 30	J1639+8631	16 50 36	56.6	-0.5	0.3		175.4	-22	1509	No stop
23 11 00	=1654+866	16 52 06	56.6	-0.5	0.3		175.0	68	1521	23 09 31
23 11 00	PSJ1721+8842	16 52 06	54.4	0.1	-0.2		-177.0	-22	1521	No stop
23 14 25	---	16 55 32	54.4	0.1	-0.1		-177.9	183	1547	23 11 01
23 15 10	J1639+8631	16 56 17	56.6	-0.6	0.4		173.8	23	1547	23 15 10
23 16 35	=1654+866	16 57 42	56.6	-0.7	0.4		173.5	85	1558	23 15 11
23 16 35	PSJ1721+8842	16 57 42	54.4	0.1	-0.1		-178.5	-22	1558	No stop
23 20 00	---	17 01 07	54.4	0.0	-0.0		-179.3	183	1584	23 16 36
23 20 00	J1639+8631	17 01 07	56.6	-0.8	0.5		172.5	-22	1584	No stop
23 21 30	=1654+866	17 02 38	56.6	-0.8	0.5		172.1	68	1596	23 20 01
23 21 30	PSJ1721+8842	17 02 38	54.4	0.0	-0.0		-179.7	-22	1596	No stop
23 24 55	---	17 06 03	54.4	-0.0	0.0		179.4	183	1622	23 21 31
23 25 40	J1639+8631	17 06 48	56.6	-0.9	0.6		171.0	23	1622	23 25 40
23 27 05	=1654+866	17 08 14	56.6	-1.0	0.6		170.6	85	1633	23 25 41
23 27 05	PSJ1721+8842	17 08 14	54.4	-0.0	0.1		178.8	-22	1633	No stop
23 30 30	---	17 11 39	54.4	-0.1	0.1		177.9	183	1660	23 27 06
23 30 30	J1639+8631	17 11 39	56.6	-1.0	0.6		169.6	-22	1660	No stop
23 32 00	=1654+866	17 13 09	56.5	-1.1	0.7		169.2	68	1671	23 30 31
23 32 00	PSJ1721+8842	17 13 09	54.4	-0.1	0.2		177.5	-22	1671	No stop
23 35 25	---	17 16 35	54.4	-0.1	0.2		176.7	183	1698	23 32 01
23 36 10	J1639+8631	17 17 20	56.5	-1.2	0.7		168.1	23	1698	23 36 10
23 37 35	=1654+866	17 18 45	56.5	-1.2	0.8		167.7	85	1709	23 36 11

Schedule for TORUN (Code Tr )

Page 8

Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 28 May 2021 Day 148 ---										
23 37 35	PSJ1721+8842	17 18 45	54.4	-0.1	0.3		176.1	-22	1709	No stop
23 41 00	---	17 22 11	54.4	-0.2	0.3		175.2	183	1735	23 37 36
23 41 00	J1639+8631	17 22 11	56.5	-1.3	0.8		166.8	-22	1735	No stop
23 42 30	=1654+866	17 23 41	56.5	-1.4	0.8		166.4	68	1747	23 41 01
23 42 30	PSJ1721+8842	17 23 41	54.4	-0.2	0.3		174.8	-22	1747	No stop
23 45 55	---	17 27 07	54.4	-0.2	0.4		174.0	183	1773	23 42 31
23 46 40	J1639+8631	17 27 52	56.5	-1.5	0.9		165.2	23	1773	23 46 40
23 48 05	=1654+866	17 29 17	56.5	-1.5	0.9		164.9	85	1784	23 46 41
23 48 05	PSJ1721+8842	17 29 17	54.4	-0.3	0.4		173.4	-22	1784	No stop
23 51 30	---	17 32 43	54.4	-0.3	0.5		172.5	183	1811	23 48 06
23 51 30	J1639+8631	17 32 43	56.5	-1.6	1.0		163.9	-22	1811	No stop
23 53 00	=1654+866	17 34 13	56.5	-1.7	1.0		163.5	68	1822	23 51 31
23 53 00	PSJ1721+8842	17 34 13	54.4	-0.3	0.5		172.1	-22	1822	No stop
23 56 25	---	17 37 38	54.4	-0.3	0.6		171.2	183	1849	23 53 01
23 57 10	J1639+8631	17 38 24	56.5	-1.8	1.1		162.4	23	1849	23 57 10
23 58 35	=1654+866	17 39 49	56.4	-1.8	1.1		162.0	85	1860	23 57 11
--- Start: Fri 28 May 2021 Day 148 -- Stop: Sat 29 May 2021 Day 149 ---										
23 58 35	PSJ1721+8842	17 39 49	54.4	-0.4	0.6		170.7	-22	1860	No stop
00 02 00	---	17 43 14	54.4	-0.4	0.7		169.8	183	1886	23 58 36
00 02 00	J1639+8631	17 43 14	56.4	-1.9	1.2		161.1	-21	1886	No stop
00 03 30	=1654+866	17 44 45	56.4	-1.9	1.2		160.7	69	1898	00 02 01
00 03 30	PSJ1721+8842	17 44 45	54.4	-0.4	0.7		169.4	-21	1898	No stop
00 06 55	---	17 48 10	54.4	-0.4	0.7		168.5	184	1924	00 03 31
00 07 40	J1639+8631	17 48 55	56.4	-2.0	1.3		159.5	24	1924	00 07 40
00 09 05	=1654+866	17 50 21	56.4	-2.1	1.3		159.1	85	1935	00 07 41
00 09 05	PSJ1721+8842	17 50 21	54.4	-0.5	0.8		168.0	-21	1935	No stop
00 12 30	---	17 53 46	54.4	-0.5	0.8		167.1	184	1961	00 09 06
00 12 30	J1639+8631	17 53 46	56.4	-2.2	1.3		158.2	-21	1961	No stop
00 14 00	=1654+866	17 55 16	56.4	-2.2	1.4		157.8	69	1973	00 12 31



Schedule for TORUN (Code Tr )

Page 9

Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 29 May 2021 Day 149 ---										
00 14 00	PSJ1721+8842	17 55 16	54.4	-0.5	0.9		166.7	-21	1973	No stop
00 17 25	---	17 58 42	54.4	-0.5	0.9		165.8	184	1999	00 14 01
00 18 10	J1639+8631	17 59 27	56.3	-2.3	1.4		156.7	24	1999	00 18 10
00 19 35	=1654+866	18 00 52	56.3	-2.4	1.5		156.3	85	2010	00 18 11
00 19 35	PSJ1721+8842	18 00 52	54.4	-0.6	1.0		165.2	-21	2010	No stop
00 23 00	---	18 04 18	54.4	-0.6	1.0		164.4	184	2037	00 19 36
00 23 00	J1639+8631	18 04 18	56.3	-2.4	1.5		155.4	-21	2037	No stop
00 24 30	=1654+866	18 05 48	56.3	-2.5	1.5		155.0	69	2048	00 23 01
00 24 30	PSJ1721+8842	18 05 48	54.4	-0.6	1.0		164.0	-21	2048	No stop
00 27 55	---	18 09 14	54.4	-0.6	1.1		163.1	184	2075	00 24 31
00 28 40	J1639+8631	18 09 59	56.3	-2.6	1.6		153.8	24	2075	00 28 40
00 30 05	=1654+866	18 11 24	56.3	-2.6	1.6		153.4	85	2086	00 28 41
00 30 05	PSJ1721+8842	18 11 24	54.4	-0.7	1.1		162.5	-21	2086	No stop
00 33 30	---	18 14 50	54.4	-0.7	1.2		161.7	184	2112	00 30 06
00 33 30	J1639+8631	18 14 50	56.2	-2.7	1.7		152.5	-21	2112	No stop
00 35 00	=1654+866	18 16 20	56.2	-2.7	1.7		152.1	69	2124	00 33 31
00 35 00	PSJ1721+8842	18 16 20	54.3	-0.7	1.2		161.3	-21	2124	No stop
00 38 25	---	18 19 45	54.3	-0.7	1.3		160.4	184	2150	00 35 01
00 39 10	J1639+8631	18 20 31	56.2	-2.8	1.8		151.0	24	2150	00 39 10
00 40 35	=1654+866	18 21 56	56.2	-2.9	1.8		150.6	85	2161	00 39 11
00 40 35	PSJ1721+8842	18 21 56	54.3	-0.8	1.3		159.8	-21	2161	No stop
00 44 00	---	18 25 21	54.3	-0.8	1.4		158.9	184	2187	00 40 36
00 44 00	J1639+8631	18 25 21	56.2	-3.0	1.9		149.7	-21	2187	No stop
00 45 30	=1654+866	18 26 52	56.2	-3.0	1.9		149.3	69	2199	00 44 01
00 45 30	PSJ1721+8842	18 26 52	54.3	-0.8	1.4		158.6	-21	2199	No stop
00 48 55	---	18 30 17	54.3	-0.8	1.4		157.7	184	2225	00 45 31
00 49 40	J1639+8631	18 31 02	56.1	-3.1	2.0		148.1	24	2225	00 49 40
00 51 05	=1654+866	18 32 27	56.1	-3.1	2.0		147.8	85	2236	00 49 41
00 51 05	PSJ1721+8842	18 32 27	54.3	-0.9	1.5		157.1	-20	2236	No stop
00 54 30	---	18 35 53	54.3	-0.9	1.5		156.2	185	2263	00 51 06

Schedule for TORUN (Code Tr )

Page 10

Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 29 May 2021 Day 149 ---										
00 54 30	J1639+8631	18 35 53	56.1	-3.2	2.0		146.8	-20	2263	No stop
00 56 00	=1654+866	18 37 23	56.1	-3.2	2.1		146.4	70	2274	00 54 31
00 56 00	PSJ1721+8842	18 37 23	54.3	-0.9	1.6		155.8	-20	2274	No stop
00 59 25	---	18 40 49	54.3	-0.9	1.6		155.0	185	2301	00 56 01
01 00 10	J1639+8631	18 41 34	56.0	-3.3	2.1		145.3	25	2301	01 00 10
01 01 35	=1654+866	18 42 59	56.0	-3.4	2.2		144.9	85	2312	01 00 11
01 01 35	PSJ1721+8842	18 42 59	54.3	-0.9	1.7		154.4	-20	2312	No stop
01 05 00	---	18 46 25	54.3	-1.0	1.7		153.5	185	2338	01 01 36
01 05 00	J1639+8631	18 46 25	56.0	-3.4	2.2		144.0	-20	2338	No stop
01 06 30	=1654+866	18 47 55	56.0	-3.5	2.2		143.6	70	2350	01 05 01
01 06 30	PSJ1721+8842	18 47 55	54.3	-1.0	1.7		153.1	-20	2350	No stop
01 09 55	---	18 51 21	54.3	-1.0	1.8		152.3	185	2376	01 06 31
01 10 40	J1639+8631	18 52 06	55.9	-3.6	2.3		142.5	25	2376	01 10 40
01 12 05	=1654+866	18 53 31	55.9	-3.6	2.3		142.1	85	2387	01 10 41
01 12 05	PSJ1721+8842	18 53 31	54.3	-1.0	1.8		151.7	-20	2387	No stop
01 15 30	---	18 56 56	54.3	-1.1	1.9		150.8	185	2413	01 12 06
01 15 30	J1639+8631	18 56 56	55.9	-3.7	2.4		141.2	-20	2413	No stop
01 17 00	=1654+866	18 58 27	55.9	-3.7	2.4		140.8	70	2425	01 15 31
01 17 00	PSJ1721+8842	18 58 27	54.2	-1.1	1.9		150.4	-20	2425	No stop
01 20 25	---	19 01 52	54.2	-1.1	2.0		149.6	185	2451	01 17 01
01 21 10	J1639+8631	19 02 37	55.8	-3.8	2.5		139.7	25	2451	01 21 10
01 22 35	=1654+866	19 04 03	55.8	-3.8	2.5		139.3	85	2462	01 21 11
01 22 35	PSJ1721+8842	19 04 03	54.2	-1.1	2.0		149.0	-20	2462	No stop
01 26 00	---	19 07 28	54.2	-1.2	2.1		148.1	185	2489	01 22 36
01 26 00	J1639+8631	19 07 28	55.8	-3.9	2.6		138.4	-20	2489	No stop
01 27 30	=1654+866	19 08 58	55.8	-3.9	2.6		138.0	70	2500	01 26 01
01 32 30	3C454.3	19 13 59	33.5	108.9	-3.7		-36.3	60	2500	01 32 30
01 37 30	---	19 19 00	34.2	110.0	-3.6		-36.0	300	2539	01 32 31
01 42 30	J1639+8631	19 24 01	55.6	-4.2	2.8		134.0	57	2539	01 42 30
01 47 30	=1654+866	19 29 02	55.6	-4.3	2.9		132.7	300	2578	01 42 31

Schedule for TORUN (Code Tr )

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Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 29 May 2021 Day 149 ---										
01 47 30	PSJ1721+8842	19 29 02	54.2	-1.3	2.4		142.6	-20	2578	No stop
01 50 55	---	19 32 27	54.1	-1.4	2.5		141.7	185	2604	01 47 31
01 51 40	J1639+8631	19 33 12	55.5	-4.4	3.0		131.6	24	2604	01 51 40
01 53 05	=1654+866	19 34 38	55.5	-4.4	3.0		131.2	85	2615	01 51 41
01 53 05	PSJ1721+8842	19 34 38	54.1	-1.4	2.5		141.1	-21	2615	No stop
01 56 30	---	19 38 03	54.1	-1.4	2.6		140.3	184	2641	01 53 06
01 56 30	J1639+8631	19 38 03	55.5	-4.5	3.1		130.3	-21	2641	No stop
01 58 00	=1654+866	19 39 33	55.4	-4.5	3.1		129.9	69	2653	01 56 31
01 58 00	PSJ1721+8842	19 39 33	54.1	-1.4	2.6		139.9	-21	2653	No stop
02 01 25	---	19 42 59	54.1	-1.4	2.7		139.0	184	2679	01 58 01
02 02 10	J1639+8631	19 43 44	55.4	-4.6	3.2		128.8	24	2679	02 02 10
02 03 35	=1654+866	19 45 09	55.4	-4.6	3.2		128.4	85	2690	02 02 11
02 03 35	PSJ1721+8842	19 45 09	54.1	-1.5	2.7		138.5	-21	2690	No stop
02 07 00	---	19 48 35	54.1	-1.5	2.7		137.6	184	2717	02 03 36
02 07 00	J1639+8631	19 48 35	55.3	-4.6	3.2		127.5	-21	2717	No stop
02 08 30	=1654+866	19 50 05	55.3	-4.7	3.3		127.1	69	2728	02 07 01
02 08 30	PSJ1721+8842	19 50 05	54.1	-1.5	2.8		137.2	-21	2728	No stop
02 11 55	---	19 53 31	54.1	-1.5	2.8		136.3	184	2755	02 08 31
02 12 40	J1639+8631	19 54 16	55.3	-4.7	3.3		126.0	24	2755	02 12 40
02 14 05	=1654+866	19 55 41	55.2	-4.8	3.4		125.6	85	2766	02 12 41
02 14 05	PSJ1721+8842	19 55 41	54.1	-1.5	2.9		135.8	-21	2766	No stop
02 17 30	---	19 59 07	54.0	-1.6	2.9		134.9	184	2792	02 14 06
02 17 30	J1639+8631	19 59 07	55.2	-4.8	3.4		124.7	-21	2792	No stop
02 19 00	=1654+866	20 00 37	55.2	-4.8	3.4		124.4	69	2804	02 17 31
02 19 00	PSJ1721+8842	20 00 37	54.0	-1.6	2.9		134.5	-21	2804	No stop
02 22 25	---	20 04 02	54.0	-1.6	3.0		133.6	184	2830	02 19 01
02 23 10	J1639+8631	20 04 48	55.1	-4.9	3.5		123.3	24	2830	02 23 10
02 24 35	=1654+866	20 06 13	55.1	-4.9	3.5		122.9	85	2841	02 23 11
02 24 35	PSJ1721+8842	20 06 13	54.0	-1.6	3.0		133.1	-21	2841	No stop
02 28 00	---	20 09 38	54.0	-1.6	3.1		132.2	184	2868	02 24 36

Schedule for TORUN (Code Tr )

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Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 29 May 2021 Day 149 ---										
02 28 00	J1639+8631	20 09 38	55.1	-5.0	3.6		122.0	-21	2868	No stop
02 29 30	=1654+866	20 11 09	55.0	-5.0	3.6		121.6	69	2879	02 28 01
02 29 30	PSJ1721+8842	20 11 09	54.0	-1.6	3.1		131.8	-21	2879	No stop
02 32 55	---	20 14 34	54.0	-1.7	3.2		130.9	184	2906	02 29 31
02 33 40	J1639+8631	20 15 19	55.0	-5.0	3.7		120.5	24	2906	02 33 40
02 35 05	=1654+866	20 16 45	55.0	-5.1	3.7		120.1	85	2916	02 33 41
02 35 05	PSJ1721+8842	20 16 45	54.0	-1.7	3.2		130.4	-21	2916	No stop
02 38 30	---	20 20 10	53.9	-1.7	3.3		129.5	184	2943	02 35 06
02 38 30	J1639+8631	20 20 10	54.9	-5.1	3.8		119.2	-22	2943	No stop
02 40 00	=1654+866	20 21 40	54.9	-5.1	3.8		118.9	68	2954	02 38 31
02 40 00	PSJ1721+8842	20 21 40	53.9	-1.7	3.3		129.1	-22	2954	No stop
02 43 25	---	20 25 06	53.9	-1.7	3.4		128.3	183	2981	02 40 01
02 44 10	J1639+8631	20 25 51	54.8	-5.2	3.9		117.8	23	2981	02 44 10
02 45 35	=1654+866	20 27 16	54.8	-5.2	3.9		117.4	85	2992	02 44 11
02 45 35	PSJ1721+8842	20 27 16	53.9	-1.7	3.4		127.7	-22	2992	No stop
02 49 00	---	20 30 42	53.9	-1.8	3.5		126.8	183	3018	02 45 36
02 49 00	J1639+8631	20 30 42	54.8	-5.2	4.0		116.5	-22	3018	No stop
02 50 30	=1654+866	20 32 12	54.8	-5.3	4.0		116.1	68	3030	02 49 01
02 50 30	PSJ1721+8842	20 32 12	53.9	-1.8	3.5		126.4	-22	3030	No stop
02 53 55	---	20 35 38	53.9	-1.8	3.5		125.6	183	3056	02 50 31
02 54 40	J1639+8631	20 36 23	54.7	-5.3	4.0		115.0	23	3056	02 54 40
02 56 05	=1654+866	20 37 48	54.7	-5.3	4.1		114.7	85	3067	02 54 41
02 56 05	PSJ1721+8842	20 37 48	53.9	-1.8	3.6		125.0	-22	3067	No stop
02 59 30	---	20 41 14	53.9	-1.8	3.6		124.1	183	3094	02 56 06
02 59 30	J1639+8631	20 41 14	54.6	-5.4	4.1		113.8	-22	3094	No stop
03 01 00	=1654+866	20 42 44	54.6	-5.4	4.2		113.4	68	3105	02 59 31
03 01 00	PSJ1721+8842	20 42 44	53.8	-1.8	3.7		123.8	-22	3105	No stop
03 04 25	---	20 46 09	53.8	-1.8	3.7		122.9	183	3132	03 01 01
03 05 10	J1639+8631	20 46 54	54.6	-5.4	4.2		112.3	23	3132	03 05 10
03 06 35	=1654+866	20 48 20	54.5	-5.4	4.2		112.0	85	3143	03 05 11

Schedule for TORUN (Code Tr )

Page 13

Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 29 May 2021 Day 149 ---										
03 06 35	PSJ1721+8842	20 48 20	53.8	-1.9	3.7		122.3	-22	3143	No stop
03 10 00	---	20 51 45	53.8	-1.9	3.8		121.5	183	3169	03 06 36
03 10 00	J1639+8631	20 51 45	54.5	-5.5	4.3		111.1	-22	3169	No stop
03 11 30	=1654+866	20 53 16	54.5	-5.5	4.3		110.7	68	3181	03 10 01
03 11 30	PSJ1721+8842	20 53 16	53.8	-1.9	3.8		121.1	-22	3181	No stop
03 14 55	---	20 56 41	53.8	-1.9	3.9		120.2	183	3207	03 11 31
03 15 40	J1639+8631	20 57 26	54.4	-5.5	4.4		109.6	23	3207	03 15 40
03 17 05	=1654+866	20 58 51	54.4	-5.5	4.4		109.3	85	3218	03 15 41
03 17 05	PSJ1721+8842	20 58 51	53.8	-1.9	3.9		119.7	-22	3218	No stop
03 20 30	---	21 02 17	53.7	-1.9	4.0		118.8	183	3244	03 17 06
03 20 30	J1639+8631	21 02 17	54.3	-5.6	4.5		108.4	-22	3244	No stop
03 22 00	=1654+866	21 03 47	54.3	-5.6	4.5		108.0	68	3256	03 20 31
03 22 00	PSJ1721+8842	21 03 47	53.7	-1.9	4.0		118.4	-22	3256	No stop
03 25 25	---	21 07 13	53.7	-1.9	4.1		117.5	183	3282	03 22 01
03 26 10	J1639+8631	21 07 58	54.2	-5.6	4.6		106.9	23	3282	03 26 10
03 27 35	=1654+866	21 09 23	54.2	-5.6	4.6		106.6	85	3293	03 26 11
03 27 35	PSJ1721+8842	21 09 23	53.7	-2.0	4.1		117.0	-22	3293	No stop
03 31 00	---	21 12 49	53.7	-2.0	4.2		116.1	183	3320	03 27 36
03 31 00	J1639+8631	21 12 49	54.2	-5.6	4.7		105.7	-22	3320	No stop
03 32 30	=1654+866	21 14 19	54.2	-5.6	4.7		105.3	68	3331	03 31 01
03 32 30	PSJ1721+8842	21 14 19	53.7	-2.0	4.2		115.7	-22	3331	No stop
03 35 55	---	21 17 45	53.7	-2.0	4.2		114.9	183	3358	03 32 31
03 36 40	J1639+8631	21 18 30	54.1	-5.7	4.7		104.2	23	3358	03 36 40
03 38 05	=1654+866	21 19 55	54.1	-5.7	4.8		103.9	85	3369	03 36 41
03 38 05	PSJ1721+8842	21 19 55	53.7	-2.0	4.3		114.3	-22	3369	No stop
03 41 30	---	21 23 20	53.6	-2.0	4.3		113.5	183	3395	03 38 06
03 41 30	J1639+8631	21 23 20	54.0	-5.7	4.8		103.0	-22	3395	No stop
03 43 00	=1654+866	21 24 51	54.0	-5.7	4.9		102.6	68	3407	03 41 31
03 43 00	PSJ1721+8842	21 24 51	53.6	-2.0	4.4		113.1	-22	3407	No stop
03 46 25	---	21 28 16	53.6	-2.0	4.4		112.2	183	3433	03 43 01

Schedule for TORUN (Code Tr )

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Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 29 May 2021 Day 149 ---										
03 47 10	J1639+8631	21 29 01	53.9	-5.7	4.9		101.6	23	3433	03 47 10
03 48 35	=1654+866	21 30 27	53.9	-5.7	4.9		101.2	85	3444	03 47 11
03 48 35	PSJ1721+8842	21 30 27	53.6	-2.0	4.4		111.7	-22	3444	No stop
03 52 00	---	21 33 52	53.6	-2.1	4.5		110.8	183	3470	03 48 36
03 52 00	J1639+8631	21 33 52	53.9	-5.8	5.0		100.3	-22	3470	No stop
03 53 30	=1654+866	21 35 22	53.8	-5.8	5.0		99.9	68	3482	03 52 01
03 53 30	PSJ1721+8842	21 35 22	53.6	-2.1	4.5		110.4	-22	3482	No stop
03 56 55	---	21 38 48	53.6	-2.1	4.6		109.6	183	3508	03 53 31
03 57 40	J1639+8631	21 39 33	53.8	-5.8	5.1		98.9	23	3508	03 57 40
03 59 05	=1654+866	21 40 58	53.8	-5.8	5.1		98.5	85	3519	03 57 41
03 59 05	PSJ1721+8842	21 40 58	53.5	-2.1	4.6		109.0	-22	3519	No stop
04 02 30	---	21 44 24	53.5	-2.1	4.7		108.1	183	3546	03 59 06
04 02 30	J1639+8631	21 44 24	53.7	-5.8	5.2		97.7	-22	3546	No stop
04 04 00	=1654+866	21 45 54	53.7	-5.8	5.2		97.3	68	3557	04 02 31
04 04 00	PSJ1721+8842	21 45 54	53.5	-2.1	4.7		107.8	-22	3557	No stop
04 07 25	---	21 49 20	53.5	-2.1	4.8		106.9	183	3584	04 04 01
04 08 10	J1639+8631	21 50 05	53.6	-5.8	5.3		96.2	23	3584	04 08 10
04 09 35	=1654+866	21 51 30	53.6	-5.8	5.3		95.9	85	3595	04 08 11
04 09 35	PSJ1721+8842	21 51 30	53.5	-2.1	4.8		106.3	-22	3595	No stop
04 13 00	---	21 54 56	53.5	-2.1	4.9		105.5	183	3621	04 09 36
04 13 00	J1639+8631	21 54 56	53.5	-5.8	5.4		95.0	-22	3621	No stop
04 14 30	=1654+866	21 56 26	53.5	-5.8	5.4		94.6	68	3633	04 13 01
04 14 30	PSJ1721+8842	21 56 26	53.5	-2.1	4.9		105.1	-22	3633	No stop
04 17 55	---	21 59 51	53.4	-2.1	4.9		104.2	183	3659	04 14 31
04 18 40	J1639+8631	22 00 37	53.5	-5.8	5.4		93.6	23	3659	04 18 40
04 20 05	=1654+866	22 02 02	53.4	-5.8	5.5		93.2	85	3670	04 18 41
04 20 05	PSJ1721+8842	22 02 02	53.4	-2.1	5.0		103.7	-22	3670	No stop
04 23 30	---	22 05 27	53.4	-2.1	5.0		102.8	183	3696	04 20 06
04 23 30	J1639+8631	22 05 27	53.4	-5.8	5.5		92.4	-22	3696	No stop
04 25 00	=1654+866	22 06 58	53.4	-5.9	5.6		92.0	68	3708	04 23 31

Schedule for TORUN (Code Tr )

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Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 29 May 2021 Day 149 ---										
04 25 00	PSJ1721+8842	22 06 58	53.4	-2.1	5.1		102.5	-22	3708	No stop
04 28 25	---	22 10 23	53.4	-2.2	5.1		101.6	183	3734	04 25 01
04 29 10	J1639+8631	22 11 08	53.3	-5.9	5.6		90.9	23	3734	04 29 10
04 30 35	=1654+866	22 12 34	53.3	-5.9	5.6		90.6	85	3745	04 29 11
04 30 35	PSJ1721+8842	22 12 34	53.4	-2.2	5.1		101.0	-22	3745	No stop
04 34 00	---	22 15 59	53.3	-2.2	5.2		100.2	183	3772	04 30 36
04 34 00	J1639+8631	22 15 59	53.2	-5.9	5.7		89.7	-22	3772	No stop
04 35 30	=1654+866	22 17 29	53.2	-5.9	5.7		89.4	68	3783	04 34 01
04 35 30	PSJ1721+8842	22 17 29	53.3	-2.2	5.2		99.8	-22	3783	No stop
04 38 55	---	22 20 55	53.3	-2.2	5.3		98.9	183	3810	04 35 31
04 39 40	J1639+8631	22 21 40	53.1	-5.9	5.8		88.3	23	3810	04 39 40
04 41 05	=1654+866	22 23 05	53.1	-5.8	5.8		88.0	85	3821	04 39 41
04 41 05	PSJ1721+8842	22 23 05	53.3	-2.2	5.3		98.4	-22	3821	No stop
04 44 30	---	22 26 31	53.3	-2.2	5.4		97.5	183	3847	04 41 06
04 44 30	J1639+8631	22 26 31	53.1	-5.8	5.9		87.1	-22	3847	No stop
04 46 00	=1654+866	22 28 01	53.0	-5.8	5.9		86.7	68	3859	04 44 31
04 46 00	PSJ1721+8842	22 28 01	53.3	-2.2	5.4		97.2	-22	3859	No stop
04 49 25	---	22 31 27	53.3	-2.2	5.5		96.3	183	3885	04 46 01
04 50 10	J1639+8631	22 32 12	53.0	-5.8	6.0		85.7	23	3885	04 50 10
04 51 35	=1654+866	22 33 37	53.0	-5.8	6.0		85.4	85	3896	04 50 11
04 51 35	PSJ1721+8842	22 33 37	53.2	-2.2	5.5		95.8	-22	3896	No stop
04 55 00	---	22 37 03	53.2	-2.2	5.6		94.9	183	3923	04 51 36
04 55 00	J1639+8631	22 37 03	52.9	-5.8	6.1		84.5	-22	3923	No stop
04 56 30	=1654+866	22 38 33	52.9	-5.8	6.1		84.1	68	3934	04 55 01
04 56 30	PSJ1721+8842	22 38 33	53.2	-2.2	5.6		94.5	-22	3934	No stop
04 59 55	---	22 41 58	53.2	-2.2	5.6		93.7	183	3961	04 56 31
05 00 40	J1639+8631	22 42 43	52.8	-5.8	6.2		83.1	23	3961	05 00 40
05 02 05	=1654+866	22 44 09	52.8	-5.8	6.2		82.8	85	3972	05 00 41
05 02 05	PSJ1721+8842	22 44 09	53.2	-2.2	5.7		93.1	-22	3972	No stop
05 05 30	---	22 47 34	53.2	-2.2	5.7		92.3	183	3998	05 02 06

Schedule for TORUN (Code Tr )

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Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 29 May 2021 Day 149 ---										
05 05 30	J1639+8631	22 47 34	52.7	-5.8	6.2		81.9	-22	3998	No stop
05 07 00	=1654+866	22 49 05	52.7	-5.8	6.3		81.5	68	4010	05 05 31
05 07 00	PSJ1721+8842	22 49 05	53.2	-2.2	5.8		91.9	-22	4010	No stop
05 10 25	---	22 52 30	53.1	-2.2	5.8		91.0	183	4036	05 07 01
05 11 10	J1639+8631	22 53 15	52.7	-5.8	6.3		80.5	23	4036	05 11 10
05 12 35	=1654+866	22 54 40	52.6	-5.8	6.3		80.2	85	4047	05 11 11
05 12 35	PSJ1721+8842	22 54 40	53.1	-2.2	5.9		90.5	-22	4047	No stop
05 16 00	---	22 58 06	53.1	-2.2	5.9		89.6	183	4073	05 12 36
05 16 00	J1639+8631	22 58 06	52.6	-5.8	6.4		79.3	-22	4073	No stop
05 17 30	=1654+866	22 59 36	52.6	-5.7	6.4		78.9	68	4085	05 16 01
05 17 30	PSJ1721+8842	22 59 36	53.1	-2.2	5.9		89.3	-22	4085	No stop
05 20 55	---	23 03 02	53.1	-2.2	6.0		88.4	183	4111	05 17 31
05 21 40	J1639+8631	23 03 47	52.5	-5.7	6.5		77.9	23	4111	05 21 40
05 23 05	=1654+866	23 05 12	52.5	-5.7	6.5		77.6	85	4122	05 21 41
05 23 05	PSJ1721+8842	23 05 12	53.1	-2.2	6.0		87.9	-22	4122	No stop
05 26 30	---	23 08 38	53.0	-2.2	6.1		87.0	183	4149	05 23 06
05 26 30	J1639+8631	23 08 38	52.4	-5.7	6.6		76.7	-22	4149	No stop
05 28 00	=1654+866	23 10 08	52.4	-5.7	6.6		76.4	68	4160	05 26 31
05 28 00	PSJ1721+8842	23 10 08	53.0	-2.2	6.1		86.6	-22	4160	No stop
05 31 25	---	23 13 34	53.0	-2.2	6.2		85.8	183	4187	05 28 01
05 32 10	J1639+8631	23 14 19	52.3	-5.7	6.7		75.3	23	4187	05 32 10
05 33 35	=1654+866	23 15 44	52.3	-5.7	6.7		75.0	85	4198	05 32 11
05 33 35	PSJ1721+8842	23 15 44	53.0	-2.2	6.2		85.2	-22	4198	No stop
05 37 00	---	23 19 09	53.0	-2.2	6.3		84.4	183	4224	05 33 36
05 37 00	J1639+8631	23 19 09	52.3	-5.6	6.8		74.2	-22	4224	No stop
05 38 30	=1654+866	23 20 40	52.2	-5.6	6.8		73.8	68	4236	05 37 01
05 43 30	3C84	23 25 40	49.7	82.1	-3.9		-52.7	110	4236	05 43 30
05 48 30	---	23 30 41	50.5	82.9	-3.8		-52.8	300	4274	05 43 31
05 53 30	J1639+8631	23 35 42	52.0	-5.5	7.0		70.1	108	4274	05 53 30
05 58 30	=1654+866	23 40 43	52.0	-5.5	7.1		68.9	300	4313	05 53 31



Schedule for TORUN (Code Tr )

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Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 29 May 2021 Day 149 ---										
05 58 30	PSJ1721+8842	23 40 43	52.9	-2.2	6.6		79.0	-21	4313	No stop
06 01 55	---	23 44 09	52.8	-2.2	6.7		78.2	184	4339	05 58 31
06 02 40	J1639+8631	23 44 54	51.9	-5.4	7.2		67.9	24	4339	06 02 40
06 04 05	=1654+866	23 46 19	51.9	-5.4	7.2		67.6	85	4350	06 02 41
06 04 05	PSJ1721+8842	23 46 19	52.8	-2.1	6.7		77.6	-21	4350	No stop
06 07 30	---	23 49 44	52.8	-2.1	6.8		76.8	184	4377	06 04 06
06 07 30	J1639+8631	23 49 44	51.8	-5.4	7.3		66.7	-21	4377	No stop
06 09 00	=1654+866	23 51 15	51.8	-5.4	7.3		66.4	69	4388	06 07 31
06 09 00	PSJ1721+8842	23 51 15	52.8	-2.1	6.8		76.4	-21	4388	No stop
06 12 25	---	23 54 40	52.8	-2.1	6.9		75.5	184	4415	06 09 01
06 13 10	J1639+8631	23 55 25	51.7	-5.3	7.4		65.3	24	4415	06 13 10
06 14 35	=1654+866	23 56 51	51.7	-5.3	7.4		65.0	85	4426	06 13 11
06 14 35	PSJ1721+8842	23 56 51	52.8	-2.1	6.9		75.0	-21	4426	No stop
06 18 00	---	00 00 16	52.8	-2.1	6.9		74.2	184	4452	06 14 36
06 18 00	J1639+8631	00 00 16	51.7	-5.3	7.4		64.2	-21	4452	No stop
06 19 30	=1654+866	00 01 46	51.7	-5.3	7.5		63.8	69	4464	06 18 01
06 19 30	PSJ1721+8842	00 01 46	52.7	-2.1	7.0		73.8	-21	4464	No stop
06 22 55	---	00 05 12	52.7	-2.1	7.0		72.9	184	4490	06 19 31
06 23 40	J1639+8631	00 05 57	51.6	-5.2	7.5		62.8	24	4490	06 23 40
06 25 05	=1654+866	00 07 22	51.6	-5.2	7.6		62.5	85	4501	06 23 41
06 25 05	PSJ1721+8842	00 07 22	52.7	-2.1	7.1		72.4	-21	4501	No stop
06 28 30	---	00 10 48	52.7	-2.1	7.1		71.6	184	4527	06 25 06
06 28 30	J1639+8631	00 10 48	51.5	-5.1	7.6		61.6	-21	4527	No stop
06 30 00	=1654+866	00 12 18	51.5	-5.1	7.6		61.3	69	4539	06 28 31
06 30 00	PSJ1721+8842	00 12 18	52.7	-2.1	7.1		71.2	-21	4539	No stop
06 33 25	---	00 15 44	52.7	-2.1	7.2		70.3	184	4565	06 30 01
06 34 10	J1639+8631	00 16 29	51.5	-5.1	7.7		60.3	24	4565	06 34 10
06 35 35	=1654+866	00 17 54	51.4	-5.1	7.7		59.9	85	4576	06 34 11
06 35 35	PSJ1721+8842	00 17 54	52.7	-2.1	7.2		69.8	-20	4576	No stop
06 39 00	---	00 21 20	52.6	-2.1	7.3		68.9	185	4603	06 35 36

Schedule for TORUN (Code Tr )

Page 18

Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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SYNC: Time correlator 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 29 May 2021 Day 149 ---										
06 39 00	J1639+8631	00 21 20	51.4	-5.0	7.8		59.1	-20	4603	No stop
06 40 30	=1654+866	00 22 50	51.4	-5.0	7.8		58.8	70	4614	06 39 01
06 40 30	PSJ1721+8842	00 22 50	52.6	-2.0	7.3		68.6	-20	4614	No stop
06 43 55	---	00 26 15	52.6	-2.0	7.4		67.7	185	4641	06 40 31
06 44 40	J1639+8631	00 27 01	51.3	-4.9	7.9		57.8	25	4641	06 44 40
06 46 05	=1654+866	00 28 26	51.3	-4.9	7.9		57.4	85	4652	06 44 41
06 46 05	PSJ1721+8842	00 28 26	52.6	-2.0	7.4		67.2	-20	4652	No stop
06 49 30	---	00 31 51	52.6	-2.0	7.5		66.3	185	4678	06 46 06
06 49 30	J1639+8631	00 31 51	51.3	-4.9	8.0		56.6	-20	4678	No stop
06 51 00	=1654+866	00 33 22	51.2	-4.9	8.0		56.2	70	4690	06 49 31
06 51 00	PSJ1721+8842	00 33 22	52.6	-2.0	7.5		66.0	-20	4690	No stop
06 54 25	---	00 36 47	52.6	-2.0	7.6		65.1	185	4716	06 51 01
06 55 10	J1639+8631	00 37 32	51.2	-4.8	8.1		55.2	25	4716	06 55 10
06 56 35	=1654+866	00 38 58	51.2	-4.8	8.1		54.9	85	4727	06 55 11
06 56 35	PSJ1721+8842	00 38 58	52.5	-2.0	7.6		64.6	-20	4727	No stop
07 00 00	---	00 42 23	52.5	-2.0	7.6		63.7	185	4753	06 56 36
07 00 00	J1639+8631	00 42 23	51.1	-4.7	8.1		54.1	-20	4753	No stop
07 01 30	=1654+866	00 43 53	51.1	-4.7	8.2		53.7	70	4765	07 00 01
07 01 30	PSJ1721+8842	00 43 53	52.5	-2.0	7.7		63.4	-20	4765	No stop
07 04 55	---	00 47 19	52.5	-2.0	7.7		62.5	185	4791	07 01 31
07 05 40	J1639+8631	00 48 04	51.1	-4.7	8.2		52.7	25	4791	07 05 40
07 07 05	=1654+866	00 49 29	51.0	-4.6	8.3		52.4	85	4802	07 05 41
07 07 05	PSJ1721+8842	00 49 29	52.5	-1.9	7.8		62.0	-20	4802	No stop
07 10 30	---	00 52 55	52.5	-1.9	7.8		61.2	185	4829	07 07 06
07 10 30	J1639+8631	00 52 55	51.0	-4.6	8.3		51.6	-20	4829	No stop
07 12 00	=1654+866	00 54 25	51.0	-4.6	8.3		51.2	70	4840	07 10 31
07 12 00	PSJ1721+8842	00 54 25	52.5	-1.9	7.8		60.8	-20	4840	No stop
07 15 25	---	00 57 51	52.4	-1.9	7.9		59.9	185	4867	07 12 01
07 16 10	J1639+8631	00 58 36	50.9	-4.5	8.4		50.2	26	4867	07 16 10
07 17 35	=1654+866	01 00 01	50.9	-4.5	8.4		49.9	85	4878	07 16 11

Schedule for TORUN (Code Tr )

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Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

```

-----
Start UT  Source          Start / Stop          Early  Disk  TPStart
Stop UT          LST      EL  AZ  HA  UP  ParA  Dwell  GBytes  SYNC
-----
--- Sat 29 May 2021  Day 149 ---

07 17 35 PSJ1721+8842 01 00 01 52.4 -1.9 7.9      59.4  -19   4878  No stop
07 21 00 ---          01 03 27 52.4 -1.9 8.0      58.6  186   4904  07 17 36

07 21 00 J1639+8631  01 03 27 50.9 -4.4 8.5      49.1  -19   4904  No stop
07 22 30 =1654+866   01 04 57 50.9 -4.4 8.5      48.7   71   4916  07 21 01

07 22 30 PSJ1721+8842 01 04 57 52.4 -1.9 8.0      58.2  -19   4916  No stop
07 25 55 ---          01 08 22 52.4 -1.9 8.1      57.3  186   4942  07 22 31

07 26 40 J1639+8631  01 09 07 50.8 -4.3 8.6      47.7   25   4942  07 26 40
07 28 05 =1654+866   01 10 33 50.8 -4.3 8.6      47.4   85   4953  07 26 41

07 28 05 PSJ1721+8842 01 10 33 52.4 -1.8 8.1      56.8  -20   4953  No stop
07 30 30 ---          01 12 58 52.4 -1.8 8.2      56.2  125   4972  07 28 06

```

## SETUP FILE INFORMATION:

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

==== Setup file: sess221.L1024

```

Setup group:    9          Station: TORUN          Total bit rate: 1024
Format: VDIF    Bits per sample: 2      Sample rate: 64.000
Number of channels: 8    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
Net SB=	L	L	U	U	L	L	U	U
IF SB =	L	L	L	L	L	L	L	L
Pol. =	RCP	LCP	RCP	LCP	RCP	LCP	RCP	LCP
BBC =	1	9	1	9	2	10	2	10
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:  8  Setup file default.  Used with PCAL = off
LO sum= 1626.49 1626.49 1626.49 1626.49 1690.49 1690.49 1690.49 1690.49
BBC fr=  673.51 673.51 673.51 673.51 609.51 609.51 609.51 609.51
Bandwd=  32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00
Matching frequency sets:  8

```

Track assignments are:

```

track1= 1, 2, 3, 4, 5, 6, 7, 8
barrel=roll_off

```

#### POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* PSJ1721+8842	18 08 47.084813	* 17 21 43.936000	17 03 39.644560	0.00
	88 43 26.13207	* 88 42 21.42800	88 40 48.95086	0.00
* 3C84	03 16 29.567265	* 03 19 48.160096	03 21 10.311462	1.50
J0319+4130	41 19 51.91692	* 41 30 42.10404	41 35 08.24304	2.86
0316+413	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
J0319+41	GSFC 2016a X/S astro solution, 10291 observations.			
1654+866	16 54 31.289232	* 16 39 25.014806	16 33 41.277383	10.77
* J1639+8631	86 37 07.15444	* 86 31 53.13177	86 29 20.00418	0.62
J1639+86	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 43 observations.			
* 3C345	16 41 17.606229	* 16 42 58.809967	16 43 43.226759	0.79
J1642+3948	39 54 10.81492	* 39 48 36.99399	39 46 13.08296	0.59
1641+399	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
J1642+39	GSFC 2016a X/S astro solution, 53724 observations.			
* 3C454.3	22 51 29.519739	* 22 53 57.747939	22 55 00.061697	0.65
J2253+1608	15 52 54.34808	* 16 08 53.56091	16 15 29.40943	0.73
2251+158	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
J2253+16	GSFC 2016a X/S astro solution, 41272 observations.			

RESOLVING THE FAINTEST RADIO QUASARS DETECTED BY LOFAR  
 PI: *John McKean*

Address: ASTRON

Observing mode: 18cm 1024-8-2

Schedule for TORUN (Code Tr ) Page 2

Resolving the faintest radio quasars detected by LOFAR

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 29 May 2021 Day 149 ---										
Next scan frequencies: 1626.49 1626.49 1626.49 1626.49 1690.49 1690.49 1690.49 1690.49										
Next BBC frequencies: 673.51 673.51 673.51 673.51 609.51 609.51 609.51 609.51										
Next scan bandwidths: 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00										
09 30 00	J0948+4039	03 12 48	26.5	56.9	-6.6		-41.4	0	0	09 30 00
09 31 30	=0945+408	03 14 18	26.7	57.1	-6.6		-41.6	90	12	09 30 01
09 31 30	SDSSJ1004+41	03 14 18	25.1	54.2	-6.9		-40.3	-20	12	No stop
09 35 00	---	03 17 49	25.6	54.8	-6.8		-40.6	190	39	09 31 31
09 35 30	J0948+4039	03 18 19	27.2	57.7	-6.5		-41.9	10	39	09 35 30
09 37 00	=0945+408	03 19 49	27.4	58.0	-6.5		-42.1	90	50	09 35 31
09 37 00	SDSSJ1004+41	03 19 49	25.8	55.1	-6.8		-40.8	-20	50	No stop
09 40 30	---	03 23 19	26.3	55.7	-6.7		-41.2	190	77	09 37 01
09 40 30	J0948+4039	03 23 19	27.8	58.5	-6.4		-42.4	-20	77	No stop
09 42 00	=0945+408	03 24 50	28.0	58.8	-6.4		-42.5	70	89	09 40 31
09 42 00	SDSSJ1004+41	03 24 50	26.4	55.9	-6.7		-41.3	-20	89	No stop
09 45 30	---	03 28 20	26.9	56.4	-6.6		-41.6	190	116	09 42 01
09 46 00	J0948+4039	03 28 50	28.5	59.4	-6.4		-42.9	10	116	09 46 00
09 47 30	=0945+408	03 30 21	28.7	59.7	-6.3		-43.0	90	128	09 46 01
09 47 30	SDSSJ1004+41	03 30 21	27.1	56.8	-6.6		-41.8	-20	128	No stop
09 51 00	---	03 33 51	27.6	57.3	-6.5		-42.1	190	155	09 47 31
09 51 00	J0948+4039	03 33 51	29.2	60.2	-6.3		-43.3	-20	155	No stop
09 52 30	=0945+408	03 35 21	29.4	60.4	-6.2		-43.4	70	166	09 51 01
09 52 30	SDSSJ1004+41	03 35 21	27.8	57.6	-6.5		-42.3	-20	166	No stop
09 56 00	---	03 38 52	28.2	58.1	-6.4		-42.6	190	193	09 52 31
09 56 30	J0948+4039	03 39 22	29.9	61.1	-6.2		-43.8	10	193	09 56 30
09 58 00	=0945+408	03 40 52	30.1	61.3	-6.2		-43.9	90	205	09 56 31
09 58 00	SDSSJ1004+41	03 40 52	28.5	58.4	-6.4		-42.8	-20	205	No stop
10 01 30	---	03 44 23	28.9	59.0	-6.4		-43.1	190	232	09 58 01
10 01 30	J0948+4039	03 44 23	30.6	61.9	-6.1		-44.2	-20	232	No stop
10 03 00	=0945+408	03 45 53	30.8	62.1	-6.1		-44.3	70	243	10 01 31

Schedule for TORUN (Code Tr )

Page 3

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart		
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC	
-----											
---	Sat 29 May 2021	Day 149					---				
10 03 00	SDSSJ1004+41	03 45 53	29.1	59.2	-6.3		-43.2	-20	243	No stop	
10 06 30	---	03 49 24	29.6	59.8	-6.3		-43.5	190	271	10 03 01	
10 07 00	J0948+4039	03 49 54	31.3	62.7	-6.0		-44.6	10	271	10 07 00	
10 08 30	=0945+408	03 51 24	31.5	63.0	-6.0		-44.8	90	282	10 07 01	
10 08 30	SDSSJ1004+41	03 51 24	29.8	60.1	-6.2		-43.7	-20	282	No stop	
10 12 00	---	03 54 55	30.3	60.6	-6.2		-44.0	190	309	10 08 31	
10 12 00	J0948+4039	03 54 55	32.0	63.5	-5.9		-45.0	-20	309	No stop	
10 13 30	=0945+408	03 56 25	32.2	63.8	-5.9		-45.2	70	321	10 12 01	
10 13 30	SDSSJ1004+41	03 56 25	30.5	60.9	-6.2		-44.1	-20	321	No stop	
10 17 00	---	03 59 55	30.9	61.4	-6.1		-44.4	190	348	10 13 31	
10 17 30	J0948+4039	04 00 26	32.7	64.4	-5.8		-45.5	10	348	10 17 30	
10 19 00	=0945+408	04 01 56	32.9	64.6	-5.8		-45.6	90	359	10 17 31	
10 19 00	SDSSJ1004+41	04 01 56	31.2	61.7	-6.1		-44.6	-20	359	No stop	
10 22 30	---	04 05 26	31.7	62.3	-6.0		-44.9	190	386	10 19 01	
10 22 30	J0948+4039	04 05 26	33.4	65.2	-5.7		-45.9	-20	386	No stop	
10 24 00	=0945+408	04 06 57	33.6	65.4	-5.7		-46.0	70	398	10 22 31	
10 24 00	SDSSJ1004+41	04 06 57	31.9	62.5	-6.0		-45.0	-20	398	No stop	
10 27 30	---	04 10 27	32.3	63.1	-5.9		-45.3	190	425	10 24 01	
10 28 00	J0948+4039	04 10 57	34.1	66.1	-5.7		-46.3	10	425	10 28 00	
10 29 30	=0945+408	04 12 27	34.3	66.3	-5.6		-46.4	90	437	10 28 01	
10 29 30	SDSSJ1004+41	04 12 27	32.6	63.4	-5.9		-45.4	-20	437	No stop	
10 33 00	---	04 15 58	33.1	63.9	-5.8		-45.7	190	464	10 29 31	
10 33 00	J0948+4039	04 15 58	34.8	66.9	-5.6		-46.6	-20	464	No stop	
10 34 30	=0945+408	04 17 28	35.0	67.1	-5.5		-46.7	70	475	10 33 01	
10 34 30	SDSSJ1004+41	04 17 28	33.3	64.2	-5.8		-45.8	-20	475	No stop	
10 38 00	---	04 20 59	33.8	64.7	-5.7		-46.1	190	502	10 34 31	
10 38 30	J0948+4039	04 21 29	35.6	67.7	-5.5		-47.0	9	502	10 38 30	
10 40 00	=0945+408	04 22 59	35.8	68.0	-5.5		-47.1	90	514	10 38 31	
10 40 00	SDSSJ1004+41	04 22 59	34.0	65.0	-5.7		-46.3	-20	514	No stop	
10 43 30	---	04 26 30	34.5	65.6	-5.7		-46.5	190	541	10 40 01	
10 43 30	J0948+4039	04 26 30	36.3	68.5	-5.4		-47.4	-21	541	No stop	
10 45 00	=0945+408	04 28 00	36.5	68.8	-5.4		-47.5	69	553	10 43 31	

Schedule for TORUN (Code Tr )

Page 4

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 29 May 2021 Day 149 ---										
10 45 00	SDSSJ1004+41	04 28 00	34.7	65.8	-5.6		-46.6	-20	553	No stop
10 48 30	---	04 31 31	35.2	66.4	-5.6		-46.9	190	580	10 45 01
10 49 00	J0948+4039	04 32 01	37.1	69.4	-5.3		-47.7	9	580	10 49 00
10 50 30	=0945+408	04 33 31	37.3	69.7	-5.3		-47.8	90	591	10 49 01
10 50 30	SDSSJ1004+41	04 33 31	35.5	66.7	-5.5		-47.0	-20	591	No stop
10 54 00	---	04 37 02	36.0	67.2	-5.5		-47.3	190	618	10 50 31
10 54 00	J0948+4039	04 37 02	37.8	70.2	-5.2		-48.1	-21	618	No stop
10 55 30	=0945+408	04 38 32	38.0	70.5	-5.2		-48.2	69	630	10 54 01
10 55 30	SDSSJ1004+41	04 38 32	36.2	67.5	-5.5		-47.4	-20	630	No stop
10 59 00	---	04 42 02	36.7	68.0	-5.4		-47.7	190	657	10 55 31
10 59 30	J0948+4039	04 42 32	38.6	71.1	-5.1		-48.4	9	657	10 59 30
11 01 00	=0945+408	04 44 03	38.8	71.4	-5.1		-48.5	90	669	10 59 31
11 01 00	SDSSJ1004+41	04 44 03	36.9	68.4	-5.4		-47.8	-21	669	No stop
11 04 30	---	04 47 33	37.4	68.9	-5.3		-48.0	189	696	11 01 01
11 04 30	J0948+4039	04 47 33	39.3	71.9	-5.0		-48.7	-21	696	No stop
11 06 00	=0945+408	04 49 03	39.5	72.2	-5.0		-48.8	69	707	11 04 31
11 06 00	SDSSJ1004+41	04 49 03	37.6	69.1	-5.3		-48.1	-21	707	No stop
11 09 30	---	04 52 34	38.1	69.7	-5.2		-48.4	189	734	11 06 01
11 10 00	J0948+4039	04 53 04	40.1	72.8	-5.0		-49.0	9	734	11 10 00
11 11 30	=0945+408	04 54 34	40.3	73.1	-4.9		-49.1	90	746	11 10 01
11 11 30	SDSSJ1004+41	04 54 34	38.4	70.0	-5.2		-48.5	-21	746	No stop
11 15 00	---	04 58 05	38.9	70.6	-5.1		-48.7	189	773	11 11 31
11 15 00	J0948+4039	04 58 05	40.8	73.6	-4.9		-49.3	-21	773	No stop
11 16 30	=0945+408	04 59 35	41.0	73.9	-4.8		-49.4	69	785	11 15 01
11 16 30	SDSSJ1004+41	04 59 35	39.1	70.8	-5.1		-48.8	-21	785	No stop
11 20 00	---	05 03 06	39.6	71.4	-5.0		-49.1	189	812	11 16 31
11 20 30	J0948+4039	05 03 36	41.6	74.5	-4.8		-49.6	9	812	11 20 30
11 22 00	=0945+408	05 05 06	41.8	74.8	-4.8		-49.7	90	823	11 20 31
11 22 00	SDSSJ1004+41	05 05 06	39.9	71.7	-5.0		-49.2	-21	823	No stop
11 25 30	---	05 08 37	40.4	72.3	-5.0		-49.4	189	850	11 22 01

Schedule for TORUN (Code Tr ) Page 5

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 29 May 2021 Day 149 ---										
11 25 30	J0948+4039	05 08 37	42.3	75.4	-4.7		-49.9	-21	850	No stop
11 27 00	=0945+408	05 10 07	42.5	75.6	-4.7		-50.0	69	862	11 25 31
11 27 00	SDSSJ1004+41	05 10 07	40.6	72.5	-4.9		-49.5	-21	862	No stop
11 30 30	---	05 13 38	41.1	73.1	-4.9		-49.7	189	889	11 27 01
11 31 00	J0948+4039	05 14 08	43.1	76.3	-4.6		-50.2	9	889	11 31 00
11 32 30	=0945+408	05 15 38	43.3	76.5	-4.6		-50.2	90	900	11 31 01
11 32 30	SDSSJ1004+41	05 15 38	41.4	73.4	-4.8		-49.8	-21	900	No stop
11 36 00	---	05 19 08	41.9	74.0	-4.8		-50.0	189	927	11 32 31
11 36 00	J0948+4039	05 19 08	43.8	77.1	-4.5		-50.4	-21	927	No stop
11 37 30	=0945+408	05 20 39	44.1	77.4	-4.5		-50.5	69	939	11 36 01
11 42 30	DA193	05 25 39	75.7	155.0	-0.5		-19.3	133	939	11 42 30
11 47 30	---	05 30 40	76.0	158.7	-0.4		-16.5	300	978	11 42 31
11 52 30	J0948+4039	05 35 41	46.3	79.9	-4.2		-51.1	127	978	11 52 30
11 57 30	=0945+408	05 40 42	47.0	80.8	-4.2		-51.3	300	1016	11 52 31
11 57 30	SDSSJ1004+41	05 40 42	45.1	77.5	-4.4		-51.1	-21	1016	No stop
12 01 00	---	05 44 13	45.6	78.1	-4.4		-51.3	189	1043	11 57 31
12 01 30	J0948+4039	05 44 43	47.6	81.5	-4.1		-51.4	9	1043	12 01 30
12 03 00	=0945+408	05 46 13	47.8	81.8	-4.1		-51.5	90	1055	12 01 31
12 03 00	SDSSJ1004+41	05 46 13	45.9	78.5	-4.3		-51.3	-21	1055	No stop
12 06 30	---	05 49 43	46.4	79.1	-4.3		-51.5	189	1082	12 03 01
12 06 30	J0948+4039	05 49 43	48.4	82.4	-4.0		-51.6	-21	1082	No stop
12 08 00	=0945+408	05 51 14	48.6	82.7	-4.0		-51.6	69	1094	12 06 31
12 08 00	SDSSJ1004+41	05 51 14	46.6	79.3	-4.2		-51.6	-21	1094	No stop
12 11 30	---	05 54 44	47.1	79.9	-4.2		-51.7	189	1121	12 08 01
12 12 00	J0948+4039	05 55 14	49.2	83.4	-3.9		-51.7	8	1121	12 12 00
12 13 30	=0945+408	05 56 45	49.4	83.7	-3.9		-51.8	90	1132	12 12 01
12 13 30	SDSSJ1004+41	05 56 45	47.4	80.3	-4.2		-51.8	-21	1132	No stop
12 17 00	---	06 00 15	47.9	80.9	-4.1		-51.9	189	1159	12 13 31
12 17 00	J0948+4039	06 00 15	49.9	84.3	-3.8		-51.9	-22	1159	No stop
12 18 30	=0945+408	06 01 45	50.1	84.6	-3.8		-51.9	68	1171	12 17 01



Schedule for TORUN (Code Tr )

Page 6

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 29 May 2021 Day 149 ---										
12 18 30	SDSSJ1004+41	06 01 45	48.2	81.1	-4.1		-51.9	-21	1171	No stop
12 22 00	---	06 05 16	48.7	81.7	-4.0		-52.1	189	1198	12 18 31
12 22 30	J0948+4039	06 05 46	50.7	85.3	-3.7		-52.0	8	1198	12 22 30
12 24 00	=0945+408	06 07 16	51.0	85.6	-3.7		-52.0	90	1210	12 22 31
12 24 00	SDSSJ1004+41	06 07 16	49.0	82.1	-4.0		-52.1	-22	1210	No stop
12 27 30	---	06 10 47	49.5	82.7	-3.9		-52.2	188	1237	12 24 01
12 27 30	J0948+4039	06 10 47	51.5	86.2	-3.7		-52.1	-22	1237	No stop
12 29 00	=0945+408	06 12 17	51.7	86.5	-3.6		-52.1	68	1248	12 27 31
12 29 00	SDSSJ1004+41	06 12 17	49.7	83.0	-3.9		-52.3	-22	1248	No stop
12 32 30	---	06 15 48	50.2	83.6	-3.8		-52.4	188	1275	12 29 01
12 33 00	J0948+4039	06 16 18	52.3	87.3	-3.6		-52.1	8	1275	12 33 00
12 34 30	=0945+408	06 17 48	52.6	87.6	-3.5		-52.2	90	1287	12 33 01
12 34 30	SDSSJ1004+41	06 17 48	50.5	84.0	-3.8		-52.4	-22	1287	No stop
12 38 00	---	06 21 19	51.1	84.6	-3.7		-52.5	188	1314	12 34 31
12 38 00	J0948+4039	06 21 19	53.1	88.2	-3.5		-52.2	-22	1314	No stop
12 39 30	=0945+408	06 22 49	53.3	88.5	-3.5		-52.2	68	1326	12 38 01
12 39 30	SDSSJ1004+41	06 22 49	51.3	84.9	-3.7		-52.5	-22	1326	No stop
12 43 00	---	06 26 19	51.8	85.5	-3.7		-52.6	188	1353	12 39 31
12 43 30	J0948+4039	06 26 49	53.9	89.3	-3.4		-52.2	8	1353	12 43 30
12 45 00	=0945+408	06 28 20	54.1	89.6	-3.4		-52.2	90	1364	12 43 31
12 45 00	SDSSJ1004+41	06 28 20	52.1	85.9	-3.6		-52.7	-22	1364	No stop
12 48 30	---	06 31 50	52.6	86.6	-3.6		-52.7	188	1391	12 45 01
12 48 30	J0948+4039	06 31 50	54.7	90.3	-3.3		-52.2	-22	1391	No stop
12 50 00	=0945+408	06 33 21	54.9	90.6	-3.3		-52.2	68	1403	12 48 31
12 50 00	SDSSJ1004+41	06 33 21	52.9	86.8	-3.5		-52.7	-22	1403	No stop
12 53 30	---	06 36 51	53.4	87.5	-3.5		-52.8	188	1430	12 50 01
12 54 00	J0948+4039	06 37 21	55.5	91.4	-3.2		-52.2	7	1430	12 54 00
12 55 30	=0945+408	06 38 51	55.7	91.8	-3.2		-52.2	90	1441	12 54 01
12 55 30	SDSSJ1004+41	06 38 51	53.7	87.9	-3.4		-52.8	-22	1441	No stop
12 59 00	---	06 42 22	54.2	88.6	-3.4		-52.8	188	1469	12 55 31

Schedule for TORUN (Code Tr )

Page 7

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 29 May 2021 Day 149 ---										
12 59 00	J0948+4039	06 42 22	56.2	92.5	-3.1		-52.2	-23	1469	No stop
13 00 30	=0945+408	06 43 52	56.5	92.8	-3.1		-52.1	67	1480	12 59 01
13 00 30	SDSSJ1004+41	06 43 52	54.4	88.9	-3.4		-52.8	-23	1480	No stop
13 04 00	---	06 47 23	55.0	89.6	-3.3		-52.8	187	1507	13 00 31
13 04 30	J0948+4039	06 47 53	57.1	93.7	-3.0		-52.1	7	1507	13 04 30
13 06 00	=0945+408	06 49 23	57.3	94.0	-3.0		-52.1	90	1519	13 04 31
13 06 00	SDSSJ1004+41	06 49 23	55.3	89.9	-3.3		-52.8	-23	1519	No stop
13 09 30	---	06 52 54	55.8	90.7	-3.2		-52.8	187	1546	13 06 01
13 09 30	J0948+4039	06 52 54	57.8	94.7	-3.0		-52.0	-23	1546	No stop
13 11 00	=0945+408	06 54 24	58.0	95.1	-2.9		-51.9	67	1557	13 09 31
13 11 00	SDSSJ1004+41	06 54 24	56.0	91.0	-3.2		-52.8	-23	1557	No stop
13 14 30	---	06 57 55	56.6	91.7	-3.1		-52.8	187	1584	13 11 01
13 15 00	J0948+4039	06 58 25	58.6	96.0	-2.9		-51.8	7	1584	13 15 00
13 16 30	=0945+408	06 59 55	58.9	96.3	-2.8		-51.8	90	1596	13 15 01
13 16 30	SDSSJ1004+41	06 59 55	56.9	92.1	-3.1		-52.8	-23	1596	No stop
13 20 00	---	07 03 25	57.4	92.8	-3.0		-52.8	187	1623	13 16 31
13 20 00	J0948+4039	07 03 25	59.4	97.1	-2.8		-51.7	-24	1623	No stop
13 21 30	=0945+408	07 04 56	59.6	97.5	-2.8		-51.6	66	1635	13 20 01
13 21 30	SDSSJ1004+41	07 04 56	57.6	93.2	-3.0		-52.7	-23	1635	No stop
13 25 00	---	07 08 26	58.1	93.9	-3.0		-52.7	187	1662	13 21 31
13 25 30	J0948+4039	07 08 56	60.2	98.4	-2.7		-51.4	6	1662	13 25 30
13 27 00	=0945+408	07 10 27	60.4	98.8	-2.7		-51.4	90	1673	13 25 31
13 27 00	SDSSJ1004+41	07 10 27	58.4	94.3	-2.9		-52.6	-24	1673	No stop
13 30 30	---	07 13 57	59.0	95.1	-2.9		-52.5	186	1700	13 27 01
13 30 30	J0948+4039	07 13 57	61.0	99.6	-2.6		-51.2	-24	1700	No stop
13 32 00	=0945+408	07 15 27	61.2	100.0	-2.6		-51.1	66	1712	13 30 31
13 32 00	SDSSJ1004+41	07 15 27	59.2	95.4	-2.8		-52.5	-24	1712	No stop
13 35 30	---	07 18 58	59.7	96.2	-2.8		-52.4	186	1739	13 32 01
13 36 00	J0948+4039	07 19 28	61.8	101.0	-2.5		-50.9	6	1739	13 36 00
13 37 30	=0945+408	07 20 58	62.0	101.4	-2.5		-50.8	90	1751	13 36 01

Schedule for TORUN (Code Tr ) Page 8

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 29 May 2021 Day 149 ---										
13 37 30	SDSSJ1004+41	07 20 58	60.0	96.7	-2.7		-52.3	-24	1751	No stop
13 41 00	---	07 24 29	60.5	97.5	-2.7		-52.2	186	1778	13 37 31
13 41 00	J0948+4039	07 24 29	62.5	102.3	-2.4		-50.6	-25	1778	No stop
13 42 30	=0945+408	07 25 59	62.7	102.7	-2.4		-50.5	65	1789	13 41 01
13 42 30	SDSSJ1004+41	07 25 59	60.8	97.9	-2.7		-52.1	-24	1789	No stop
13 46 00	---	07 29 30	61.3	98.7	-2.6		-52.0	186	1816	13 42 31
13 46 30	J0948+4039	07 30 00	63.3	103.7	-2.3		-50.2	5	1816	13 46 30
13 48 00	=0945+408	07 31 30	63.5	104.2	-2.3		-50.0	90	1828	13 46 31
13 48 00	SDSSJ1004+41	07 31 30	61.6	99.2	-2.6		-51.9	-25	1828	No stop
13 51 30	---	07 35 01	62.1	100.1	-2.5		-51.7	185	1855	13 48 01
13 51 30	J0948+4039	07 35 01	64.0	105.1	-2.3		-49.7	-25	1855	No stop
13 53 00	=0945+408	07 36 31	64.3	105.6	-2.2		-49.6	65	1867	13 51 31
13 53 00	SDSSJ1004+41	07 36 31	62.3	100.4	-2.5		-51.6	-25	1867	No stop
13 56 30	---	07 40 01	62.8	101.3	-2.4		-51.4	185	1894	13 53 01
13 57 00	J0948+4039	07 40 32	64.8	106.7	-2.2		-49.2	4	1894	13 57 00
13 58 30	=0945+408	07 42 02	65.1	107.1	-2.1		-49.1	90	1905	13 57 01
13 58 30	SDSSJ1004+41	07 42 02	63.1	101.9	-2.4		-51.3	-25	1905	No stop
14 02 00	---	07 45 32	63.6	102.8	-2.3		-51.0	185	1932	13 58 31
14 02 00	J0948+4039	07 45 32	65.6	108.2	-2.1		-48.7	-26	1932	No stop
14 03 30	=0945+408	07 47 03	65.8	108.7	-2.1		-48.5	64	1944	14 02 01
14 03 30	SDSSJ1004+41	07 47 03	63.9	103.2	-2.3		-50.9	-26	1944	No stop
14 07 00	---	07 50 33	64.4	104.1	-2.3		-50.6	184	1971	14 03 31
14 07 30	J0948+4039	07 51 03	66.3	109.9	-2.0		-48.0	4	1971	14 07 30
14 09 00	=0945+408	07 52 34	66.5	110.4	-2.0		-47.8	90	1983	14 07 31
14 09 00	SDSSJ1004+41	07 52 34	64.7	104.7	-2.2		-50.4	-26	1983	No stop
14 12 30	---	07 56 04	65.2	105.7	-2.2		-50.1	184	2010	14 09 01
14 12 30	J0948+4039	07 56 04	67.0	111.5	-1.9		-47.3	-27	2010	No stop
14 14 00	=0945+408	07 57 34	67.2	112.0	-1.9		-47.1	63	2021	14 12 31
14 14 00	SDSSJ1004+41	07 57 34	65.4	106.1	-2.1		-50.0	-27	2021	No stop
14 17 30	---	08 01 05	65.9	107.2	-2.1		-49.6	183	2048	14 14 01

Schedule for TORUN (Code Tr ) Page 9

Resolving the faintest radio quasars detected by LOFAR

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

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Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Sat 29 May 2021 Day 149 ---										
14 18 00	J0948+4039	08 01 35	67.8	113.4	-1.8		-46.5	3	2048	14 18 00
14 19 30	=0945+408	08 03 05	68.0	113.9	-1.8		-46.3	90	2060	14 18 01
14 19 30	SDSSJ1004+41	08 03 05	66.2	107.8	-2.0		-49.4	-27	2060	No stop
14 23 00	---	08 06 36	66.7	108.9	-2.0		-49.0	183	2087	14 19 31
14 23 00	J0948+4039	08 06 36	68.5	115.2	-1.7		-45.7	-28	2087	No stop
14 24 30	=0945+408	08 08 06	68.7	115.7	-1.7		-45.4	62	2098	14 23 01
14 24 30	SDSSJ1004+41	08 08 06	66.9	109.3	-2.0		-48.8	-28	2098	No stop
14 28 00	---	08 11 37	67.4	110.5	-1.9		-48.3	182	2126	14 24 31
14 28 30	J0948+4039	08 12 07	69.2	117.2	-1.6		-44.7	2	2126	14 28 30
14 30 00	=0945+408	08 13 37	69.4	117.8	-1.6		-44.4	90	2137	14 28 31
14 30 00	SDSSJ1004+41	08 13 37	67.7	111.1	-1.9		-48.0	-28	2137	No stop
14 33 30	---	08 17 08	68.2	112.3	-1.8		-47.5	182	2164	14 30 01
14 33 30	J0948+4039	08 17 08	69.9	119.2	-1.6		-43.7	-29	2164	No stop
14 35 00	=0945+408	08 18 38	70.1	119.8	-1.5		-43.3	61	2176	14 33 31
14 35 00	SDSSJ1004+41	08 18 38	68.4	112.8	-1.8		-47.3	-29	2176	No stop
14 38 30	---	08 22 08	68.9	114.0	-1.7		-46.7	181	2203	14 35 01
14 39 00	J0948+4039	08 22 38	70.6	121.4	-1.5		-42.4	0	2203	14 39 00
14 40 30	=0945+408	08 24 09	70.8	122.1	-1.4		-42.1	90	2214	14 39 01
14 40 30	SDSSJ1004+41	08 24 09	69.1	114.8	-1.7		-46.4	-29	2214	No stop
14 44 00	---	08 27 39	69.6	116.1	-1.6		-45.7	181	2241	14 40 31
14 44 00	J0948+4039	08 27 39	71.2	123.6	-1.4		-41.2	-30	2241	No stop
14 45 30	=0945+408	08 29 10	71.4	124.3	-1.4		-40.8	60	2253	14 44 01
14 45 30	SDSSJ1004+41	08 29 10	69.8	116.6	-1.6		-45.4	-30	2253	No stop
14 49 00	---	08 32 40	70.3	118.0	-1.6		-44.7	180	2280	14 45 31
14 49 30	J0948+4039	08 33 10	71.9	126.1	-1.3		-39.7	-1	2280	14 49 30
14 51 00	=0945+408	08 34 40	72.1	126.8	-1.3		-39.2	89	2292	14 49 31
14 51 00	SDSSJ1004+41	08 34 40	70.5	118.8	-1.5		-44.3	-31	2292	No stop
14 54 30	---	08 38 11	71.0	120.3	-1.5		-43.5	179	2319	14 51 01
14 54 30	J0948+4039	08 38 11	72.5	128.6	-1.2		-38.2	-32	2319	No stop
14 56 00	=0945+408	08 39 41	72.7	129.3	-1.2		-37.7	58	2330	14 54 31

Schedule for TORUN (Code Tr ) Page 10

Resolving the faintest radio quasars detected by LOFAR

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Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 29 May 2021 Day 149 ---										
14 56 00	SDSSJ1004+41	08 39 41	71.2	120.9	-1.4		-43.1	-31	2330	No stop
14 59 30	---	08 43 12	71.6	122.4	-1.4		-42.3	179	2357	14 56 01
15 00 00	J0948+4039	08 43 42	73.2	131.4	-1.1		-36.4	-3	2357	15 00 00
15 01 30	=0945+408	08 45 12	73.3	132.2	-1.1		-35.9	87	2369	15 00 01
15 01 30	SDSSJ1004+41	08 45 12	71.9	123.3	-1.3		-41.8	-32	2369	No stop
15 05 00	---	08 48 43	72.3	124.9	-1.3		-40.8	178	2396	15 01 31
15 05 00	J0948+4039	08 48 43	73.7	134.1	-1.0		-34.6	-34	2396	No stop
15 06 30	=0945+408	08 50 13	73.9	134.9	-1.0		-34.0	56	2408	15 05 01
15 11 30	4C39.25	08 55 14	74.8	154.8	-0.6		-19.2	251	2408	15 11 30
15 16 30	---	09 00 15	75.1	158.3	-0.5		-16.6	300	2446	15 11 31
15 21 30	J0948+4039	09 05 15	75.3	144.2	-0.7		-27.5	251	2446	15 21 30
15 26 30	=0945+408	09 10 16	75.8	147.6	-0.7		-25.0	300	2485	15 21 31
15 26 30	SDSSJ1004+41	09 10 16	74.8	136.4	-0.9		-33.3	-37	2485	No stop
15 30 00	---	09 13 47	75.1	138.6	-0.9		-31.8	173	2512	15 26 31
15 30 30	J0948+4039	09 14 17	76.1	150.5	-0.6		-22.9	-9	2512	15 30 30
15 32 00	=0945+408	09 15 47	76.2	151.6	-0.6		-22.1	81	2524	15 30 31
15 32 00	SDSSJ1004+41	09 15 47	75.3	139.8	-0.8		-30.9	-38	2524	No stop
15 35 30	---	09 19 18	75.7	142.1	-0.8		-29.3	172	2551	15 32 01
15 35 30	J0948+4039	09 19 18	76.4	154.2	-0.5		-20.1	-40	2551	No stop
15 37 00	=0945+408	09 20 48	76.5	155.4	-0.5		-19.2	50	2562	15 35 31
15 37 00	SDSSJ1004+41	09 20 48	75.8	143.1	-0.8		-28.6	-39	2562	No stop
15 40 30	---	09 24 19	76.1	145.5	-0.7		-26.8	171	2589	15 37 01
15 41 00	J0948+4039	09 24 49	76.8	158.5	-0.4		-16.8	-11	2589	15 41 00
15 42 30	=0945+408	09 26 19	76.8	159.7	-0.4		-15.9	79	2601	15 41 01
15 42 30	SDSSJ1004+41	09 26 19	76.3	146.9	-0.7		-25.8	-40	2601	No stop
15 46 00	---	09 29 49	76.6	149.5	-0.6		-23.9	170	2628	15 42 31
15 46 00	J0948+4039	09 29 49	77.0	162.5	-0.3		-13.7	-42	2628	No stop
15 47 30	=0945+408	09 31 20	77.1	163.8	-0.3		-12.8	48	2640	15 46 01
15 47 30	SDSSJ1004+41	09 31 20	76.7	150.6	-0.6		-23.0	-40	2640	No stop
15 51 00	---	09 34 50	76.9	153.3	-0.5		-21.0	170	2667	15 47 31

Schedule for TORUN (Code Tr )

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Resolving the faintest radio quasars detected by LOFAR

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SYNC: Time correlator 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 29 May 2021 Day 149 ---										
15 51 30	J0948+4039	09 35 20	77.2	167.1	-0.2		-10.1	-13	2667	15 51 30
15 53 00	=0945+408	09 36 51	77.3	168.4	-0.2		-9.1	77	2678	15 51 31
15 53 00	SDSSJ1004+41	09 36 51	77.1	154.9	-0.5		-19.8	-41	2678	No stop
15 56 30	---	09 40 21	77.3	157.7	-0.4		-17.6	169	2705	15 53 01
15 56 30	J0948+4039	09 40 21	77.4	171.4	-0.2		-6.8	-44	2705	No stop
15 58 00	=0945+408	09 41 51	77.4	172.7	-0.1		-5.8	46	2717	15 56 31
15 58 00	SDSSJ1004+41	09 41 51	77.4	158.9	-0.4		-16.7	-42	2717	No stop
16 01 30	---	09 45 22	77.5	161.9	-0.3		-14.4	168	2744	15 58 01
16 02 00	J0948+4039	09 45 52	77.4	176.2	-0.1		-3.0	-14	2744	16 02 00
16 03 30	=0945+408	09 47 22	77.5	177.5	-0.0		-2.0	76	2755	16 02 01
16 03 30	SDSSJ1004+41	09 47 22	77.6	163.6	-0.3		-13.0	-42	2755	No stop
16 07 00	---	09 50 53	77.8	166.6	-0.2		-10.6	168	2782	16 03 31
16 07 00	J0948+4039	09 50 53	77.5	180.6	0.0		0.5	-44	2782	No stop
16 08 30	=0945+408	09 52 23	77.5	181.9	0.0		1.5	46	2794	16 07 01
16 08 30	SDSSJ1004+41	09 52 23	77.8	167.9	-0.2		-9.6	-42	2794	No stop
16 12 00	---	09 55 54	77.9	171.0	-0.2		-7.1	168	2821	16 08 31
16 12 30	J0948+4039	09 56 24	77.4	185.4	0.1		4.3	-14	2821	16 12 30
16 14 00	=0945+408	09 57 54	77.4	186.7	0.1		5.3	76	2833	16 12 31
16 14 00	SDSSJ1004+41	09 57 54	77.9	172.8	-0.1		-5.7	-42	2833	No stop
16 17 30	---	10 01 25	78.0	176.0	-0.1		-3.2	168	2860	16 14 01
16 17 30	J0948+4039	10 01 25	77.3	189.7	0.2		7.7	-44	2860	No stop
16 19 00	=0945+408	10 02 55	77.3	191.0	0.2		8.7	46	2871	16 17 31
16 19 00	SDSSJ1004+41	10 02 55	78.0	177.3	-0.0		-2.1	-41	2871	No stop
16 22 30	---	10 06 25	78.0	180.5	0.0		0.4	169	2898	16 19 01
16 23 00	J0948+4039	10 06 56	77.2	194.4	0.3		11.3	-13	2898	16 23 00
16 24 30	=0945+408	10 08 26	77.1	195.7	0.3		12.3	77	2910	16 23 01
16 24 30	SDSSJ1004+41	10 08 26	78.0	182.3	0.0		1.9	-41	2910	No stop
16 28 00	---	10 11 56	78.0	185.5	0.1		4.4	169	2937	16 24 31
16 28 00	J0948+4039	10 11 56	76.9	198.6	0.4		14.6	-42	2937	No stop
16 29 30	=0945+408	10 13 27	76.9	199.8	0.4		15.5	48	2949	16 28 01

Schedule for TORUN (Code Tr )

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Resolving the faintest radio quasars detected by LOFAR

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SYNC: Time correlator 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 29 May 2021 Day 149 ---										
16 29 30	SDSSJ1004+41	10 13 27	77.9	186.9	0.1		5.5	-40	2949	No stop
16 33 00	---	10 16 57	77.9	190.0	0.2		8.0	170	2976	16 29 31
16 33 30	J0948+4039	10 17 27	76.6	203.0	0.5		18.0	-11	2976	16 33 30
16 35 00	=0945+408	10 18 58	76.6	204.1	0.5		18.9	79	2987	16 33 31
16 35 00	SDSSJ1004+41	10 18 58	77.8	191.8	0.2		9.4	-39	2987	No stop
16 38 30	---	10 22 28	77.7	194.8	0.3		11.8	171	3014	16 35 01
16 38 30	J0948+4039	10 22 28	76.3	206.8	0.5		20.9	-40	3014	No stop
16 40 00	=0945+408	10 23 58	76.2	207.9	0.6		21.7	50	3026	16 38 31
16 40 00	SDSSJ1004+41	10 23 58	77.6	196.1	0.3		12.8	-38	3026	No stop
16 43 30	---	10 27 29	77.5	199.1	0.4		15.1	172	3053	16 40 01
16 44 00	J0948+4039	10 27 59	75.9	210.8	0.6		23.9	-9	3053	16 44 00
16 45 30	=0945+408	10 29 29	75.8	211.9	0.7		24.7	81	3065	16 44 01
16 45 30	SDSSJ1004+41	10 29 29	77.4	200.8	0.4		16.4	-36	3065	No stop
16 49 00	---	10 33 00	77.2	203.6	0.5		18.6	174	3092	16 45 31
16 49 00	J0948+4039	10 33 00	75.5	214.3	0.7		26.5	-37	3092	No stop
16 50 30	=0945+408	10 34 30	75.4	215.4	0.7		27.2	53	3103	16 49 01
16 50 30	SDSSJ1004+41	10 34 30	77.1	204.8	0.5		19.6	-35	3103	No stop
16 54 00	---	10 38 01	76.8	207.6	0.5		21.7	175	3130	16 50 31
16 54 30	J0948+4039	10 38 31	75.0	218.0	0.8		29.1	-6	3130	16 54 30
16 56 00	=0945+408	10 40 01	74.9	218.9	0.8		29.8	84	3142	16 54 31
16 56 00	SDSSJ1004+41	10 40 01	76.7	209.1	0.6		22.8	-34	3142	No stop
16 59 30	---	10 43 32	76.4	211.7	0.6		24.8	176	3169	16 56 01
16 59 30	J0948+4039	10 43 32	74.6	221.1	0.9		31.3	-34	3169	No stop
17 01 00	=0945+408	10 45 02	74.4	222.0	0.9		32.0	56	3181	16 59 31
17 01 00	SDSSJ1004+41	10 45 02	76.3	212.8	0.7		25.6	-33	3181	No stop
17 04 30	---	10 48 32	76.0	215.3	0.7		27.4	177	3208	17 01 01
17 05 00	J0948+4039	10 49 02	74.0	224.4	1.0		33.6	-3	3208	17 05 00
17 06 30	=0945+408	10 50 33	73.8	225.2	1.0		34.1	87	3219	17 05 01
17 06 30	SDSSJ1004+41	10 50 33	75.8	216.7	0.7		28.4	-32	3219	No stop
17 10 00	---	10 54 03	75.5	219.0	0.8		30.1	178	3246	17 06 31

Schedule for TORUN (Code Tr )

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Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop				Early	Disk	TPStart		
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 29 May 2021 Day 149 ---										
17 10 00	J0948+4039	10 54 03	73.5	227.2	1.1		35.4	-32	3246	No stop
17 11 30	=0945+408	10 55 34	73.3	228.0	1.1		36.0	58	3258	17 10 01
17 11 30	SDSSJ1004+41	10 55 34	75.4	220.0	0.8		30.8	-31	3258	No stop
17 15 00	---	10 59 04	75.0	222.2	0.9		32.3	179	3285	17 11 31
17 15 30	J0948+4039	10 59 34	72.8	230.1	1.2		37.3	-1	3285	17 15 30
17 17 00	=0945+408	11 01 04	72.7	230.9	1.2		37.8	89	3296	17 15 31
17 17 00	SDSSJ1004+41	11 01 04	74.8	223.4	0.9		33.2	-29	3296	No stop
17 20 30	---	11 04 35	74.5	225.5	1.0		34.6	181	3324	17 17 01
17 20 30	J0948+4039	11 04 35	72.2	232.6	1.2		38.9	-30	3324	No stop
17 22 00	=0945+408	11 06 05	72.1	233.3	1.3		39.3	60	3335	17 20 31
17 22 00	SDSSJ1004+41	11 06 05	74.3	226.3	1.0		35.2	-29	3335	No stop
17 25 30	---	11 09 36	73.9	228.3	1.1		36.5	181	3362	17 22 01
17 26 00	J0948+4039	11 10 06	71.6	235.2	1.3		40.5	1	3362	17 26 00
17 27 30	=0945+408	11 11 36	71.4	235.9	1.4		40.9	90	3374	17 26 01
17 27 30	SDSSJ1004+41	11 11 36	73.7	229.4	1.1		37.2	-28	3374	No stop
17 31 00	---	11 15 07	73.3	231.2	1.2		38.4	182	3401	17 27 31
17 31 00	J0948+4039	11 15 07	71.0	237.4	1.4		41.8	-28	3401	No stop
17 32 30	=0945+408	11 16 37	70.8	238.1	1.4		42.1	62	3412	17 31 01
17 32 30	SDSSJ1004+41	11 16 37	73.1	232.0	1.2		38.9	-27	3412	No stop
17 36 00	---	11 20 08	72.7	233.7	1.2		40.0	183	3439	17 32 31
17 36 30	J0948+4039	11 20 38	70.2	239.7	1.5		43.1	3	3439	17 36 30
17 38 00	=0945+408	11 22 08	70.1	240.4	1.5		43.4	90	3451	17 36 31
17 38 00	SDSSJ1004+41	11 22 08	72.4	234.7	1.3		40.6	-26	3451	No stop
17 41 30	---	11 25 38	72.0	236.3	1.3		41.5	184	3478	17 38 01
17 41 30	J0948+4039	11 25 38	69.6	241.8	1.6		44.1	-26	3478	No stop
17 43 00	=0945+408	11 27 09	69.4	242.3	1.6		44.4	64	3490	17 41 31
17 43 00	SDSSJ1004+41	11 27 09	71.8	237.0	1.4		41.9	-25	3490	No stop
17 46 30	---	11 30 39	71.4	238.5	1.4		42.8	185	3517	17 43 01
17 47 00	J0948+4039	11 31 09	68.9	243.9	1.7		45.2	4	3517	17 47 00
17 48 30	=0945+408	11 32 40	68.6	244.4	1.7		45.5	90	3528	17 47 01



Schedule for TORUN (Code Tr )

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Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop				Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA UP	ParA	Dwell	GBytes	SYNC
-----									
--- Sat 29 May 2021 Day 149 ---									
17 48 30	SDSSJ1004+41	11 32 40	71.1	239.4	1.4	43.3	-25	3528	No stop
17 52 00	---	11 36 10	70.7	240.8	1.5	44.1	185	3555	17 48 31
17 52 00	J0948+4039	11 36 10	68.2	245.7	1.8	46.1	-25	3555	No stop
17 53 30	=0945+408	11 37 40	68.0	246.2	1.8	46.3	65	3567	17 52 01
17 53 30	SDSSJ1004+41	11 37 40	70.5	241.4	1.5	44.4	-24	3567	No stop
17 57 00	---	11 41 11	70.0	242.8	1.6	45.2	186	3594	17 53 31
17 57 30	J0948+4039	11 41 41	67.4	247.6	1.9	46.9	6	3594	17 57 30
17 59 00	=0945+408	11 43 11	67.2	248.1	1.9	47.2	90	3606	17 57 31
17 59 00	SDSSJ1004+41	11 43 11	69.7	243.6	1.6	45.6	-24	3606	No stop
18 02 30	---	11 46 42	69.2	244.9	1.7	46.2	186	3633	17 59 01
18 02 30	J0948+4039	11 46 42	66.7	249.2	1.9	47.7	-24	3633	No stop
18 04 00	=0945+408	11 48 12	66.5	249.7	2.0	47.9	66	3644	18 02 31
18 04 00	SDSSJ1004+41	11 48 12	69.0	245.5	1.7	46.5	-23	3644	No stop
18 07 30	---	11 51 43	68.6	246.7	1.8	47.1	187	3671	18 04 01
18 08 00	J0948+4039	11 52 13	65.9	251.0	2.0	48.4	6	3671	18 08 00
18 09 30	=0945+408	11 53 43	65.7	251.4	2.1	48.5	90	3683	18 08 01
18 09 30	SDSSJ1004+41	11 53 43	68.3	247.4	1.8	47.4	-23	3683	No stop
18 13 00	---	11 57 14	67.8	248.6	1.9	47.9	187	3710	18 09 31
18 13 00	J0948+4039	11 57 14	65.2	252.5	2.1	48.9	-24	3710	No stop
18 14 30	=0945+408	11 58 44	65.0	253.0	2.1	49.1	66	3722	18 13 01
18 14 30	SDSSJ1004+41	11 58 44	67.6	249.1	1.9	48.1	-23	3722	No stop
18 18 00	---	12 02 14	67.1	250.2	1.9	48.6	187	3749	18 14 31
18 18 30	J0948+4039	12 02 45	64.4	254.1	2.2	49.5	6	3749	18 18 30
18 20 00	=0945+408	12 04 15	64.2	254.5	2.2	49.6	90	3760	18 18 31
18 20 00	SDSSJ1004+41	12 04 15	66.8	250.9	2.0	48.9	-23	3760	No stop
18 23 30	---	12 07 45	66.3	252.0	2.0	49.3	187	3787	18 20 01
18 23 30	J0948+4039	12 07 45	63.7	255.5	2.3	49.9	-24	3787	No stop
18 25 00	=0945+408	12 09 16	63.5	255.9	2.3	50.1	66	3799	18 23 31
18 25 00	SDSSJ1004+41	12 09 16	66.1	252.4	2.1	49.4	-24	3799	No stop
18 28 30	---	12 12 46	65.6	253.5	2.1	49.8	186	3826	18 25 01

Schedule for TORUN (Code Tr )

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Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop				Early	Disk	TPStart		
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 29 May 2021 Day 149 ---										
18 29 00	J0948+4039	12 13 16	62.9	257.0	2.4		50.4	6	3826	18 29 00
18 30 30	=0945+408	12 14 46	62.7	257.4	2.4		50.5	90	3838	18 29 01
18 30 30	SDSSJ1004+41	12 14 46	65.3	254.1	2.1		50.0	-24	3838	No stop
18 34 00	---	12 18 17	64.8	255.1	2.2		50.4	186	3865	18 30 31
18 34 00	J0948+4039	12 18 17	62.2	258.3	2.5		50.7	-24	3865	No stop
18 35 30	=0945+408	12 19 47	61.9	258.7	2.5		50.8	66	3876	18 34 01
18 35 30	SDSSJ1004+41	12 19 47	64.6	255.5	2.2		50.5	-24	3876	No stop
18 39 00	---	12 23 18	64.1	256.5	2.3		50.8	186	3903	18 35 31
18 39 30	J0948+4039	12 23 48	61.3	259.7	2.6		51.1	6	3903	18 39 30
18 41 00	=0945+408	12 25 18	61.1	260.1	2.6		51.1	90	3915	18 39 31
18 41 00	SDSSJ1004+41	12 25 18	63.8	257.0	2.3		50.9	-24	3915	No stop
18 44 30	---	12 28 49	63.3	257.9	2.4		51.2	186	3942	18 41 01
18 44 30	J0948+4039	12 28 49	60.6	261.0	2.6		51.3	-24	3942	No stop
18 46 00	=0945+408	12 30 19	60.4	261.3	2.7		51.4	66	3953	18 44 31
18 46 00	SDSSJ1004+41	12 30 19	63.0	258.3	2.4		51.3	-24	3953	No stop
18 49 30	---	12 33 50	62.5	259.2	2.5		51.5	186	3981	18 46 01
18 50 00	J0948+4039	12 34 20	59.8	262.3	2.7		51.6	6	3981	18 50 00
18 51 30	=0945+408	12 35 50	59.6	262.6	2.8		51.6	90	3992	18 50 01
18 51 30	SDSSJ1004+41	12 35 50	62.2	259.7	2.5		51.6	-24	3992	No stop
18 55 00	---	12 39 21	61.7	260.6	2.6		51.8	186	4019	18 51 31
18 55 00	J0948+4039	12 39 21	59.0	263.4	2.8		51.7	-24	4019	No stop
18 56 30	=0945+408	12 40 51	58.8	263.8	2.8		51.8	66	4031	18 55 01
18 56 30	SDSSJ1004+41	12 40 51	61.5	261.0	2.6		51.9	-24	4031	No stop
19 00 00	---	12 44 21	61.0	261.8	2.6		52.1	186	4058	18 56 31
19 00 30	J0948+4039	12 44 51	58.2	264.7	2.9		51.9	6	4058	19 00 30
19 02 00	=0945+408	12 46 22	58.0	265.0	2.9		51.9	90	4069	19 00 31
19 02 00	SDSSJ1004+41	12 46 22	60.7	262.3	2.7		52.2	-24	4069	No stop
19 05 30	---	12 49 52	60.1	263.1	2.7		52.3	186	4096	19 02 01
19 05 30	J0948+4039	12 49 52	57.5	265.8	3.0		52.0	-24	4096	No stop
19 07 00	=0945+408	12 51 22	57.2	266.1	3.0		52.1	66	4108	19 05 31

Schedule for TORUN (Code Tr ) Page 16

Resolving the faintest radio quasars detected by LOFAR

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

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Start UT	Source	Start / Stop				Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA UP	ParA	Dwell	GBytes	SYNC
-----									
--- Sat 29 May 2021 Day 149 ---									
19 07 00	SDSSJ1004+41	12 51 22	59.9	263.4	2.8	52.4	-24	4108	No stop
19 10 30	---	12 54 53	59.4	264.2	2.8	52.5	186	4135	19 07 01
19 11 00	J0948+4039	12 55 23	56.6	267.0	3.1	52.1	6	4135	19 11 00
19 12 30	=0945+408	12 56 53	56.4	267.3	3.1	52.1	90	4147	19 11 01
19 12 30	SDSSJ1004+41	12 56 53	59.1	264.7	2.9	52.5	-24	4147	No stop
19 16 00	---	13 00 24	58.6	265.5	2.9	52.6	186	4174	19 12 31
19 16 00	J0948+4039	13 00 24	55.9	268.0	3.2	52.2	-24	4174	No stop
19 17 30	=0945+408	13 01 54	55.7	268.3	3.2	52.2	66	4185	19 16 01
19 17 30	SDSSJ1004+41	13 01 54	58.3	265.8	2.9	52.6	-24	4185	No stop
19 21 00	---	13 05 25	57.8	266.6	3.0	52.7	186	4212	19 17 31
19 21 30	J0948+4039	13 05 55	55.1	269.1	3.3	52.2	6	4212	19 21 30
19 23 00	=0945+408	13 07 25	54.8	269.4	3.3	52.2	90	4224	19 21 31
19 23 00	SDSSJ1004+41	13 07 25	57.5	267.0	3.0	52.7	-24	4224	No stop
19 26 30	---	13 10 56	57.0	267.7	3.1	52.8	186	4251	19 23 01
19 26 30	J0948+4039	13 10 56	54.3	270.1	3.3	52.2	-24	4251	No stop
19 28 00	=0945+408	13 12 26	54.1	270.4	3.4	52.2	66	4263	19 26 31
19 28 00	SDSSJ1004+41	13 12 26	56.8	268.0	3.1	52.8	-24	4263	No stop
19 31 30	---	13 15 57	56.2	268.8	3.2	52.8	186	4290	19 28 01
19 32 00	J0948+4039	13 16 27	53.5	271.2	3.4	52.2	6	4290	19 32 00
19 33 30	=0945+408	13 17 57	53.3	271.5	3.5	52.2	90	4301	19 32 01
19 33 30	SDSSJ1004+41	13 17 57	55.9	269.2	3.2	52.8	-24	4301	No stop
19 37 00	---	13 21 27	55.4	269.9	3.3	52.8	186	4328	19 33 31
19 37 00	J0948+4039	13 21 27	52.7	272.2	3.5	52.2	-24	4328	No stop
19 38 30	=0945+408	13 22 58	52.5	272.5	3.5	52.2	66	4340	19 37 01
19 43 30	4C39.25	13 27 58	47.5	275.6	4.0	50.2	270	4340	19 43 30
19 48 30	---	13 32 59	46.7	276.5	4.1	50.1	300	4379	19 43 31
19 53 30	J0948+4039	13 38 00	50.2	275.3	3.8	51.9	270	4379	19 53 30
19 58 30	=0945+408	13 43 01	49.5	276.2	3.9	51.8	300	4417	19 53 31
19 58 30	SDSSJ1004+41	13 43 01	52.2	274.0	3.6	52.7	-24	4417	No stop
20 02 00	---	13 46 32	51.6	274.7	3.7	52.6	186	4444	19 58 31

Schedule for TORUN (Code Tr )

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Resolving the faintest radio quasars detected by LOFAR

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Start UT	Source	Start / Stop				Early	Disk	TPStart		
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 29 May 2021 Day 149 ---										
20 02 30	J0948+4039	13 47 02	48.9	276.9	3.9		51.7	6	4444	20 02 30
20 04 00	=0945+408	13 48 32	48.7	277.2	4.0		51.6	90	4456	20 02 31
20 04 00	SDSSJ1004+41	13 48 32	51.3	275.1	3.7		52.6	-24	4456	No stop
20 07 30	---	13 52 02	50.8	275.7	3.8		52.5	186	4483	20 04 01
20 07 30	J0948+4039	13 52 02	48.2	277.8	4.0		51.5	-24	4483	No stop
20 09 00	=0945+408	13 53 33	47.9	278.1	4.1		51.5	66	4495	20 07 31
20 09 00	SDSSJ1004+41	13 53 33	50.6	276.0	3.8		52.4	-24	4495	No stop
20 12 30	---	13 57 03	50.1	276.6	3.9		52.3	186	4522	20 09 01
20 13 00	J0948+4039	13 57 33	47.3	278.8	4.1		51.4	6	4522	20 13 00
20 14 30	=0945+408	13 59 04	47.1	279.1	4.1		51.3	90	4533	20 13 01
20 14 30	SDSSJ1004+41	13 59 04	49.8	277.0	3.9		52.3	-24	4533	No stop
20 18 00	---	14 02 34	49.3	277.6	3.9		52.2	186	4560	20 14 31
20 18 00	J0948+4039	14 02 34	46.6	279.7	4.2		51.2	-24	4560	No stop
20 19 30	=0945+408	14 04 04	46.4	279.9	4.2		51.1	66	4572	20 18 01
20 19 30	SDSSJ1004+41	14 04 04	49.0	277.9	4.0		52.1	-24	4572	No stop
20 23 00	---	14 07 35	48.5	278.5	4.0		52.0	186	4599	20 19 31
20 23 30	J0948+4039	14 08 05	45.8	280.6	4.3		51.0	6	4599	20 23 30
20 25 00	=0945+408	14 09 35	45.6	280.9	4.3		50.9	90	4610	20 23 31
20 25 00	SDSSJ1004+41	14 09 35	48.2	278.8	4.1		52.0	-24	4610	No stop
20 28 30	---	14 13 06	47.7	279.4	4.1		51.8	186	4637	20 25 01
20 28 30	J0948+4039	14 13 06	45.0	281.5	4.4		50.8	-24	4637	No stop
20 30 00	=0945+408	14 14 36	44.8	281.7	4.4		50.7	66	4649	20 28 31
20 30 00	SDSSJ1004+41	14 14 36	47.5	279.7	4.1		51.8	-24	4649	No stop
20 33 30	---	14 18 07	46.9	280.3	4.2		51.6	186	4676	20 30 01
20 34 00	J0948+4039	14 18 37	44.2	282.4	4.5		50.5	6	4676	20 34 00
20 35 30	=0945+408	14 20 07	44.0	282.7	4.5		50.5	90	4688	20 34 01
20 35 30	SDSSJ1004+41	14 20 07	46.7	280.6	4.2		51.6	-24	4688	No stop
20 39 00	---	14 23 38	46.1	281.2	4.3		51.4	186	4715	20 35 31
20 39 00	J0948+4039	14 23 38	43.5	283.3	4.6		50.3	-24	4715	No stop
20 40 30	=0945+408	14 25 08	43.3	283.5	4.6		50.2	66	4726	20 39 01

Schedule for TORUN (Code Tr )

Page 18

Resolving the faintest radio quasars detected by LOFAR

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

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Start UT	Source	Start / Stop				Early	Disk	TPStart		
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 29 May 2021 Day 149 ---										
20 40 30	SDSSJ1004+41	14 25 08	45.9	281.5	4.3		51.4	-24	4726	No stop
20 44 00	---	14 28 38	45.4	282.1	4.4		51.2	186	4753	20 40 31
20 44 30	J0948+4039	14 29 09	42.7	284.2	4.6		50.0	6	4753	20 44 30
20 46 00	=0945+408	14 30 39	42.5	284.4	4.7		50.0	90	4765	20 44 31
20 46 00	SDSSJ1004+41	14 30 39	45.1	282.4	4.4		51.1	-24	4765	No stop
20 49 30	---	14 34 09	44.6	283.0	4.5		50.9	186	4792	20 46 01
20 49 30	J0948+4039	14 34 09	42.0	285.0	4.7		49.8	-24	4792	No stop
20 51 00	=0945+408	14 35 40	41.7	285.3	4.8		49.7	66	4804	20 49 31
20 51 00	SDSSJ1004+41	14 35 40	44.4	283.2	4.5		50.9	-24	4804	No stop
20 54 30	---	14 39 10	43.9	283.8	4.6		50.7	186	4831	20 51 01
20 55 00	J0948+4039	14 39 40	41.2	285.9	4.8		49.5	6	4831	20 55 00
20 56 30	=0945+408	14 41 10	40.9	286.2	4.8		49.4	90	4842	20 55 01
20 56 30	SDSSJ1004+41	14 41 10	43.6	284.2	4.6		50.6	-24	4842	No stop
21 00 00	---	14 44 41	43.1	284.7	4.6		50.4	186	4869	20 56 31
21 00 00	J0948+4039	14 44 41	40.4	286.7	4.9		49.2	-24	4869	No stop
21 01 30	=0945+408	14 46 11	40.2	287.0	4.9		49.1	66	4881	21 00 01
21 01 30	SDSSJ1004+41	14 46 11	42.8	285.0	4.7		50.3	-24	4881	No stop
21 05 00	---	14 49 42	42.3	285.6	4.7		50.2	186	4908	21 01 31
21 05 30	J0948+4039	14 50 12	39.7	287.6	5.0		48.9	6	4908	21 05 30
21 07 00	=0945+408	14 51 42	39.4	287.9	5.0		48.8	90	4920	21 05 31
21 07 00	SDSSJ1004+41	14 51 42	42.0	285.9	4.8		50.0	-23	4920	No stop
21 10 30	---	14 55 13	41.5	286.5	4.8		49.8	187	4947	21 07 01
21 10 30	J0948+4039	14 55 13	38.9	288.4	5.1		48.6	-24	4947	No stop
21 12 00	=0945+408	14 56 43	38.7	288.7	5.1		48.5	66	4958	21 10 31
21 12 00	SDSSJ1004+41	14 56 43	41.3	286.7	4.8		49.8	-23	4958	No stop
21 15 30	---	15 00 14	40.8	287.3	4.9		49.6	187	4985	21 12 01
21 16 00	J0948+4039	15 00 44	38.2	289.3	5.2		48.2	6	4985	21 16 00
21 17 30	=0945+408	15 02 14	37.9	289.6	5.2		48.1	90	4997	21 16 01
21 17 30	SDSSJ1004+41	15 02 14	40.5	287.6	4.9		49.4	-23	4997	No stop
21 21 00	---	15 05 45	40.0	288.2	5.0		49.2	187	5024	21 17 31

Schedule for TORUN (Code Tr )

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Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 29 May 2021 Day 149 ---										
21 21 00	J0948+4039	15 05 45	37.4	290.1	5.3		47.9	-24	5024	No stop
21 22 30	=0945+408	15 07 15	37.2	290.4	5.3		47.8	66	5036	21 21 01
21 22 30	SDSSJ1004+41	15 07 15	39.8	288.4	5.0		49.1	-23	5036	No stop
21 26 00	---	15 10 45	39.3	289.0	5.1		48.9	187	5063	21 22 31
21 26 30	J0948+4039	15 11 15	36.7	291.0	5.4		47.5	6	5063	21 26 30
21 28 00	=0945+408	15 12 46	36.5	291.3	5.4		47.4	90	5074	21 26 31
21 28 00	SDSSJ1004+41	15 12 46	39.0	289.3	5.1		48.8	-23	5074	No stop
21 30 00	---	15 14 46	38.7	289.6	5.1		48.7	97	5090	21 28 01
21 32 00	SDSSJ2222+27	15 16 46	12.8	420.3	-7.1		-36.2	-157	5090	21 32 00
21 35 30	---	15 20 17	13.3	421.0	-7.0		-36.4	53	5117	21 32 01
21 36 00	J2219+2613	15 20 47	12.4	422.4	-7.0		-36.4	14	5117	21 36 00
21 37 30	=2217+259	15 22 17	12.6	422.7	-7.0		-36.5	90	5128	21 36 01
21 37 30	SDSSJ2222+27	15 22 17	13.6	421.4	-7.0		-36.6	-16	5128	No stop
21 41 00	---	15 25 48	14.0	422.0	-7.0		-36.8	194	5155	21 37 31
21 41 00	J2219+2613	15 25 48	13.1	423.4	-6.9		-36.8	-16	5155	No stop
21 42 30	=2217+259	15 27 18	13.3	423.6	-6.9		-36.9	74	5167	21 41 01
21 42 30	SDSSJ2222+27	15 27 18	14.2	422.3	-6.9		-37.0	-16	5167	No stop
21 46 00	---	15 30 49	14.7	422.9	-6.9		-37.2	194	5194	21 42 31
21 46 30	J2219+2613	15 31 19	13.8	424.4	-6.8		-37.2	14	5194	21 46 30
21 48 00	=2217+259	15 32 49	14.0	424.7	-6.8		-37.3	90	5206	21 46 31
21 48 00	SDSSJ2222+27	15 32 49	15.0	423.3	-6.8		-37.3	-16	5206	No stop
21 51 30	---	15 36 20	15.4	423.9	-6.8		-37.6	194	5233	21 48 01
21 51 30	J2219+2613	15 36 20	14.5	425.3	-6.7		-37.5	-16	5233	No stop
21 53 00	=2217+259	15 37 50	14.7	425.6	-6.7		-37.6	74	5244	21 51 31
21 53 00	SDSSJ2222+27	15 37 50	15.6	424.2	-6.8		-37.7	-16	5244	No stop
21 56 30	---	15 41 20	16.1	424.8	-6.7		-37.9	194	5271	21 53 01
21 57 00	J2219+2613	15 41 50	15.3	426.3	-6.6		-37.8	14	5271	21 57 00
21 58 30	=2217+259	15 43 21	15.5	426.6	-6.6		-37.9	90	5283	21 57 01
21 58 30	SDSSJ2222+27	15 43 21	16.4	425.2	-6.7		-38.1	-16	5283	No stop
22 02 00	---	15 46 51	16.9	425.8	-6.6		-38.3	194	5310	21 58 31

Schedule for TORUN (Code Tr ) Page 20

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 29 May 2021 Day 149 ---										
22 02 00	J2219+2613	15 46 51	16.0	427.2	-6.6		-38.2	-16	5310	No stop
22 03 30	=2217+259	15 48 21	16.2	427.5	-6.5		-38.2	74	5322	22 02 01
22 03 30	SDSSJ2222+27	15 48 21	17.1	426.1	-6.6		-38.4	-16	5322	No stop
22 07 00	---	15 51 52	17.6	426.7	-6.5		-38.6	194	5349	22 03 31
22 07 30	J2219+2613	15 52 22	16.7	428.2	-6.5		-38.5	14	5349	22 07 30
22 09 00	=2217+259	15 53 52	16.9	428.5	-6.4		-38.6	90	5360	22 07 31
22 09 00	SDSSJ2222+27	15 53 52	17.8	427.1	-6.5		-38.7	-16	5360	No stop
22 12 30	---	15 57 23	18.3	427.7	-6.4		-38.9	194	5387	22 09 01
22 12 30	J2219+2613	15 57 23	17.4	429.2	-6.4		-38.8	-16	5387	No stop
22 14 00	=2217+259	15 58 53	17.7	429.4	-6.4		-38.8	74	5399	22 12 31
22 14 00	SDSSJ2222+27	15 58 53	18.5	428.0	-6.4		-39.0	-16	5399	No stop
22 17 30	---	16 02 24	19.0	428.6	-6.3		-39.2	194	5426	22 14 01
22 18 00	J2219+2613	16 02 54	18.2	430.2	-6.3		-39.1	14	5426	22 18 00
22 19 30	=2217+259	16 04 24	18.4	430.4	-6.3		-39.1	90	5437	22 18 01
22 19 30	SDSSJ2222+27	16 04 24	19.3	429.0	-6.3		-39.4	-16	5437	No stop
22 23 00	---	16 07 55	19.8	429.6	-6.3		-39.6	194	5465	22 19 31
22 23 00	J2219+2613	16 07 55	18.9	431.1	-6.2		-39.3	-16	5465	No stop
22 24 30	=2217+259	16 09 25	19.1	431.4	-6.2		-39.4	74	5476	22 23 01
22 24 30	SDSSJ2222+27	16 09 25	20.0	429.9	-6.2		-39.6	-16	5476	No stop
22 28 00	---	16 12 56	20.5	430.5	-6.2		-39.8	194	5503	22 24 31
22 28 30	J2219+2613	16 13 26	19.7	432.1	-6.1		-39.6	14	5503	22 28 30
22 30 00	=2217+259	16 14 56	19.9	432.4	-6.1		-39.7	90	5515	22 28 31
22 30 00	SDSSJ2222+27	16 14 56	20.8	430.9	-6.1		-39.9	-16	5515	No stop
22 33 30	---	16 18 26	21.3	431.5	-6.1		-40.1	194	5542	22 30 01
22 33 30	J2219+2613	16 18 26	20.4	433.0	-6.0		-39.8	-16	5542	No stop
22 35 00	=2217+259	16 19 57	20.6	433.3	-6.0		-39.9	74	5553	22 33 31
22 35 00	SDSSJ2222+27	16 19 57	21.5	431.8	-6.1		-40.2	-16	5553	No stop
22 38 30	---	16 23 27	22.0	432.4	-6.0		-40.4	194	5580	22 35 01
22 39 00	J2219+2613	16 23 57	21.2	434.0	-5.9		-40.1	14	5580	22 39 00
22 40 30	=2217+259	16 25 28	21.4	434.3	-5.9		-40.2	90	5592	22 39 01

Schedule for TORUN (Code Tr ) Page 21

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 29 May 2021 Day 149 ---										
22 40 30	SDSSJ2222+27	16 25 28	22.3	432.8	-6.0		-40.5	-16	5592	No stop
22 44 00	---	16 28 58	22.8	433.5	-5.9		-40.6	194	5619	22 40 31
22 44 00	J2219+2613	16 28 58	21.9	435.0	-5.9		-40.3	-16	5619	No stop
22 45 30	=2217+259	16 30 28	22.2	435.2	-5.8		-40.4	74	5631	22 44 01
22 45 30	SDSSJ2222+27	16 30 28	23.0	433.7	-5.9		-40.7	-16	5631	No stop
22 49 00	---	16 33 59	23.5	434.4	-5.8		-40.9	194	5658	22 45 31
22 49 30	J2219+2613	16 34 29	22.8	436.0	-5.8		-40.5	14	5658	22 49 30
22 51 00	=2217+259	16 35 59	23.0	436.2	-5.7		-40.6	90	5669	22 49 31
22 51 00	SDSSJ2222+27	16 35 59	23.8	434.7	-5.8		-40.9	-16	5669	No stop
22 54 30	---	16 39 30	24.3	435.4	-5.7		-41.1	194	5696	22 51 01
22 54 30	J2219+2613	16 39 30	23.5	436.9	-5.7		-40.7	-16	5696	No stop
22 56 00	=2217+259	16 41 00	23.7	437.2	-5.7		-40.8	74	5708	22 54 31
22 56 00	SDSSJ2222+27	16 41 00	24.5	435.6	-5.7		-41.1	-16	5708	No stop
22 59 30	---	16 44 31	25.0	436.3	-5.6		-41.3	194	5735	22 56 01
23 00 00	J2219+2613	16 45 01	24.3	437.9	-5.6		-40.9	14	5735	23 00 00
23 01 30	=2217+259	16 46 31	24.5	438.2	-5.6		-41.0	90	5747	23 00 01
23 01 30	SDSSJ2222+27	16 46 31	25.3	436.7	-5.6		-41.4	-16	5747	No stop
23 05 00	---	16 50 02	25.8	437.3	-5.6		-41.5	194	5774	23 01 31
23 05 00	J2219+2613	16 50 02	25.0	438.9	-5.5		-41.1	-16	5774	No stop
23 06 30	=2217+259	16 51 32	25.2	439.1	-5.5		-41.1	74	5785	23 05 01
23 06 30	SDSSJ2222+27	16 51 32	26.1	437.6	-5.5		-41.6	-16	5785	No stop
23 10 00	---	16 55 02	26.6	438.2	-5.5		-41.7	194	5812	23 06 31
23 10 30	J2219+2613	16 55 32	25.8	79.9	-5.4	W	-41.3	-697	5812	23 10 30
23 12 00	=2217+259	16 57 03	26.1	80.2	-5.4	W	-41.3	0	5824	23 10 31
23 12 00	SDSSJ2222+27	16 57 03	26.9	78.6	-5.4		-41.7	-16	5824	No stop
23 15 30	---	17 00 33	27.4	79.2	-5.4		-41.9	194	5851	23 12 01
23 15 30	J2219+2613	17 00 33	26.6	80.8	-5.3		-41.4	-16	5851	No stop
23 17 00	=2217+259	17 02 04	26.8	81.1	-5.3		-41.4	74	5863	23 15 31
23 17 00	SDSSJ2222+27	17 02 04	27.6	79.5	-5.4		-41.9	-16	5863	No stop
23 20 30	---	17 05 34	28.1	80.2	-5.3		-42.0	194	5890	23 17 01



Schedule for TORUN (Code Tr )

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Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 29 May 2021 Day 149 ---										
23 21 00	J2219+2613	17 06 04	27.4	81.9	-5.2		-41.5	14	5890	23 21 00
23 22 30	=2217+259	17 07 34	27.6	82.1	-5.2		-41.6	90	5901	23 21 01
23 22 30	SDSSJ2222+27	17 07 34	28.4	80.6	-5.3		-42.1	-16	5901	No stop
23 26 00	---	17 11 05	28.9	81.2	-5.2		-42.2	194	5928	23 22 31
23 26 00	J2219+2613	17 11 05	28.1	82.8	-5.2		-41.7	-16	5928	No stop
23 27 30	=2217+259	17 12 35	28.4	83.1	-5.1		-41.7	74	5940	23 26 01
23 27 30	SDSSJ2222+27	17 12 35	29.2	81.5	-5.2		-42.2	-16	5940	No stop
23 31 00	---	17 16 06	29.7	82.1	-5.1		-42.3	194	5967	23 27 31
23 31 30	J2219+2613	17 16 36	29.0	83.9	-5.1		-41.8	13	5967	23 31 30
23 33 00	=2217+259	17 18 06	29.2	84.1	-5.0		-41.8	90	5979	23 31 31
23 33 00	SDSSJ2222+27	17 18 06	30.0	82.5	-5.1		-42.3	-16	5979	No stop
23 36 30	---	17 21 37	30.5	83.2	-5.0		-42.4	194	6006	23 33 01
23 36 30	J2219+2613	17 21 37	29.7	84.8	-5.0		-41.9	-17	6006	No stop
23 38 00	=2217+259	17 23 07	29.9	85.1	-5.0		-41.9	73	6017	23 36 31
23 38 00	SDSSJ2222+27	17 23 07	30.7	83.5	-5.0		-42.4	-16	6017	No stop
23 41 30	---	17 26 38	31.3	84.1	-4.9		-42.5	194	6044	23 38 01
23 42 00	J2219+2613	17 27 08	30.5	85.9	-4.9		-41.9	13	6044	23 42 00
23 43 30	=2217+259	17 28 38	30.8	86.2	-4.9		-42.0	90	6056	23 42 01
23 43 30	SDSSJ2222+27	17 28 38	31.6	84.5	-4.9		-42.5	-16	6056	No stop
23 47 00	---	17 32 08	32.1	85.2	-4.8		-42.6	194	6083	23 43 31
23 47 00	J2219+2613	17 32 08	31.3	86.9	-4.8		-42.0	-17	6083	No stop
23 48 30	=2217+259	17 33 39	31.5	87.2	-4.8		-42.0	73	6094	23 47 01
23 48 30	SDSSJ2222+27	17 33 39	32.3	85.5	-4.8		-42.6	-16	6094	No stop
23 52 00	---	17 37 09	32.8	86.2	-4.8		-42.7	194	6122	23 48 31
23 52 30	J2219+2613	17 37 39	32.1	87.9	-4.7		-42.0	13	6122	23 52 30
23 54 00	=2217+259	17 39 10	32.3	88.2	-4.7		-42.0	90	6133	23 52 31
23 54 00	SDSSJ2222+27	17 39 10	33.1	86.6	-4.7		-42.7	-16	6133	No stop
23 57 30	---	17 42 40	33.7	87.2	-4.7		-42.7	194	6160	23 54 01
23 57 30	J2219+2613	17 42 40	32.9	88.9	-4.6		-42.1	-17	6160	No stop
23 59 00	=2217+259	17 44 10	33.1	89.2	-4.6		-42.1	73	6172	23 57 31

Schedule for TORUN (Code Tr )

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Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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: Sat 29 May 2021 Day 149 -- Stop: Sun 30 May 2021 Day 150 ---										
23 59 00	SDSSJ2222+27	17 44 10	33.9	87.5	-4.6		-42.7	-17	6172	No stop
00 02 30	---	17 47 41	34.4	88.2	-4.6		-42.8	193	6199	23 59 01
00 03 00	J2219+2613	17 48 11	33.7	90.0	-4.5		-42.1	13	6199	00 03 00
00 04 30	=2217+259	17 49 41	33.9	90.3	-4.5		-42.1	90	6210	00 03 01
00 04 30	SDSSJ2222+27	17 49 41	34.7	88.6	-4.6		-42.8	-17	6210	No stop
00 08 00	---	17 53 12	35.2	89.3	-4.5		-42.8	193	6237	00 04 31
00 08 00	J2219+2613	17 53 12	34.5	91.0	-4.5		-42.1	-17	6237	No stop
00 09 30	=2217+259	17 54 42	34.7	91.3	-4.4		-42.1	73	6249	00 08 01
00 09 30	SDSSJ2222+27	17 54 42	35.5	89.6	-4.5		-42.8	-17	6249	No stop
00 13 00	---	17 58 13	36.0	90.3	-4.4		-42.8	193	6276	00 09 31
00 13 30	J2219+2613	17 58 43	35.3	92.1	-4.4		-42.0	13	6276	00 13 30
00 15 00	=2217+259	18 00 13	35.5	92.5	-4.3		-42.0	90	6288	00 13 31
00 15 00	SDSSJ2222+27	18 00 13	36.3	90.7	-4.4		-42.8	-17	6288	No stop
00 18 30	---	18 03 44	36.8	91.4	-4.3		-42.8	193	6315	00 15 01
00 18 30	J2219+2613	18 03 44	36.0	93.2	-4.3		-42.0	-17	6315	No stop
00 20 00	=2217+259	18 05 14	36.3	93.5	-4.3		-42.0	73	6326	00 18 31
00 25 00	3C454.3	18 10 15	24.2	95.0	-4.7		-38.5	239	6326	00 25 00
00 30 00	---	18 15 16	24.9	96.0	-4.7		-38.5	300	6365	00 25 01
00 35 00	J2219+2613	18 20 16	38.5	96.6	-4.0		-41.7	237	6365	00 35 00
00 40 00	=2217+259	18 25 17	39.3	97.7	-3.9		-41.6	300	6404	00 35 01
00 40 00	SDSSJ2222+27	18 25 17	40.1	95.9	-4.0		-42.5	-17	6404	No stop
00 43 30	---	18 28 48	40.6	96.6	-3.9		-42.4	193	6431	00 40 01
00 44 00	J2219+2613	18 29 18	39.9	98.6	-3.9		-41.5	13	6431	00 44 00
00 45 30	=2217+259	18 30 48	40.1	98.9	-3.8		-41.4	90	6442	00 44 01
00 45 30	SDSSJ2222+27	18 30 48	40.9	97.1	-3.9		-42.4	-17	6442	No stop
00 49 00	---	18 34 19	41.4	97.8	-3.8		-42.3	193	6469	00 45 31
00 49 00	J2219+2613	18 34 19	40.6	99.7	-3.8		-41.3	-17	6469	No stop
00 50 30	=2217+259	18 35 49	40.8	100.0	-3.7		-41.3	73	6481	00 49 01
00 50 30	SDSSJ2222+27	18 35 49	41.6	98.2	-3.8		-42.2	-17	6481	No stop
00 54 00	---	18 39 19	42.1	98.9	-3.7		-42.1	193	6508	00 50 31

Schedule for TORUN (Code Tr )

Page 24

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 30 May 2021 Day 150 ---										
00 54 30	J2219+2613	18 39 50	41.4	100.9	-3.7		-41.1	13	6508	00 54 30
00 56 00	=2217+259	18 41 20	41.6	101.3	-3.7		-41.1	90	6520	00 54 31
00 56 00	SDSSJ2222+27	18 41 20	42.4	99.4	-3.7		-42.1	-17	6520	No stop
00 59 30	---	18 44 50	43.0	100.2	-3.6		-42.0	193	6547	00 56 01
00 59 30	J2219+2613	18 44 50	42.1	102.1	-3.6		-40.9	-17	6547	No stop
01 01 00	=2217+259	18 46 21	42.4	102.4	-3.6		-40.9	73	6558	00 59 31
01 01 00	SDSSJ2222+27	18 46 21	43.2	100.5	-3.6		-41.9	-17	6558	No stop
01 04 30	---	18 49 51	43.7	101.3	-3.6		-41.8	193	6585	01 01 01
01 05 00	J2219+2613	18 50 21	43.0	103.3	-3.5		-40.7	12	6585	01 05 00
01 06 30	=2217+259	18 51 52	43.2	103.7	-3.5		-40.6	90	6597	01 05 01
01 06 30	SDSSJ2222+27	18 51 52	44.0	101.8	-3.5		-41.7	-17	6597	No stop
01 10 00	---	18 55 22	44.5	102.6	-3.5		-41.5	193	6624	01 06 31
01 10 00	J2219+2613	18 55 22	43.7	104.5	-3.4		-40.4	-18	6624	No stop
01 11 30	=2217+259	18 56 52	43.9	104.9	-3.4		-40.4	72	6635	01 10 01
01 11 30	SDSSJ2222+27	18 56 52	44.7	102.9	-3.4		-41.5	-17	6635	No stop
01 15 00	---	19 00 23	45.2	103.7	-3.4		-41.3	193	6663	01 11 31
01 15 30	J2219+2613	19 00 53	44.5	105.8	-3.3		-40.1	12	6663	01 15 30
01 17 00	=2217+259	19 02 23	44.7	106.2	-3.3		-40.0	90	6674	01 15 31
01 17 00	SDSSJ2222+27	19 02 23	45.5	104.2	-3.3		-41.2	-17	6674	No stop
01 20 30	---	19 05 54	46.0	105.1	-3.3		-41.0	193	6701	01 17 01
01 20 30	J2219+2613	19 05 54	45.2	107.0	-3.2		-39.8	-18	6701	No stop
01 22 00	=2217+259	19 07 24	45.4	107.4	-3.2		-39.7	72	6713	01 20 31
01 22 00	SDSSJ2222+27	19 07 24	46.3	105.4	-3.3		-40.9	-17	6713	No stop
01 25 30	---	19 10 55	46.8	106.3	-3.2		-40.7	193	6740	01 22 01
01 26 00	J2219+2613	19 11 25	46.0	108.4	-3.2		-39.5	12	6740	01 26 00
01 27 30	=2217+259	19 12 55	46.2	108.8	-3.1		-39.4	90	6751	01 26 01
01 27 30	SDSSJ2222+27	19 12 55	47.1	106.8	-3.2		-40.6	-18	6751	No stop
01 31 00	---	19 16 26	47.6	107.6	-3.1		-40.3	192	6778	01 27 31
01 31 00	J2219+2613	19 16 26	46.7	109.7	-3.1		-39.1	-18	6778	No stop
01 32 30	=2217+259	19 17 56	46.9	110.0	-3.0		-39.0	72	6790	01 31 01

Schedule for TORUN (Code Tr ) Page 25

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 30 May 2021 Day 150 ---										
01 32 30	SDSSJ2222+27	19 17 56	47.8	108.0	-3.1		-40.2	-18	6790	No stop
01 36 00	---	19 21 26	48.3	108.9	-3.0		-40.0	192	6817	01 32 31
01 36 30	J2219+2613	19 21 56	47.5	111.1	-3.0		-38.7	12	6817	01 36 30
01 38 00	=2217+259	19 23 27	47.7	111.5	-3.0		-38.6	90	6829	01 36 31
01 38 00	SDSSJ2222+27	19 23 27	48.6	109.4	-3.0		-39.8	-18	6829	No stop
01 41 30	---	19 26 57	49.1	110.3	-2.9		-39.6	192	6856	01 38 01
01 41 30	J2219+2613	19 26 57	48.2	112.4	-2.9		-38.3	-18	6856	No stop
01 43 00	=2217+259	19 28 28	48.4	112.8	-2.9		-38.2	72	6867	01 41 31
01 43 00	SDSSJ2222+27	19 28 28	49.3	110.7	-2.9		-39.4	-18	6867	No stop
01 46 30	---	19 31 58	49.8	111.6	-2.9		-39.2	192	6894	01 43 01
01 47 00	J2219+2613	19 32 28	48.9	113.9	-2.8		-37.8	12	6894	01 47 00
01 48 30	=2217+259	19 33 58	49.1	114.3	-2.8		-37.6	90	6906	01 47 01
01 48 30	SDSSJ2222+27	19 33 58	50.0	112.2	-2.8		-39.0	-18	6906	No stop
01 52 00	---	19 37 29	50.5	113.1	-2.8		-38.7	192	6933	01 48 31
01 52 00	J2219+2613	19 37 29	49.6	115.2	-2.7		-37.3	-18	6933	No stop
01 53 30	=2217+259	19 38 59	49.8	115.6	-2.7		-37.2	72	6945	01 52 01
01 53 30	SDSSJ2222+27	19 38 59	50.7	113.5	-2.7		-38.5	-18	6945	No stop
01 57 00	---	19 42 30	51.2	114.5	-2.7		-38.2	192	6972	01 53 31
01 57 30	J2219+2613	19 43 00	50.4	116.8	-2.6		-36.7	12	6972	01 57 30
01 59 00	=2217+259	19 44 30	50.6	117.2	-2.6		-36.6	90	6983	01 57 31
01 59 00	SDSSJ2222+27	19 44 30	51.5	115.0	-2.6		-38.0	-18	6983	No stop
02 02 30	---	19 48 01	52.0	116.0	-2.6		-37.6	192	7010	01 59 01
02 02 30	J2219+2613	19 48 01	51.0	118.2	-2.5		-36.2	-18	7010	No stop
02 04 00	=2217+259	19 49 31	51.2	118.6	-2.5		-36.0	72	7022	02 02 31
02 04 00	SDSSJ2222+27	19 49 31	52.2	116.5	-2.6		-37.4	-18	7022	No stop
02 07 30	---	19 53 02	52.6	117.5	-2.5		-37.1	192	7049	02 04 01
02 08 00	J2219+2613	19 53 32	51.8	119.8	-2.5		-35.6	12	7049	02 08 00
02 09 30	=2217+259	19 55 02	52.0	120.2	-2.4		-35.4	90	7061	02 08 01
02 09 30	SDSSJ2222+27	19 55 02	52.9	118.1	-2.5		-36.8	-18	7061	No stop
02 13 00	---	19 58 32	53.4	119.1	-2.4		-36.4	192	7088	02 09 31

Schedule for TORUN (Code Tr )

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Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 30 May 2021 Day 150 ---										
02 13 00	J2219+2613	19 58 32	52.4	121.3	-2.4		-34.9	-18	7088	No stop
02 14 30	=2217+259	20 00 03	52.6	121.7	-2.3		-34.7	72	7099	02 13 01
02 14 30	SDSSJ2222+27	20 00 03	53.6	119.5	-2.4		-36.2	-18	7099	No stop
02 18 00	---	20 03 33	54.0	120.6	-2.3		-35.8	192	7126	02 14 31
02 18 30	J2219+2613	20 04 03	53.1	123.0	-2.3		-34.2	12	7126	02 18 30
02 20 00	=2217+259	20 05 34	53.3	123.4	-2.3		-34.0	90	7138	02 18 31
02 20 00	SDSSJ2222+27	20 05 34	54.3	121.2	-2.3		-35.5	-18	7138	No stop
02 23 30	---	20 09 04	54.7	122.3	-2.2		-35.0	192	7165	02 20 01
02 23 30	J2219+2613	20 09 04	53.7	124.5	-2.2		-33.5	-18	7165	No stop
02 25 00	=2217+259	20 10 34	53.9	125.0	-2.2		-33.3	72	7177	02 23 31
02 25 00	SDSSJ2222+27	20 10 34	54.9	122.8	-2.2		-34.8	-18	7177	No stop
02 28 30	---	20 14 05	55.4	123.9	-2.2		-34.3	192	7204	02 25 01
02 29 00	J2219+2613	20 14 35	54.4	126.3	-2.1		-32.7	11	7204	02 29 00
02 30 30	=2217+259	20 16 05	54.6	126.8	-2.1		-32.5	90	7215	02 29 01
02 30 30	SDSSJ2222+27	20 16 05	55.6	124.6	-2.1		-34.0	-18	7215	No stop
02 34 00	---	20 19 36	56.0	125.7	-2.1		-33.5	192	7242	02 30 31
02 34 00	J2219+2613	20 19 36	55.0	127.9	-2.0		-31.9	-19	7242	No stop
02 35 30	=2217+259	20 21 06	55.2	128.4	-2.0		-31.7	71	7254	02 34 01
02 35 30	SDSSJ2222+27	20 21 06	56.2	126.2	-2.0		-33.2	-18	7254	No stop
02 39 00	---	20 24 37	56.6	127.4	-2.0		-32.7	192	7281	02 35 31
02 39 30	J2219+2613	20 25 07	55.7	129.8	-1.9		-31.0	11	7281	02 39 30
02 41 00	=2217+259	20 26 37	55.8	130.3	-1.9		-30.7	90	7292	02 39 31
02 41 00	SDSSJ2222+27	20 26 37	56.9	128.1	-1.9		-32.3	-18	7292	No stop
02 44 30	---	20 30 08	57.3	129.3	-1.9		-31.7	192	7320	02 41 01
02 44 30	J2219+2613	20 30 08	56.2	131.5	-1.8		-30.1	-19	7320	No stop
02 46 00	=2217+259	20 31 38	56.4	132.0	-1.8		-29.8	71	7331	02 44 31
02 46 00	SDSSJ2222+27	20 31 38	57.5	129.8	-1.9		-31.5	-18	7331	No stop
02 49 30	---	20 35 08	57.9	131.0	-1.8		-30.8	192	7358	02 46 01
02 50 00	J2219+2613	20 35 39	56.8	133.5	-1.8		-29.1	11	7358	02 50 00
02 51 30	=2217+259	20 37 09	57.0	134.0	-1.7		-28.8	90	7370	02 50 01

Schedule for TORUN (Code Tr )

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Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 30 May 2021 Day 150 ---										
02 51 30	SDSSJ2222+27	20 37 09	58.1	131.8	-1.8		-30.4	-18	7370	No stop
02 55 00	---	20 40 39	58.5	133.0	-1.7		-29.8	192	7397	02 51 31
02 55 00	J2219+2613	20 40 39	57.4	135.3	-1.7		-28.1	-19	7397	No stop
02 56 30	=2217+259	20 42 10	57.5	135.8	-1.6		-27.8	71	7408	02 55 01
02 56 30	SDSSJ2222+27	20 42 10	58.6	133.6	-1.7		-29.5	-18	7408	No stop
03 00 00	---	20 45 40	59.0	134.9	-1.6		-28.8	192	7435	02 56 31
03 00 30	J2219+2613	20 46 10	58.0	137.3	-1.6		-27.0	11	7435	03 00 30
03 02 00	=2217+259	20 47 41	58.1	137.9	-1.6		-26.7	90	7447	03 00 31
03 02 00	SDSSJ2222+27	20 47 41	59.2	135.7	-1.6		-28.3	-18	7447	No stop
03 05 30	---	20 51 11	59.6	137.0	-1.5		-27.6	192	7474	03 02 01
03 05 30	J2219+2613	20 51 11	58.5	139.2	-1.5		-25.9	-19	7474	No stop
03 07 00	=2217+259	20 52 41	58.6	139.8	-1.5		-25.6	71	7486	03 05 31
03 12 00	3C454.3	20 57 42	46.6	136.8	-2.0		-25.3	239	7486	03 12 00
03 17 00	---	21 02 43	47.1	138.4	-1.9		-24.5	300	7524	03 12 01
03 22 00	J2219+2613	21 07 44	60.0	145.9	-1.2		-22.1	239	7524	03 22 00
03 27 00	=2217+259	21 12 45	60.4	148.0	-1.1		-20.8	300	7563	03 22 01
03 27 00	SDSSJ2222+27	21 12 45	61.6	145.8	-1.2		-22.4	-18	7563	No stop
03 30 30	---	21 16 15	61.9	147.3	-1.1		-21.5	192	7590	03 27 01
03 31 00	J2219+2613	21 16 45	60.7	149.7	-1.1		-19.8	12	7590	03 31 00
03 32 30	=2217+259	21 18 16	60.8	150.3	-1.0		-19.4	90	7602	03 31 01
03 32 30	SDSSJ2222+27	21 18 16	62.1	148.2	-1.1		-21.0	-18	7602	No stop
03 36 00	---	21 21 46	62.3	149.8	-1.0		-20.0	192	7629	03 32 31
03 36 00	J2219+2613	21 21 46	61.1	151.8	-1.0		-18.4	-18	7629	No stop
03 37 30	=2217+259	21 23 16	61.2	152.5	-1.0		-18.0	72	7640	03 36 01
03 37 30	SDSSJ2222+27	21 23 16	62.4	150.4	-1.0		-19.6	-18	7640	No stop
03 41 00	---	21 26 47	62.7	152.0	-0.9		-18.6	192	7667	03 37 31
03 41 30	J2219+2613	21 27 17	61.4	154.3	-0.9		-16.9	12	7667	03 41 30
03 43 00	=2217+259	21 28 47	61.5	155.0	-0.9		-16.5	90	7679	03 41 31
03 43 00	SDSSJ2222+27	21 28 47	62.8	152.9	-0.9		-18.0	-18	7679	No stop
03 46 30	---	21 32 18	63.1	154.6	-0.8		-17.0	192	7706	03 43 01

Schedule for TORUN (Code Tr )

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Resolving the faintest radio quasars detected by LOFAR

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

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Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 30 May 2021 Day 150 ---										
03 46 30	J2219+2613	21 32 18	61.7	156.6	-0.8		-15.5	-18	7706	No stop
03 48 00	=2217+259	21 33 48	61.8	157.3	-0.8		-15.0	72	7718	03 46 31
03 48 00	SDSSJ2222+27	21 33 48	63.2	155.3	-0.8		-16.5	-18	7718	No stop
03 51 30	---	21 37 19	63.4	156.9	-0.8		-15.4	192	7745	03 48 01
03 52 00	J2219+2613	21 37 49	62.1	159.1	-0.7		-13.8	12	7745	03 52 00
03 53 30	=2217+259	21 39 19	62.1	159.8	-0.7		-13.4	90	7756	03 52 01
03 53 30	SDSSJ2222+27	21 39 19	63.5	157.9	-0.7		-14.8	-19	7756	No stop
03 57 00	---	21 42 50	63.7	159.6	-0.7		-13.7	191	7783	03 53 31
03 57 00	J2219+2613	21 42 50	62.3	161.4	-0.6		-12.3	-19	7783	No stop
03 58 30	=2217+259	21 44 20	62.4	162.2	-0.6		-11.8	71	7795	03 57 01
03 58 30	SDSSJ2222+27	21 44 20	63.8	160.3	-0.6		-13.2	-19	7795	No stop
04 02 00	---	21 47 50	63.9	162.0	-0.6		-12.1	191	7822	03 58 31
04 02 30	J2219+2613	21 48 20	62.6	164.1	-0.5		-10.6	11	7822	04 02 30
04 04 00	=2217+259	21 49 51	62.6	164.8	-0.5		-10.1	90	7834	04 02 31
04 04 00	SDSSJ2222+27	21 49 51	64.0	163.0	-0.6		-11.4	-19	7834	No stop
04 07 30	---	21 53 21	64.2	164.8	-0.5		-10.3	191	7861	04 04 01
04 07 30	J2219+2613	21 53 21	62.7	166.5	-0.5		-9.0	-19	7861	No stop
04 09 00	=2217+259	21 54 52	62.8	167.2	-0.4		-8.5	71	7872	04 07 31
04 09 00	SDSSJ2222+27	21 54 52	64.2	165.5	-0.5		-9.8	-19	7872	No stop
04 12 30	---	21 58 22	64.4	167.3	-0.4		-8.6	191	7899	04 09 01
04 13 00	J2219+2613	21 58 52	62.9	169.2	-0.4		-7.2	11	7899	04 13 00
04 14 30	=2217+259	22 00 22	63.0	169.9	-0.3		-6.8	90	7911	04 13 01
04 14 30	SDSSJ2222+27	22 00 22	64.4	168.3	-0.4		-7.9	-19	7911	No stop
04 18 00	---	22 03 53	64.5	170.1	-0.3		-6.7	191	7938	04 14 31
04 18 00	J2219+2613	22 03 53	63.0	171.6	-0.3		-5.6	-19	7938	No stop
04 19 30	=2217+259	22 05 23	63.1	172.4	-0.3		-5.1	71	7949	04 18 01
04 19 30	SDSSJ2222+27	22 05 23	64.6	170.8	-0.3		-6.2	-19	7949	No stop
04 23 00	---	22 08 54	64.6	172.6	-0.2		-5.0	191	7977	04 19 31
04 23 30	J2219+2613	22 09 24	63.1	174.3	-0.2		-3.8	11	7977	04 23 30
04 25 00	=2217+259	22 10 54	63.2	175.1	-0.2		-3.3	90	7988	04 23 31

Schedule for TORUN (Code Tr )

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Resolving the faintest radio quasars detected by LOFAR

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

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SYNC: Time correlator 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 30 May 2021 Day 150 ---										
04 25 00	SDSSJ2222+27	22 10 54	64.7	173.7	-0.2		-4.3	-19	7988	No stop
04 28 30	---	22 14 25	64.7	175.5	-0.1		-3.1	191	8015	04 25 01
04 28 30	J2219+2613	22 14 25	63.2	176.8	-0.1		-2.1	-19	8015	No stop
04 30 00	=2217+259	22 15 55	63.2	177.6	-0.1		-1.6	71	8027	04 28 31
04 30 00	SDSSJ2222+27	22 15 55	64.7	176.3	-0.1		-2.5	-19	8027	No stop
04 33 30	---	22 19 26	64.8	178.1	-0.1		-1.3	191	8054	04 30 01
04 34 00	J2219+2613	22 19 56	63.2	179.6	-0.0		-0.3	11	8054	04 34 00
04 35 30	=2217+259	22 21 26	63.2	180.3	0.0		0.2	90	8065	04 34 01
04 35 30	SDSSJ2222+27	22 21 26	64.8	179.1	-0.0		-0.6	-19	8065	No stop
04 39 00	---	22 24 56	64.8	180.9	0.0		0.6	191	8092	04 35 31
04 39 00	J2219+2613	22 24 56	63.2	182.1	0.1		1.4	-19	8092	No stop
04 40 30	=2217+259	22 26 27	63.2	182.8	0.1		1.9	71	8104	04 39 01
04 40 30	SDSSJ2222+27	22 26 27	64.8	181.7	0.1		1.2	-19	8104	No stop
04 44 00	---	22 29 57	64.7	183.5	0.1		2.4	191	8131	04 40 31
04 44 30	J2219+2613	22 30 27	63.2	184.8	0.2		3.2	11	8131	04 44 30
04 46 00	=2217+259	22 31 58	63.2	185.5	0.2		3.7	90	8143	04 44 31
04 46 00	SDSSJ2222+27	22 31 58	64.7	184.6	0.1		3.1	-19	8143	No stop
04 49 30	---	22 35 28	64.7	186.4	0.2		4.3	191	8170	04 46 01
04 49 30	J2219+2613	22 35 28	63.1	187.3	0.2		4.9	-19	8170	No stop
04 51 00	=2217+259	22 36 58	63.1	188.0	0.3		5.4	71	8181	04 49 31
04 51 00	SDSSJ2222+27	22 36 58	64.6	187.2	0.2		4.9	-19	8181	No stop
04 54 30	---	22 40 29	64.6	189.0	0.3		6.1	191	8208	04 51 01
04 55 00	J2219+2613	22 40 59	63.0	190.0	0.3		6.7	10	8208	04 55 00
04 56 30	=2217+259	22 42 29	62.9	190.7	0.4		7.2	90	8220	04 55 01
04 56 30	SDSSJ2222+27	22 42 29	64.5	190.0	0.3		6.8	-20	8220	No stop
05 00 00	---	22 46 00	64.4	191.8	0.4		8.0	190	8247	04 56 31
05 00 00	J2219+2613	22 46 00	62.8	192.4	0.4		8.3	-20	8247	No stop
05 01 30	=2217+259	22 47 30	62.8	193.2	0.4		8.8	70	8259	05 00 01
05 01 30	SDSSJ2222+27	22 47 30	64.4	192.5	0.4		8.5	-20	8259	No stop
05 05 00	---	22 51 01	64.2	194.3	0.5		9.7	190	8286	05 01 31



Schedule for TORUN (Code Tr ) Page 30

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 30 May 2021 Day 150 ---										
05 05 30	J2219+2613	22 51 31	62.6	195.1	0.5		10.0	10	8286	05 05 30
05 07 00	=2217+259	22 53 01	62.6	195.8	0.5		10.5	90	8297	05 05 31
05 07 00	SDSSJ2222+27	22 53 01	64.2	195.3	0.5		10.3	-20	8297	No stop
05 10 30	---	22 56 32	64.0	197.0	0.6		11.5	190	8324	05 07 01
05 10 30	J2219+2613	22 56 32	62.4	197.5	0.6		11.6	-20	8324	No stop
05 12 00	=2217+259	22 58 02	62.3	198.2	0.6		12.1	70	8336	05 10 31
05 12 00	SDSSJ2222+27	22 58 02	64.0	197.8	0.6		12.0	-20	8336	No stop
05 15 30	---	23 01 32	63.8	199.5	0.6		13.1	190	8363	05 12 01
05 16 00	J2219+2613	23 02 03	62.1	200.1	0.7		13.3	10	8363	05 16 00
05 17 30	=2217+259	23 03 33	62.1	200.8	0.7		13.7	90	8375	05 16 01
05 17 30	SDSSJ2222+27	23 03 33	63.7	200.5	0.7		13.7	-20	8375	No stop
05 21 00	---	23 07 03	63.5	202.2	0.7		14.9	190	8402	05 17 31
05 21 00	J2219+2613	23 07 03	61.9	202.4	0.8		14.8	-20	8402	No stop
05 22 30	=2217+259	23 08 34	61.8	203.1	0.8		15.2	70	8413	05 21 01
05 22 30	SDSSJ2222+27	23 08 34	63.4	202.9	0.8		15.3	-20	8413	No stop
05 26 00	---	23 12 04	63.2	204.6	0.8		16.4	190	8440	05 22 31
05 26 30	J2219+2613	23 12 34	61.5	204.9	0.9		16.4	10	8440	05 26 30
05 28 00	=2217+259	23 14 05	61.4	205.6	0.9		16.8	90	8452	05 26 31
05 28 00	SDSSJ2222+27	23 14 05	63.1	205.5	0.8		17.0	-20	8452	No stop
05 31 30	---	23 17 35	62.8	207.1	0.9		18.0	190	8479	05 28 01
05 31 30	J2219+2613	23 17 35	61.2	207.2	0.9		17.8	-20	8479	No stop
05 33 00	=2217+259	23 19 05	61.1	207.8	1.0		18.2	70	8490	05 31 31
05 33 00	SDSSJ2222+27	23 19 05	62.7	207.8	0.9		18.5	-20	8490	No stop
05 36 30	---	23 22 36	62.5	209.4	1.0		19.5	190	8518	05 33 01
05 37 00	J2219+2613	23 23 06	60.8	209.6	1.0		19.3	10	8518	05 37 00
05 38 30	=2217+259	23 24 36	60.7	210.2	1.1		19.7	90	8529	05 37 01
05 38 30	SDSSJ2222+27	23 24 36	62.3	210.3	1.0		20.0	-20	8529	No stop
05 42 00	---	23 28 07	62.1	211.9	1.1		21.0	190	8556	05 38 31
05 42 00	J2219+2613	23 28 07	60.4	211.7	1.1		20.6	-20	8556	No stop
05 43 30	=2217+259	23 29 37	60.3	212.4	1.1		21.0	70	8568	05 42 01

Schedule for TORUN (Code Tr )

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Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop				Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA UP	ParA	Dwell	GBytes	SYNC
-----									
--- Sun 30 May 2021 Day 150 ---									
05 43 30	SDSSJ2222+27	23 29 37	61.9	212.5	1.1	21.4	-20	8568	No stop
05 47 00	---	23 33 08	61.6	214.0	1.2	22.3	190	8595	05 43 31
05 47 30	J2219+2613	23 33 38	60.0	214.0	1.2	22.0	10	8595	05 47 30
05 49 00	=2217+259	23 35 08	59.9	214.7	1.2	22.4	90	8606	05 47 31
05 49 00	SDSSJ2222+27	23 35 08	61.5	214.9	1.2	22.9	-20	8606	No stop
05 52 30	---	23 38 39	61.2	216.4	1.3	23.8	190	8633	05 49 01
05 52 30	J2219+2613	23 38 39	59.6	216.1	1.3	23.2	-20	8633	No stop
05 54 00	=2217+259	23 40 09	59.4	216.7	1.3	23.6	70	8645	05 52 31
05 54 00	SDSSJ2222+27	23 40 09	61.0	217.0	1.3	24.1	-20	8645	No stop
05 57 30	---	23 43 39	60.7	218.5	1.3	25.0	190	8672	05 54 01
05 58 00	J2219+2613	23 44 09	59.1	218.3	1.4	24.5	10	8672	05 58 00
05 59 30	=2217+259	23 45 40	58.9	218.9	1.4	24.9	90	8684	05 58 01
05 59 30	SDSSJ2222+27	23 45 40	60.5	219.3	1.4	25.5	-20	8684	No stop
06 03 00	---	23 49 10	60.2	220.7	1.4	26.3	190	8711	05 59 31
06 03 00	J2219+2613	23 49 10	58.6	220.3	1.5	25.7	-20	8711	No stop
06 04 30	=2217+259	23 50 41	58.4	220.9	1.5	26.0	70	8722	06 03 01
06 04 30	SDSSJ2222+27	23 50 41	60.0	221.3	1.5	26.6	-20	8722	No stop
06 08 00	---	23 54 11	59.7	222.7	1.5	27.4	190	8749	06 04 31
06 08 30	J2219+2613	23 54 41	58.0	222.4	1.6	26.8	10	8749	06 08 30
06 10 00	=2217+259	23 56 11	57.9	223.0	1.6	27.2	90	8761	06 08 31
06 10 00	SDSSJ2222+27	23 56 11	59.5	223.4	1.6	27.8	-19	8761	No stop
06 13 30	---	23 59 42	59.1	224.8	1.6	28.6	191	8788	06 10 01
06 13 30	J2219+2613	23 59 42	57.5	224.3	1.6	27.9	-20	8788	No stop
06 15 00	=2217+259	00 01 12	57.4	224.8	1.7	28.2	70	8800	06 13 31
06 15 00	SDSSJ2222+27	00 01 12	58.9	225.3	1.6	28.9	-19	8800	No stop
06 18 30	---	00 04 43	58.6	226.6	1.7	29.6	191	8827	06 15 01
06 19 00	J2219+2613	00 05 13	56.9	226.3	1.7	29.0	10	8827	06 19 00
06 20 30	=2217+259	00 06 43	56.8	226.8	1.8	29.2	90	8838	06 19 01
06 20 30	SDSSJ2222+27	00 06 43	58.3	227.4	1.7	30.0	-19	8838	No stop
06 24 00	---	00 10 14	58.0	228.7	1.8	30.7	191	8865	06 20 31

Schedule for TORUN (Code Tr )

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Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop				Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA UP	ParA	Dwell	GBytes	SYNC
-----									
--- Sun 30 May 2021 Day 150 ---									
06 24 00	J2219+2613	00 10 14	56.4	228.0	1.8	29.9	-20	8865	No stop
06 25 30	=2217+259	00 11 44	56.2	228.6	1.8	30.2	70	8877	06 24 01
06 25 30	SDSSJ2222+27	00 11 44	57.8	229.2	1.8	30.9	-19	8877	No stop
06 29 00	---	00 15 15	57.4	230.4	1.9	31.6	191	8904	06 25 31
06 29 30	J2219+2613	00 15 45	55.7	230.0	1.9	30.9	10	8904	06 29 30
06 31 00	=2217+259	00 17 15	55.6	230.5	1.9	31.1	90	8916	06 29 31
06 31 00	SDSSJ2222+27	00 17 15	57.2	231.1	1.9	31.9	-19	8916	No stop
06 34 30	---	00 20 45	56.7	232.3	2.0	32.5	191	8943	06 31 01
06 34 30	J2219+2613	00 20 45	55.2	231.6	2.0	31.7	-20	8943	No stop
06 36 00	=2217+259	00 22 16	55.0	232.1	2.0	31.9	70	8954	06 34 31
06 36 00	SDSSJ2222+27	00 22 16	56.6	232.8	2.0	32.8	-19	8954	No stop
06 39 30	---	00 25 46	56.1	234.0	2.0	33.3	191	8981	06 36 01
06 40 00	J2219+2613	00 26 16	54.5	233.5	2.1	32.6	10	8981	06 40 00
06 41 30	=2217+259	00 27 47	54.3	234.0	2.1	32.8	90	8993	06 40 01
06 41 30	SDSSJ2222+27	00 27 47	55.9	234.7	2.1	33.7	-19	8993	No stop
06 45 00	---	00 31 17	55.5	235.8	2.1	34.2	191	9020	06 41 31
06 45 00	J2219+2613	00 31 17	53.9	235.1	2.2	33.3	-20	9020	No stop
06 46 30	=2217+259	00 32 47	53.7	235.6	2.2	33.5	70	9032	06 45 01
06 46 30	SDSSJ2222+27	00 32 47	55.3	236.3	2.2	34.4	-19	9032	No stop
06 50 00	---	00 36 18	54.8	237.4	2.2	34.9	191	9059	06 46 31
06 50 30	J2219+2613	00 36 48	53.2	236.8	2.3	34.1	10	9059	06 50 30
06 52 00	=2217+259	00 38 18	53.0	237.3	2.3	34.3	90	9070	06 50 31
06 52 00	SDSSJ2222+27	00 38 18	54.6	238.0	2.3	35.2	-19	9070	No stop
06 55 30	---	00 41 49	54.1	239.1	2.3	35.7	191	9097	06 52 01
06 55 30	J2219+2613	00 41 49	52.6	238.3	2.4	34.8	-20	9097	No stop
06 57 00	=2217+259	00 43 19	52.4	238.8	2.4	35.0	70	9109	06 55 31
06 57 00	SDSSJ2222+27	00 43 19	53.9	239.6	2.3	35.9	-19	9109	No stop
07 00 30	---	00 46 50	53.5	240.6	2.4	36.3	191	9136	06 57 01
07 01 00	J2219+2613	00 47 20	51.9	240.0	2.4	35.5	10	9136	07 01 00
07 02 30	=2217+259	00 48 50	51.7	240.4	2.5	35.6	90	9147	07 01 01

Schedule for TORUN (Code Tr ) Page 33

Resolving the faintest radio quasars detected by LOFAR

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

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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 30 May 2021 Day 150 ---										
07 02 30	SDSSJ2222+27	00 48 50	53.2	241.2	2.4		36.5	-19	9147	No stop
07 06 00	---	00 52 21	52.7	242.3	2.5		37.0	191	9175	07 02 31
07 06 00	J2219+2613	00 52 21	51.2	241.5	2.5		36.1	-19	9175	No stop
07 07 30	=2217+259	00 53 51	51.0	241.9	2.6		36.2	71	9186	07 06 01
07 07 30	SDSSJ2222+27	00 53 51	52.5	242.7	2.5		37.1	-19	9186	No stop
07 11 00	---	00 57 21	52.1	243.7	2.6		37.5	191	9213	07 07 31
07 11 30	J2219+2613	00 57 52	50.5	243.0	2.6		36.7	11	9213	07 11 30
07 13 00	=2217+259	00 59 22	50.3	243.5	2.6		36.8	90	9225	07 11 31
07 13 00	SDSSJ2222+27	00 59 22	51.8	244.3	2.6		37.7	-19	9225	No stop
07 16 30	---	01 02 52	51.3	245.3	2.7		38.1	191	9252	07 13 01
07 16 30	J2219+2613	01 02 52	49.8	244.4	2.7		37.2	-19	9252	No stop
07 18 00	=2217+259	01 04 23	49.6	244.8	2.7		37.3	71	9263	07 16 31
07 18 00	SDSSJ2222+27	01 04 23	51.1	245.7	2.7		38.2	-19	9263	No stop
07 21 30	---	01 07 53	50.6	246.7	2.7		38.6	191	9290	07 18 01
07 22 00	J2219+2613	01 08 23	49.0	245.9	2.8		37.7	11	9290	07 22 00
07 23 30	=2217+259	01 09 53	48.8	246.3	2.8		37.9	90	9302	07 22 01
07 23 30	SDSSJ2222+27	01 09 53	50.4	247.2	2.8		38.8	-19	9302	No stop
07 27 00	---	01 13 24	49.9	248.1	2.8		39.1	191	9329	07 23 31
07 27 00	J2219+2613	01 13 24	48.4	247.3	2.9		38.2	-19	9329	No stop
07 28 30	=2217+259	01 14 54	48.1	247.7	2.9		38.3	71	9341	07 27 01
07 28 30	SDSSJ2222+27	01 14 54	49.7	248.5	2.9		39.2	-19	9341	No stop
07 32 00	---	01 18 25	49.2	249.5	2.9		39.5	191	9368	07 28 31
07 32 30	J2219+2613	01 18 55	47.6	248.7	3.0		38.6	11	9368	07 32 30
07 34 00	=2217+259	01 20 25	47.4	249.1	3.0		38.8	90	9379	07 32 31
07 34 00	SDSSJ2222+27	01 20 25	48.9	250.0	3.0		39.7	-19	9379	No stop
07 37 30	---	01 23 56	48.4	250.9	3.0		39.9	191	9406	07 34 01
07 37 30	J2219+2613	01 23 56	46.9	250.0	3.1		39.0	-19	9406	No stop
07 39 00	=2217+259	01 25 26	46.7	250.4	3.1		39.1	71	9418	07 37 31
07 44 00	3C454.3	01 30 27	42.3	234.5	2.6		30.6	251	9418	07 44 00
07 49 00	---	01 35 28	41.7	235.9	2.7		31.2	300	9457	07 44 01

Schedule for TORUN (Code Tr )

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Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 30 May 2021 Day 150 ---										
07 54 00	J2219+2613	01 40 28	44.5	254.1	3.3		40.1	251	9457	07 54 00
07 59 00	=2217+259	01 45 29	43.8	255.3	3.4		40.4	300	9495	07 54 01
07 59 00	SDSSJ2222+27	01 45 29	45.3	256.2	3.4		41.3	-19	9495	No stop
08 02 30	---	01 49 00	44.8	257.0	3.4		41.4	191	9522	07 59 01
08 03 00	J2219+2613	01 49 30	43.2	256.2	3.5		40.6	11	9522	08 03 00
08 04 30	=2217+259	01 51 00	43.0	256.6	3.5		40.7	90	9534	08 03 01
08 04 30	SDSSJ2222+27	01 51 00	44.5	257.5	3.5		41.5	-19	9534	No stop
08 08 00	---	01 54 31	44.0	258.3	3.5		41.7	191	9561	08 04 31
08 08 00	J2219+2613	01 54 31	42.5	257.4	3.6		40.8	-19	9561	No stop
08 09 30	=2217+259	01 56 01	42.3	257.8	3.6		40.9	71	9573	08 08 01
08 09 30	SDSSJ2222+27	01 56 01	43.8	258.6	3.5		41.7	-19	9573	No stop
08 13 00	---	01 59 32	43.2	259.4	3.6		41.9	191	9600	08 09 31
08 13 30	J2219+2613	02 00 02	41.7	258.7	3.7		41.1	11	9600	08 13 30
08 15 00	=2217+259	02 01 32	41.4	259.0	3.7		41.1	90	9611	08 13 31
08 15 00	SDSSJ2222+27	02 01 32	42.9	259.9	3.6		42.0	-19	9611	No stop
08 18 30	---	02 05 03	42.4	260.6	3.7		42.1	191	9638	08 15 01
08 18 30	J2219+2613	02 05 03	40.9	259.8	3.7		41.3	-19	9638	No stop
08 20 00	=2217+259	02 06 33	40.7	260.1	3.8		41.3	71	9650	08 18 31
08 20 00	SDSSJ2222+27	02 06 33	42.2	261.0	3.7		42.1	-19	9650	No stop
08 23 30	---	02 10 03	41.7	261.8	3.8		42.2	191	9677	08 20 01
08 24 00	J2219+2613	02 10 33	40.1	261.0	3.8		41.4	11	9677	08 24 00
08 25 30	=2217+259	02 12 04	39.9	261.3	3.9		41.5	90	9689	08 24 01
08 25 30	SDSSJ2222+27	02 12 04	41.4	262.2	3.8		42.3	-19	9689	No stop
08 29 00	---	02 15 34	40.9	263.0	3.9		42.4	191	9716	08 25 31
08 29 00	J2219+2613	02 15 34	39.4	262.1	3.9		41.6	-19	9716	No stop
08 30 30	=2217+259	02 17 04	39.1	262.4	3.9		41.6	71	9727	08 29 01
08 30 30	SDSSJ2222+27	02 17 04	40.6	263.3	3.9		42.4	-19	9727	No stop
08 34 00	---	02 20 35	40.1	264.0	4.0		42.5	191	9754	08 30 31
08 34 30	J2219+2613	02 21 05	38.5	263.3	4.0		41.7	11	9754	08 34 30
08 36 00	=2217+259	02 22 35	38.3	263.6	4.0		41.7	90	9766	08 34 31

Schedule for TORUN (Code Tr )

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Resolving the faintest radio quasars detected by LOFAR

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

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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 30 May 2021 Day 150 ---									
08 36 00	SDSSJ2222+27	02 22 35	39.8	264.5	4.0	42.5	-19	9766	No stop
08 39 30	---	02 26 06	39.3	265.2	4.0	42.6	191	9793	08 36 01
08 39 30	J2219+2613	02 26 06	37.8	264.4	4.1	41.8	-19	9793	No stop
08 41 00	=2217+259	02 27 36	37.6	264.7	4.1	41.8	71	9804	08 39 31
08 41 00	SDSSJ2222+27	02 27 36	39.1	265.5	4.1	42.6	-19	9804	No stop
08 44 30	---	02 31 07	38.5	266.2	4.1	42.7	191	9831	08 41 01
08 45 00	J2219+2613	02 31 37	37.0	265.5	4.2	41.9	11	9831	08 45 00
08 46 30	=2217+259	02 33 07	36.8	265.8	4.2	41.9	90	9843	08 45 01
08 46 30	SDSSJ2222+27	02 33 07	38.2	266.7	4.2	42.7	-19	9843	No stop
08 50 00	---	02 36 38	37.7	267.4	4.2	42.7	191	9870	08 46 31
08 50 00	J2219+2613	02 36 38	36.2	266.6	4.3	42.0	-19	9870	No stop
08 51 30	=2217+259	02 38 08	36.0	266.9	4.3	42.0	71	9882	08 50 01
08 51 30	SDSSJ2222+27	02 38 08	37.5	267.7	4.3	42.7	-19	9882	No stop
08 55 00	---	02 41 39	37.0	268.4	4.3	42.8	191	9909	08 51 31
08 55 30	J2219+2613	02 42 09	35.4	267.7	4.4	42.0	11	9909	08 55 30
08 57 00	=2217+259	02 43 39	35.2	268.0	4.4	42.0	90	9920	08 55 31
08 57 00	SDSSJ2222+27	02 43 39	36.7	268.8	4.3	42.8	-19	9920	No stop
09 00 30	---	02 47 09	36.1	269.5	4.4	42.8	191	9947	08 57 01
09 00 30	J2219+2613	02 47 09	34.6	268.7	4.4	42.1	-19	9947	No stop
09 02 00	=2217+259	02 48 40	34.4	269.0	4.5	42.1	71	9959	09 00 31
09 02 00	SDSSJ2222+27	02 48 40	35.9	269.8	4.4	42.8	-19	9959	No stop
09 05 30	---	02 52 10	35.4	270.5	4.5	42.8	191	9986	09 02 01
09 06 00	J2219+2613	02 52 40	33.8	269.8	4.5	42.1	11	9986	09 06 00
09 07 30	=2217+259	02 54 11	33.6	270.1	4.6	42.1	90	9998	09 06 01
09 07 30	SDSSJ2222+27	02 54 11	35.1	270.9	4.5	42.8	-19	9998	No stop
09 11 00	---	02 57 41	34.5	271.6	4.6	42.8	191	10025	09 07 31
09 11 00	J2219+2613	02 57 41	33.1	270.8	4.6	42.1	-19	10025	No stop
09 12 30	=2217+259	02 59 11	32.8	271.1	4.6	42.1	71	10036	09 11 01
09 12 30	SDSSJ2222+27	02 59 11	34.3	271.9	4.6	42.8	-19	10036	No stop
09 16 00	---	03 02 42	33.8	272.6	4.7	42.7	191	10063	09 12 31

Schedule for TORUN (Code Tr ) Page 36

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 30 May 2021 Day 150 ---										
09 16 30	J2219+2613	03 03 12	32.2	271.9	4.7		42.0	11	10063	09 16 30
09 18 00	=2217+259	03 04 42	32.0	272.2	4.7		42.0	90	10075	09 16 31
09 18 00	SDSSJ2222+27	03 04 42	33.5	273.0	4.7		42.7	-19	10075	No stop
09 21 30	---	03 08 13	33.0	273.7	4.8		42.7	191	10102	09 18 01
09 21 30	J2219+2613	03 08 13	31.5	272.9	4.8		42.0	-19	10102	No stop
09 23 00	=2217+259	03 09 43	31.3	273.2	4.8		42.0	71	10114	09 21 31
09 23 00	SDSSJ2222+27	03 09 43	32.7	274.0	4.8		42.7	-19	10114	No stop
09 26 30	---	03 13 14	32.2	274.6	4.8		42.6	191	10141	09 23 01
09 27 00	J2219+2613	03 13 44	30.7	274.0	4.9		41.9	11	10141	09 27 00
09 28 30	=2217+259	03 15 14	30.4	274.3	4.9		41.9	90	10152	09 27 01
09 28 30	SDSSJ2222+27	03 15 14	31.9	275.0	4.9		42.6	-19	10152	No stop
09 30 30	---	03 17 14	31.6	275.4	4.9		42.5	101	10168	09 28 31
09 32 30	SDSSJ1004+41	03 19 15	25.7	415.0	-6.8		-40.8	-175	10168	09 32 30
09 36 00	---	03 22 45	26.2	415.6	-6.7		-41.1	35	10195	09 32 31
09 36 30	J0948+4039	03 23 15	27.8	418.5	-6.4		-42.4	10	10195	09 36 30
09 38 00	=0945+408	03 24 46	28.0	418.8	-6.4		-42.5	90	10206	09 36 31
09 38 00	SDSSJ1004+41	03 24 46	26.4	415.9	-6.7		-41.3	-20	10206	No stop
09 41 30	---	03 28 16	26.9	416.4	-6.6		-41.6	190	10233	09 38 01
09 41 30	J0948+4039	03 28 16	28.5	419.3	-6.4		-42.8	-20	10233	No stop
09 43 00	=0945+408	03 29 46	28.6	419.6	-6.3		-43.0	70	10245	09 41 31
09 43 00	SDSSJ1004+41	03 29 46	27.1	416.7	-6.6		-41.8	-20	10245	No stop
09 46 30	---	03 33 17	27.5	417.2	-6.5		-42.1	190	10272	09 43 01
09 47 00	J0948+4039	03 33 47	29.2	420.2	-6.3		-43.3	10	10272	09 47 00
09 48 30	=0945+408	03 35 17	29.4	420.4	-6.2		-43.4	90	10284	09 47 01
09 48 30	SDSSJ1004+41	03 35 17	27.8	417.5	-6.5		-42.3	-20	10284	No stop
09 52 00	---	03 38 48	28.2	418.1	-6.5		-42.6	190	10311	09 48 31
09 52 00	J0948+4039	03 38 48	29.8	421.0	-6.2		-43.7	-20	10311	No stop
09 53 30	=0945+408	03 40 18	30.0	421.2	-6.2		-43.9	70	10322	09 52 01
09 53 30	SDSSJ1004+41	03 40 18	28.4	418.3	-6.4		-42.7	-20	10322	No stop
09 57 00	---	03 43 49	28.8	418.9	-6.4		-43.0	190	10349	09 53 31

Schedule for TORUN (Code Tr )

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Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 30 May 2021 Day 150 ---										
09 57 30	J0948+4039	03 44 19	30.5	421.9	-6.1		-44.2	10	10349	09 57 30
09 59 00	=0945+408	03 45 49	30.7	422.1	-6.1		-44.3	90	10361	09 57 31
09 59 00	SDSSJ1004+41	03 45 49	29.1	419.2	-6.3		-43.2	-20	10361	No stop
10 02 30	---	03 49 20	29.6	419.8	-6.3		-43.5	190	10388	09 59 01
10 02 30	J0948+4039	03 49 20	31.2	422.7	-6.0		-44.6	-20	10388	No stop
10 04 00	=0945+408	03 50 50	31.4	422.9	-6.0		-44.7	70	10400	10 02 31
10 04 00	SDSSJ1004+41	03 50 50	29.7	420.0	-6.3		-43.6	-20	10400	No stop
10 07 30	---	03 54 20	30.2	420.5	-6.2		-43.9	190	10427	10 04 01
10 08 00	J0948+4039	03 54 51	32.0	423.5	-5.9		-45.0	10	10427	10 08 00
10 09 30	=0945+408	03 56 21	32.2	423.8	-5.9		-45.2	90	10438	10 08 01
10 09 30	SDSSJ1004+41	03 56 21	30.5	420.9	-6.2		-44.1	-20	10438	No stop
10 13 00	---	03 59 51	30.9	421.4	-6.1		-44.4	190	10465	10 09 31
10 13 00	J0948+4039	03 59 51	32.6	424.3	-5.8		-45.4	-20	10465	No stop
10 14 30	=0945+408	04 01 22	32.8	424.6	-5.8		-45.5	70	10477	10 13 01
10 14 30	SDSSJ1004+41	04 01 22	31.1	421.6	-6.1		-44.5	-20	10477	No stop
10 18 00	---	04 04 52	31.6	422.2	-6.0		-44.8	190	10504	10 14 31
10 18 30	J0948+4039	04 05 22	33.4	425.2	-5.7		-45.9	10	10504	10 18 30
10 20 00	=0945+408	04 06 52	33.6	425.4	-5.7		-46.0	90	10516	10 18 31
10 20 00	SDSSJ1004+41	04 06 52	31.9	422.5	-6.0		-45.0	-20	10516	No stop
10 23 30	---	04 10 23	32.3	423.1	-5.9		-45.3	190	10543	10 20 01
10 23 30	J0948+4039	04 10 23	34.1	426.0	-5.7		-46.2	-20	10543	No stop
10 25 00	=0945+408	04 11 53	34.3	426.2	-5.6		-46.3	70	10554	10 23 31
10 25 00	SDSSJ1004+41	04 11 53	32.5	423.3	-5.9		-45.4	-20	10554	No stop
10 28 30	---	04 15 24	33.0	423.8	-5.8		-45.7	190	10581	10 25 01
10 29 00	J0948+4039	04 15 54	34.8	426.9	-5.6		-46.6	10	10581	10 29 00
10 30 30	=0945+408	04 17 24	35.0	427.1	-5.5		-46.7	90	10593	10 29 01
10 30 30	SDSSJ1004+41	04 17 24	33.3	424.2	-5.8		-45.8	-20	10593	No stop
10 34 00	---	04 20 55	33.7	424.7	-5.7		-46.1	190	10620	10 30 31
10 34 00	J0948+4039	04 20 55	35.5	427.7	-5.5		-47.0	-21	10620	No stop
10 35 30	=0945+408	04 22 25	35.7	427.9	-5.5		-47.1	69	10631	10 34 01



Schedule for TORUN (Code Tr )

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Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 30 May 2021 Day 150 ---										
10 35 30	SDSSJ1004+41	04 22 25	33.9	424.9	-5.7		-46.2	-20	10631	No stop
10 39 00	---	04 25 56	34.4	425.5	-5.7		-46.5	190	10659	10 35 31
10 39 30	J0948+4039	04 26 26	36.3	428.5	-5.4		-47.4	9	10659	10 39 30
10 41 00	=0945+408	04 27 56	36.5	428.8	-5.4		-47.5	90	10670	10 39 31
10 41 00	SDSSJ1004+41	04 27 56	34.7	425.8	-5.6		-46.6	-20	10670	No stop
10 44 30	---	04 31 27	35.2	426.4	-5.6		-46.9	190	10697	10 41 01
10 44 30	J0948+4039	04 31 27	37.0	429.3	-5.3		-47.7	-21	10697	No stop
10 46 00	=0945+408	04 32 57	37.2	429.6	-5.3		-47.8	69	10709	10 44 31
10 46 00	SDSSJ1004+41	04 32 57	35.4	426.6	-5.5		-47.0	-20	10709	No stop
10 49 30	---	04 36 27	35.9	427.2	-5.5		-47.3	190	10736	10 46 01
10 50 00	J0948+4039	04 36 57	37.8	430.2	-5.2		-48.1	9	10736	10 50 00
10 51 30	=0945+408	04 38 28	38.0	430.5	-5.2		-48.2	90	10747	10 50 01
10 51 30	SDSSJ1004+41	04 38 28	36.2	427.5	-5.5		-47.4	-20	10747	No stop
10 55 00	---	04 41 58	36.6	428.0	-5.4		-47.7	190	10774	10 51 31
10 55 00	J0948+4039	04 41 58	38.5	431.0	-5.1		-48.4	-21	10774	No stop
10 56 30	=0945+408	04 43 28	38.7	431.3	-5.1		-48.5	69	10786	10 55 01
10 56 30	SDSSJ1004+41	04 43 28	36.9	428.3	-5.4		-47.8	-20	10786	No stop
11 00 00	---	04 46 59	37.3	428.8	-5.3		-48.0	190	10813	10 56 31
11 00 30	J0948+4039	04 47 29	39.3	431.9	-5.0		-48.7	9	10813	11 00 30
11 02 00	=0945+408	04 48 59	39.5	432.2	-5.0		-48.8	90	10825	11 00 31
11 02 00	SDSSJ1004+41	04 48 59	37.6	429.1	-5.3		-48.1	-21	10825	No stop
11 05 30	---	04 52 30	38.1	429.7	-5.2		-48.4	189	10852	11 02 01
11 05 30	J0948+4039	04 52 30	40.0	432.7	-5.0		-49.0	-21	10852	No stop
11 07 00	=0945+408	04 54 00	40.2	433.0	-4.9		-49.1	69	10863	11 05 31
11 07 00	SDSSJ1004+41	04 54 00	38.3	429.9	-5.2		-48.5	-21	10863	No stop
11 10 30	---	04 57 31	38.8	430.5	-5.1		-48.7	189	10890	11 07 01
11 11 00	J0948+4039	04 58 01	40.8	433.6	-4.9		-49.3	9	10890	11 11 00
11 12 30	=0945+408	04 59 31	41.0	433.9	-4.8		-49.4	90	10902	11 11 01
11 12 30	SDSSJ1004+41	04 59 31	39.1	430.8	-5.1		-48.8	-21	10902	No stop
11 16 00	---	05 03 02	39.6	431.4	-5.0		-49.0	189	10929	11 12 31

Schedule for TORUN (Code Tr )

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Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 30 May 2021 Day 150 ---										
11 16 00	J0948+4039	05 03 02	41.5	434.5	-4.8		-49.6	-21	10929	No stop
11 17 30	=0945+408	05 04 32	41.7	434.7	-4.8		-49.7	69	10941	11 16 01
11 17 30	SDSSJ1004+41	05 04 32	39.8	431.6	-5.0		-49.1	-21	10941	No stop
11 21 00	---	05 08 02	40.3	432.2	-5.0		-49.4	189	10968	11 17 31
11 21 30	J0948+4039	05 08 33	42.3	435.4	-4.7		-49.9	9	10968	11 21 30
11 23 00	=0945+408	05 10 03	42.5	435.6	-4.7		-50.0	90	10979	11 21 31
11 23 00	SDSSJ1004+41	05 10 03	40.6	432.5	-4.9		-49.5	-21	10979	No stop
11 26 30	---	05 13 33	41.1	433.1	-4.9		-49.7	189	11006	11 23 01
11 26 30	J0948+4039	05 13 33	43.0	436.2	-4.6		-50.1	-21	11006	No stop
11 28 00	=0945+408	05 15 04	43.2	436.4	-4.6		-50.2	69	11018	11 26 31
11 28 00	SDSSJ1004+41	05 15 04	41.3	433.3	-4.8		-49.8	-21	11018	No stop
11 31 30	---	05 18 34	41.8	433.9	-4.8		-50.0	189	11045	11 28 01
11 32 00	J0948+4039	05 19 04	43.8	437.1	-4.5		-50.4	9	11045	11 32 00
11 33 30	=0945+408	05 20 35	44.0	437.4	-4.5		-50.5	90	11057	11 32 01
11 33 30	SDSSJ1004+41	05 20 35	42.1	434.2	-4.8		-50.1	-21	11057	No stop
11 37 00	---	05 24 05	42.6	434.8	-4.7		-50.3	189	11084	11 33 31
11 37 00	J0948+4039	05 24 05	44.6	438.0	-4.4		-50.6	-21	11084	No stop
11 38 30	=0945+408	05 25 35	44.8	438.2	-4.4		-50.7	69	11095	11 37 01
11 43 30	DA193	05 30 36	76.0	158.7	-0.4		-16.5	-267	11095	11 43 30
11 51 30	---	05 38 38	76.4	164.9	-0.3		-11.7	213	11157	11 43 31
11 53 30	J0948+4039	05 40 38	47.0	80.8	-4.2		-51.3	-63	11157	11 53 30
11 58 30	=0945+408	05 45 39	47.7	81.7	-4.1		-51.5	237	11196	11 53 31
11 58 30	SDSSJ1004+41	05 45 39	45.8	78.4	-4.3		-51.3	-21	11196	No stop
12 02 00	---	05 49 09	46.3	79.0	-4.3		-51.5	189	11223	11 58 31
12 02 30	J0948+4039	05 49 39	48.3	82.4	-4.0		-51.6	9	11223	12 02 30
12 04 00	=0945+408	05 51 10	48.6	82.7	-4.0		-51.6	90	11234	12 02 31
12 04 00	SDSSJ1004+41	05 51 10	46.6	79.3	-4.2		-51.5	-21	11234	No stop
12 07 30	---	05 54 40	47.1	79.9	-4.2		-51.7	189	11261	12 04 01
12 07 30	J0948+4039	05 54 40	49.1	83.3	-3.9		-51.7	-22	11261	No stop
12 09 00	=0945+408	05 56 10	49.3	83.6	-3.9		-51.8	68	11273	12 07 31

Schedule for TORUN (Code Tr ) Page 40

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 30 May 2021 Day 150 ---										
12 09 00	SDSSJ1004+41	05 56 10	47.3	80.2	-4.2		-51.7	-21	11273	No stop
12 12 30	---	05 59 41	47.8	80.8	-4.1		-51.9	189	11300	12 09 01
12 13 00	J0948+4039	06 00 11	49.9	84.3	-3.8		-51.9	8	11300	12 13 00
12 14 30	=0945+408	06 01 41	50.1	84.6	-3.8		-51.9	90	11312	12 13 01
12 14 30	SDSSJ1004+41	06 01 41	48.1	81.1	-4.1		-51.9	-21	11312	No stop
12 18 00	---	06 05 12	48.7	81.7	-4.0		-52.1	189	11339	12 14 31
12 18 00	J0948+4039	06 05 12	50.7	85.2	-3.8		-52.0	-22	11339	No stop
12 19 30	=0945+408	06 06 42	50.9	85.5	-3.7		-52.0	68	11350	12 18 01
12 19 30	SDSSJ1004+41	06 06 42	48.9	82.0	-4.0		-52.1	-22	11350	No stop
12 23 00	---	06 10 13	49.4	82.6	-3.9		-52.2	188	11377	12 19 31
12 23 30	J0948+4039	06 10 43	51.5	86.2	-3.7		-52.1	8	11377	12 23 30
12 25 00	=0945+408	06 12 13	51.7	86.5	-3.6		-52.1	90	11389	12 23 31
12 25 00	SDSSJ1004+41	06 12 13	49.7	83.0	-3.9		-52.3	-22	11389	No stop
12 28 30	---	06 15 44	50.2	83.6	-3.8		-52.4	188	11416	12 25 01
12 28 30	J0948+4039	06 15 44	52.2	87.2	-3.6		-52.1	-22	11416	No stop
12 30 00	=0945+408	06 17 14	52.5	87.5	-3.5		-52.2	68	11428	12 28 31
12 30 00	SDSSJ1004+41	06 17 14	50.5	83.9	-3.8		-52.4	-22	11428	No stop
12 33 30	---	06 20 44	51.0	84.5	-3.8		-52.5	188	11455	12 30 01
12 34 00	J0948+4039	06 21 14	53.1	88.2	-3.5		-52.2	8	11455	12 34 00
12 35 30	=0945+408	06 22 45	53.3	88.5	-3.5		-52.2	90	11466	12 34 01
12 35 30	SDSSJ1004+41	06 22 45	51.3	84.9	-3.7		-52.5	-22	11466	No stop
12 39 00	---	06 26 15	51.8	85.5	-3.7		-52.6	188	11493	12 35 31
12 39 00	J0948+4039	06 26 15	53.8	89.2	-3.4		-52.2	-22	11493	No stop
12 40 30	=0945+408	06 27 46	54.0	89.5	-3.4		-52.2	68	11505	12 39 01
12 40 30	SDSSJ1004+41	06 27 46	52.0	85.8	-3.6		-52.6	-22	11505	No stop
12 44 00	---	06 31 16	52.6	86.4	-3.6		-52.7	188	11532	12 40 31
12 44 30	J0948+4039	06 31 46	54.6	90.3	-3.3		-52.2	8	11532	12 44 30
12 46 00	=0945+408	06 33 16	54.9	90.6	-3.3		-52.2	90	11543	12 44 31
12 46 00	SDSSJ1004+41	06 33 16	52.9	86.8	-3.5		-52.7	-22	11543	No stop
12 49 30	---	06 36 47	53.4	87.5	-3.5		-52.8	188	11571	12 46 01

Schedule for TORUN (Code Tr ) Page 41

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 30 May 2021 Day 150 ---										
12 49 30	J0948+4039	06 36 47	55.4	91.3	-3.2		-52.2	-23	11571	No stop
12 51 00	=0945+408	06 38 17	55.6	91.6	-3.2		-52.2	67	11582	12 49 31
12 51 00	SDSSJ1004+41	06 38 17	53.6	87.8	-3.5		-52.8	-22	11582	No stop
12 54 30	---	06 41 48	54.1	88.5	-3.4		-52.8	188	11609	12 51 01
12 55 00	J0948+4039	06 42 18	56.2	92.5	-3.1		-52.2	7	11609	12 55 00
12 56 30	=0945+408	06 43 48	56.5	92.8	-3.1		-52.1	90	11621	12 55 01
12 56 30	SDSSJ1004+41	06 43 48	54.4	88.8	-3.4		-52.8	-23	11621	No stop
13 00 00	---	06 47 19	55.0	89.5	-3.3		-52.8	187	11648	12 56 31
13 00 00	J0948+4039	06 47 19	57.0	93.5	-3.0		-52.1	-23	11648	No stop
13 01 30	=0945+408	06 48 49	57.2	93.9	-3.0		-52.1	67	11659	13 00 01
13 01 30	SDSSJ1004+41	06 48 49	55.2	89.8	-3.3		-52.8	-23	11659	No stop
13 05 00	---	06 52 20	55.7	90.5	-3.2		-52.8	187	11686	13 01 31
13 05 30	J0948+4039	06 52 50	57.8	94.7	-3.0		-52.0	7	11686	13 05 30
13 07 00	=0945+408	06 54 20	58.0	95.1	-2.9		-51.9	90	11698	13 05 31
13 07 00	SDSSJ1004+41	06 54 20	56.0	90.9	-3.2		-52.8	-23	11698	No stop
13 10 30	---	06 57 50	56.5	91.7	-3.1		-52.8	187	11725	13 07 01
13 10 30	J0948+4039	06 57 50	58.6	95.8	-2.9		-51.8	-23	11725	No stop
13 12 00	=0945+408	06 59 21	58.8	96.2	-2.8		-51.8	67	11737	13 10 31
13 12 00	SDSSJ1004+41	06 59 21	56.8	92.0	-3.1		-52.8	-23	11737	No stop
13 15 30	---	07 02 51	57.3	92.7	-3.0		-52.8	187	11764	13 12 01
13 16 00	J0948+4039	07 03 21	59.4	97.1	-2.8		-51.7	6	11764	13 16 00
13 17 30	=0945+408	07 04 52	59.6	97.4	-2.8		-51.6	90	11775	13 16 01
13 17 30	SDSSJ1004+41	07 04 52	57.6	93.1	-3.0		-52.7	-23	11775	No stop
13 21 00	---	07 08 22	58.1	93.9	-3.0		-52.7	187	11802	13 17 31
13 21 00	J0948+4039	07 08 22	60.1	98.3	-2.7		-51.5	-24	11802	No stop
13 22 30	=0945+408	07 09 52	60.3	98.6	-2.7		-51.4	66	11814	13 21 01
13 22 30	SDSSJ1004+41	07 09 52	58.3	94.2	-2.9		-52.6	-24	11814	No stop
13 26 00	---	07 13 23	58.9	95.0	-2.9		-52.6	186	11841	13 22 31
13 26 30	J0948+4039	07 13 53	60.9	99.6	-2.6		-51.2	6	11841	13 26 30
13 28 00	=0945+408	07 15 23	61.2	100.0	-2.6		-51.1	90	11853	13 26 31

Schedule for TORUN (Code Tr ) Page 42

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 30 May 2021 Day 150 ---										
13 28 00	SDSSJ1004+41	07 15 23	59.2	95.4	-2.8		-52.5	-24	11853	No stop
13 31 30	---	07 18 54	59.7	96.2	-2.8		-52.4	186	11880	13 28 01
13 31 30	J0948+4039	07 18 54	61.7	100.8	-2.5		-50.9	-24	11880	No stop
13 33 00	=0945+408	07 20 24	61.9	101.2	-2.5		-50.8	66	11891	13 31 31
13 33 00	SDSSJ1004+41	07 20 24	59.9	96.6	-2.8		-52.4	-24	11891	No stop
13 36 30	---	07 23 55	60.4	97.4	-2.7		-52.2	186	11918	13 33 01
13 37 00	J0948+4039	07 24 25	62.5	102.3	-2.4		-50.6	5	11918	13 37 00
13 38 30	=0945+408	07 25 55	62.7	102.7	-2.4		-50.5	90	11930	13 37 01
13 38 30	SDSSJ1004+41	07 25 55	60.7	97.9	-2.7		-52.1	-24	11930	No stop
13 42 00	---	07 29 26	61.3	98.7	-2.6		-52.0	186	11957	13 38 31
13 42 00	J0948+4039	07 29 26	63.2	103.6	-2.3		-50.2	-25	11957	No stop
13 43 30	=0945+408	07 30 56	63.4	104.0	-2.3		-50.1	65	11969	13 42 01
13 43 30	SDSSJ1004+41	07 30 56	61.5	99.1	-2.6		-51.9	-25	11969	No stop
13 47 00	---	07 34 26	62.0	99.9	-2.5		-51.7	185	11996	13 43 31
13 47 30	J0948+4039	07 34 57	64.0	105.1	-2.3		-49.7	5	11996	13 47 30
13 49 00	=0945+408	07 36 27	64.2	105.5	-2.2		-49.6	90	12007	13 47 31
13 49 00	SDSSJ1004+41	07 36 27	62.3	100.4	-2.5		-51.6	-25	12007	No stop
13 52 30	---	07 39 57	62.8	101.3	-2.4		-51.4	185	12034	13 49 01
13 52 30	J0948+4039	07 39 57	64.8	106.5	-2.2		-49.3	-26	12034	No stop
13 54 00	=0945+408	07 41 28	65.0	107.0	-2.1		-49.1	64	12046	13 52 31
13 54 00	SDSSJ1004+41	07 41 28	63.0	101.7	-2.4		-51.3	-25	12046	No stop
13 57 30	---	07 44 58	63.6	102.6	-2.3		-51.1	185	12073	13 54 01
13 58 00	J0948+4039	07 45 28	65.5	108.2	-2.1		-48.7	4	12073	13 58 00
13 59 30	=0945+408	07 46 59	65.8	108.6	-2.1		-48.5	90	12085	13 58 01
13 59 30	SDSSJ1004+41	07 46 59	63.9	103.2	-2.3		-50.9	-26	12085	No stop
14 03 00	---	07 50 29	64.4	104.1	-2.3		-50.6	184	12112	13 59 31
14 03 00	J0948+4039	07 50 29	66.3	109.7	-2.0		-48.1	-26	12112	No stop
14 04 30	=0945+408	07 51 59	66.5	110.2	-2.0		-47.9	64	12123	14 03 01
14 04 30	SDSSJ1004+41	07 51 59	64.6	104.5	-2.2		-50.5	-26	12123	No stop
14 08 00	---	07 55 30	65.1	105.5	-2.2		-50.2	184	12150	14 04 31

Schedule for TORUN (Code Tr )

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Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Sun 30 May 2021 Day 150 ---										
14 08 30	J0948+4039	07 56 00	67.0	111.5	-1.9		-47.3	3	12150	14 08 30
14 10 00	=0945+408	07 57 30	67.2	112.0	-1.9		-47.1	90	12162	14 08 31
14 10 00	SDSSJ1004+41	07 57 30	65.4	106.1	-2.1		-50.0	-27	12162	No stop
14 13 30	---	08 01 01	65.9	107.1	-2.1		-49.6	183	12189	14 10 01
14 13 30	J0948+4039	08 01 01	67.7	113.2	-1.8		-46.6	-27	12189	No stop
14 15 00	=0945+408	08 02 31	67.9	113.7	-1.8		-46.4	63	12200	14 13 31
14 15 00	SDSSJ1004+41	08 02 31	66.1	107.6	-2.1		-49.4	-27	12200	No stop
14 18 30	---	08 06 02	66.6	108.7	-2.0		-49.0	183	12228	14 15 01
14 19 00	J0948+4039	08 06 32	68.5	115.1	-1.7		-45.7	2	12228	14 19 00
14 20 30	=0945+408	08 08 02	68.7	115.7	-1.7		-45.4	90	12239	14 19 01
14 20 30	SDSSJ1004+41	08 08 02	66.9	109.3	-2.0		-48.8	-28	12239	No stop
14 24 00	---	08 11 33	67.4	110.4	-1.9		-48.3	182	12266	14 20 31
14 24 00	J0948+4039	08 11 33	69.2	117.0	-1.6		-44.8	-28	12266	No stop
14 25 30	=0945+408	08 13 03	69.4	117.6	-1.6		-44.5	62	12278	14 24 01
14 25 30	SDSSJ1004+41	08 13 03	67.6	110.9	-1.9		-48.1	-28	12278	No stop
14 29 00	---	08 16 33	68.1	112.1	-1.8		-47.6	182	12305	14 25 31
14 29 30	J0948+4039	08 17 03	69.9	119.1	-1.6		-43.7	1	12305	14 29 30
14 31 00	=0945+408	08 18 34	70.1	119.7	-1.5		-43.3	90	12316	14 29 31
14 31 00	SDSSJ1004+41	08 18 34	68.4	112.8	-1.8		-47.3	-29	12316	No stop
14 34 30	---	08 22 04	68.8	114.0	-1.7		-46.7	181	12343	14 31 01
14 34 30	J0948+4039	08 22 04	70.5	121.2	-1.5		-42.5	-30	12343	No stop
14 36 00	=0945+408	08 23 35	70.7	121.8	-1.4		-42.2	60	12355	14 34 31
14 36 00	SDSSJ1004+41	08 23 35	69.1	114.6	-1.7		-46.5	-29	12355	No stop
14 39 30	---	08 27 05	69.5	115.9	-1.6		-45.8	181	12382	14 36 01
14 40 00	J0948+4039	08 27 35	71.2	123.6	-1.4		-41.2	0	12382	14 40 00
14 41 30	=0945+408	08 29 05	71.4	124.2	-1.4		-40.8	90	12394	14 40 01
14 41 30	SDSSJ1004+41	08 29 05	69.8	116.6	-1.6		-45.4	-30	12394	No stop
14 45 00	---	08 32 36	70.3	118.0	-1.6		-44.7	180	12421	14 41 31
14 45 00	J0948+4039	08 32 36	71.9	125.9	-1.3		-39.8	-31	12421	No stop
14 46 30	=0945+408	08 34 06	72.0	126.6	-1.3		-39.4	59	12432	14 45 01

Schedule for TORUN (Code Tr )

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Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 30 May 2021 Day 150 ---										
14 46 30	SDSSJ1004+41	08 34 06	70.5	118.6	-1.5		-44.4	-31	12432	No stop
14 50 00	---	08 37 37	70.9	120.0	-1.5		-43.6	179	12459	14 46 31
14 50 30	J0948+4039	08 38 07	72.5	128.5	-1.2		-38.2	-2	12459	14 50 30
14 52 00	=0945+408	08 39 37	72.7	129.3	-1.2		-37.7	88	12471	14 50 31
14 52 00	SDSSJ1004+41	08 39 37	71.2	120.9	-1.4		-43.2	-31	12471	No stop
14 55 30	---	08 43 08	71.6	122.4	-1.4		-42.3	179	12498	14 52 01
14 55 30	J0948+4039	08 43 08	73.1	131.1	-1.1		-36.6	-33	12498	No stop
14 57 00	=0945+408	08 44 38	73.3	131.9	-1.1		-36.1	57	12510	14 55 31
14 57 00	SDSSJ1004+41	08 44 38	71.8	123.1	-1.4		-41.9	-32	12510	No stop
15 00 30	---	08 48 09	72.3	124.7	-1.3		-41.0	178	12537	14 57 01
15 01 00	J0948+4039	08 48 39	73.7	134.1	-1.0		-34.6	-4	12537	15 01 00
15 02 30	=0945+408	08 50 09	73.9	134.9	-1.0		-34.0	86	12548	15 01 01
15 02 30	SDSSJ1004+41	08 50 09	72.5	125.6	-1.3		-40.4	-33	12548	No stop
15 06 00	---	08 53 39	72.9	127.3	-1.2		-39.3	177	12575	15 02 31
15 06 00	J0948+4039	08 53 39	74.2	136.9	-0.9		-32.7	-35	12575	No stop
15 07 30	=0945+408	08 55 10	74.4	137.8	-0.9		-32.1	55	12587	15 06 01
15 12 30	4C39.25	09 00 11	75.1	158.3	-0.5		-16.6	250	12587	15 12 30
15 17 30	---	09 05 11	75.3	162.0	-0.4		-13.8	300	12626	15 12 31
15 22 30	J0948+4039	09 10 12	75.8	147.6	-0.7		-25.1	250	12626	15 22 30
15 27 30	=0945+408	09 15 13	76.1	151.2	-0.6		-22.4	300	12664	15 22 31
15 27 30	SDSSJ1004+41	09 15 13	75.3	139.5	-0.8		-31.2	-38	12664	No stop
15 31 00	---	09 18 44	75.6	141.7	-0.8		-29.6	172	12691	15 27 31
15 31 30	J0948+4039	09 19 14	76.4	154.2	-0.5		-20.2	-10	12691	15 31 30
15 33 00	=0945+408	09 20 44	76.5	155.3	-0.5		-19.3	80	12703	15 31 31
15 33 00	SDSSJ1004+41	09 20 44	75.8	143.1	-0.8		-28.6	-39	12703	No stop
15 36 30	---	09 24 14	76.1	145.5	-0.7		-26.9	171	12730	15 33 01
15 36 30	J0948+4039	09 24 14	76.7	158.0	-0.4		-17.2	-41	12730	No stop
15 38 00	=0945+408	09 25 45	76.8	159.2	-0.4		-16.3	49	12742	15 36 31
15 38 00	SDSSJ1004+41	09 25 45	76.2	146.5	-0.7		-26.1	-40	12742	No stop
15 41 30	---	09 29 15	76.5	149.1	-0.6		-24.2	170	12769	15 38 01

Schedule for TORUN (Code Tr ) Page 45

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 30 May 2021 Day 150 ---										
15 42 00	J0948+4039	09 29 45	77.0	162.5	-0.3		-13.8	-12	12769	15 42 00
15 43 30	=0945+408	09 31 16	77.1	163.7	-0.3		-12.8	78	12780	15 42 01
15 43 30	SDSSJ1004+41	09 31 16	76.7	150.6	-0.6		-23.1	-40	12780	No stop
15 47 00	---	09 34 46	76.9	153.3	-0.5		-21.0	170	12807	15 43 31
15 47 00	J0948+4039	09 34 46	77.2	166.6	-0.3		-10.5	-43	12807	No stop
15 48 30	=0945+408	09 36 16	77.3	167.9	-0.2		-9.5	47	12819	15 47 01
15 48 30	SDSSJ1004+41	09 36 16	77.0	154.4	-0.5		-20.1	-41	12819	No stop
15 52 00	---	09 39 47	77.2	157.2	-0.4		-18.0	169	12846	15 48 31
15 52 30	J0948+4039	09 40 17	77.4	171.4	-0.2		-6.8	-13	12846	15 52 30
15 54 00	=0945+408	09 41 47	77.4	172.7	-0.1		-5.8	77	12857	15 52 31
15 54 00	SDSSJ1004+41	09 41 47	77.3	158.9	-0.4		-16.7	-42	12857	No stop
15 57 30	---	09 45 18	77.5	161.8	-0.3		-14.4	168	12884	15 54 01
15 57 30	J0948+4039	09 45 18	77.4	175.7	-0.1		-3.4	-44	12884	No stop
15 59 00	=0945+408	09 46 48	77.5	177.0	-0.1		-2.4	46	12896	15 57 31
15 59 00	SDSSJ1004+41	09 46 48	77.6	163.1	-0.3		-13.4	-42	12896	No stop
16 02 30	---	09 50 19	77.7	166.1	-0.3		-11.0	168	12923	15 59 01
16 03 00	J0948+4039	09 50 49	77.5	180.5	0.0		0.4	-14	12923	16 03 00
16 04 30	=0945+408	09 52 19	77.5	181.8	0.0		1.5	76	12935	16 03 01
16 04 30	SDSSJ1004+41	09 52 19	77.8	167.9	-0.2		-9.7	-42	12935	No stop
16 08 00	---	09 55 50	77.9	171.0	-0.2		-7.2	168	12962	16 04 31
16 08 00	J0948+4039	09 55 50	77.4	184.9	0.1		3.9	-44	12962	No stop
16 09 30	=0945+408	09 57 20	77.4	186.2	0.1		4.9	46	12973	16 08 01
16 09 30	SDSSJ1004+41	09 57 20	77.9	172.3	-0.1		-6.1	-42	12973	No stop
16 13 00	---	10 00 50	78.0	175.5	-0.1		-3.6	168	13000	16 09 31
16 13 30	J0948+4039	10 01 21	77.3	189.7	0.2		7.6	-14	13000	16 13 30
16 15 00	=0945+408	10 02 51	77.3	191.0	0.2		8.6	76	13012	16 13 31
16 15 00	SDSSJ1004+41	10 02 51	78.0	177.3	-0.1		-2.2	-41	13012	No stop
16 18 30	---	10 06 21	78.0	180.5	0.0		0.4	169	13039	16 15 01
16 18 30	J0948+4039	10 06 21	77.2	193.9	0.3		11.0	-43	13039	No stop
16 20 00	=0945+408	10 07 52	77.1	195.2	0.3		12.0	47	13051	16 18 31



Schedule for TORUN (Code Tr ) Page 46

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 30 May 2021 Day 150 ---										
16 20 00	SDSSJ1004+41	10 07 52	78.0	181.8	0.0		1.5	-41	13051	No stop
16 23 30	---	10 11 22	78.0	185.0	0.1		4.0	169	13078	16 20 01
16 24 00	J0948+4039	10 11 52	76.9	198.5	0.4		14.5	-12	13078	16 24 00
16 25 30	=0945+408	10 13 23	76.9	199.7	0.4		15.5	78	13089	16 24 01
16 25 30	SDSSJ1004+41	10 13 23	77.9	186.8	0.1		5.4	-40	13089	No stop
16 29 00	---	10 16 53	77.9	189.9	0.2		7.9	170	13116	16 25 31
16 29 00	J0948+4039	10 16 53	76.7	202.5	0.4		17.6	-41	13116	No stop
16 30 30	=0945+408	10 18 23	76.6	203.7	0.5		18.5	49	13128	16 29 01
16 30 30	SDSSJ1004+41	10 18 23	77.8	191.3	0.2		9.0	-39	13128	No stop
16 34 00	---	10 21 54	77.7	194.3	0.3		11.4	171	13155	16 30 31
16 34 30	J0948+4039	10 22 24	76.3	206.8	0.5		20.8	-10	13155	16 34 30
16 36 00	=0945+408	10 23 54	76.2	207.9	0.6		21.7	80	13167	16 34 31
16 36 00	SDSSJ1004+41	10 23 54	77.6	196.1	0.3		12.8	-38	13167	No stop
16 39 30	---	10 27 25	77.5	199.1	0.4		15.1	172	13194	16 36 01
16 39 30	J0948+4039	10 27 25	76.0	210.4	0.6		23.6	-39	13194	No stop
16 41 00	=0945+408	10 28 55	75.9	211.5	0.6		24.4	51	13205	16 39 31
16 41 00	SDSSJ1004+41	10 28 55	77.4	200.3	0.4		16.1	-36	13205	No stop
16 44 30	---	10 32 26	77.2	203.2	0.4		18.3	174	13232	16 41 01
16 45 00	J0948+4039	10 32 56	75.5	214.3	0.7		26.4	-7	13232	16 45 00
16 46 30	=0945+408	10 34 26	75.4	215.3	0.7		27.2	83	13244	16 45 01
16 46 30	SDSSJ1004+41	10 34 26	77.1	204.8	0.5		19.5	-35	13244	No stop
16 50 00	---	10 37 57	76.9	207.5	0.5		21.6	175	13271	16 46 31
16 50 00	J0948+4039	10 37 57	75.1	217.6	0.8		28.8	-36	13271	No stop
16 51 30	=0945+408	10 39 27	75.0	218.6	0.8		29.5	54	13283	16 50 01
16 51 30	SDSSJ1004+41	10 39 27	76.7	208.7	0.6		22.5	-34	13283	No stop
16 55 00	---	10 42 57	76.5	211.3	0.6		24.5	176	13310	16 51 31
16 55 30	J0948+4039	10 43 27	74.6	221.1	0.9		31.3	-5	13310	16 55 30
16 57 00	=0945+408	10 44 58	74.4	222.0	0.9		31.9	85	13321	16 55 31
16 57 00	SDSSJ1004+41	10 44 58	76.3	212.8	0.7		25.5	-33	13321	No stop
17 00 30	---	10 48 28	76.0	215.2	0.7		27.4	177	13348	16 57 01

Schedule for TORUN (Code Tr )

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Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop				Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA UP	ParA Dwell	GBytes	SYNC
--- Sun 30 May 2021 Day 150 ---								
17 00 30	J0948+4039	10 48 28	74.1	224.1	1.0	33.3 -33	13348	No stop
17 02 00	=0945+408	10 49 59	73.9	224.9	1.0	33.9 57	13360	17 00 31
17 02 00	SDSSJ1004+41	10 49 59	75.9	216.3	0.7	28.1 -32	13360	No stop
17 05 30	---	10 53 29	75.6	218.6	0.8	29.8 178	13387	17 02 01
17 06 00	J0948+4039	10 53 59	73.5	227.1	1.1	35.4 -2	13387	17 06 00
17 07 30	=0945+408	10 55 29	73.3	228.0	1.1	35.9 88	13398	17 06 01
17 07 30	SDSSJ1004+41	10 55 29	75.4	219.9	0.8	30.8 -31	13398	No stop
17 11 00	---	10 59 00	75.0	222.1	0.9	32.3 179	13426	17 07 31
17 11 00	J0948+4039	10 59 00	72.9	229.8	1.1	37.1 -31	13426	No stop
17 12 30	=0945+408	11 00 30	72.7	230.6	1.2	37.6 59	13437	17 11 01
17 12 30	SDSSJ1004+41	11 00 30	74.9	223.0	0.9	33.0 -30	13437	No stop
17 16 00	---	11 04 01	74.5	225.1	1.0	34.4 180	13464	17 12 31
17 16 30	J0948+4039	11 04 31	72.3	232.6	1.2	38.9 0	13464	17 16 30
17 18 00	=0945+408	11 06 01	72.1	233.3	1.3	39.3 90	13476	17 16 31
17 18 00	SDSSJ1004+41	11 06 01	74.3	226.3	1.0	35.2 -29	13476	No stop
17 21 30	---	11 09 32	73.9	228.2	1.1	36.5 181	13503	17 18 01
17 21 30	J0948+4039	11 09 32	71.6	234.9	1.3	40.3 -29	13503	No stop
17 23 00	=0945+408	11 11 02	71.5	235.6	1.3	40.7 61	13514	17 21 31
17 23 00	SDSSJ1004+41	11 11 02	73.7	229.1	1.1	37.0 -28	13514	No stop
17 26 30	---	11 14 33	73.3	230.9	1.1	38.2 182	13541	17 23 01
17 27 00	J0948+4039	11 15 03	71.0	237.4	1.4	41.7 2	13541	17 27 00
17 28 30	=0945+408	11 16 33	70.8	238.0	1.4	42.1 90	13553	17 27 01
17 28 30	SDSSJ1004+41	11 16 33	73.1	231.9	1.2	38.9 -27	13553	No stop
17 32 00	---	11 20 03	72.7	233.7	1.2	39.9 183	13580	17 28 31
17 32 00	J0948+4039	11 20 03	70.3	239.5	1.5	42.9 -27	13580	No stop
17 33 30	=0945+408	11 21 34	70.1	240.1	1.5	43.3 63	13592	17 32 01
17 33 30	SDSSJ1004+41	11 21 34	72.5	234.4	1.3	40.4 -26	13592	No stop
17 37 00	---	11 25 04	72.1	236.0	1.3	41.4 184	13619	17 33 31
17 37 30	J0948+4039	11 25 34	69.6	241.7	1.6	44.1 4	13619	17 37 30
17 39 00	=0945+408	11 27 05	69.4	242.3	1.6	44.4 90	13630	17 37 31

Schedule for TORUN (Code Tr ) Page 48

Resolving the faintest radio quasars detected by LOFAR

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

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Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop				Early	Disk	TPStart
Stop UT		LST	EL	AZ	HA UP	ParA	Dwell	GBytes SYNC
--- Sun 30 May 2021 Day 150 ---								
17 39 00	SDSSJ1004+41	11 27 05	71.8	236.9	1.4	41.9	-25	13630 No stop
17 42 30	---	11 30 35	71.4	238.5	1.4	42.8	185	13657 17 39 01
17 42 30	J0948+4039	11 30 35	68.9	243.6	1.7	45.1	-26	13657 No stop
17 44 00	=0945+408	11 32 05	68.7	244.2	1.7	45.4	64	13669 17 42 31
17 44 00	SDSSJ1004+41	11 32 05	71.2	239.1	1.4	43.2	-25	13669 No stop
17 47 30	---	11 35 36	70.7	240.6	1.5	44.0	185	13696 17 44 01
17 48 00	J0948+4039	11 36 06	68.2	245.7	1.8	46.1	5	13696 17 48 00
17 49 30	=0945+408	11 37 36	68.0	246.2	1.8	46.3	90	13708 17 48 01
17 49 30	SDSSJ1004+41	11 37 36	70.5	241.4	1.5	44.4	-24	13708 No stop
17 53 00	---	11 41 07	70.0	242.8	1.6	45.1	186	13735 17 49 31
17 53 00	J0948+4039	11 41 07	67.5	247.4	1.8	46.9	-24	13735 No stop
17 54 30	=0945+408	11 42 37	67.3	247.9	1.9	47.1	66	13746 17 53 01
17 54 30	SDSSJ1004+41	11 42 37	69.8	243.4	1.6	45.4	-24	13746 No stop
17 58 00	---	11 46 08	69.3	244.7	1.7	46.1	186	13773 17 54 31
17 58 30	J0948+4039	11 46 38	66.7	249.2	1.9	47.6	6	13773 17 58 30
18 00 00	=0945+408	11 48 08	66.5	249.7	2.0	47.8	90	13785 17 58 31
18 00 00	SDSSJ1004+41	11 48 08	69.0	245.4	1.7	46.5	-23	13785 No stop
18 03 30	---	11 51 39	68.6	246.7	1.8	47.1	187	13812 18 00 01
18 03 30	J0948+4039	11 51 39	66.0	250.8	2.0	48.3	-24	13812 No stop
18 05 00	=0945+408	11 53 09	65.8	251.3	2.0	48.5	66	13824 18 03 31
18 05 00	SDSSJ1004+41	11 53 09	68.4	247.2	1.8	47.3	-23	13824 No stop
18 08 30	---	11 56 39	67.9	248.4	1.8	47.8	187	13851 18 05 01
18 09 00	J0948+4039	11 57 10	65.2	252.5	2.1	48.9	6	13851 18 09 00
18 10 30	=0945+408	11 58 40	65.0	252.9	2.1	49.1	90	13862 18 09 01
18 10 30	SDSSJ1004+41	11 58 40	67.6	249.1	1.9	48.1	-23	13862 No stop
18 14 00	---	12 02 10	67.1	250.2	1.9	48.6	187	13889 18 10 31
18 14 00	J0948+4039	12 02 10	64.5	254.0	2.2	49.4	-24	13889 No stop
18 15 30	=0945+408	12 03 41	64.3	254.4	2.2	49.6	66	13901 18 14 01
18 15 30	SDSSJ1004+41	12 03 41	66.9	250.7	2.0	48.8	-23	13901 No stop
18 19 00	---	12 07 11	66.4	251.8	2.0	49.2	187	13928 18 15 31

Schedule for TORUN (Code Tr )

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Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop				Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA UP	ParA	Dwell	GBytes	SYNC
--- Sun 30 May 2021 Day 150 ---									
18 19 30	J0948+4039	12 07 41	63.7	255.5	2.3	49.9	6	13928	18 19 30
18 21 00	=0945+408	12 09 11	63.5	255.9	2.3	50.1	90	13940	18 19 31
18 21 00	SDSSJ1004+41	12 09 11	66.1	252.4	2.1	49.4	-24	13940	No stop
18 24 30	---	12 12 42	65.6	253.5	2.1	49.8	186	13967	18 21 01
18 24 30	J0948+4039	12 12 42	63.0	256.9	2.4	50.3	-24	13967	No stop
18 26 00	=0945+408	12 14 12	62.8	257.3	2.4	50.4	66	13978	18 24 31
18 26 00	SDSSJ1004+41	12 14 12	65.4	253.9	2.1	50.0	-24	13978	No stop
18 29 30	---	12 17 43	64.9	254.9	2.2	50.3	186	14005	18 26 01
18 30 00	J0948+4039	12 18 13	62.2	258.3	2.5	50.7	6	14005	18 30 00
18 31 30	=0945+408	12 19 43	61.9	258.7	2.5	50.8	90	14017	18 30 01
18 31 30	SDSSJ1004+41	12 19 43	64.6	255.5	2.2	50.5	-24	14017	No stop
18 35 00	---	12 23 14	64.1	256.4	2.3	50.8	186	14044	18 31 31
18 35 00	J0948+4039	12 23 14	61.4	259.6	2.6	51.0	-24	14044	No stop
18 36 30	=0945+408	12 24 44	61.2	260.0	2.6	51.1	66	14055	18 35 01
18 36 30	SDSSJ1004+41	12 24 44	63.9	256.8	2.3	50.9	-24	14055	No stop
18 40 00	---	12 28 15	63.3	257.8	2.4	51.2	186	14083	18 36 31
18 40 30	J0948+4039	12 28 45	60.6	260.9	2.6	51.3	6	14083	18 40 30
18 42 00	=0945+408	12 30 15	60.4	261.3	2.7	51.4	90	14094	18 40 31
18 42 00	SDSSJ1004+41	12 30 15	63.0	258.3	2.4	51.3	-24	14094	No stop
18 45 30	---	12 33 46	62.5	259.2	2.5	51.5	186	14121	18 42 01
18 45 30	J0948+4039	12 33 46	59.9	262.1	2.7	51.5	-24	14121	No stop
18 47 00	=0945+408	12 35 16	59.6	262.5	2.8	51.6	66	14133	18 45 31
18 47 00	SDSSJ1004+41	12 35 16	62.3	259.6	2.5	51.6	-24	14133	No stop
18 50 30	---	12 38 46	61.8	260.5	2.5	51.8	186	14160	18 47 01
18 51 00	J0948+4039	12 39 16	59.0	263.4	2.8	51.7	6	14160	18 51 00
18 52 30	=0945+408	12 40 47	58.8	263.8	2.8	51.8	90	14171	18 51 01
18 52 30	SDSSJ1004+41	12 40 47	61.5	260.9	2.6	51.9	-24	14171	No stop
18 56 00	---	12 44 17	61.0	261.8	2.6	52.1	186	14198	18 52 31
18 56 00	J0948+4039	12 44 17	58.3	264.5	2.9	51.9	-24	14198	No stop
18 57 30	=0945+408	12 45 47	58.1	264.9	2.9	51.9	66	14210	18 56 01

Schedule for TORUN (Code Tr ) Page 50

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 30 May 2021 Day 150 ---										
18 57 30	SDSSJ1004+41	12 45 47	60.7	262.1	2.7		52.1	-24	14210	No stop
19 01 00	---	12 49 18	60.2	263.0	2.7		52.3	186	14237	18 57 31
19 01 30	J0948+4039	12 49 48	57.5	265.8	3.0		52.0	6	14237	19 01 30
19 03 00	=0945+408	12 51 18	57.3	266.1	3.0		52.1	90	14249	19 01 31
19 03 00	SDSSJ1004+41	12 51 18	59.9	263.4	2.8		52.4	-24	14249	No stop
19 06 30	---	12 54 49	59.4	264.2	2.8		52.5	186	14276	19 03 01
19 06 30	J0948+4039	12 54 49	56.7	266.8	3.1		52.1	-24	14276	No stop
19 08 00	=0945+408	12 56 19	56.5	267.2	3.1		52.1	66	14287	19 06 31
19 08 00	SDSSJ1004+41	12 56 19	59.2	264.6	2.8		52.5	-24	14287	No stop
19 11 30	---	12 59 50	58.6	265.3	2.9		52.6	186	14314	19 08 01
19 12 00	J0948+4039	13 00 20	55.9	268.0	3.2		52.2	6	14314	19 12 00
19 13 30	=0945+408	13 01 50	55.7	268.3	3.2		52.2	90	14326	19 12 01
19 13 30	SDSSJ1004+41	13 01 50	58.3	265.8	2.9		52.6	-24	14326	No stop
19 17 00	---	13 05 21	57.8	266.5	3.0		52.7	186	14353	19 13 31
19 17 00	J0948+4039	13 05 21	55.1	269.0	3.3		52.2	-24	14353	No stop
19 18 30	=0945+408	13 06 51	54.9	269.3	3.3		52.2	66	14365	19 17 01
19 18 30	SDSSJ1004+41	13 06 51	57.6	266.9	3.0		52.7	-24	14365	No stop
19 22 00	---	13 10 22	57.1	267.6	3.1		52.8	186	14392	19 18 31
19 22 30	J0948+4039	13 10 52	54.3	270.1	3.3		52.2	6	14392	19 22 30
19 24 00	=0945+408	13 12 22	54.1	270.4	3.4		52.2	90	14403	19 22 31
19 24 00	SDSSJ1004+41	13 12 22	56.8	268.0	3.1		52.8	-24	14403	No stop
19 27 30	---	13 15 52	56.2	268.7	3.2		52.8	186	14430	19 24 01
19 27 30	J0948+4039	13 15 52	53.6	271.1	3.4		52.2	-24	14430	No stop
19 29 00	=0945+408	13 17 23	53.3	271.4	3.5		52.2	66	14442	19 27 31
19 29 00	SDSSJ1004+41	13 17 23	56.0	269.1	3.2		52.8	-24	14442	No stop
19 32 30	---	13 20 53	55.5	269.8	3.3		52.8	186	14469	19 29 01
19 33 00	J0948+4039	13 21 23	52.7	272.2	3.5		52.2	6	14469	19 33 00
19 34 30	=0945+408	13 22 54	52.5	272.5	3.5		52.2	90	14481	19 33 01
19 34 30	SDSSJ1004+41	13 22 54	55.2	270.2	3.3		52.8	-24	14481	No stop
19 38 00	---	13 26 24	54.7	270.9	3.3		52.8	186	14508	19 34 31

Schedule for TORUN (Code Tr ) Page 51

Resolving the faintest radio quasars detected by LOFAR

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

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Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 30 May 2021 Day 150 ---										
19 38 00	J0948+4039	13 26 24	52.0	273.2	3.6		52.1	-24	14508	No stop
19 39 30	=0945+408	13 27 54	51.8	273.4	3.6		52.1	66	14519	19 38 01
19 44 30	4C39.25	13 32 55	46.7	276.5	4.1		50.1	270	14519	19 44 30
19 49 30	---	13 37 56	46.0	277.4	4.2		50.0	300	14558	19 44 31
19 54 30	J0948+4039	13 42 57	49.5	276.2	3.9		51.8	270	14558	19 54 30
19 59 30	=0945+408	13 47 58	48.8	277.1	4.0		51.7	300	14596	19 54 31
19 59 30	SDSSJ1004+41	13 47 58	51.4	275.0	3.7		52.6	-24	14596	No stop
20 03 00	---	13 51 28	50.9	275.6	3.8		52.5	186	14624	19 59 31
20 03 30	J0948+4039	13 51 58	48.2	277.8	4.0		51.5	6	14624	20 03 30
20 05 00	=0945+408	13 53 29	47.9	278.1	4.1		51.5	90	14635	20 03 31
20 05 00	SDSSJ1004+41	13 53 29	50.6	276.0	3.8		52.4	-24	14635	No stop
20 08 30	---	13 56 59	50.1	276.6	3.9		52.3	186	14662	20 05 01
20 08 30	J0948+4039	13 56 59	47.4	278.7	4.1		51.4	-24	14662	No stop
20 10 00	=0945+408	13 58 29	47.2	279.0	4.1		51.3	66	14674	20 08 31
20 10 00	SDSSJ1004+41	13 58 29	49.9	276.9	3.9		52.3	-24	14674	No stop
20 13 30	---	14 02 00	49.3	277.5	3.9		52.2	186	14701	20 10 01
20 14 00	J0948+4039	14 02 30	46.6	279.7	4.2		51.2	6	14701	20 14 00
20 15 30	=0945+408	14 04 00	46.4	279.9	4.2		51.1	90	14712	20 14 01
20 15 30	SDSSJ1004+41	14 04 00	49.0	277.8	4.0		52.1	-24	14712	No stop
20 19 00	---	14 07 31	48.5	278.5	4.0		52.0	186	14739	20 15 31
20 19 00	J0948+4039	14 07 31	45.9	280.5	4.3		51.0	-24	14739	No stop
20 20 30	=0945+408	14 09 01	45.6	280.8	4.3		50.9	66	14751	20 19 01
20 20 30	SDSSJ1004+41	14 09 01	48.3	278.7	4.1		52.0	-24	14751	No stop
20 24 00	---	14 12 32	47.8	279.3	4.1		51.9	186	14778	20 20 31
20 24 30	J0948+4039	14 13 02	45.0	281.5	4.4		50.8	6	14778	20 24 30
20 26 00	=0945+408	14 14 32	44.8	281.7	4.4		50.7	90	14790	20 24 31
20 26 00	SDSSJ1004+41	14 14 32	47.5	279.7	4.1		51.8	-24	14790	No stop
20 29 30	---	14 18 03	47.0	280.3	4.2		51.6	186	14817	20 26 01
20 29 30	J0948+4039	14 18 03	44.3	282.3	4.5		50.6	-24	14817	No stop
20 31 00	=0945+408	14 19 33	44.1	282.6	4.5		50.5	66	14828	20 29 31

Schedule for TORUN (Code Tr )

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Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 30 May 2021 Day 150 ---										
20 31 00	SDSSJ1004+41	14 19 33	46.7	280.5	4.2		51.6	-24	14828	No stop
20 34 30	---	14 23 03	46.2	281.1	4.3		51.4	186	14855	20 31 01
20 35 00	J0948+4039	14 23 34	43.5	283.3	4.6		50.3	6	14855	20 35 00
20 36 30	=0945+408	14 25 04	43.3	283.5	4.6		50.2	90	14867	20 35 01
20 36 30	SDSSJ1004+41	14 25 04	45.9	281.5	4.3		51.4	-24	14867	No stop
20 40 00	---	14 28 34	45.4	282.1	4.4		51.2	186	14894	20 36 31
20 40 00	J0948+4039	14 28 34	42.8	284.1	4.6		50.1	-24	14894	No stop
20 41 30	=0945+408	14 30 05	42.6	284.3	4.7		50.0	66	14906	20 40 01
20 41 30	SDSSJ1004+41	14 30 05	45.2	282.3	4.4		51.1	-24	14906	No stop
20 45 00	---	14 33 35	44.7	282.9	4.5		51.0	186	14933	20 41 31
20 45 30	J0948+4039	14 34 05	42.0	285.0	4.7		49.8	6	14933	20 45 30
20 47 00	=0945+408	14 35 35	41.8	285.2	4.8		49.7	90	14944	20 45 31
20 47 00	SDSSJ1004+41	14 35 35	44.4	283.2	4.5		50.9	-24	14944	No stop
20 50 30	---	14 39 06	43.9	283.8	4.6		50.7	186	14971	20 47 01
20 50 30	J0948+4039	14 39 06	41.2	285.8	4.8		49.5	-24	14971	No stop
20 52 00	=0945+408	14 40 36	41.0	286.1	4.8		49.4	66	14983	20 50 31
20 52 00	SDSSJ1004+41	14 40 36	43.6	284.1	4.6		50.6	-24	14983	No stop
20 55 30	---	14 44 07	43.1	284.6	4.6		50.5	186	15010	20 52 01
20 56 00	J0948+4039	14 44 37	40.5	286.7	4.9		49.2	6	15010	20 56 00
20 57 30	=0945+408	14 46 07	40.2	287.0	4.9		49.1	90	15022	20 56 01
20 57 30	SDSSJ1004+41	14 46 07	42.8	285.0	4.7		50.3	-24	15022	No stop
21 01 00	---	14 49 38	42.3	285.5	4.7		50.2	186	15049	20 57 31
21 01 00	J0948+4039	14 49 38	39.7	287.5	5.0		48.9	-24	15049	No stop
21 02 30	=0945+408	14 51 08	39.5	287.8	5.0		48.8	66	15060	21 01 01
21 02 30	SDSSJ1004+41	14 51 08	42.1	285.8	4.8		50.1	-23	15060	No stop
21 06 00	---	14 54 39	41.6	286.4	4.8		49.9	187	15087	21 02 31
21 06 30	J0948+4039	14 55 09	38.9	288.4	5.1		48.6	6	15087	21 06 30
21 08 00	=0945+408	14 56 39	38.7	288.7	5.1		48.5	90	15099	21 06 31
21 08 00	SDSSJ1004+41	14 56 39	41.3	286.7	4.8		49.8	-23	15099	No stop
21 11 30	---	15 00 10	40.8	287.3	4.9		49.6	187	15126	21 08 01

Schedule for TORUN (Code Tr )

Page 53

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop				Early	Disk	TPStart		
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 30 May 2021 Day 150 ---										
21 11 30	J0948+4039	15 00 10	38.2	289.2	5.2		48.3	-24	15126	No stop
21 13 00	=0945+408	15 01 40	38.0	289.5	5.2		48.2	66	15138	21 11 31
21 13 00	SDSSJ1004+41	15 01 40	40.6	287.5	4.9		49.5	-23	15138	No stop
21 16 30	---	15 05 10	40.1	288.1	5.0		49.3	187	15165	21 13 01
21 17 00	J0948+4039	15 05 40	37.5	290.1	5.3		47.9	6	15165	21 17 00
21 18 30	=0945+408	15 07 11	37.2	290.4	5.3		47.8	90	15176	21 17 01
21 18 30	SDSSJ1004+41	15 07 11	39.8	288.4	5.0		49.1	-23	15176	No stop
21 22 00	---	15 10 41	39.3	288.9	5.1		48.9	187	15203	21 18 31
21 22 00	J0948+4039	15 10 41	36.7	290.9	5.3		47.6	-24	15203	No stop
21 23 30	=0945+408	15 12 11	36.5	291.2	5.4		47.5	66	15215	21 22 01
21 23 30	SDSSJ1004+41	15 12 11	39.1	289.2	5.1		48.8	-23	15215	No stop
21 27 00	---	15 15 42	38.6	289.8	5.2		48.6	187	15242	21 23 31
21 27 30	J0948+4039	15 16 12	36.0	291.8	5.4		47.2	6	15242	21 27 30
21 29 00	=0945+408	15 17 42	35.8	292.1	5.5		47.1	90	15253	21 27 31
21 29 00	SDSSJ1004+41	15 17 42	38.3	290.1	5.2		48.5	-23	15253	No stop
21 31 00	---	15 19 43	38.0	290.4	5.2		48.3	97	15269	21 29 01
21 33 00	SDSSJ2222+27	15 21 43	13.5	421.2	-7.0		-36.5	-158	15269	21 33 00
21 36 30	---	15 25 14	13.9	421.9	-7.0		-36.8	52	15296	21 33 01
21 37 00	J2219+2613	15 25 44	13.1	423.3	-6.9		-36.8	14	15296	21 37 00
21 38 30	=2217+259	15 27 14	13.3	423.6	-6.9		-36.9	90	15308	21 37 01
21 38 30	SDSSJ2222+27	15 27 14	14.2	422.3	-6.9		-37.0	-16	15308	No stop
21 42 00	---	15 30 45	14.7	422.9	-6.9		-37.2	194	15335	21 38 31
21 42 00	J2219+2613	15 30 45	13.8	424.3	-6.8		-37.1	-16	15335	No stop
21 43 30	=2217+259	15 32 15	14.0	424.5	-6.8		-37.2	74	15346	21 42 01
21 43 30	SDSSJ2222+27	15 32 15	14.9	423.2	-6.8		-37.3	-16	15346	No stop
21 47 00	---	15 35 45	15.4	423.8	-6.8		-37.6	194	15373	21 43 31
21 47 30	J2219+2613	15 36 15	14.5	425.3	-6.7		-37.5	14	15373	21 47 30
21 49 00	=2217+259	15 37 46	14.7	425.6	-6.7		-37.6	90	15385	21 47 31
21 49 00	SDSSJ2222+27	15 37 46	15.6	424.2	-6.8		-37.7	-16	15385	No stop
21 52 30	---	15 41 16	16.1	424.8	-6.7		-37.9	194	15412	21 49 01



Schedule for TORUN (Code Tr ) Page 54

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 30 May 2021 Day 150 ---										
21 52 30	J2219+2613	15 41 16	15.2	426.2	-6.7		-37.8	-16	15412	No stop
21 54 00	=2217+259	15 42 46	15.4	426.5	-6.6		-37.9	74	15424	21 52 31
21 54 00	SDSSJ2222+27	15 42 46	16.3	425.1	-6.7		-38.0	-16	15424	No stop
21 57 30	---	15 46 17	16.8	425.7	-6.6		-38.3	194	15451	21 54 01
21 58 00	J2219+2613	15 46 47	16.0	427.2	-6.6		-38.1	14	15451	21 58 00
21 59 30	=2217+259	15 48 17	16.2	427.5	-6.5		-38.2	90	15462	21 58 01
21 59 30	SDSSJ2222+27	15 48 17	17.1	426.1	-6.6		-38.4	-16	15462	No stop
22 03 00	---	15 51 48	17.5	426.7	-6.5		-38.6	194	15489	21 59 31
22 03 00	J2219+2613	15 51 48	16.7	428.1	-6.5		-38.4	-16	15489	No stop
22 04 30	=2217+259	15 53 18	16.9	428.4	-6.5		-38.5	74	15501	22 03 01
22 04 30	SDSSJ2222+27	15 53 18	17.7	427.0	-6.5		-38.7	-16	15501	No stop
22 08 00	---	15 56 49	18.2	427.6	-6.4		-38.9	194	15528	22 04 31
22 08 30	J2219+2613	15 57 19	17.4	429.1	-6.4		-38.8	14	15528	22 08 30
22 10 00	=2217+259	15 58 49	17.6	429.4	-6.4		-38.8	90	15539	22 08 31
22 10 00	SDSSJ2222+27	15 58 49	18.5	428.0	-6.4		-39.0	-16	15539	No stop
22 13 30	---	16 02 20	19.0	428.6	-6.3		-39.2	194	15566	22 10 01
22 13 30	J2219+2613	16 02 20	18.1	430.1	-6.3		-39.0	-16	15566	No stop
22 15 00	=2217+259	16 03 50	18.3	430.3	-6.3		-39.1	74	15578	22 13 31
22 15 00	SDSSJ2222+27	16 03 50	19.2	428.9	-6.3		-39.3	-16	15578	No stop
22 18 30	---	16 07 21	19.7	429.5	-6.3		-39.5	194	15605	22 15 01
22 19 00	J2219+2613	16 07 51	18.9	431.1	-6.2		-39.3	14	15605	22 19 00
22 20 30	=2217+259	16 09 21	19.1	431.3	-6.2		-39.4	90	15617	22 19 01
22 20 30	SDSSJ2222+27	16 09 21	20.0	429.9	-6.2		-39.6	-16	15617	No stop
22 24 00	---	16 12 51	20.5	430.5	-6.2		-39.8	194	15644	22 20 31
22 24 00	J2219+2613	16 12 51	19.6	432.0	-6.1		-39.6	-16	15644	No stop
22 25 30	=2217+259	16 14 22	19.8	432.3	-6.1		-39.7	74	15655	22 24 01
22 25 30	SDSSJ2222+27	16 14 22	20.7	430.8	-6.1		-39.9	-16	15655	No stop
22 29 00	---	16 17 52	21.2	431.4	-6.1		-40.1	194	15682	22 25 31
22 29 30	J2219+2613	16 18 22	20.4	433.0	-6.0		-39.8	14	15682	22 29 30
22 31 00	=2217+259	16 19 53	20.6	433.3	-6.0		-39.9	90	15694	22 29 31

Schedule for TORUN (Code Tr ) Page 55

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 30 May 2021 Day 150 ---										
22 31 00	SDSSJ2222+27	16 19 53	21.5	431.8	-6.1		-40.2	-16	15694	No stop
22 34 30	---	16 23 23	22.0	432.4	-6.0		-40.4	194	15721	22 31 01
22 34 30	J2219+2613	16 23 23	21.1	433.9	-6.0		-40.1	-16	15721	No stop
22 36 00	=2217+259	16 24 53	21.4	434.2	-5.9		-40.1	74	15733	22 34 31
22 36 00	SDSSJ2222+27	16 24 53	22.2	432.7	-6.0		-40.4	-16	15733	No stop
22 39 30	---	16 28 24	22.7	433.3	-5.9		-40.6	194	15760	22 36 01
22 40 00	J2219+2613	16 28 54	21.9	434.9	-5.9		-40.3	14	15760	22 40 00
22 41 30	=2217+259	16 30 24	22.2	435.2	-5.8		-40.4	90	15771	22 40 01
22 41 30	SDSSJ2222+27	16 30 24	23.0	433.7	-5.9		-40.7	-16	15771	No stop
22 45 00	---	16 33 55	23.5	434.4	-5.8		-40.8	194	15798	22 41 31
22 45 00	J2219+2613	16 33 55	22.7	435.9	-5.8		-40.5	-16	15798	No stop
22 46 30	=2217+259	16 35 25	22.9	436.1	-5.8		-40.6	74	15810	22 45 01
22 46 30	SDSSJ2222+27	16 35 25	23.7	434.6	-5.8		-40.9	-16	15810	No stop
22 50 00	---	16 38 56	24.2	435.3	-5.7		-41.1	194	15837	22 46 31
22 50 30	J2219+2613	16 39 26	23.5	436.9	-5.7		-40.7	14	15837	22 50 30
22 52 00	=2217+259	16 40 56	23.7	437.2	-5.7		-40.8	90	15849	22 50 31
22 52 00	SDSSJ2222+27	16 40 56	24.5	435.6	-5.7		-41.1	-16	15849	No stop
22 55 30	---	16 44 27	25.0	436.3	-5.6		-41.3	194	15876	22 52 01
22 55 30	J2219+2613	16 44 27	24.2	437.8	-5.6		-40.9	-16	15876	No stop
22 57 00	=2217+259	16 45 57	24.4	438.1	-5.6		-41.0	74	15887	22 55 31
22 57 00	SDSSJ2222+27	16 45 57	25.2	436.6	-5.6		-41.3	-16	15887	No stop
23 00 30	---	16 49 27	25.8	437.2	-5.6		-41.5	194	15914	22 57 01
23 01 00	J2219+2613	16 49 57	25.0	438.8	-5.5		-41.1	14	15914	23 01 00
23 02 30	=2217+259	16 51 28	25.2	439.1	-5.5		-41.1	90	15926	23 01 01
23 02 30	SDSSJ2222+27	16 51 28	26.1	437.6	-5.5		-41.6	-16	15926	No stop
23 06 00	---	16 54 58	26.6	438.2	-5.5		-41.7	194	15953	23 02 31
23 06 00	J2219+2613	16 54 58	25.8	79.8	-5.4	W	-41.2	-727	15953	No stop
23 07 30	=2217+259	16 56 29	26.0	80.1	-5.4	W	-41.3	0	15965	23 06 01
23 07 30	SDSSJ2222+27	16 56 29	26.8	78.5	-5.4		-41.7	-16	15965	No stop
23 11 00	---	16 59 59	27.3	79.1	-5.4		-41.8	194	15992	23 07 31

Schedule for TORUN (Code Tr )

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Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 30 May 2021 Day 150 ---										
23 11 30	J2219+2613	17 00 29	26.6	80.8	-5.3		-41.4	14	15992	23 11 30
23 13 00	=2217+259	17 01 59	26.8	81.1	-5.3		-41.4	90	16003	23 11 31
23 13 00	SDSSJ2222+27	17 01 59	27.6	79.5	-5.4		-41.9	-16	16003	No stop
23 16 30	---	17 05 30	28.1	80.2	-5.3		-42.0	194	16030	23 13 01
23 16 30	J2219+2613	17 05 30	27.3	81.8	-5.3		-41.5	-16	16030	No stop
23 18 00	=2217+259	17 07 00	27.5	82.0	-5.2		-41.6	74	16042	23 16 31
23 18 00	SDSSJ2222+27	17 07 00	28.3	80.4	-5.3		-42.1	-16	16042	No stop
23 21 30	---	17 10 31	28.9	81.1	-5.2		-42.1	194	16069	23 18 01
23 22 00	J2219+2613	17 11 01	28.1	82.8	-5.2		-41.7	14	16069	23 22 00
23 23 30	=2217+259	17 12 31	28.4	83.1	-5.1		-41.7	90	16080	23 22 01
23 23 30	SDSSJ2222+27	17 12 31	29.2	81.5	-5.2		-42.2	-16	16080	No stop
23 27 00	---	17 16 02	29.7	82.1	-5.1		-42.3	194	16108	23 23 31
23 27 00	J2219+2613	17 16 02	28.9	83.8	-5.1		-41.8	-16	16108	No stop
23 28 30	=2217+259	17 17 32	29.1	84.0	-5.1		-41.8	74	16119	23 27 01
23 28 30	SDSSJ2222+27	17 17 32	29.9	82.4	-5.1		-42.3	-16	16119	No stop
23 32 00	---	17 21 03	30.4	83.1	-5.0		-42.4	194	16146	23 28 31
23 32 30	J2219+2613	17 21 33	29.7	84.8	-5.0		-41.9	13	16146	23 32 30
23 34 00	=2217+259	17 23 03	29.9	85.1	-5.0		-41.9	90	16158	23 32 31
23 34 00	SDSSJ2222+27	17 23 03	30.7	83.5	-5.0		-42.4	-16	16158	No stop
23 37 30	---	17 26 33	31.3	84.1	-4.9		-42.5	194	16185	23 34 01
23 37 30	J2219+2613	17 26 33	30.5	85.8	-4.9		-41.9	-17	16185	No stop
23 39 00	=2217+259	17 28 04	30.7	86.1	-4.9		-41.9	73	16196	23 37 31
23 39 00	SDSSJ2222+27	17 28 04	31.5	84.4	-4.9		-42.5	-16	16196	No stop
23 42 30	---	17 31 34	32.0	85.1	-4.9		-42.6	194	16223	23 39 01
23 43 00	J2219+2613	17 32 04	31.3	86.8	-4.8		-42.0	13	16223	23 43 00
23 44 30	=2217+259	17 33 35	31.5	87.1	-4.8		-42.0	90	16235	23 43 01
23 44 30	SDSSJ2222+27	17 33 35	32.3	85.5	-4.8		-42.6	-16	16235	No stop
23 48 00	---	17 37 05	32.8	86.2	-4.8		-42.7	194	16262	23 44 31
23 48 00	J2219+2613	17 37 05	32.0	87.8	-4.7		-42.0	-17	16262	No stop
23 49 30	=2217+259	17 38 35	32.3	88.1	-4.7		-42.0	73	16274	23 48 01

Schedule for TORUN (Code Tr )

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Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 30 May 2021 Day 150 ---										
23 49 30	SDSSJ2222+27	17 38 35	33.1	86.4	-4.7		-42.7	-16	16274	No stop
23 53 00	---	17 42 06	33.6	87.1	-4.7		-42.7	194	16301	23 49 31
23 53 30	J2219+2613	17 42 36	32.9	88.9	-4.6		-42.1	13	16301	23 53 30
23 55 00	=2217+259	17 44 06	33.1	89.2	-4.6		-42.1	90	16312	23 53 31
23 55 00	SDSSJ2222+27	17 44 06	33.9	87.5	-4.7		-42.7	-17	16312	No stop
23 58 30	---	17 47 37	34.4	88.2	-4.6		-42.8	193	16339	23 55 01
23 58 30	J2219+2613	17 47 37	33.6	89.9	-4.6		-42.1	-17	16339	No stop
23 59 59	=2217+259	17 49 07	33.8	90.2	-4.5		-42.1	72	16351	23 58 31
--- Mon 31 May 2021 Day 151 ---										
00 00 00	SDSSJ2222+27	17 49 07	34.6	88.5	-4.6		-42.8	-17	16351	00 00 00
00 03 30	---	17 52 38	35.2	89.2	-4.5		-42.8	193	16378	00 00 01
00 04 00	J2219+2613	17 53 08	34.4	91.0	-4.5		-42.1	13	16378	00 04 00
00 05 30	=2217+259	17 54 38	34.7	91.3	-4.4		-42.1	90	16390	00 04 01
00 05 30	SDSSJ2222+27	17 54 38	35.5	89.6	-4.5		-42.8	-17	16390	No stop
00 09 00	---	17 58 09	36.0	90.3	-4.4		-42.8	193	16417	00 05 31
00 09 00	J2219+2613	17 58 09	35.2	92.0	-4.4		-42.0	-17	16417	No stop
00 10 30	=2217+259	17 59 39	35.4	92.3	-4.4		-42.0	73	16428	00 09 01
00 10 30	SDSSJ2222+27	17 59 39	36.2	90.6	-4.4		-42.8	-17	16428	No stop
00 14 00	---	18 03 09	36.7	91.3	-4.3		-42.8	193	16455	00 10 31
00 14 30	J2219+2613	18 03 40	36.0	93.2	-4.3		-42.0	13	16455	00 14 30
00 16 00	=2217+259	18 05 10	36.3	93.5	-4.3		-42.0	90	16467	00 14 31
00 16 00	SDSSJ2222+27	18 05 10	37.0	91.7	-4.3		-42.8	-17	16467	No stop
00 19 30	---	18 08 40	37.6	92.4	-4.2		-42.7	193	16494	00 16 01
00 19 30	J2219+2613	18 08 40	36.8	94.2	-4.2		-41.9	-17	16494	No stop
00 21 00	=2217+259	18 10 11	37.0	94.5	-4.2		-41.9	73	16506	00 19 31
00 26 00	3C454.3	18 15 11	24.9	96.0	-4.7		-38.5	239	16506	00 26 00
00 31 00	---	18 20 12	25.7	97.1	-4.6		-38.4	300	16544	00 26 01
00 36 00	J2219+2613	18 25 13	39.2	97.7	-3.9		-41.6	237	16544	00 36 00
00 41 00	=2217+259	18 30 14	40.0	98.8	-3.8		-41.5	300	16583	00 36 01

Schedule for TORUN (Code Tr ) Page 58

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 31 May 2021 Day 151 ---										
00 41 00	SDSSJ2222+27	18 30 14	40.8	97.0	-3.9		-42.4	-17	16583	No stop
00 44 30	---	18 33 44	41.3	97.7	-3.8		-42.3	193	16610	00 41 01
00 45 00	J2219+2613	18 34 15	40.6	99.7	-3.8		-41.3	13	16610	00 45 00
00 46 30	=2217+259	18 35 45	40.8	100.0	-3.8		-41.3	90	16622	00 45 01
00 46 30	SDSSJ2222+27	18 35 45	41.6	98.2	-3.8		-42.2	-17	16622	No stop
00 50 00	---	18 39 15	42.1	98.9	-3.7		-42.1	193	16649	00 46 31
00 50 00	J2219+2613	18 39 15	41.3	100.8	-3.7		-41.2	-17	16649	No stop
00 51 30	=2217+259	18 40 46	41.5	101.1	-3.7		-41.1	73	16660	00 50 01
00 51 30	SDSSJ2222+27	18 40 46	42.4	99.3	-3.7		-42.1	-17	16660	No stop
00 55 00	---	18 44 16	42.9	100.0	-3.6		-42.0	193	16687	00 51 31
00 55 30	J2219+2613	18 44 46	42.1	102.1	-3.6		-40.9	13	16687	00 55 30
00 57 00	=2217+259	18 46 17	42.4	102.4	-3.6		-40.9	90	16699	00 55 31
00 57 00	SDSSJ2222+27	18 46 17	43.2	100.5	-3.6		-41.9	-17	16699	No stop
01 00 30	---	18 49 47	43.7	101.3	-3.6		-41.8	193	16726	00 57 01
01 00 30	J2219+2613	18 49 47	42.9	103.2	-3.5		-40.7	-18	16726	No stop
01 02 00	=2217+259	18 51 17	43.1	103.6	-3.5		-40.6	72	16737	01 00 31
01 02 00	SDSSJ2222+27	18 51 17	43.9	101.6	-3.5		-41.7	-17	16737	No stop
01 05 30	---	18 54 48	44.4	102.4	-3.5		-41.6	193	16765	01 02 01
01 06 00	J2219+2613	18 55 18	43.7	104.5	-3.4		-40.4	12	16765	01 06 00
01 07 30	=2217+259	18 56 48	43.9	104.9	-3.4		-40.4	90	16776	01 06 01
01 07 30	SDSSJ2222+27	18 56 48	44.7	102.9	-3.4		-41.5	-17	16776	No stop
01 11 00	---	19 00 19	45.2	103.7	-3.4		-41.3	193	16803	01 07 31
01 11 00	J2219+2613	19 00 19	44.4	105.7	-3.3		-40.2	-18	16803	No stop
01 12 30	=2217+259	19 01 49	44.6	106.0	-3.3		-40.1	72	16815	01 11 01
01 12 30	SDSSJ2222+27	19 01 49	45.5	104.1	-3.4		-41.2	-17	16815	No stop
01 16 00	---	19 05 20	46.0	104.9	-3.3		-41.0	193	16842	01 12 31
01 16 30	J2219+2613	19 05 50	45.2	107.0	-3.2		-39.8	12	16842	01 16 30
01 18 00	=2217+259	19 07 20	45.4	107.4	-3.2		-39.7	90	16853	01 16 31
01 18 00	SDSSJ2222+27	19 07 20	46.3	105.4	-3.3		-40.9	-17	16853	No stop
01 21 30	---	19 10 51	46.8	106.3	-3.2		-40.7	193	16880	01 18 01

Schedule for TORUN (Code Tr ) Page 59

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Mon 31 May 2021 Day 151 ---										
01 21 30	J2219+2613	19 10 51	45.9	108.3	-3.2		-39.5	-18	16880	No stop
01 23 00	=2217+259	19 12 21	46.1	108.6	-3.1		-39.4	72	16892	01 21 31
01 23 00	SDSSJ2222+27	19 12 21	47.0	106.6	-3.2		-40.6	-18	16892	No stop
01 26 30	---	19 15 51	47.5	107.5	-3.1		-40.4	192	16919	01 23 01
01 27 00	J2219+2613	19 16 21	46.7	109.6	-3.1		-39.1	12	16919	01 27 00
01 28 30	=2217+259	19 17 52	46.9	110.0	-3.0		-39.0	90	16931	01 27 01
01 28 30	SDSSJ2222+27	19 17 52	47.8	108.0	-3.1		-40.2	-18	16931	No stop
01 32 00	---	19 21 22	48.3	108.9	-3.0		-40.0	192	16958	01 28 31
01 32 00	J2219+2613	19 21 22	47.4	110.9	-3.0		-38.7	-18	16958	No stop
01 33 30	=2217+259	19 22 53	47.6	111.3	-3.0		-38.6	72	16969	01 32 01
01 33 30	SDSSJ2222+27	19 22 53	48.5	109.3	-3.0		-39.9	-18	16969	No stop
01 37 00	---	19 26 23	49.0	110.2	-2.9		-39.6	192	16996	01 33 31
01 37 30	J2219+2613	19 26 53	48.2	112.4	-2.9		-38.3	12	16996	01 37 30
01 39 00	=2217+259	19 28 23	48.4	112.8	-2.9		-38.2	90	17008	01 37 31
01 39 00	SDSSJ2222+27	19 28 23	49.3	110.7	-2.9		-39.5	-18	17008	No stop
01 42 30	---	19 31 54	49.7	111.6	-2.9		-39.2	192	17035	01 39 01
01 42 30	J2219+2613	19 31 54	48.9	113.7	-2.8		-37.8	-18	17035	No stop
01 44 00	=2217+259	19 33 24	49.1	114.1	-2.8		-37.7	72	17047	01 42 31
01 44 00	SDSSJ2222+27	19 33 24	50.0	112.0	-2.8		-39.0	-18	17047	No stop
01 47 30	---	19 36 55	50.4	113.0	-2.8		-38.7	192	17074	01 44 01
01 48 00	J2219+2613	19 37 25	49.6	115.2	-2.7		-37.3	12	17074	01 48 00
01 49 30	=2217+259	19 38 55	49.8	115.6	-2.7		-37.2	90	17085	01 48 01
01 49 30	SDSSJ2222+27	19 38 55	50.7	113.5	-2.7		-38.5	-18	17085	No stop
01 53 00	---	19 42 26	51.2	114.5	-2.7		-38.2	192	17112	01 49 31
01 53 00	J2219+2613	19 42 26	50.3	116.6	-2.6		-36.8	-18	17112	No stop
01 54 30	=2217+259	19 43 56	50.5	117.0	-2.6		-36.6	72	17124	01 53 01
01 54 30	SDSSJ2222+27	19 43 56	51.4	114.9	-2.7		-38.0	-18	17124	No stop
01 58 00	---	19 47 27	51.9	115.9	-2.6		-37.7	192	17151	01 54 31
01 58 30	J2219+2613	19 47 57	51.0	118.2	-2.5		-36.2	12	17151	01 58 30
02 00 00	=2217+259	19 49 27	51.2	118.6	-2.5		-36.0	90	17163	01 58 31

Schedule for TORUN (Code Tr ) Page 60

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 31 May 2021 Day 151 ---										
02 00 00	SDSSJ2222+27	19 49 27	52.2	116.4	-2.6		-37.5	-18	17163	No stop
02 03 30	---	19 52 57	52.6	117.5	-2.5		-37.1	192	17190	02 00 01
02 03 30	J2219+2613	19 52 57	51.7	119.6	-2.5		-35.6	-18	17190	No stop
02 05 00	=2217+259	19 54 28	51.9	120.1	-2.4		-35.4	72	17201	02 03 31
02 05 00	SDSSJ2222+27	19 54 28	52.8	117.9	-2.5		-36.9	-18	17201	No stop
02 08 30	---	19 57 58	53.3	118.9	-2.4		-36.5	192	17228	02 05 01
02 09 00	J2219+2613	19 58 28	52.4	121.3	-2.4		-34.9	12	17228	02 09 00
02 10 30	=2217+259	19 59 59	52.6	121.7	-2.3		-34.7	90	17240	02 09 01
02 10 30	SDSSJ2222+27	19 59 59	53.5	119.5	-2.4		-36.2	-18	17240	No stop
02 14 00	---	20 03 29	54.0	120.6	-2.3		-35.8	192	17267	02 10 31
02 14 00	J2219+2613	20 03 29	53.0	122.8	-2.3		-34.3	-18	17267	No stop
02 15 30	=2217+259	20 04 59	53.2	123.2	-2.3		-34.1	72	17279	02 14 01
02 15 30	SDSSJ2222+27	20 04 59	54.2	121.1	-2.3		-35.6	-18	17279	No stop
02 19 00	---	20 08 30	54.6	122.1	-2.2		-35.1	192	17306	02 15 31
02 19 30	J2219+2613	20 09 00	53.7	124.5	-2.2		-33.5	12	17306	02 19 30
02 21 00	=2217+259	20 10 30	53.9	125.0	-2.2		-33.3	90	17317	02 19 31
02 21 00	SDSSJ2222+27	20 10 30	54.9	122.8	-2.2		-34.8	-18	17317	No stop
02 24 30	---	20 14 01	55.3	123.9	-2.2		-34.3	192	17344	02 21 01
02 24 30	J2219+2613	20 14 01	54.3	126.1	-2.1		-32.8	-19	17344	No stop
02 26 00	=2217+259	20 15 31	54.5	126.6	-2.1		-32.5	71	17356	02 24 31
02 26 00	SDSSJ2222+27	20 15 31	55.5	124.4	-2.1		-34.1	-18	17356	No stop
02 29 30	---	20 19 02	56.0	125.5	-2.1		-33.6	192	17383	02 26 01
02 30 00	J2219+2613	20 19 32	55.0	127.9	-2.0		-31.9	11	17383	02 30 00
02 31 30	=2217+259	20 21 02	55.2	128.4	-2.0		-31.7	90	17394	02 30 01
02 31 30	SDSSJ2222+27	20 21 02	56.2	126.2	-2.0		-33.2	-18	17394	No stop
02 35 00	---	20 24 33	56.6	127.4	-2.0		-32.7	192	17421	02 31 31
02 35 00	J2219+2613	20 24 33	55.6	129.6	-1.9		-31.1	-19	17421	No stop
02 36 30	=2217+259	20 26 03	55.8	130.1	-1.9		-30.8	71	17433	02 35 01
02 36 30	SDSSJ2222+27	20 26 03	56.8	127.9	-2.0		-32.4	-18	17433	No stop
02 40 00	---	20 29 33	57.2	129.1	-1.9		-31.8	192	17460	02 36 31

Schedule for TORUN (Code Tr ) Page 61

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 31 May 2021 Day 151 ---										
02 40 30	J2219+2613	20 30 04	56.2	131.5	-1.8		-30.1	11	17460	02 40 30
02 42 00	=2217+259	20 31 34	56.4	132.0	-1.8		-29.9	90	17472	02 40 31
02 42 00	SDSSJ2222+27	20 31 34	57.5	129.8	-1.9		-31.5	-18	17472	No stop
02 45 30	---	20 35 04	57.9	131.0	-1.8		-30.8	192	17499	02 42 01
02 45 30	J2219+2613	20 35 04	56.8	133.3	-1.8		-29.2	-19	17499	No stop
02 47 00	=2217+259	20 36 35	56.9	133.8	-1.7		-28.9	71	17510	02 45 31
02 47 00	SDSSJ2222+27	20 36 35	58.0	131.6	-1.8		-30.6	-18	17510	No stop
02 50 30	---	20 40 05	58.4	132.8	-1.7		-29.9	192	17537	02 47 01
02 51 00	J2219+2613	20 40 35	57.4	135.3	-1.7		-28.1	11	17537	02 51 00
02 52 30	=2217+259	20 42 06	57.5	135.8	-1.6		-27.8	90	17549	02 51 01
02 52 30	SDSSJ2222+27	20 42 06	58.6	133.6	-1.7		-29.5	-18	17549	No stop
02 56 00	---	20 45 36	59.0	134.9	-1.6		-28.8	192	17576	02 52 31
02 56 00	J2219+2613	20 45 36	57.9	137.1	-1.6		-27.1	-19	17576	No stop
02 57 30	=2217+259	20 47 06	58.0	137.7	-1.6		-26.8	71	17588	02 56 01
02 57 30	SDSSJ2222+27	20 47 06	59.2	135.4	-1.6		-28.5	-18	17588	No stop
03 01 00	---	20 50 37	59.5	136.8	-1.5		-27.7	192	17615	02 57 31
03 01 30	J2219+2613	20 51 07	58.4	139.2	-1.5		-26.0	11	17615	03 01 30
03 03 00	=2217+259	20 52 37	58.6	139.8	-1.5		-25.6	90	17626	03 01 31
03 03 00	SDSSJ2222+27	20 52 37	59.7	137.6	-1.5		-27.3	-18	17626	No stop
03 06 30	---	20 56 08	60.1	138.9	-1.4		-26.5	192	17653	03 03 01
03 06 30	J2219+2613	20 56 08	58.9	141.2	-1.4		-24.8	-19	17653	No stop
03 08 00	=2217+259	20 57 38	59.1	141.8	-1.4		-24.5	71	17665	03 06 31
03 13 00	3C454.3	21 02 39	47.1	138.4	-1.9		-24.5	240	17665	03 13 00
03 18 00	---	21 07 40	47.6	140.0	-1.8		-23.7	300	17704	03 13 01
03 23 00	J2219+2613	21 12 41	60.4	147.9	-1.1		-20.8	239	17704	03 23 00
03 28 00	=2217+259	21 17 41	60.8	150.1	-1.1		-19.5	300	17742	03 23 01
03 28 00	SDSSJ2222+27	21 17 41	62.0	147.9	-1.1		-21.1	-18	17742	No stop
03 31 30	---	21 21 12	62.3	149.5	-1.0		-20.2	192	17769	03 28 01
03 32 00	J2219+2613	21 21 42	61.0	151.8	-1.0		-18.4	12	17769	03 32 00
03 33 30	=2217+259	21 23 12	61.2	152.5	-1.0		-18.0	90	17781	03 32 01



Schedule for TORUN (Code Tr )

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Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 31 May 2021 Day 151 ---										
03 33 30	SDSSJ2222+27	21 23 12	62.4	150.4	-1.0		-19.6	-18	17781	No stop
03 37 00	---	21 26 43	62.7	152.0	-0.9		-18.6	192	17808	03 33 31
03 37 00	J2219+2613	21 26 43	61.4	154.0	-0.9		-17.1	-18	17808	No stop
03 38 30	=2217+259	21 28 13	61.5	154.7	-0.9		-16.6	72	17820	03 37 01
03 38 30	SDSSJ2222+27	21 28 13	62.8	152.7	-0.9		-18.2	-18	17820	No stop
03 42 00	---	21 31 44	63.0	154.3	-0.9		-17.1	192	17847	03 38 31
03 42 30	J2219+2613	21 32 14	61.7	156.5	-0.8		-15.5	12	17847	03 42 30
03 44 00	=2217+259	21 33 44	61.8	157.2	-0.8		-15.0	90	17858	03 42 31
03 44 00	SDSSJ2222+27	21 33 44	63.2	155.2	-0.8		-16.5	-18	17858	No stop
03 47 30	---	21 37 15	63.4	156.9	-0.8		-15.5	192	17885	03 44 01
03 47 30	J2219+2613	21 37 15	62.0	158.8	-0.7		-14.0	-18	17885	No stop
03 49 00	=2217+259	21 38 45	62.1	159.5	-0.7		-13.5	72	17897	03 47 31
03 49 00	SDSSJ2222+27	21 38 45	63.5	157.6	-0.7		-15.0	-19	17897	No stop
03 52 30	---	21 42 15	63.7	159.3	-0.7		-13.9	191	17924	03 49 01
03 53 00	J2219+2613	21 42 45	62.3	161.4	-0.6		-12.3	11	17924	03 53 00
03 54 30	=2217+259	21 44 16	62.4	162.1	-0.6		-11.9	90	17935	03 53 01
03 54 30	SDSSJ2222+27	21 44 16	63.8	160.3	-0.6		-13.2	-19	17935	No stop
03 58 00	---	21 47 46	63.9	162.0	-0.6		-12.1	191	17963	03 54 31
03 58 00	J2219+2613	21 47 46	62.5	163.8	-0.6		-10.8	-19	17963	No stop
03 59 30	=2217+259	21 49 17	62.6	164.5	-0.5		-10.3	71	17974	03 58 01
03 59 30	SDSSJ2222+27	21 49 17	64.0	162.7	-0.6		-11.6	-19	17974	No stop
04 03 00	---	21 52 47	64.2	164.5	-0.5		-10.5	191	18001	03 59 31
04 03 30	J2219+2613	21 53 17	62.7	166.4	-0.5		-9.0	11	18001	04 03 30
04 05 00	=2217+259	21 54 47	62.8	167.2	-0.4		-8.6	90	18013	04 03 31
04 05 00	SDSSJ2222+27	21 54 47	64.2	165.5	-0.5		-9.8	-19	18013	No stop
04 08 30	---	21 58 18	64.4	167.2	-0.4		-8.6	191	18040	04 05 01
04 08 30	J2219+2613	21 58 18	62.9	168.9	-0.4		-7.4	-19	18040	No stop
04 10 00	=2217+259	21 59 48	62.9	169.6	-0.4		-6.9	71	18051	04 08 31
04 10 00	SDSSJ2222+27	21 59 48	64.4	168.0	-0.4		-8.1	-19	18051	No stop
04 13 30	---	22 03 19	64.5	169.8	-0.3		-6.9	191	18078	04 10 01

Schedule for TORUN (Code Tr )

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Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 31 May 2021 Day 151 ---										
04 14 00	J2219+2613	22 03 49	63.0	171.6	-0.3		-5.6	11	18078	04 14 00
04 15 30	=2217+259	22 05 19	63.1	172.3	-0.3		-5.1	90	18090	04 14 01
04 15 30	SDSSJ2222+27	22 05 19	64.6	170.8	-0.3		-6.2	-19	18090	No stop
04 19 00	---	22 08 50	64.6	172.6	-0.2		-5.0	191	18117	04 15 31
04 19 00	J2219+2613	22 08 50	63.1	174.0	-0.2		-4.0	-19	18117	No stop
04 20 30	=2217+259	22 10 20	63.2	174.8	-0.2		-3.5	71	18129	04 19 01
04 20 30	SDSSJ2222+27	22 10 20	64.7	173.4	-0.2		-4.5	-19	18129	No stop
04 24 00	---	22 13 51	64.7	175.2	-0.2		-3.3	191	18156	04 20 31
04 24 30	J2219+2613	22 14 21	63.2	176.8	-0.1		-2.2	11	18156	04 24 30
04 26 00	=2217+259	22 15 51	63.2	177.5	-0.1		-1.7	90	18167	04 24 31
04 26 00	SDSSJ2222+27	22 15 51	64.7	176.2	-0.1		-2.6	-19	18167	No stop
04 29 30	---	22 19 21	64.8	178.1	-0.1		-1.3	191	18194	04 26 01
04 29 30	J2219+2613	22 19 21	63.2	179.3	-0.0		-0.5	-19	18194	No stop
04 31 00	=2217+259	22 20 52	63.2	180.0	0.0		0.0	71	18206	04 29 31
04 31 00	SDSSJ2222+27	22 20 52	64.8	178.8	-0.0		-0.8	-19	18206	No stop
04 34 30	---	22 24 22	64.8	180.6	0.0		0.4	191	18233	04 31 01
04 35 00	J2219+2613	22 24 52	63.2	182.0	0.1		1.4	11	18233	04 35 00
04 36 30	=2217+259	22 26 23	63.2	182.8	0.1		1.9	90	18245	04 35 01
04 36 30	SDSSJ2222+27	22 26 23	64.8	181.7	0.1		1.1	-19	18245	No stop
04 40 00	---	22 29 53	64.7	183.5	0.1		2.4	191	18272	04 36 31
04 40 00	J2219+2613	22 29 53	63.2	184.5	0.2		3.0	-19	18272	No stop
04 41 30	=2217+259	22 31 23	63.2	185.3	0.2		3.5	71	18283	04 40 01
04 41 30	SDSSJ2222+27	22 31 23	64.7	184.3	0.1		2.9	-19	18283	No stop
04 45 00	---	22 34 54	64.7	186.1	0.2		4.1	191	18310	04 41 31
04 45 30	J2219+2613	22 35 24	63.1	187.2	0.2		4.8	11	18310	04 45 30
04 47 00	=2217+259	22 36 54	63.1	188.0	0.3		5.3	90	18322	04 45 31
04 47 00	SDSSJ2222+27	22 36 54	64.6	187.1	0.2		4.8	-19	18322	No stop
04 50 30	---	22 40 25	64.6	188.9	0.3		6.1	191	18349	04 47 01
04 50 30	J2219+2613	22 40 25	63.0	189.7	0.3		6.5	-20	18349	No stop
04 52 00	=2217+259	22 41 55	62.9	190.4	0.4		7.0	70	18361	04 50 31

Schedule for TORUN (Code Tr ) Page 64

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 31 May 2021 Day 151 ---										
04 52 00	SDSSJ2222+27	22 41 55	64.5	189.7	0.3		6.6	-20	18361	No stop
04 55 30	---	22 45 26	64.4	191.5	0.4		7.8	190	18388	04 52 01
04 56 00	J2219+2613	22 45 56	62.8	192.4	0.4		8.3	10	18388	04 56 00
04 57 30	=2217+259	22 47 26	62.8	193.1	0.4		8.7	90	18399	04 56 01
04 57 30	SDSSJ2222+27	22 47 26	64.4	192.5	0.4		8.5	-20	18399	No stop
05 01 00	---	22 50 57	64.2	194.3	0.5		9.6	190	18426	04 57 31
05 01 00	J2219+2613	22 50 57	62.6	194.8	0.5		9.9	-20	18426	No stop
05 02 30	=2217+259	22 52 27	62.6	195.5	0.5		10.3	70	18438	05 01 01
05 02 30	SDSSJ2222+27	22 52 27	64.2	195.0	0.5		10.1	-20	18438	No stop
05 06 00	---	22 55 57	64.0	196.8	0.5		11.3	190	18465	05 02 31
05 06 30	J2219+2613	22 56 28	62.4	197.4	0.6		11.6	10	18465	05 06 30
05 08 00	=2217+259	22 57 58	62.3	198.2	0.6		12.1	90	18477	05 06 31
05 08 00	SDSSJ2222+27	22 57 58	64.0	197.8	0.6		12.0	-20	18477	No stop
05 11 30	---	23 01 28	63.8	199.5	0.6		13.1	190	18504	05 08 01
05 11 30	J2219+2613	23 01 28	62.2	199.8	0.7		13.1	-20	18504	No stop
05 13 00	=2217+259	23 02 59	62.1	200.5	0.7		13.6	70	18515	05 11 31
05 13 00	SDSSJ2222+27	23 02 59	63.7	200.2	0.7		13.6	-20	18515	No stop
05 16 30	---	23 06 29	63.5	201.9	0.7		14.7	190	18542	05 13 01
05 17 00	J2219+2613	23 06 59	61.9	202.4	0.8		14.8	10	18542	05 17 00
05 18 30	=2217+259	23 08 30	61.8	203.1	0.8		15.2	90	18554	05 17 01
05 18 30	SDSSJ2222+27	23 08 30	63.4	202.9	0.8		15.3	-20	18554	No stop
05 22 00	---	23 12 00	63.2	204.5	0.8		16.4	190	18581	05 18 31
05 22 00	J2219+2613	23 12 00	61.6	204.7	0.9		16.2	-20	18581	No stop
05 23 30	=2217+259	23 13 30	61.5	205.3	0.9		16.7	70	18592	05 22 01
05 23 30	SDSSJ2222+27	23 13 30	63.1	205.2	0.8		16.8	-20	18592	No stop
05 27 00	---	23 17 01	62.9	206.9	0.9		17.9	190	18620	05 23 31
05 27 30	J2219+2613	23 17 31	61.2	207.1	0.9		17.8	10	18620	05 27 30
05 29 00	=2217+259	23 19 01	61.1	207.8	1.0		18.2	90	18631	05 27 31
05 29 00	SDSSJ2222+27	23 19 01	62.7	207.8	0.9		18.5	-20	18631	No stop
05 32 30	---	23 22 32	62.5	209.4	1.0		19.5	190	18658	05 29 01

Schedule for TORUN (Code Tr ) Page 65

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop				Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA UP	ParA	Dwell	GBytes	SYNC
-----									
--- Mon 31 May 2021 Day 151 ---									
05 32 30	J2219+2613	23 22 32	60.9	209.3	1.0	19.2	-20	18658	No stop
05 34 00	=2217+259	23 24 02	60.7	210.0	1.1	19.6	70	18670	05 32 31
05 34 00	SDSSJ2222+27	23 24 02	62.4	210.0	1.0	19.9	-20	18670	No stop
05 37 30	---	23 27 33	62.1	211.6	1.1	20.9	190	18697	05 34 01
05 38 00	J2219+2613	23 28 03	60.4	211.7	1.1	20.6	10	18697	05 38 00
05 39 30	=2217+259	23 29 33	60.3	212.3	1.1	21.0	90	18708	05 38 01
05 39 30	SDSSJ2222+27	23 29 33	61.9	212.5	1.1	21.4	-20	18708	No stop
05 43 00	---	23 33 04	61.6	214.0	1.2	22.3	190	18735	05 39 31
05 43 00	J2219+2613	23 33 04	60.0	213.8	1.2	21.9	-20	18735	No stop
05 44 30	=2217+259	23 34 34	59.9	214.4	1.2	22.3	70	18747	05 43 01
05 44 30	SDSSJ2222+27	23 34 34	61.5	214.7	1.2	22.7	-20	18747	No stop
05 48 00	---	23 38 04	61.2	216.1	1.2	23.6	190	18774	05 44 31
05 48 30	J2219+2613	23 38 34	59.6	216.1	1.3	23.2	10	18774	05 48 30
05 50 00	=2217+259	23 40 05	59.4	216.7	1.3	23.6	90	18786	05 48 31
05 50 00	SDSSJ2222+27	23 40 05	61.0	217.0	1.3	24.1	-20	18786	No stop
05 53 30	---	23 43 35	60.7	218.4	1.3	25.0	190	18813	05 50 01
05 53 30	J2219+2613	23 43 35	59.1	218.1	1.4	24.4	-20	18813	No stop
05 55 00	=2217+259	23 45 05	59.0	218.7	1.4	24.8	70	18824	05 53 31
05 55 00	SDSSJ2222+27	23 45 05	60.6	219.0	1.4	25.3	-20	18824	No stop
05 58 30	---	23 48 36	60.2	220.5	1.4	26.2	190	18851	05 55 01
05 59 00	J2219+2613	23 49 06	58.6	220.2	1.5	25.7	10	18851	05 59 00
06 00 30	=2217+259	23 50 36	58.4	220.8	1.5	26.0	90	18863	05 59 01
06 00 30	SDSSJ2222+27	23 50 36	60.0	221.3	1.5	26.6	-20	18863	No stop
06 04 00	---	23 54 07	59.7	222.6	1.5	27.4	190	18890	06 00 31
06 04 00	J2219+2613	23 54 07	58.1	222.2	1.6	26.7	-20	18890	No stop
06 05 30	=2217+259	23 55 37	57.9	222.7	1.6	27.0	70	18902	06 04 01
06 05 30	SDSSJ2222+27	23 55 37	59.5	223.2	1.5	27.7	-19	18902	No stop
06 09 00	---	23 59 08	59.2	224.6	1.6	28.5	191	18929	06 05 31
06 09 30	J2219+2613	23 59 38	57.5	224.2	1.6	27.9	10	18929	06 09 30
06 11 00	=2217+259	00 01 08	57.4	224.8	1.7	28.2	90	18940	06 09 31

Schedule for TORUN (Code Tr ) Page 66

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Mon 31 May 2021 Day 151 ---										
06 11 00	SDSSJ2222+27	00 01 08	59.0	225.3	1.6		28.9	-19	18940	No stop
06 14 30	---	00 04 39	58.6	226.6	1.7		29.6	191	18967	06 11 01
06 14 30	J2219+2613	00 04 39	57.0	226.1	1.7		28.8	-20	18967	No stop
06 16 00	=2217+259	00 06 09	56.8	226.6	1.8		29.1	70	18979	06 14 31
06 16 00	SDSSJ2222+27	00 06 09	58.4	227.2	1.7		29.9	-19	18979	No stop
06 19 30	---	00 09 40	58.0	228.4	1.8		30.6	191	19006	06 16 01
06 20 00	J2219+2613	00 10 10	56.4	228.0	1.8		29.9	10	19006	06 20 00
06 21 30	=2217+259	00 11 40	56.2	228.5	1.8		30.1	90	19018	06 20 01
06 21 30	SDSSJ2222+27	00 11 40	57.8	229.2	1.8		30.9	-19	19018	No stop
06 25 00	---	00 15 10	57.4	230.4	1.9		31.6	191	19045	06 21 31
06 25 00	J2219+2613	00 15 10	55.8	229.8	1.9		30.8	-20	19045	No stop
06 26 30	=2217+259	00 16 41	55.6	230.3	1.9		31.0	70	19056	06 25 01
06 26 30	SDSSJ2222+27	00 16 41	57.2	230.9	1.9		31.8	-19	19056	No stop
06 30 00	---	00 20 11	56.8	232.1	2.0		32.4	191	19083	06 26 31
06 30 30	J2219+2613	00 20 41	55.2	231.6	2.0		31.7	10	19083	06 30 30
06 32 00	=2217+259	00 22 12	55.0	232.1	2.0		31.9	90	19095	06 30 31
06 32 00	SDSSJ2222+27	00 22 12	56.6	232.8	2.0		32.8	-19	19095	No stop
06 35 30	---	00 25 42	56.1	234.0	2.0		33.3	191	19122	06 32 01
06 35 30	J2219+2613	00 25 42	54.6	233.3	2.1		32.5	-20	19122	No stop
06 37 00	=2217+259	00 27 12	54.4	233.8	2.1		32.7	70	19134	06 35 31
06 37 00	SDSSJ2222+27	00 27 12	56.0	234.5	2.1		33.6	-19	19134	No stop
06 40 30	---	00 30 43	55.5	235.6	2.1		34.1	191	19161	06 37 01
06 41 00	J2219+2613	00 31 13	53.9	235.1	2.2		33.3	10	19161	06 41 00
06 42 30	=2217+259	00 32 43	53.7	235.5	2.2		33.5	90	19172	06 41 01
06 42 30	SDSSJ2222+27	00 32 43	55.3	236.3	2.2		34.4	-19	19172	No stop
06 46 00	---	00 36 14	54.8	237.4	2.2		34.9	191	19199	06 42 31
06 46 00	J2219+2613	00 36 14	53.3	236.6	2.3		34.0	-20	19199	No stop
06 47 30	=2217+259	00 37 44	53.1	237.1	2.3		34.2	70	19211	06 46 01
06 47 30	SDSSJ2222+27	00 37 44	54.6	237.9	2.2		35.1	-19	19211	No stop
06 51 00	---	00 41 15	54.2	238.9	2.3		35.6	191	19238	06 47 31

Schedule for TORUN (Code Tr )

Page 67

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop				Early	Disk	TPStart		
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Mon 31 May 2021 Day 151 ---										
06 51 30	J2219+2613	00 41 45	52.6	238.3	2.3		34.8	10	19238	06 51 30
06 53 00	=2217+259	00 43 15	52.4	238.8	2.4		35.0	90	19249	06 51 31
06 53 00	SDSSJ2222+27	00 43 15	53.9	239.6	2.3		35.8	-19	19249	No stop
06 56 30	---	00 46 46	53.5	240.6	2.4		36.3	191	19277	06 53 01
06 56 30	J2219+2613	00 46 46	51.9	239.8	2.4		35.4	-19	19277	No stop
06 58 00	=2217+259	00 48 16	51.7	240.3	2.5		35.6	71	19288	06 56 31
06 58 00	SDSSJ2222+27	00 48 16	53.3	241.1	2.4		36.5	-19	19288	No stop
07 01 30	---	00 51 46	52.8	242.1	2.5		36.9	191	19315	06 58 01
07 02 00	J2219+2613	00 52 17	51.2	241.4	2.5		36.0	11	19315	07 02 00
07 03 30	=2217+259	00 53 47	51.0	241.9	2.5		36.2	90	19327	07 02 01
07 03 30	SDSSJ2222+27	00 53 47	52.6	242.7	2.5		37.1	-19	19327	No stop
07 07 00	---	00 57 17	52.1	243.7	2.6		37.5	191	19354	07 03 31
07 07 00	J2219+2613	00 57 17	50.6	242.9	2.6		36.6	-19	19354	No stop
07 08 30	=2217+259	00 58 48	50.3	243.3	2.6		36.8	71	19365	07 07 01
07 08 30	SDSSJ2222+27	00 58 48	51.9	244.1	2.6		37.7	-19	19365	No stop
07 12 00	---	01 02 18	51.4	245.1	2.7		38.0	191	19392	07 08 31
07 12 30	J2219+2613	01 02 48	49.8	244.4	2.7		37.2	11	19392	07 12 30
07 14 00	=2217+259	01 04 18	49.6	244.8	2.7		37.3	90	19404	07 12 31
07 14 00	SDSSJ2222+27	01 04 18	51.1	245.7	2.7		38.2	-19	19404	No stop
07 17 30	---	01 07 49	50.7	246.6	2.7		38.6	191	19431	07 14 01
07 17 30	J2219+2613	01 07 49	49.1	245.8	2.8		37.7	-19	19431	No stop
07 19 00	=2217+259	01 09 19	48.9	246.2	2.8		37.8	71	19443	07 17 31
07 19 00	SDSSJ2222+27	01 09 19	50.4	247.0	2.8		38.7	-19	19443	No stop
07 22 30	---	01 12 50	50.0	248.0	2.8		39.0	191	19470	07 19 01
07 23 00	J2219+2613	01 13 20	48.4	247.3	2.9		38.2	11	19470	07 23 00
07 24 30	=2217+259	01 14 50	48.2	247.7	2.9		38.3	90	19481	07 23 01
07 24 30	SDSSJ2222+27	01 14 50	49.7	248.5	2.9		39.2	-19	19481	No stop
07 28 00	---	01 18 21	49.2	249.4	2.9		39.5	191	19508	07 24 31
07 28 00	J2219+2613	01 18 21	47.7	248.6	3.0		38.6	-19	19508	No stop
07 29 30	=2217+259	01 19 51	47.5	249.0	3.0		38.7	71	19520	07 28 01

Schedule for TORUN (Code Tr ) Page 68

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Mon 31 May 2021 Day 151 ---										
07 29 30	SDSSJ2222+27	01 19 51	49.0	249.8	2.9		39.6	-19	19520	No stop
07 33 00	---	01 23 22	48.5	250.7	3.0		39.9	191	19547	07 29 31
07 33 30	J2219+2613	01 23 52	46.9	250.0	3.1		39.0	11	19547	07 33 30
07 35 00	=2217+259	01 25 22	46.7	250.4	3.1		39.1	90	19559	07 33 31
07 35 00	SDSSJ2222+27	01 25 22	48.2	251.2	3.0		40.0	-19	19559	No stop
07 38 30	---	01 28 53	47.7	252.1	3.1		40.3	191	19586	07 35 01
07 38 30	J2219+2613	01 28 53	46.2	251.3	3.1		39.4	-19	19586	No stop
07 40 00	=2217+259	01 30 23	46.0	251.6	3.2		39.5	71	19597	07 38 31
07 45 00	3C454.3	01 35 24	41.7	235.9	2.7		31.2	251	19597	07 45 00
07 50 00	---	01 40 24	41.0	237.2	2.8		31.7	300	19636	07 45 01
07 55 00	J2219+2613	01 45 25	43.8	255.3	3.4		40.4	251	19636	07 55 00
08 00 00	=2217+259	01 50 26	43.1	256.5	3.5		40.6	300	19675	07 55 01
08 00 00	SDSSJ2222+27	01 50 26	44.6	257.3	3.5		41.5	-19	19675	No stop
08 03 30	---	01 53 57	44.1	258.1	3.5		41.7	191	19702	08 00 01
08 04 00	J2219+2613	01 54 27	42.5	257.4	3.6		40.8	11	19702	08 04 00
08 05 30	=2217+259	01 55 57	42.3	257.7	3.6		40.9	90	19713	08 04 01
08 05 30	SDSSJ2222+27	01 55 57	43.8	258.6	3.5		41.7	-19	19713	No stop
08 09 00	---	01 59 28	43.2	259.4	3.6		41.9	191	19740	08 05 31
08 09 00	J2219+2613	01 59 28	41.8	258.5	3.6		41.0	-19	19740	No stop
08 10 30	=2217+259	02 00 58	41.5	258.9	3.7		41.1	71	19752	08 09 01
08 10 30	SDSSJ2222+27	02 00 58	43.0	259.7	3.6		41.9	-19	19752	No stop
08 14 00	---	02 04 28	42.5	260.5	3.7		42.1	191	19779	08 10 31
08 14 30	J2219+2613	02 04 58	40.9	259.8	3.7		41.2	11	19779	08 14 30
08 16 00	=2217+259	02 06 29	40.7	260.1	3.8		41.3	90	19791	08 14 31
08 16 00	SDSSJ2222+27	02 06 29	42.2	261.0	3.7		42.1	-19	19791	No stop
08 19 30	---	02 09 59	41.7	261.7	3.8		42.2	191	19818	08 16 01
08 19 30	J2219+2613	02 09 59	40.2	260.9	3.8		41.4	-19	19818	No stop
08 21 00	=2217+259	02 11 29	40.0	261.2	3.8		41.5	71	19829	08 19 31
08 21 00	SDSSJ2222+27	02 11 29	41.5	262.1	3.8		42.3	-19	19829	No stop
08 24 30	---	02 15 00	40.9	262.8	3.9		42.4	191	19856	08 21 01

Schedule for TORUN (Code Tr ) Page 69

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 31 May 2021 Day 151 ---										
08 25 00	J2219+2613	02 15 30	39.4	262.1	3.9		41.6	11	19856	08 25 00
08 26 30	=2217+259	02 17 00	39.2	262.4	3.9		41.6	90	19868	08 25 01
08 26 30	SDSSJ2222+27	02 17 00	40.6	263.3	3.9		42.4	-19	19868	No stop
08 30 00	---	02 20 31	40.1	264.0	4.0		42.5	191	19895	08 26 31
08 30 00	J2219+2613	02 20 31	38.6	263.2	4.0		41.7	-19	19895	No stop
08 31 30	=2217+259	02 22 01	38.4	263.5	4.0		41.7	71	19906	08 30 01
08 31 30	SDSSJ2222+27	02 22 01	39.9	264.3	4.0		42.5	-19	19906	No stop
08 35 00	---	02 25 32	39.4	265.1	4.0		42.6	191	19934	08 31 31
08 35 30	J2219+2613	02 26 02	37.8	264.3	4.1		41.8	11	19934	08 35 30
08 37 00	=2217+259	02 27 32	37.6	264.7	4.1		41.8	90	19945	08 35 31
08 37 00	SDSSJ2222+27	02 27 32	39.1	265.5	4.1		42.6	-19	19945	No stop
08 40 30	---	02 31 03	38.5	266.2	4.1		42.7	191	19972	08 37 01
08 40 30	J2219+2613	02 31 03	37.1	265.4	4.2		41.9	-19	19972	No stop
08 42 00	=2217+259	02 32 33	36.8	265.7	4.2		41.9	71	19984	08 40 31
08 42 00	SDSSJ2222+27	02 32 33	38.3	266.5	4.2		42.7	-19	19984	No stop
08 45 30	---	02 36 04	37.8	267.3	4.2		42.7	191	20011	08 42 01
08 46 00	J2219+2613	02 36 34	36.2	266.5	4.3		42.0	11	20011	08 46 00
08 47 30	=2217+259	02 38 04	36.0	266.9	4.3		42.0	90	20022	08 46 01
08 47 30	SDSSJ2222+27	02 38 04	37.5	267.7	4.2		42.7	-19	20022	No stop
08 51 00	---	02 41 34	37.0	268.4	4.3		42.8	191	20049	08 47 31
08 51 00	J2219+2613	02 41 34	35.5	267.6	4.3		42.0	-19	20049	No stop
08 52 30	=2217+259	02 43 05	35.3	267.9	4.4		42.0	71	20061	08 51 01
08 52 30	SDSSJ2222+27	02 43 05	36.7	268.7	4.3		42.8	-19	20061	No stop
08 56 00	---	02 46 35	36.2	269.4	4.4		42.8	191	20088	08 52 31
08 56 30	J2219+2613	02 47 05	34.7	268.7	4.4		42.1	11	20088	08 56 30
08 58 00	=2217+259	02 48 36	34.4	269.0	4.5		42.1	90	20100	08 56 31
08 58 00	SDSSJ2222+27	02 48 36	35.9	269.8	4.4		42.8	-19	20100	No stop
09 01 30	---	02 52 06	35.4	270.5	4.5		42.8	191	20127	08 58 01
09 01 30	J2219+2613	02 52 06	33.9	269.7	4.5		42.1	-19	20127	No stop
09 03 00	=2217+259	02 53 36	33.7	270.0	4.5		42.1	71	20138	09 01 31



Schedule for TORUN (Code Tr ) Page 70

Resolving the faintest radio quasars detected by LOFAR

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 31 May 2021  Day 151 ---

09 03 00 SDSSJ2222+27 02 53 36 35.2 270.8 4.5      42.8  -19  20138  No stop
09 06 30 ---          02 57 07 34.6 271.5 4.6      42.8  191  20165  09 03 01

09 07 00 J2219+2613 02 57 37 33.1 270.8 4.6      42.1   11  20165  09 07 00
09 08 30 =2217+259 02 59 07 32.8 271.1 4.6      42.1   90  20177  09 07 01

09 08 30 SDSSJ2222+27 02 59 07 34.3 271.9 4.6      42.8  -19  20177  No stop
09 12 00 ---          03 02 38 33.8 272.6 4.7      42.7  191  20204  09 08 31

09 12 00 J2219+2613 03 02 38 32.3 271.8 4.7      42.0  -19  20204  No stop
09 13 30 =2217+259 03 04 08 32.1 272.1 4.7      42.0   71  20216  09 12 01

09 13 30 SDSSJ2222+27 03 04 08 33.6 272.9 4.7      42.7  -19  20216  No stop
09 17 00 ---          03 07 39 33.1 273.6 4.7      42.7  191  20243  09 13 31

09 17 30 J2219+2613 03 08 09 31.5 272.9 4.8      42.0   11  20243  09 17 30
09 19 00 =2217+259 03 09 39 31.3 273.2 4.8      42.0   90  20254  09 17 31

09 19 00 SDSSJ2222+27 03 09 39 32.8 273.9 4.8      42.7  -19  20254  No stop
09 22 30 ---          03 13 10 32.2 274.6 4.8      42.6  191  20281  09 19 01

09 22 30 J2219+2613 03 13 10 30.7 273.9 4.9      41.9  -19  20281  No stop
09 24 00 =2217+259 03 14 40 30.5 274.1 4.9      41.9   71  20293  09 22 31

09 24 00 SDSSJ2222+27 03 14 40 32.0 274.9 4.9      42.6  -19  20293  No stop
09 27 30 ---          03 18 10 31.5 275.6 4.9      42.5  191  20320  09 24 01

09 28 00 J2219+2613 03 18 40 29.9 274.9 5.0      41.9   11  20320  09 28 00
09 30 00 =2217+259 03 20 41 29.6 275.3 5.0      41.8  120  20335  09 28 01

```

## SETUP FILE INFORMATION:

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

==== Setup file: sess221.L1024

```

Setup group: 11      Station: TORUN      Total bit rate: 1024
Format: VDIF        Bits per sample: 2    Sample rate: 64.000
Number of channels: 8  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
Net SB=	L	L	U	U	L	L	U	U
IF SB =	L	L	L	L	L	L	L	L
Pol. =	RCP	LCP	RCP	LCP	RCP	LCP	RCP	LCP
BBC =	1	9	1	9	2	10	2	10
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: 8 Setup file default. Used with PCAL = off  
 LO sum= 1626.49 1626.49 1626.49 1626.49 1690.49 1690.49 1690.49 1690.49  
 BBC fr= 673.51 673.51 673.51 673.51 609.51 609.51 609.51 609.51  
 Bandwd= 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00  
 Matching frequency sets: 8

Track assignments are:

track1= 1, 2, 3, 4, 5, 6, 7, 8  
 barrel=roll\_off

#### POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* SDSSJ1004+41	10 01 31.906035	* 10 04 34.352000	10 05 50.859246	0.00
	41 27 16.26404	* 41 12 41.99000	41 06 43.44464	0.00
* SDSSJ2222+27	22 19 49.333259	* 22 22 08.468000	22 23 07.156019	0.00
	27 30 25.02664	* 27 45 34.97000	27 51 46.70095	0.00
0552+398	05 52 01.407168	* 05 55 30.805611	05 56 57.442194	0.00
J0555+3948	39 48 21.94581	* 39 48 49.16496	39 49 00.63851	0.00
* DA193	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc2016			
J0555+39	GSFC 2016a X/S astro solution, 415688 observations.			
* 4C39.25	09 23 55.319216	* 09 27 03.013937	09 28 21.471253	0.31
J0927+3902	39 15 23.56644	* 39 02 20.85185	38 56 59.55030	0.16
0923+392	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc2016			
J0927+39	GSFC 2016a X/S astro solution, 250526 observations.			
0945+408	09 45 50.078215	* 09 48 55.338147	09 50 12.913358	0.02
* J0948+4039	40 53 43.38100	* 40 39 44.58699	40 34 00.57010	0.02
J0948+40	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc2016			
	GSFC 2016a X/S astro solution, 1810 observations.			
2217+259	22 17 29.964521	* 22 19 49.741163	22 20 48.713202	0.14
* J2219+2613	25 58 22.28454	* 26 13 27.94610	26 19 38.32398	0.21
	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc2016			
	GSFC 2016a X/S astro solution, 108 observations.			
* 3C454.3	22 51 29.519739	* 22 53 57.747939	22 55 00.085026	0.65
J2253+1608	15 52 54.34808	* 16 08 53.56091	16 15 29.53987	0.73
2251+158	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc2016			
J2253+16	GSFC 2016a X/S astro solution, 41272 observations.			

**en007ctr**

E-EVN: EN007C  
PI: *Nimmo*

Address: JIVE

Observing mode: realtime e-vlbi  
Schedule for TORUN (Code Tr )  
e-EVN: en007c

Page 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
-----										
--- Mon 31 May 2021 Day 151 ---										
Next scan frequencies: 1626.49 1626.49 1626.49 1626.49 1690.49 1690.49 1690.49 1690.49										
Next BBC frequencies: 673.51 673.51 673.51 673.51 609.51 609.51 609.51 609.51										
Next scan bandwidths: 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00										
-----										
10 30 00	J0854+2006	04 20 51	28.6	94.3	-4.6		-39.6	0	0	10 30 00
10 35 00	=OJ287	04 25 51	29.3	95.4	-4.5		-39.5	300	39	10 30 01
10 45 00	J0358+5606	04 35 53	84.0	-55.7	0.6		117.0	290	39	10 45 00
10 46 00	=0354+559	04 36 53	83.9	-56.3	0.6		116.2	60	46	10 45 01
10 47 00	B0355+54	04 37 53	84.3	-74.2	0.6		98.3	9	46	10 47 00
10 50 00	---	04 40 54	83.9	-74.8	0.7		97.1	180	70	10 47 01
10 50 00	J0358+5606	04 40 54	83.4	-58.4	0.7		113.3	-47	70	No stop
10 52 00	=0354+559	04 42 54	83.1	-59.3	0.7		112.0	73	85	10 50 01
10 55 30	NR3	04 46 25	82.7	-9.3	0.2		168.8	92	85	10 55 30
11 00 30	---	04 51 26	82.5	-13.9	0.2		163.0	300	124	10 55 31
11 01 00	J0451+5935	04 51 56	83.5	1.3	-0.0		-178.4	-15	124	11 01 00
11 02 50	=0446+595	04 53 46	83.5	-0.7	0.0		179.1	95	138	11 01 01
11 03 40	NR3	04 54 36	82.4	-16.8	0.3		159.5	3	138	11 03 40
11 08 40	---	04 59 37	82.2	-21.0	0.4		154.2	300	176	11 03 41
11 09 10	J0451+5935	05 00 07	83.4	-7.7	0.1		170.8	-11	176	11 09 10
11 10 40	=0446+595	05 01 37	83.4	-9.3	0.1		168.9	79	188	11 09 11
11 11 30	NR3	05 02 27	82.0	-23.3	0.4		151.3	7	188	11 11 30
11 16 30	---	05 07 28	81.7	-27.1	0.5		146.5	300	227	11 11 31
11 17 00	J0451+5935	05 07 58	83.2	-16.0	0.2		160.9	-7	227	11 17 00
11 18 50	=0446+595	05 09 49	83.1	-17.8	0.3		158.7	103	241	11 17 01
11 19 40	NR3	05 10 39	81.5	-29.3	0.6		143.7	12	241	11 19 40
11 24 40	---	05 15 40	81.1	-32.5	0.6		139.4	300	280	11 19 41
11 25 10	J0451+5935	05 16 10	82.7	-23.7	0.4		151.5	-3	280	11 25 10
11 26 40	=0446+595	05 17 40	82.6	-25.0	0.4		149.9	87	291	11 25 11
11 27 30	NR3	05 18 30	80.8	-34.1	0.7		137.2	17	291	11 27 30
11 32 30	---	05 23 31	80.4	-36.9	0.8		133.4	300	330	11 27 31

Schedule for TORUN (Code Tr )  
e-EVN: en007c

Page 3

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 31 May 2021	Day 151					---				
11 33 00	J0451+5935	05 24 01	82.2	-30.1	0.5		143.5	1	330	11 33 00	
11 34 50	=0446+595	05 25 51	82.1	-31.4	0.5		141.8	110	344	11 33 01	
11 35 40	NR3	05 26 41	80.1	-38.4	0.8		131.2	21	344	11 35 40	
11 40 40	---	05 31 42	79.6	-40.7	0.9		127.9	300	383	11 35 41	
11 41 10	J0451+5935	05 32 12	81.5	-35.7	0.7		136.2	5	383	11 41 10	
11 42 40	=0446+595	05 33 43	81.4	-36.6	0.7		135.0	90	394	11 41 11	
11 43 30	NR3	05 34 33	79.3	-41.8	1.0		126.1	25	394	11 43 30	
11 48 30	---	05 39 34	78.8	-43.7	1.0		123.2	300	433	11 43 31	
11 49 00	J0451+5935	05 40 04	80.8	-40.1	0.8		130.1	8	433	11 49 00	
11 50 50	=0446+595	05 41 54	80.6	-41.0	0.8		128.8	110	447	11 49 01	
11 51 40	NR3	05 42 44	78.5	-44.8	1.1		121.4	28	447	11 51 40	
11 56 40	---	05 47 45	78.0	-46.3	1.2		118.9	300	486	11 51 41	
11 57 10	J0451+5935	05 48 15	80.0	-43.9	0.9		124.6	9	486	11 57 10	
11 58 40	=0446+595	05 49 45	79.8	-44.5	0.9		123.7	90	497	11 57 11	
11 59 30	NR3	05 50 35	77.7	-47.1	1.2		117.5	28	497	11 59 30	
12 04 30	---	05 55 36	77.1	-48.3	1.3		115.1	300	536	11 59 31	
12 05 00	J0451+5935	05 56 06	79.1	-46.8	1.0		120.1	8	536	12 05 00	
12 06 50	=0446+595	05 57 57	78.9	-47.4	1.1		119.1	110	550	12 05 01	
12 07 40	NR3	05 58 47	76.7	-49.1	1.4		113.8	28	550	12 07 40	
12 12 40	---	06 03 48	76.2	-50.1	1.4		111.7	300	589	12 07 41	
12 13 10	J0451+5935	06 04 18	78.2	-49.3	1.2		115.9	8	589	12 13 10	
12 14 40	=0446+595	06 05 48	78.1	-49.7	1.2		115.1	90	600	12 13 11	
12 15 30	NR3	06 06 38	75.8	-50.6	1.5		110.5	28	600	12 15 30	
12 20 30	---	06 11 39	75.3	-51.4	1.6		108.7	300	639	12 15 31	
12 20 50	J0451+5935	06 11 59	77.3	-51.1	1.3		112.4	-2	639	12 20 50	
12 22 20	=0446+595	06 13 29	77.2	-51.5	1.3		111.7	88	651	12 20 51	
12 22 20	J0449+6332	06 13 29	75.1	-37.4	1.4		125.0	-43	651	No stop	
12 25 20	=0444+634	06 16 30	74.8	-38.1	1.4		123.6	137	674	12 22 21	
12 25 20	J0451+5935	06 16 30	76.8	-52.1	1.4		110.5	-43	674	No stop	
12 27 10	=0446+595	06 18 20	76.6	-52.4	1.4		109.8	67	688	12 25 21	
12 29 10	J0929+8612	06 20 20	55.6	5.2	-3.2		-127.2	-10	688	12 29 10	
12 30 40	=0916+864	06 21 50	55.6	5.1	-3.2		-127.6	80	699	12 29 11	

Schedule for TORUN (Code Tr )  
e-EVN: en007c

Page 4

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 31 May 2021 Day 151 ---										
12 31 20	NR1	06 22 31	56.2	1.5	-1.0		-163.5	18	699	12 31 20
12 36 20	---	06 27 31	56.2	1.4	-0.9		-164.9	300	738	12 31 21
12 36 40	J0929+8612	06 27 51	55.7	5.0	-3.1		-129.2	-2	738	12 36 40
12 38 30	=0916+864	06 29 42	55.7	5.0	-3.1		-129.6	108	752	12 36 41
12 39 10	NR1	06 30 22	56.2	1.3	-0.9		-165.6	18	752	12 39 10
12 44 10	---	06 35 23	56.3	1.2	-0.8		-167.0	300	791	12 39 11
12 44 30	J0929+8612	06 35 43	55.8	4.9	-3.0		-131.2	-2	791	12 44 30
12 46 00	=0916+864	06 37 13	55.8	4.8	-3.0		-131.6	88	803	12 44 31
12 46 40	NR1	06 37 53	56.3	1.2	-0.8		-167.7	18	803	12 46 40
12 51 40	---	06 42 54	56.3	1.0	-0.7		-169.0	300	841	12 46 41
12 52 00	J0929+8612	06 43 14	55.9	4.7	-2.9		-133.2	-2	841	12 52 00
12 53 50	=0916+864	06 45 04	55.9	4.7	-2.8		-133.7	108	855	12 52 01
12 54 30	NR1	06 45 44	56.3	1.0	-0.6		-169.8	18	855	12 54 30
12 59 30	---	06 50 45	56.3	0.8	-0.5		-171.1	300	894	12 54 31
12 59 50	J0929+8612	06 51 05	55.9	4.5	-2.7		-135.3	-2	894	12 59 50
13 01 20	=0916+864	06 52 36	56.0	4.5	-2.7		-135.7	88	906	12 59 51
13 02 00	NR1	06 53 16	56.3	0.8	-0.5		-171.8	18	906	13 02 00
13 07 00	---	06 58 16	56.3	0.6	-0.4		-173.2	300	944	13 02 01
13 07 20	J0929+8612	06 58 37	56.0	4.4	-2.6		-137.3	-2	944	13 07 20
13 09 10	=0916+864	07 00 27	56.1	4.3	-2.6		-137.8	108	958	13 07 21
13 09 50	NR1	07 01 07	56.3	0.6	-0.4		-174.0	18	958	13 09 50
13 14 50	---	07 06 08	56.3	0.4	-0.3		-175.3	300	997	13 09 51
13 15 10	J0929+8612	07 06 28	56.1	4.2	-2.5		-139.5	-2	997	13 15 10
13 16 40	=0916+864	07 07 58	56.1	4.2	-2.4		-139.9	88	1009	13 15 11
13 17 20	NR1	07 08 38	56.3	0.4	-0.2		-176.0	18	1009	13 17 20
13 22 20	---	07 13 39	56.3	0.2	-0.2		-177.3	300	1047	13 17 21
13 22 40	J0929+8612	07 13 59	56.2	4.0	-2.3		-141.5	-2	1047	13 22 40
13 24 30	=0916+864	07 15 49	56.2	4.0	-2.3		-142.0	108	1061	13 22 41
13 25 10	NR1	07 16 29	56.3	0.2	-0.1		-178.1	18	1061	13 25 10
13 30 10	---	07 21 30	56.3	0.0	-0.0		-179.5	300	1100	13 25 11

Schedule for TORUN (Code Tr )  
e-EVN: en007c

Page 5

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 31 May 2021 Day 151 ---										
13 30 30	J0929+8612	07 21 50	56.3	3.8	-2.2		-143.6	-2	1100	13 30 30
13 32 00	=0916+864	07 23 21	56.3	3.8	-2.2		-144.0	88	1112	13 30 31
13 32 40	NR1	07 24 01	56.3	-0.0	0.0		179.8	18	1112	13 32 40
13 37 40	---	07 29 02	56.3	-0.1	0.1		178.5	300	1150	13 32 41
13 38 10	J0929+8612	07 29 32	56.4	3.6	-2.1		-145.7	8	1150	13 38 10
13 39 40	=0916+864	07 31 02	56.4	3.6	-2.1		-146.1	90	1162	13 38 11
13 39 40	J0702+8549	07 31 02	57.3	-0.7	0.4		174.0	-24	1162	No stop
13 42 40	=0645+858	07 34 02	57.3	-0.8	0.4		173.2	156	1185	13 39 41
13 42 40	J0929+8612	07 34 02	56.4	3.5	-2.0		-146.9	-24	1185	No stop
13 44 30	=0916+864	07 35 53	56.4	3.5	-2.0		-147.4	86	1199	13 42 41
13 46 30	J1048+7143	07 37 53	62.3	30.3	-3.2		-106.1	51	1199	13 46 30
13 48 00	=1044+719	07 39 23	62.4	30.2	-3.2		-106.5	90	1211	13 46 31
13 48 50	R4	07 40 13	62.8	25.4	-2.9		-114.4	25	1211	13 48 50
13 53 50	---	07 45 14	63.1	25.0	-2.8		-115.9	300	1250	13 48 51
13 54 10	J1048+7143	07 45 34	62.9	29.9	-3.1		-108.3	-5	1250	13 54 10
13 56 00	=1044+719	07 47 25	63.0	29.8	-3.0		-108.8	105	1264	13 54 11
13 56 50	R4	07 48 15	63.3	24.8	-2.8		-116.8	25	1264	13 56 50
14 02 46	---	07 54 12	63.7	24.4	-2.7		-118.6	356	1310	13 56 51
14 03 26	J1048+7143	07 54 52	63.6	29.4	-2.9		-111.0	15	1310	14 03 26
14 04 56	=1044+719	07 56 22	63.7	29.3	-2.9		-111.4	90	1321	14 03 27
14 05 46	R4	07 57 12	63.9	24.2	-2.6		-119.6	25	1321	14 05 46
14 11 06	---	08 02 33	64.2	23.7	-2.6		-121.2	320	1362	14 05 47
14 11 26	J1048+7143	08 02 53	64.2	28.8	-2.8		-113.4	-5	1362	14 11 26
14 13 16	=1044+719	08 04 43	64.3	28.7	-2.8		-113.9	105	1377	14 11 27
14 14 06	R4	08 05 33	64.4	23.5	-2.5		-122.2	25	1377	14 14 06
14 20 02	---	08 11 30	64.7	22.9	-2.4		-124.1	356	1422	14 14 07
14 20 42	J1048+7143	08 12 11	64.8	28.1	-2.6		-116.2	15	1422	14 20 42
14 22 12	=1044+719	08 13 41	64.9	28.0	-2.6		-116.7	90	1434	14 20 43
14 23 02	R4	08 14 31	64.9	22.7	-2.4		-125.1	24	1434	14 23 02
14 28 22	---	08 19 52	65.2	22.1	-2.3		-126.8	320	1475	14 23 03

Schedule for TORUN (Code Tr )

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e-EVN: en007c

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 31 May 2021 Day 151 ---										
14 28 42	J1048+7143	08 20 12	65.4	27.4	-2.5		-118.7	-6	1475	14 28 42
14 30 32	=1044+719	08 22 02	65.5	27.2	-2.5		-119.3	104	1489	14 28 43
14 31 22	R4	08 22 52	65.4	21.8	-2.2		-127.8	24	1489	14 31 22
14 37 18	---	08 28 49	65.7	21.2	-2.1		-129.8	356	1535	14 31 23
14 37 58	J1048+7143	08 29 29	66.0	26.5	-2.3		-121.8	14	1535	14 37 58
14 39 28	=1044+719	08 31 00	66.1	26.4	-2.3		-122.3	90	1547	14 37 59
14 40 18	R4	08 31 50	65.8	20.8	-2.1		-130.9	24	1547	14 40 18
14 45 38	---	08 37 11	66.1	20.2	-2.0		-132.7	320	1588	14 40 19
14 45 58	J1048+7143	08 37 31	66.6	25.7	-2.2		-124.5	-6	1588	14 45 58
14 47 48	=1044+719	08 39 21	66.7	25.4	-2.2		-125.1	104	1602	14 45 59
14 48 38	R4	08 40 11	66.3	19.9	-1.9		-133.8	24	1602	14 48 38
14 54 34	---	08 46 08	66.6	19.1	-1.8		-135.9	356	1648	14 48 39
14 55 14	J1048+7143	08 46 48	67.1	24.6	-2.1		-127.7	14	1648	14 55 14
14 56 44	=1044+719	08 48 18	67.2	24.4	-2.0		-128.2	90	1660	14 55 15
14 57 34	R4	08 49 09	66.7	18.7	-1.8		-137.0	24	1660	14 57 34
15 02 54	---	08 54 30	67.0	18.0	-1.7		-138.9	320	1701	14 57 35
15 03 14	J1048+7143	08 54 50	67.6	23.5	-1.9		-130.5	-6	1701	15 03 14
15 05 04	=1044+719	08 56 40	67.7	23.3	-1.9		-131.2	104	1715	15 03 15
15 05 54	R4	08 57 30	67.1	17.6	-1.6		-140.0	24	1715	15 05 54
15 11 50	---	09 03 27	67.4	16.8	-1.5		-142.2	356	1761	15 05 55
15 12 30	J1048+7143	09 04 07	68.2	22.2	-1.8		-134.0	14	1761	15 12 30
15 14 00	=1044+719	09 05 37	68.3	22.0	-1.7		-134.5	90	1773	15 12 31
15 14 50	R4	09 06 27	67.5	16.3	-1.5		-143.3	24	1773	15 14 50
15 20 10	---	09 11 48	67.7	15.5	-1.4		-145.4	320	1814	15 14 51
15 20 40	J1048+7143	09 12 18	68.6	21.0	-1.6		-137.1	4	1814	15 20 40
15 22 10	=1044+719	09 13 49	68.7	20.7	-1.6		-137.6	90	1825	15 20 41
15 22 30	J1056+7011	09 14 09	69.3	25.1	-1.7		-131.7	-4	1825	15 22 30
15 25 30	=1053+704	09 17 09	69.5	24.6	-1.7		-132.9	176	1849	15 22 31
15 25 50	J1048+7143	09 17 29	68.9	20.1	-1.5		-139.1	-4	1849	15 25 50
15 27 40	=1044+719	09 19 20	69.0	19.8	-1.5		-139.8	106	1863	15 25 51

Schedule for TORUN (Code Tr )

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e-EVN: en007c

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 31 May 2021 Day 151 ---										
15 29 00	J1240+6958	09 20 40	62.0	34.3	-3.3		-100.5	36	1863	15 29 00
15 30 30	=1238+702	09 22 10	62.1	34.3	-3.3		-100.9	90	1874	15 29 01
15 31 20	R21	09 23 00	63.6	31.8	-3.0		-107.8	31	1874	15 31 20
15 36 20	---	09 28 01	64.0	31.5	-2.9		-109.3	300	1913	15 31 21
15 36 40	J1240+6958	09 28 21	62.7	34.0	-3.2		-102.6	1	1913	15 36 40
15 38 30	=1238+702	09 30 11	62.8	33.9	-3.2		-103.1	110	1927	15 36 41
15 39 00	R21	09 30 41	64.2	31.4	-2.9		-110.1	11	1927	15 39 00
15 44 00	---	09 35 42	64.6	31.0	-2.8		-111.5	300	1966	15 39 01
15 44 20	J1240+6958	09 36 02	63.3	33.7	-3.1		-104.7	0	1966	15 44 20
15 45 50	=1238+702	09 37 33	63.4	33.6	-3.1		-105.1	90	1977	15 44 21
15 46 20	R21	09 38 03	64.8	30.8	-2.7		-112.3	10	1977	15 46 20
15 51 20	---	09 43 03	65.2	30.5	-2.7		-113.8	300	2016	15 46 21
15 51 40	J1240+6958	09 43 24	63.9	33.3	-3.0		-106.7	0	2016	15 51 40
15 53 30	=1238+702	09 45 14	64.1	33.2	-2.9		-107.3	110	2030	15 51 41
15 54 00	R21	09 45 44	65.4	30.2	-2.6		-114.6	10	2030	15 54 00
15 59 00	---	09 50 45	65.8	29.8	-2.5		-116.2	300	2069	15 54 01
15 59 20	J1240+6958	09 51 05	64.5	32.8	-2.8		-109.0	-1	2069	15 59 20
16 00 50	=1238+702	09 52 35	64.7	32.7	-2.8		-109.4	89	2080	15 59 21
16 01 20	R21	09 53 05	65.9	29.6	-2.5		-116.9	9	2080	16 01 20
16 06 20	---	09 58 06	66.3	29.1	-2.4		-118.6	300	2119	16 01 21
16 06 40	J1240+6958	09 58 26	65.1	32.3	-2.7		-111.2	-1	2119	16 06 40
16 08 30	=1238+702	10 00 16	65.3	32.2	-2.7		-111.7	109	2133	16 06 41
16 09 00	R21	10 00 46	66.5	28.8	-2.4		-119.4	9	2133	16 09 00
16 14 00	---	10 05 47	66.9	28.3	-2.3		-121.1	300	2172	16 09 01
16 14 20	J1240+6958	10 06 07	65.8	31.7	-2.6		-113.5	-2	2172	16 14 20
16 15 50	=1238+702	10 07 37	65.9	31.6	-2.6		-114.0	88	2183	16 14 21
16 16 20	R21	10 08 08	67.0	28.1	-2.2		-121.9	8	2183	16 16 20
16 21 20	---	10 13 08	67.4	27.5	-2.1		-123.6	300	2222	16 16 21
16 21 40	J1240+6958	10 13 28	66.3	31.1	-2.5		-115.8	-2	2222	16 21 40
16 23 30	=1238+702	10 15 19	66.5	30.9	-2.4		-116.4	108	2236	16 21 41



Schedule for TORUN (Code Tr )

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e-EVN: en007c

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 31 May 2021 Day 151 ---										
16 24 00	R21	10 15 49	67.6	27.1	-2.1		-124.5	8	2236	16 24 00
16 29 00	---	10 20 50	67.9	26.5	-2.0		-126.3	300	2275	16 24 01
16 29 20	J1240+6958	10 21 10	66.9	30.3	-2.3		-118.3	-2	2275	16 29 20
16 30 50	=1238+702	10 22 40	67.0	30.1	-2.3		-118.8	88	2287	16 29 21
16 31 20	R21	10 23 10	68.1	26.2	-2.0		-127.2	7	2287	16 31 20
16 36 20	---	10 28 11	68.4	25.5	-1.9		-129.0	300	2325	16 31 21
16 36 40	J1240+6958	10 28 31	67.5	29.5	-2.2		-120.8	-3	2325	16 36 40
16 38 30	=1238+702	10 30 21	67.6	29.3	-2.2		-121.4	107	2339	16 36 41
16 39 00	R21	10 30 51	68.6	25.1	-1.9		-130.0	7	2339	16 39 00
16 44 00	---	10 35 52	68.9	24.4	-1.8		-131.8	300	2378	16 39 01
16 44 20	J1240+6958	10 36 12	68.0	28.6	-2.1		-123.5	-3	2378	16 44 20
16 45 50	=1238+702	10 37 42	68.1	28.4	-2.1		-124.0	87	2390	16 44 21
16 46 20	R21	10 38 12	69.0	24.0	-1.7		-132.7	6	2390	16 46 20
16 51 20	---	10 43 13	69.3	23.2	-1.6		-134.7	300	2428	16 46 21
16 51 50	J1240+6958	10 43 43	68.6	27.6	-2.0		-126.2	6	2428	16 51 50
16 53 20	=1238+702	10 45 14	68.7	27.4	-1.9		-126.7	90	2440	16 51 51
16 53 20	J1247+7046	10 45 14	67.7	26.5	-2.0		-126.0	-16	2440	No stop
16 56 20	=1245+710	10 48 14	67.9	26.1	-2.0		-127.1	164	2463	16 53 21
16 56 20	J1240+6958	10 48 14	68.9	26.9	-1.9		-127.8	-16	2463	No stop
16 58 10	=1238+702	10 50 04	69.0	26.7	-1.9		-128.5	94	2477	16 56 21
16 58 30	J1247+7046	10 50 24	68.1	25.8	-2.0		-127.8	4	2477	16 58 30
17 00 00	=1245+710	10 51 55	68.2	25.6	-1.9		-128.4	90	2489	16 58 31
17 00 50	R15	10 52 45	66.7	17.2	-1.7		-139.9	18	2489	17 00 50
17 05 50	---	10 57 46	66.9	16.5	-1.6		-141.7	300	2527	17 00 51
17 06 20	J1247+7046	10 58 16	68.6	24.7	-1.8		-130.7	-1	2527	17 06 20
17 08 10	=1245+710	11 00 06	68.7	24.4	-1.8		-131.4	109	2542	17 06 21
17 09 00	R15	11 00 56	67.0	16.1	-1.5		-142.9	18	2542	17 09 00
17 14 00	---	11 05 57	67.2	15.4	-1.5		-144.7	300	2580	17 09 01
17 14 40	J1247+7046	11 06 37	69.1	23.4	-1.7		-133.9	9	2580	17 14 40
17 16 10	=1245+710	11 08 07	69.2	23.2	-1.7		-134.5	90	2592	17 14 41

Schedule for TORUN (Code Tr )

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e-EVN: en007c

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 31 May 2021 Day 151 ---										
17 17 00	R15	11 08 58	67.4	14.9	-1.4		-145.9	19	2592	17 17 00
17 22 00	---	11 13 58	67.6	14.2	-1.3		-147.8	300	2630	17 17 01
17 22 30	J1247+7046	11 14 28	69.6	22.1	-1.6		-137.0	-1	2630	17 22 30
17 24 20	=1245+710	11 16 19	69.7	21.8	-1.5		-137.7	109	2645	17 22 31
17 25 10	R15	11 17 09	67.7	13.7	-1.3		-149.0	19	2645	17 25 10
17 30 10	---	11 22 10	67.8	12.9	-1.2		-150.9	300	2683	17 25 11
17 30 50	J1247+7046	11 22 50	70.0	20.6	-1.4		-140.4	10	2683	17 30 50
17 32 20	=1245+710	11 24 20	70.1	20.3	-1.4		-141.0	90	2695	17 30 51
17 33 10	R15	11 25 10	67.9	12.4	-1.1		-152.1	19	2695	17 33 10
17 38 10	---	11 30 11	68.1	11.6	-1.1		-154.0	300	2734	17 33 11
17 38 40	J1247+7046	11 30 41	70.4	19.1	-1.3		-143.7	0	2734	17 38 40
17 40 30	=1245+710	11 32 31	70.5	18.7	-1.3		-144.4	110	2748	17 38 41
17 41 20	R15	11 33 22	68.2	11.0	-1.0		-155.3	20	2748	17 41 20
17 46 20	---	11 38 22	68.3	10.2	-0.9		-157.3	300	2786	17 41 21
17 47 00	J1247+7046	11 39 02	70.8	17.4	-1.1		-147.2	11	2786	17 47 00
17 48 30	=1245+710	11 40 33	70.9	17.0	-1.1		-147.9	90	2798	17 47 01
17 49 20	R15	11 41 23	68.4	9.7	-0.9		-158.5	20	2798	17 49 20
17 54 20	---	11 46 24	68.5	8.8	-0.8		-160.5	300	2837	17 49 21
17 54 50	J1247+7046	11 46 54	71.1	15.6	-1.0		-150.7	1	2837	17 54 50
17 56 40	=1245+710	11 48 44	71.2	15.2	-1.0		-151.5	110	2851	17 54 51
17 57 30	R15	11 49 34	68.6	8.2	-0.7		-161.8	21	2851	17 57 30
18 02 30	---	11 54 35	68.7	7.3	-0.6		-163.9	300	2889	17 57 31
18 03 10	J1247+7046	11 55 15	71.5	13.7	-0.9		-154.5	12	2889	18 03 10
18 04 40	=1245+710	11 56 45	71.5	13.4	-0.9		-155.2	90	2901	18 03 11
18 05 30	R15	11 57 36	68.8	6.8	-0.6		-165.1	22	2901	18 05 30
18 10 30	---	12 02 36	68.8	5.8	-0.5		-167.2	300	2940	18 05 31
18 11 00	J1247+7046	12 03 06	71.7	11.8	-0.7		-158.1	3	2940	18 11 00
18 12 50	=1245+710	12 04 57	71.8	11.4	-0.7		-159.0	110	2954	18 11 01
18 13 40	R15	12 05 47	68.9	5.3	-0.5		-168.5	23	2954	18 13 40
18 18 40	---	12 10 48	68.9	4.3	-0.4		-170.6	300	2992	18 13 41

Schedule for TORUN (Code Tr )  
e-EVN: en007c

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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
-----										
--- Mon 31 May 2021 Day 151 ---										
18 19 20	J1247+7046	12 11 28	72.0	9.8	-0.6		-162.1	14	2992	18 19 20
18 20 50	=1245+710	12 12 58	72.0	9.4	-0.6		-162.8	90	3004	18 19 21
18 21 40	R15	12 13 48	69.0	3.7	-0.3		-171.8	24	3004	18 21 40
18 26 40	---	12 18 49	69.0	2.8	-0.2		-173.9	300	3043	18 21 41
18 27 10	J1247+7046	12 19 19	72.1	7.7	-0.5		-165.9	4	3043	18 27 10
18 28 40	=1245+710	12 20 49	72.2	7.3	-0.5		-166.6	90	3054	18 27 11
18 28 40	J1240+6958	12 20 49	73.1	6.1	-0.3		-169.3	-16	3054	No stop
18 31 40	=1238+702	12 23 50	73.1	5.2	-0.3		-170.9	164	3077	18 28 41
18 31 40	J1247+7046	12 23 50	72.2	6.5	-0.4		-168.1	-16	3077	No stop
18 33 30	=1245+710	12 25 40	72.2	6.1	-0.4		-169.0	94	3092	18 31 41
18 37 30	J1345+4452	12 29 41	75.0	115.9	-1.3		-49.6	6	3092	18 37 30
18 39 00	=1343+451	12 31 11	75.2	116.5	-1.3		-49.2	90	3103	18 37 31
18 40 00	R17	12 32 11	76.3	103.6	-1.3		-60.8	19	3103	18 40 00
18 45 00	---	12 37 12	77.0	105.3	-1.3		-60.0	300	3142	18 40 01
18 45 30	J1345+4452	12 37 42	76.0	119.6	-1.1		-47.3	-14	3142	18 45 30
18 47 20	=1343+451	12 39 32	76.3	120.6	-1.1		-46.8	96	3156	18 45 31
18 48 20	R17	12 40 33	77.5	106.6	-1.2		-59.3	17	3156	18 48 20
18 53 20	---	12 45 33	78.2	108.7	-1.1		-58.3	300	3195	18 48 21
18 53 50	J1345+4452	12 46 03	77.1	124.1	-1.0		-44.5	-16	3195	18 53 50
18 55 20	=1343+451	12 47 34	77.3	124.9	-1.0		-43.9	74	3206	18 53 51
18 56 20	R17	12 48 34	78.6	110.0	-1.1		-57.5	15	3206	18 56 20
19 01 20	---	12 53 35	79.3	112.4	-1.0		-56.1	300	3245	18 56 21
19 01 50	J1345+4452	12 54 05	78.1	128.9	-0.9		-41.2	-18	3245	19 01 50
19 03 40	=1343+451	12 55 55	78.3	130.1	-0.8		-40.3	92	3259	19 01 51
19 04 40	R17	12 56 55	79.8	114.2	-0.9		-55.0	13	3259	19 04 40
19 09 40	---	13 01 56	80.5	117.0	-0.8		-53.1	300	3298	19 04 41
19 10 10	J1345+4452	13 02 26	79.0	134.7	-0.7		-36.9	-21	3298	19 10 10
19 11 40	=1343+451	13 03 56	79.2	135.9	-0.7		-36.1	69	3309	19 10 11
19 12 40	R17	13 04 57	80.9	118.9	-0.8		-51.8	11	3309	19 12 40
19 17 40	---	13 09 57	81.5	122.4	-0.7		-49.3	300	3348	19 12 41

Schedule for TORUN (Code Tr )

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e-EVN: en007c

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 31 May 2021 Day 151 ---										
19 18 10	J1345+4452	13 10 27	79.8	141.1	-0.6		-32.1	-23	3348	19 18 10
19 20 00	=1343+451	13 12 18	80.0	142.7	-0.6		-30.8	87	3362	19 18 11
19 21 00	R17	13 13 18	81.9	125.0	-0.7		-47.4	9	3362	19 21 00
19 26 00	---	13 18 19	82.5	129.3	-0.6		-44.0	300	3401	19 21 01
19 26 30	J1345+4452	13 18 49	80.5	148.7	-0.5		-26.1	-24	3401	19 26 30
19 28 00	=1343+451	13 20 19	80.7	150.2	-0.4		-24.9	66	3412	19 26 31
19 29 00	R17	13 21 19	82.9	132.2	-0.5		-41.7	9	3412	19 29 00
19 34 00	---	13 26 20	83.4	137.6	-0.4		-37.2	300	3451	19 29 01
19 35 00	J1345+4452	13 27 20	81.1	157.5	-0.3		-18.9	6	3451	19 35 00
19 36 50	=1343+451	13 29 11	81.2	159.5	-0.3		-17.2	110	3465	19 35 01
19 38 10	R17	13 30 31	83.8	142.8	-0.4		-32.9	30	3465	19 38 10
19 43 10	---	13 35 32	84.2	149.7	-0.3		-26.9	300	3504	19 38 11
19 44 10	J1345+4452	13 36 32	81.5	168.0	-0.2		-10.2	9	3504	19 44 10
19 45 40	=1343+451	13 38 02	81.6	169.8	-0.1		-8.7	90	3515	19 44 11
19 47 00	R17	13 39 22	84.5	155.7	-0.2		-21.7	35	3515	19 47 00
19 52 00	---	13 44 23	84.7	164.2	-0.1		-14.1	300	3554	19 47 01
19 53 00	J1345+4452	13 45 23	81.7	178.7	-0.0		-1.1	17	3554	19 53 00
19 54 50	=1343+451	13 47 13	81.7	181.0	0.0		0.8	110	3568	19 53 01
19 56 10	R17	13 48 34	84.9	171.8	-0.1		-7.3	44	3568	19 56 10
20 01 10	---	13 53 35	84.9	181.3	0.0		1.1	300	3607	19 56 11
20 02 10	J1345+4452	13 54 35	81.6	189.9	0.1		8.4	29	3607	20 02 10
20 03 40	=1343+451	13 56 05	81.5	191.7	0.2		9.9	90	3619	20 02 11
20 05 00	R17	13 57 25	84.9	188.5	0.1		7.6	54	3619	20 05 00
20 10 00	---	14 02 26	84.7	197.5	0.2		15.7	300	3657	20 05 01
20 11 20	J1345+4452	14 03 46	81.2	200.5	0.3		17.3	53	3657	20 11 20
20 12 50	=1343+451	14 05 16	81.1	202.2	0.3		18.6	90	3669	20 11 21
20 13 20	J1335+4542	14 05 47	81.1	215.5	0.5		29.9	-12	3669	20 13 20
20 16 20	=1333+459	14 08 47	80.8	218.4	0.5		32.2	168	3692	20 13 21
20 16 50	J1345+4452	14 09 17	80.9	206.5	0.4		22.2	-9	3692	20 16 50
20 18 40	=1343+451	14 11 07	80.8	208.4	0.4		23.7	101	3706	20 16 51

Schedule for TORUN (Code Tr )

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e-EVN: en007c

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 31 May 2021 Day 151 ---										
20 23 40	J0854+2006	14 16 08	21.8	274.7	5.3		39.6	66	3706	20 23 40
20 28 40	=0J287	14 21 09	21.1	275.6	5.4		39.5	300	3745	20 23 41
20 33 40	J1419+5423	14 26 10	88.5	325.6	0.1		144.5	33	3745	20 33 40
20 35 10	=1418+546	14 27 40	88.4	319.2	0.1		137.8	90	3756	20 33 41
20 43 20	J1419+5423	14 35 51	87.4	299.3	0.3		116.3	469	3756	20 43 20
20 45 10	=1418+546	14 37 42	87.2	296.9	0.3		113.5	110	3771	20 43 21
20 47 20	R13	14 39 52	89.3	281.4	0.1		100.6	94	3771	20 47 20
20 52 20	---	14 44 53	88.6	276.1	0.2		94.2	300	3809	20 47 21
20 54 10	J1419+5423	14 46 43	85.9	289.8	0.4		104.5	66	3809	20 54 10
20 55 40	=1418+546	14 48 13	85.7	289.1	0.5		103.5	90	3821	20 54 11
20 57 50	R13	14 50 24	87.8	274.8	0.2		91.8	87	3821	20 57 50
21 02 50	---	14 55 25	87.0	274.4	0.3		90.5	300	3859	20 57 51
21 04 40	J1419+5423	14 57 15	84.4	286.1	0.6		98.7	71	3859	21 04 40
21 06 30	=1418+546	14 59 05	84.2	285.7	0.6		97.9	110	3874	21 04 41
21 08 10	R13	15 00 46	86.2	274.5	0.4		89.4	62	3874	21 08 10
21 13 10	---	15 05 46	85.5	274.6	0.5		88.6	300	3912	21 08 11
21 14 10	J1419+5423	15 06 46	83.1	284.6	0.8		95.2	25	3912	21 14 10
21 15 40	=1418+546	15 08 17	82.8	284.4	0.8		94.8	90	3924	21 14 11
21 16 50	R13	15 09 27	84.9	274.8	0.6		88.0	36	3924	21 16 50
21 21 50	---	15 14 28	84.2	275.2	0.6		87.3	300	3962	21 16 51
21 22 20	J1419+5423	15 14 58	81.9	283.9	0.9		92.9	-3	3962	21 22 20
21 24 10	=1418+546	15 16 48	81.6	283.8	0.9		92.5	107	3977	21 22 21
21 25 00	R13	15 17 38	83.7	275.4	0.7		86.9	18	3977	21 25 00
21 30 00	---	15 22 39	82.9	275.8	0.8		86.3	300	4015	21 25 01
21 30 30	J1419+5423	15 23 09	80.7	283.6	1.0		91.0	-1	4015	21 30 30
21 32 00	=1418+546	15 24 39	80.5	283.6	1.1		90.7	89	4027	21 30 31
21 32 40	R13	15 25 20	82.5	276.0	0.8		86.0	10	4027	21 32 40
21 37 40	---	15 30 20	81.8	276.4	0.9		85.4	300	4066	21 32 41
21 38 10	J1419+5423	15 30 50	79.5	283.6	1.2		89.4	1	4066	21 38 10
21 40 00	=1418+546	15 32 41	79.3	283.6	1.2		89.1	110	4080	21 38 11

Schedule for TORUN (Code Tr )

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e-EVN: en007c

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 31 May 2021 Day 151 ---										
21 40 50	R13	15 33 31	81.3	276.7	1.0		85.0	21	4080	21 40 50
21 45 50	---	15 38 32	80.6	277.1	1.1		84.4	300	4118	21 40 51
21 46 20	J1419+5423	15 39 02	78.4	283.8	1.3		87.9	2	4118	21 46 20
21 47 50	=1418+546	15 40 32	78.1	283.8	1.3		87.6	90	4130	21 46 21
21 48 30	R13	15 41 12	80.2	277.3	1.1		84.1	12	4130	21 48 30
21 53 30	---	15 46 13	79.4	277.8	1.2		83.6	300	4169	21 48 31
21 54 00	J1419+5423	15 46 43	77.2	284.0	1.4		86.6	3	4169	21 54 00
21 55 50	=1418+546	15 48 33	77.0	284.1	1.5		86.3	110	4183	21 54 01
21 56 40	R13	15 49 23	79.0	278.1	1.2		83.2	23	4183	21 56 40
22 01 40	---	15 54 24	78.2	278.5	1.3		82.7	300	4221	21 56 41
22 02 10	J1419+5423	15 54 54	76.0	284.4	1.6		85.3	3	4221	22 02 10
22 03 40	=1418+546	15 56 25	75.8	284.5	1.6		85.0	90	4233	22 02 11
22 04 20	R13	15 57 05	77.8	278.8	1.4		82.4	14	4233	22 04 20
22 09 20	---	16 02 06	77.1	279.3	1.4		81.9	300	4272	22 04 21
22 09 50	J1419+5423	16 02 36	74.9	284.8	1.7		84.1	4	4272	22 09 50
22 11 20	=1418+546	16 04 06	74.7	284.9	1.7		83.9	90	4283	22 09 51
22 11 40	J1429+5406	16 04 26	76.0	283.2	1.6		84.2	2	4283	22 11 40
22 14 40	=1427+543	16 07 26	75.6	283.4	1.6		83.7	180	4306	22 11 41
22 15 00	J1419+5423	16 07 46	74.2	285.1	1.8		83.4	1	4306	22 15 00
22 16 50	=1418+546	16 09 37	73.9	285.2	1.8		83.1	110	4321	22 15 01
22 20 50	J1448+0402	16 13 37	37.9	206.9	1.4		15.8	68	4321	22 20 50
22 22 20	=1446+042	16 15 08	37.8	207.3	1.4		16.0	90	4332	22 20 51
22 22 40	NR2	16 15 28	38.1	207.6	1.4		16.2	9	4332	22 22 40
22 27 40	---	16 20 29	37.7	209.2	1.5		17.1	300	4371	22 22 41
22 27 40	J1448+0402	16 20 29	37.4	208.9	1.5		16.9	-11	4371	No stop
22 29 30	=1446+042	16 22 19	37.3	209.5	1.5		17.2	99	4385	22 27 41
22 29 50	NR2	16 22 39	37.6	209.8	1.6		17.4	9	4385	22 29 50
22 34 50	---	16 27 40	37.2	211.3	1.6		18.2	300	4424	22 29 51
22 34 50	J1448+0402	16 27 40	36.9	211.1	1.6		18.1	-11	4424	No stop
22 36 20	=1446+042	16 29 10	36.8	211.5	1.7		18.3	79	4435	22 34 51

Schedule for TORUN (Code Tr )  
e-EVN: en007c

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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
--- Mon 31 May 2021 Day 151 ---										
22 36 40	NR2	16 29 30	37.0	211.9	1.7		18.5	9	4435	22 36 40
22 41 40	---	16 34 31	36.6	213.3	1.7		19.3	300	4474	22 36 41
22 41 40	J1448+0402	16 34 31	36.4	213.1	1.7		19.2	-11	4474	No stop
22 43 30	=1446+042	16 36 21	36.2	213.6	1.8		19.5	99	4488	22 41 41
22 43 50	NR2	16 36 41	36.4	214.0	1.8		19.7	9	4488	22 43 50
22 48 50	---	16 41 42	36.0	215.4	1.9		20.4	300	4527	22 43 51
22 48 50	J1448+0402	16 41 42	35.8	215.2	1.9		20.3	-11	4527	No stop
22 50 20	=1446+042	16 43 12	35.6	215.6	1.9		20.5	79	4538	22 48 51
22 50 40	NR2	16 43 32	35.9	216.0	1.9		20.7	9	4538	22 50 40
22 55 40	---	16 48 33	35.4	217.4	2.0		21.4	300	4577	22 50 41
22 55 40	J1448+0402	16 48 33	35.1	217.1	2.0		21.3	-11	4577	No stop
22 57 30	=1446+042	16 50 23	35.0	217.7	2.0		21.6	99	4591	22 55 41
22 57 50	NR2	16 50 44	35.2	218.0	2.0		21.8	9	4591	22 57 50
23 02 50	---	16 55 44	34.7	219.4	2.1		22.5	300	4630	22 57 51
23 02 50	J1448+0402	16 55 44	34.5	219.2	2.1		22.3	-11	4630	No stop
23 04 20	=1446+042	16 57 15	34.3	219.6	2.1		22.6	79	4641	23 02 51
23 04 40	NR2	16 57 35	34.6	219.9	2.1		22.7	9	4641	23 04 40
23 09 40	---	17 02 35	34.1	221.3	2.2		23.4	300	4680	23 04 41
23 09 40	J1448+0402	17 02 35	33.8	221.1	2.2		23.3	-11	4680	No stop
23 11 30	=1446+042	17 04 26	33.6	221.6	2.2		23.5	99	4694	23 09 41
23 11 50	NR2	17 04 46	33.9	221.9	2.3		23.7	9	4694	23 11 50
23 16 50	---	17 09 47	33.3	223.3	2.3		24.4	300	4733	23 11 51
23 16 50	J1448+0402	17 09 47	33.1	223.0	2.3		24.3	-11	4733	No stop
23 18 20	=1446+042	17 11 17	32.9	223.4	2.4		24.4	79	4744	23 16 51
23 18 40	NR2	17 11 37	33.2	223.8	2.4		24.6	9	4744	23 18 40
23 23 40	---	17 16 38	32.6	225.1	2.5		25.3	300	4783	23 18 41
23 24 20	J1448+0402	17 17 18	32.3	225.1	2.5		25.2	29	4783	23 24 20
23 25 50	=1446+042	17 18 48	32.1	225.5	2.5		25.4	90	4795	23 24 21
23 26 10	J1458+0416	17 19 08	33.4	222.9	2.3		24.2	1	4795	23 26 10
23 29 10	=1456+044	17 22 09	33.1	223.8	2.4		24.6	180	4818	23 26 11

Schedule for TORUN (Code Tr )

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e-EVN: en007c

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 31 May 2021 Day 151 ---										
23 29 30	J1448+0402	17 22 29	31.8	226.4	2.5		25.9	0	4818	23 29 30
23 31 20	=1446+042	17 24 19	31.6	226.9	2.6		26.1	110	4832	23 29 31
23 34 20	J1640+3946	17 27 20	74.5	215.1	0.8		26.7	5	4832	23 34 20
23 35 50	=NRA0512	17 28 50	74.4	216.1	0.8		27.4	90	4844	23 34 21
23 36 40	R25	17 29 40	75.4	221.8	0.9		32.2	24	4844	23 36 40
23 41 40	---	17 34 41	74.9	224.8	0.9		34.4	300	4882	23 36 41
23 42 10	J1640+3946	17 35 11	73.8	220.0	0.9		30.1	5	4882	23 42 10
23 44 00	=NRA0512	17 37 01	73.6	221.0	0.9		30.8	110	4896	23 42 11
23 44 50	R25	17 37 51	74.6	226.7	1.0		35.6	24	4896	23 44 50
23 49 50	---	17 42 52	74.0	229.5	1.1		37.5	300	4935	23 44 51
23 50 30	J1640+3946	17 43 32	72.9	224.7	1.0		33.3	15	4935	23 50 30
23 52 00	=NRA0512	17 45 02	72.8	225.5	1.1		33.9	90	4947	23 50 31
23 52 50	R25	17 45 53	73.7	231.1	1.1		38.5	24	4947	23 52 50
23 57 50	---	17 50 53	73.1	233.6	1.2		40.1	300	4985	23 52 51
--- Start: Mon 31 May 2021 Day 151 -- Stop: Tue 1 Jun 2021 Day 152 ---										
23 58 20	J1640+3946	17 51 23	72.1	228.9	1.2		36.0	5	4985	23 58 20
00 00 10	=NRA0512	17 53 14	71.9	229.8	1.2		36.6	110	4999	23 58 21
00 01 00	R25	17 54 04	72.7	235.2	1.3		41.1	25	4999	00 01 00
00 06 00	---	17 59 05	72.1	237.5	1.4		42.5	300	5038	00 01 01
00 06 40	J1640+3946	17 59 45	71.1	232.9	1.3		38.5	16	5038	00 06 40
00 08 10	=NRA0512	18 01 15	70.9	233.6	1.3		38.9	90	5050	00 06 41
00 09 00	R25	18 02 05	71.7	238.8	1.4		43.2	25	5050	00 09 00
00 14 00	---	18 07 06	71.0	240.9	1.5		44.4	300	5088	00 09 01
00 14 30	J1640+3946	18 07 36	70.1	236.4	1.4		40.6	6	5088	00 14 30
00 16 20	=NRA0512	18 09 26	69.9	237.2	1.5		41.0	110	5103	00 14 31
00 17 10	R25	18 10 17	70.6	242.2	1.5		45.1	25	5103	00 17 10
00 22 10	---	18 15 17	69.9	244.2	1.6		46.1	300	5141	00 17 11
00 22 50	J1640+3946	18 15 57	69.1	239.9	1.6		42.5	16	5141	00 22 50
00 24 20	=NRA0512	18 17 28	68.9	240.5	1.6		42.8	90	5153	00 22 51



Schedule for TORUN (Code Tr )  
e-EVN: en007c

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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
-----										
--- Tue 1 Jun 2021 Day 152 ---										
00 25 10	R25	18 18 18	69.5	245.3	1.7		46.7	26	5153	00 25 10
00 30 10	---	18 23 19	68.8	247.1	1.8		47.5	300	5191	00 25 11
00 30 40	J1640+3946	18 23 49	68.0	242.9	1.7		44.0	6	5191	00 30 40
00 32 30	=NRA0512	18 25 39	67.8	243.6	1.7		44.4	110	5206	00 30 41
00 33 20	R25	18 26 29	68.4	248.2	1.8		48.0	26	5206	00 33 20
00 38 20	---	18 31 30	67.7	249.9	1.9		48.7	300	5244	00 33 21
00 39 00	J1640+3946	18 32 10	66.9	245.9	1.8		45.4	17	5244	00 39 00
00 40 30	=NRA0512	18 33 40	66.7	246.4	1.9		45.7	90	5256	00 39 01
00 41 20	R25	18 34 31	67.3	250.8	1.9		49.1	26	5256	00 41 20
00 46 20	---	18 39 31	66.6	252.4	2.0		49.7	300	5294	00 41 21
00 46 50	J1640+3946	18 40 01	65.8	248.5	2.0		46.6	7	5294	00 46 50
00 48 40	=NRA0512	18 41 52	65.6	249.1	2.0		46.8	110	5309	00 46 51
00 49 30	R25	18 42 42	66.1	253.3	2.1		50.1	27	5309	00 49 30
00 54 30	---	18 47 43	65.4	254.8	2.2		50.6	300	5347	00 49 31
00 55 10	J1640+3946	18 48 23	64.6	251.1	2.1		47.6	17	5347	00 55 10
00 56 40	=NRA0512	18 49 53	64.4	251.5	2.1		47.8	90	5359	00 55 11
00 57 30	R25	18 50 43	64.9	255.7	2.2		50.9	27	5359	00 57 30
01 02 30	---	18 55 44	64.2	257.0	2.3		51.3	300	5398	00 57 31
01 03 00	J1640+3946	18 56 14	63.5	253.4	2.2		48.4	8	5398	01 03 00
01 04 30	=NRA0512	18 57 44	63.3	253.8	2.3		48.6	90	5409	01 03 01
01 04 30	J1646+4059	18 57 44	65.0	254.1	2.2		49.9	-20	5409	No stop
01 07 30	=1645+410	19 00 45	64.6	254.9	2.2		50.2	160	5432	01 04 31
01 07 30	J1640+3946	19 00 45	62.9	254.7	2.3		48.9	-20	5432	No stop
01 09 20	=NRA0512	19 02 35	62.6	255.2	2.4		49.0	90	5446	01 07 31
01 09 40	R19	19 02 55	62.8	254.8	2.3		48.9	9	5446	01 09 40
01 14 40	---	19 07 56	62.1	256.2	2.4		49.3	300	5485	01 09 41
01 14 40	J1640+3946	19 07 56	61.8	256.6	2.4		49.4	-11	5485	No stop
01 16 30	=NRA0512	19 09 46	61.6	257.1	2.5		49.6	99	5499	01 14 41
01 16 50	R19	19 10 06	61.8	256.7	2.5		49.5	9	5499	01 16 50
01 21 50	---	19 15 07	61.0	258.0	2.5		49.8	300	5538	01 16 51

Schedule for TORUN (Code Tr )

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e-EVN: en007c

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 1 Jun 2021 Day 152 ---										
01 22 10	J1640+3946	19 15 27	60.7	258.6	2.6		49.9	9	5538	01 22 10
01 23 40	=NRA0512	19 16 57	60.5	258.9	2.6		50.0	90	5550	01 22 11
01 24 00	R19	19 17 18	60.7	258.6	2.6		50.0	9	5550	01 24 00
01 29 00	---	19 22 18	60.0	259.8	2.7		50.2	300	5588	01 24 01
01 29 00	J1640+3946	19 22 18	59.7	260.3	2.7		50.3	-11	5588	No stop
01 30 50	=NRA0512	19 24 09	59.4	260.7	2.7		50.4	99	5602	01 29 01
01 31 10	R19	19 24 29	59.7	260.4	2.7		50.4	9	5602	01 31 10
01 36 10	---	19 29 30	58.9	261.6	2.8		50.6	300	5641	01 31 11
01 36 30	J1640+3946	19 29 50	58.6	262.1	2.8		50.7	9	5641	01 36 30
01 38 00	=NRA0512	19 31 20	58.4	262.4	2.8		50.7	90	5653	01 36 31
01 38 20	R19	19 31 40	58.6	262.1	2.8		50.7	9	5653	01 38 20
01 43 20	---	19 36 41	57.9	263.2	2.9		50.9	300	5691	01 38 21
01 43 20	J1640+3946	19 36 41	57.6	263.6	2.9		50.9	-11	5691	No stop
01 45 10	=NRA0512	19 38 31	57.3	264.0	3.0		51.0	99	5705	01 43 21
01 45 30	R19	19 38 51	57.5	263.7	2.9		50.9	9	5705	01 45 30
01 50 30	---	19 43 52	56.8	264.9	3.0		51.1	300	5744	01 45 31
01 50 50	J1640+3946	19 44 12	56.5	265.3	3.0		51.1	9	5744	01 50 50
01 52 20	=NRA0512	19 45 42	56.2	265.6	3.1		51.1	90	5756	01 50 51
01 52 40	R19	19 46 02	56.5	265.3	3.1		51.1	9	5756	01 52 40
01 57 40	---	19 51 03	55.7	266.4	3.1		51.2	300	5794	01 52 41
01 57 40	J1640+3946	19 51 03	55.4	266.8	3.2		51.2	-11	5794	No stop
01 59 30	=NRA0512	19 52 53	55.2	267.2	3.2		51.3	99	5808	01 57 41
01 59 50	R19	19 53 13	55.4	266.9	3.2		51.3	9	5808	01 59 50
02 04 50	---	19 58 14	54.6	267.9	3.3		51.3	300	5847	01 59 51
02 05 10	J1640+3946	19 58 34	54.3	268.3	3.3		51.3	9	5847	02 05 10
02 06 40	=NRA0512	20 00 05	54.1	268.7	3.3		51.3	90	5859	02 05 11
02 07 00	R19	20 00 25	54.3	268.4	3.3		51.3	9	5859	02 07 00
02 12 00	---	20 05 25	53.6	269.4	3.4		51.4	300	5897	02 07 01
02 12 00	J1640+3946	20 05 25	53.3	269.7	3.4		51.3	-11	5897	No stop
02 13 50	=NRA0512	20 07 16	53.0	270.1	3.4		51.3	99	5912	02 12 01

Schedule for TORUN (Code Tr )

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 1 Jun 2021 Day 152 ---										
02 14 10	R19	20 07 36	53.2	269.8	3.4		51.4	9	5912	02 14 10
02 19 10	---	20 12 37	52.5	270.8	3.5		51.3	300	5950	02 14 11
02 19 30	J1640+3946	20 12 57	52.1	271.2	3.5		51.3	9	5950	02 19 30
02 21 00	=NRA0512	20 14 27	51.9	271.5	3.6		51.3	90	5962	02 19 31
02 21 20	R19	20 14 47	52.1	271.3	3.5		51.3	9	5962	02 21 20
02 26 20	---	20 19 48	51.4	272.2	3.6		51.3	300	6000	02 21 21
02 26 50	J1640+3946	20 20 18	51.0	272.7	3.7		51.3	19	6000	02 26 50
02 28 20	=NRA0512	20 21 48	50.8	272.9	3.7		51.2	90	6012	02 26 51
02 28 20	J1646+4059	20 21 48	52.5	273.3	3.6		52.5	-20	6012	No stop
02 31 20	=1645+410	20 24 49	52.1	273.8	3.6		52.5	160	6035	02 28 21
02 31 20	J1640+3946	20 24 49	50.4	273.5	3.7		51.2	-20	6035	No stop
02 33 10	=NRA0512	20 26 39	50.1	273.9	3.8		51.2	90	6049	02 31 21
02 34 30	J1808+4542	20 27 59	66.5	265.8	2.3		59.1	5	6049	02 34 30
02 36 00	=1806+456	20 29 29	66.3	266.2	2.3		59.1	90	6061	02 34 31
02 36 50	NR7	20 30 20	68.4	260.0	2.1		56.5	22	6061	02 36 50
02 41 50	---	20 35 20	67.6	261.3	2.1		56.8	300	6100	02 36 51
02 41 50	J1808+4542	20 35 20	65.4	267.4	2.4		59.2	-27	6100	No stop
02 43 40	=1806+456	20 37 11	65.1	267.8	2.5		59.2	83	6114	02 41 51
02 44 20	NR7	20 37 51	67.3	262.0	2.2		57.0	13	6114	02 44 20
02 49 20	---	20 42 52	66.5	263.2	2.3		57.2	300	6152	02 44 21
02 50 00	J1808+4542	20 43 32	64.1	269.2	2.6		59.3	13	6152	02 50 00
02 51 30	=1806+456	20 45 02	63.9	269.5	2.6		59.3	90	6164	02 50 01
02 52 10	NR7	20 45 42	66.1	263.9	2.3		57.4	14	6164	02 52 10
02 57 10	---	20 50 43	65.3	265.0	2.4		57.5	300	6203	02 52 11
02 57 10	J1808+4542	20 50 43	63.1	270.6	2.7		59.3	-26	6203	No stop
02 59 00	=1806+456	20 52 33	62.8	271.0	2.7		59.3	84	6217	02 57 11
02 59 40	NR7	20 53 13	65.0	265.6	2.4		57.6	14	6217	02 59 40
03 04 40	---	20 58 14	64.2	266.7	2.5		57.7	300	6255	02 59 41
03 05 20	J1808+4542	20 58 54	61.8	272.2	2.8		59.2	14	6255	03 05 20
03 06 50	=1806+456	21 00 24	61.6	272.5	2.9		59.2	90	6267	03 05 21

Schedule for TORUN (Code Tr )  
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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
-----										
--- Tue 1 Jun 2021 Day 152 ---										
03 07 30	NR7	21 01 05	63.8	267.3	2.6		57.8	15	6267	03 07 30
03 12 30	---	21 06 05	63.0	268.4	2.6		57.8	300	6306	03 07 31
03 12 30	J1808+4542	21 06 05	60.8	273.5	3.0		59.1	-25	6306	No stop
03 14 20	=1806+456	21 07 56	60.5	273.9	3.0		59.1	85	6320	03 12 31
03 15 00	NR7	21 08 36	62.7	268.9	2.7		57.9	15	6320	03 15 00
03 20 00	---	21 13 37	61.9	269.9	2.8		57.9	300	6359	03 15 01
03 20 40	J1808+4542	21 14 17	59.5	275.0	3.1		58.9	15	6359	03 20 40
03 22 10	=1806+456	21 15 47	59.3	275.3	3.1		58.9	90	6370	03 20 41
03 22 50	NR7	21 16 27	61.5	270.5	2.8		57.9	15	6370	03 22 50
03 27 50	---	21 21 28	60.7	271.5	2.9		57.8	300	6409	03 22 51
03 27 50	J1808+4542	21 21 28	58.5	276.3	3.2		58.7	-25	6409	No stop
03 29 40	=1806+456	21 23 18	58.2	276.6	3.2		58.7	85	6423	03 27 51
03 30 20	NR7	21 23 58	60.4	272.0	2.9		57.8	16	6423	03 30 20
03 35 20	---	21 28 59	59.6	272.9	3.0		57.8	300	6462	03 30 21
03 36 00	J1808+4542	21 29 39	57.2	277.7	3.3		58.5	16	6462	03 36 00
03 37 30	=1806+456	21 31 09	57.0	277.9	3.4		58.4	90	6473	03 36 01
03 38 10	NR7	21 31 50	59.2	273.4	3.1		57.7	16	6473	03 38 10
03 43 10	---	21 36 50	58.4	274.3	3.2		57.6	300	6512	03 38 11
03 43 10	J1808+4542	21 36 50	56.2	278.9	3.5		58.2	-24	6512	No stop
03 45 00	=1806+456	21 38 41	55.9	279.2	3.5		58.1	86	6526	03 43 11
03 45 40	NR7	21 39 21	58.1	274.8	3.2		57.5	16	6526	03 45 40
03 50 40	---	21 44 22	57.3	275.7	3.3		57.4	300	6565	03 45 41
03 51 20	J1808+4542	21 45 02	55.0	280.2	3.6		57.8	16	6565	03 51 20
03 52 50	=1806+456	21 46 32	54.7	280.4	3.6		57.7	90	6576	03 51 21
03 53 30	NR7	21 47 12	56.9	276.2	3.3		57.3	16	6576	03 53 30
03 58 30	---	21 52 13	56.1	277.1	3.4		57.2	300	6615	03 53 31
03 59 00	J1808+4542	21 52 43	53.8	281.4	3.7		57.4	6	6615	03 59 00
04 00 30	=1806+456	21 54 13	53.6	281.7	3.8		57.4	90	6626	03 59 01
04 00 30	J1759+4627	21 54 13	52.7	284.1	3.9		57.7	-19	6626	No stop
04 03 30	---	21 57 14	52.3	284.5	3.9		57.5	161	6650	04 00 31

Schedule for TORUN (Code Tr )  
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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
-----										
--- Tue 1 Jun 2021 Day 152 ---										
04 03 30	J1808+4542	21 57 14	53.2	282.1	3.8		57.2	-19	6650	No stop
04 05 20	=1806+456	21 59 04	52.9	282.4	3.8		57.1	91	6664	04 03 31
04 07 20	J1930+1532	22 01 04	42.4	232.3	2.5		29.6	5	6664	04 07 20
04 08 20	=1928+154	22 02 05	42.3	232.6	2.5		29.7	60	6672	04 07 21
04 08 50	B1933+16	22 02 35	43.5	231.8	2.4		29.5	12	6672	04 08 50
04 11 50	---	22 05 35	43.1	232.7	2.5		29.8	180	6695	04 08 51
04 11 50	J1930+1532	22 05 35	41.9	233.6	2.6		30.1	-18	6695	No stop
04 13 50	=1928+154	22 07 35	41.7	234.1	2.6		30.3	102	6710	04 11 51
04 15 50	J2203+1725	22 09 36	54.4	182.1	0.1		1.3	1	6710	04 15 50
04 17 20	=2201+171	22 11 06	54.4	182.7	0.1		1.7	90	6722	04 15 51
04 17 50	R16	22 11 36	54.4	181.6	0.1		1.0	15	6722	04 17 50
04 22 50	---	22 16 37	54.3	183.6	0.1		2.3	300	6760	04 17 51
04 22 50	J2203+1725	22 16 37	54.4	185.0	0.2		3.1	-16	6760	No stop
04 24 40	=2201+171	22 18 27	54.3	185.7	0.2		3.6	94	6775	04 22 51
04 25 10	R16	22 18 57	54.3	184.6	0.2		2.9	15	6775	04 25 10
04 30 10	---	22 23 58	54.2	186.6	0.3		4.2	300	6813	04 25 11
04 30 50	J2203+1725	22 24 38	54.2	188.2	0.3		5.2	24	6813	04 30 50
04 32 20	=2201+171	22 26 08	54.2	188.9	0.4		5.6	90	6825	04 30 51
04 32 50	R16	22 26 39	54.2	187.7	0.3		4.8	15	6825	04 32 50
04 37 50	---	22 31 39	54.1	189.7	0.4		6.1	300	6863	04 32 51
04 37 50	J2203+1725	22 31 39	54.0	191.1	0.5		7.0	-16	6863	No stop
04 39 40	=2201+171	22 33 30	54.0	191.8	0.5		7.4	94	6878	04 37 51
04 40 10	R16	22 34 00	54.0	190.7	0.4		6.7	15	6878	04 40 10
04 45 10	---	22 39 01	53.9	192.7	0.5		7.9	300	6916	04 40 11
04 45 50	J2203+1725	22 39 41	53.8	194.3	0.6		8.9	24	6916	04 45 50
04 47 20	=2201+171	22 41 11	53.7	194.9	0.6		9.3	90	6928	04 45 51
04 47 50	R16	22 41 41	53.8	193.8	0.6		8.6	15	6928	04 47 50
04 52 50	---	22 46 42	53.6	195.7	0.6		9.8	300	6967	04 47 51
04 52 50	J2203+1725	22 46 42	53.5	197.1	0.7		10.7	-16	6967	No stop
04 54 40	=2201+171	22 48 32	53.4	197.8	0.7		11.1	94	6981	04 52 51

Schedule for TORUN (Code Tr )  
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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
-----										
--- Tue 1 Jun 2021 Day 152 ---										
04 55 10	R16	22 49 02	53.5	196.7	0.7		10.4	15	6981	04 55 10
05 00 10	---	22 54 03	53.3	198.6	0.8		11.6	300	7019	04 55 11
05 00 50	J2203+1725	22 54 43	53.1	200.2	0.8		12.6	24	7019	05 00 50
05 02 20	=2201+171	22 56 13	53.0	200.8	0.9		12.9	90	7031	05 00 51
05 02 50	R16	22 56 43	53.1	199.7	0.8		12.2	15	7031	05 02 50
05 07 50	---	23 01 44	52.9	201.6	0.9		13.4	300	7070	05 02 51
05 07 50	J2203+1725	23 01 44	52.7	202.9	1.0		14.2	-15	7070	No stop
05 09 40	=2201+171	23 03 35	52.6	203.6	1.0		14.6	95	7084	05 07 51
05 10 10	R16	23 04 05	52.7	202.5	0.9		13.9	15	7084	05 10 10
05 15 10	---	23 09 06	52.4	204.4	1.0		15.1	300	7122	05 10 11
05 15 50	J2203+1725	23 09 46	52.2	205.9	1.1		16.0	25	7122	05 15 50
05 17 20	=2201+171	23 11 16	52.1	206.5	1.1		16.3	90	7134	05 15 51
05 17 50	R16	23 11 46	52.3	205.4	1.1		15.7	15	7134	05 17 50
05 22 50	---	23 16 47	51.9	207.3	1.1		16.8	300	7173	05 17 51
05 22 50	J2203+1725	23 16 47	51.7	208.5	1.2		17.5	-15	7173	No stop
05 24 40	=2201+171	23 18 37	51.6	209.2	1.2		17.9	95	7187	05 22 51
05 25 10	R16	23 19 07	51.8	208.2	1.2		17.3	15	7187	05 25 10
05 30 10	---	23 24 08	51.4	210.0	1.3		18.3	300	7225	05 25 11
05 30 50	J2203+1725	23 24 48	51.1	211.5	1.3		19.2	25	7225	05 30 50
05 32 20	=2201+171	23 26 18	51.0	212.0	1.4		19.5	90	7237	05 30 51
05 32 50	R16	23 26 48	51.2	211.0	1.3		18.9	15	7237	05 32 50
05 37 50	---	23 31 49	50.8	212.7	1.4		19.9	300	7276	05 32 51
05 38 20	J2203+1725	23 32 19	50.5	214.1	1.5		20.7	15	7276	05 38 20
05 39 50	=2201+171	23 33 50	50.4	214.7	1.5		21.0	90	7287	05 38 21
05 39 50	J2219+1806	23 33 50	52.3	209.3	1.2		18.0	-25	7287	No stop
05 42 50	=2216+178	23 36 50	52.1	210.5	1.3		18.7	155	7311	05 39 51
05 42 50	J2203+1725	23 36 50	50.1	215.7	1.5		21.6	-26	7311	No stop
05 44 40	=2201+171	23 38 40	50.0	216.3	1.6		21.9	84	7325	05 42 51
05 46 20	J2322+4445	23 40 21	81.3	200.4	0.3		17.2	-31	7325	05 46 20
05 47 50	=2319+444	23 41 51	81.2	202.0	0.3		18.5	59	7336	05 46 21

Schedule for TORUN (Code Tr )

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e-EVN: en007c

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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	1 Jun 2021	Day 152		---					
05 49 20	NR6	23 43 21	82.5	188.2	0.1		7.0	45	7336	05 49 20
05 54 20	---	23 48 22	82.4	194.7	0.2		12.6	300	7375	05 49 21
05 54 20	J2322+4445	23 48 22	80.8	208.9	0.4		24.2	-45	7375	No stop
05 56 10	=2319+444	23 50 12	80.7	210.8	0.4		25.7	65	7389	05 54 21
05 56 50	NR6	23 50 52	82.3	197.9	0.2		15.3	-1	7389	05 56 50
06 01 50	---	23 55 53	82.0	204.0	0.3		20.5	299	7428	05 56 51
06 02 30	J2322+4445	23 56 33	80.1	216.7	0.6		30.5	0	7428	06 02 30
06 04 00	=2319+444	23 58 04	80.0	218.1	0.6		31.5	90	7439	06 02 31
06 04 40	NR6	23 58 44	81.8	207.3	0.4		23.2	3	7439	06 04 40
06 09 40	---	00 03 44	81.4	212.7	0.4		27.7	300	7478	06 04 41
06 09 40	J2322+4445	00 03 44	79.5	222.8	0.7		35.1	-36	7478	No stop
06 11 30	=2319+444	00 05 35	79.3	224.2	0.7		36.2	74	7492	06 09 41
06 12 10	NR6	00 06 15	81.2	215.3	0.5		29.8	7	7492	06 12 10
06 17 10	---	00 11 16	80.8	220.0	0.6		33.6	300	7531	06 12 11
06 17 50	J2322+4445	00 11 56	78.6	228.9	0.8		39.6	8	7531	06 17 50
06 19 20	=2319+444	00 13 26	78.4	229.9	0.8		40.4	90	7542	06 17 51
06 20 00	NR6	00 14 06	80.5	222.6	0.6		35.6	10	7542	06 20 00
06 25 00	---	00 19 07	80.0	226.7	0.7		38.7	300	7581	06 20 01
06 25 00	J2322+4445	00 19 07	77.7	233.5	0.9		42.9	-29	7581	No stop
06 26 50	=2319+444	00 20 57	77.5	234.6	1.0		43.7	81	7595	06 25 01
06 27 30	NR6	00 21 37	79.7	228.6	0.7		40.1	12	7595	06 27 30
06 32 30	---	00 26 38	79.1	232.2	0.8		42.8	300	7634	06 27 31
06 33 10	J2322+4445	00 27 18	76.7	238.2	1.1		46.1	13	7634	06 33 10
06 34 40	=2319+444	00 28 49	76.5	239.0	1.1		46.6	90	7645	06 33 11
06 35 20	NR6	00 29 29	78.8	234.0	0.9		44.1	15	7645	06 35 20
06 40 20	---	00 34 30	78.1	237.1	1.0		46.2	300	7684	06 35 21
06 40 20	J2322+4445	00 34 30	75.8	241.8	1.2		48.3	-25	7684	No stop
06 42 10	=2319+444	00 36 20	75.5	242.7	1.2		48.8	85	7698	06 40 21
06 42 50	NR6	00 37 00	77.8	238.6	1.0		47.2	16	7698	06 42 50
06 47 50	---	00 42 01	77.2	241.3	1.1		48.9	300	7737	06 42 51

Schedule for TORUN (Code Tr )

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e-EVN: en007c

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 1 Jun 2021 Day 152 ---										
06 48 30	J2322+4445	00 42 41	74.7	245.5	1.3		50.5	17	7737	06 48 30
06 50 00	=2319+444	00 44 11	74.5	246.2	1.3		50.8	90	7748	06 48 31
06 50 40	NR6	00 44 51	76.8	242.7	1.1		49.8	17	7748	06 50 40
06 55 40	---	00 49 52	76.1	245.1	1.2		51.2	300	7787	06 50 41
06 55 40	J2322+4445	00 49 52	73.7	248.5	1.4		52.0	-23	7787	No stop
06 57 30	=2319+444	00 51 42	73.4	249.2	1.5		52.4	87	7801	06 55 41
06 58 10	NR6	00 52 22	75.8	246.2	1.3		51.9	17	7801	06 58 10
07 04 10	---	00 58 23	74.9	248.7	1.4		53.2	360	7848	06 58 11
07 04 40	J2322+4445	00 58 53	72.4	251.8	1.6		53.6	7	7848	07 04 40
07 06 10	=2319+444	01 00 24	72.2	252.3	1.6		53.8	90	7859	07 04 41
07 06 10	J2311+4543	01 00 24	71.2	258.2	1.8		57.5	-27	7859	No stop
07 09 10	=2309+454	01 03 24	70.8	259.0	1.8		57.8	153	7882	07 06 11
07 09 10	J2322+4445	01 03 24	71.8	253.3	1.7		54.3	-26	7882	No stop
07 11 00	=2319+444	01 05 15	71.5	253.9	1.7		54.5	84	7897	07 09 11
07 12 00	J2355+4950	01 06 15	78.7	260.9	1.2		67.1	19	7897	07 12 00
07 13 30	=2352+495	01 07 45	78.5	261.4	1.2		67.3	90	7908	07 12 01
07 14 10	NR5	01 08 25	81.1	252.6	0.9		62.3	7	7908	07 14 10
07 19 10	---	01 13 26	80.4	254.9	1.0		63.6	300	7947	07 14 11
07 19 10	J2355+4950	01 13 26	77.6	263.0	1.3		67.9	-31	7947	No stop
07 21 00	=2352+495	01 15 16	77.4	263.6	1.3		68.0	79	7961	07 19 11
07 21 40	NR5	01 15 56	80.0	256.0	1.0		64.2	10	7961	07 21 40
07 26 40	---	01 20 57	79.3	257.9	1.1		65.1	300	8000	07 21 41
07 27 20	J2355+4950	01 21 37	76.4	265.2	1.4		68.4	10	8000	07 27 20
07 28 50	=2352+495	01 23 07	76.2	265.6	1.4		68.5	90	8011	07 27 21
07 29 30	NR5	01 23 48	78.9	258.9	1.1		65.6	11	8011	07 29 30
07 34 30	---	01 28 48	78.1	260.6	1.2		66.2	300	8050	07 29 31
07 34 30	J2355+4950	01 28 48	75.3	267.0	1.5		68.7	-28	8050	No stop
07 36 20	=2352+495	01 30 39	75.1	267.4	1.6		68.8	82	8064	07 34 31
07 37 00	NR5	01 31 19	77.8	261.4	1.3		66.5	13	8064	07 37 00
07 42 00	---	01 36 20	77.0	262.8	1.3		67.0	300	8103	07 37 01



Schedule for TORUN (Code Tr )  
e-EVN: en007c

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UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.  
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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 1 Jun 2021 Day 152 ---										
07 42 40	J2355+4950	01 37 00	74.1	268.8	1.7		68.9	13	8103	07 42 40
07 44 10	=2352+495	01 38 30	73.9	269.1	1.7		68.9	90	8114	07 42 41
07 44 50	NR5	01 39 10	76.6	263.6	1.4		67.2	14	8114	07 44 50
07 49 50	---	01 44 11	75.8	264.9	1.5		67.5	300	8153	07 44 51
07 49 50	J2355+4950	01 44 11	73.0	270.2	1.8		68.9	-26	8153	No stop
07 51 40	=2352+495	01 46 01	72.7	270.6	1.8		68.9	84	8167	07 49 51
07 52 20	NR5	01 46 41	75.5	265.5	1.5		67.7	15	8167	07 52 20
07 57 20	---	01 51 42	74.7	266.7	1.6		67.9	300	8206	07 52 21
07 58 00	J2355+4950	01 52 22	71.8	271.8	1.9		68.9	15	8206	07 58 00
07 59 30	=2352+495	01 53 53	71.6	272.1	2.0		68.8	90	8217	07 58 01
08 00 10	NR5	01 54 33	74.3	267.4	1.6		67.9	15	8217	08 00 10
08 05 10	---	01 59 33	73.5	268.5	1.7		68.0	300	8256	08 00 11
08 05 10	J2355+4950	01 59 33	70.7	273.1	2.1		68.7	-25	8256	No stop
08 07 00	=2352+495	02 01 24	70.4	273.4	2.1		68.7	85	8270	08 05 11
08 07 40	NR5	02 02 04	73.2	269.0	1.8		68.1	16	8270	08 07 40
08 12 40	---	02 07 05	72.4	270.0	1.9		68.1	300	8309	08 07 41
08 13 20	J2355+4950	02 07 45	69.5	274.5	2.2		68.5	15	8309	08 13 20
08 14 50	=2352+495	02 09 15	69.3	274.8	2.2		68.4	90	8320	08 13 21
08 15 30	NR5	02 09 55	72.0	270.6	1.9		68.1	16	8320	08 15 30
08 20 30	---	02 14 56	71.2	271.5	2.0		68.0	300	8359	08 15 31
08 20 30	J2355+4950	02 14 56	68.4	275.7	2.3		68.2	-25	8359	No stop
08 22 20	=2352+495	02 16 46	68.1	276.0	2.3		68.1	85	8373	08 20 31
08 23 00	NR5	02 17 26	70.9	272.0	2.0		68.0	16	8373	08 23 00
08 28 00	---	02 22 27	70.1	272.9	2.1		67.9	300	8412	08 23 01
08 28 40	J2355+4950	02 23 07	67.2	277.0	2.4		67.9	15	8412	08 28 40
08 30 10	=2352+495	02 24 38	67.0	277.2	2.5		67.8	90	8423	08 28 41
08 30 50	NR5	02 25 18	69.7	273.4	2.2		67.8	16	8423	08 30 50
08 35 50	---	02 30 18	68.9	274.3	2.2		67.7	300	8462	08 30 51
08 36 20	J2355+4950	02 30 49	66.0	278.2	2.6		67.5	5	8462	08 36 20
08 37 50	=2352+495	02 32 19	65.8	278.4	2.6		67.4	90	8474	08 36 21

Schedule for TORUN (Code Tr )  
e-EVN: en007c

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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 1 Jun 2021 Day 152 ---										
08 37 50	J0004+4615	02 32 19	65.6	269.0	2.4		60.5	-34	8474	No stop
08 40 50	=0001+459	02 35 19	65.2	269.6	2.5		60.5	146	8497	08 37 51
08 40 50	J2355+4950	02 35 19	65.4	278.9	2.7		67.2	-34	8497	No stop
08 42 40	=2352+495	02 37 10	65.1	279.1	2.7		67.1	76	8511	08 40 51
08 48 40	J0121+1149	02 43 11	45.8	208.8	1.3		17.2	202	8511	08 48 40
08 50 10	=0119+115	02 44 41	45.7	209.3	1.4		17.5	90	8523	08 48 41
08 50 50	NR4	02 45 21	43.2	212.4	1.6		19.1	17	8523	08 50 50
08 55 50	---	02 50 22	42.8	214.0	1.6		20.0	300	8561	08 50 51
08 55 50	J0121+1149	02 50 22	45.3	211.2	1.5		18.6	-23	8561	No stop
08 57 40	=0119+115	02 52 12	45.1	211.8	1.5		18.9	87	8576	08 55 51
08 58 20	NR4	02 52 52	42.6	214.8	1.7		20.4	17	8576	08 58 20
09 03 20	---	02 57 53	42.1	216.4	1.8		21.2	300	8614	08 58 21
09 04 00	J0121+1149	02 58 33	44.6	213.9	1.6		20.0	17	8614	09 04 00
09 05 30	=0119+115	03 00 03	44.5	214.4	1.6		20.3	90	8626	09 04 01
09 06 10	NR4	03 00 43	41.9	217.3	1.8		21.7	16	8626	09 06 10
09 11 10	---	03 05 44	41.4	218.8	1.9		22.5	300	8664	09 06 11
09 11 10	J0121+1149	03 05 44	44.0	216.2	1.7		21.3	-23	8664	No stop
09 13 00	=0119+115	03 07 35	43.8	216.8	1.7		21.6	87	8679	09 11 11
09 13 40	NR4	03 08 15	41.2	219.5	1.9		22.9	16	8679	09 13 40
09 18 40	---	03 13 16	40.7	221.0	2.0		23.6	300	8717	09 13 41
09 19 20	J0121+1149	03 13 56	43.3	218.8	1.9		22.6	16	8717	09 19 20
09 20 50	=0119+115	03 15 26	43.1	219.2	1.9		22.8	90	8729	09 19 21
09 21 30	NR4	03 16 06	40.4	221.9	2.1		24.0	16	8729	09 21 30
09 26 30	---	03 21 07	39.9	223.4	2.2		24.8	300	8767	09 21 31
09 26 30	J0121+1149	03 21 07	42.6	221.0	2.0		23.7	-24	8767	No stop
09 28 20	=0119+115	03 22 57	42.4	221.5	2.0		24.0	86	8782	09 26 31
09 29 00	NR4	03 23 37	39.6	224.1	2.2		25.1	16	8782	09 29 00
09 34 00	---	03 28 38	39.1	225.5	2.3		25.8	300	8820	09 29 01
09 34 40	J0121+1149	03 29 18	41.7	223.4	2.1		25.0	16	8820	09 34 40
09 36 10	=0119+115	03 30 48	41.6	223.9	2.1		25.2	90	8832	09 34 41

Schedule for TORUN (Code Tr )  
e-EVN: en007c

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

--- Tue 1 Jun 2021 Day 152 ---

09 36 50	NR4	03 31 28	38.8	226.3	2.3	26.2	16	8832	09 36 50
09 41 50	---	03 36 29	38.3	227.7	2.4	26.8	300	8870	09 36 51
09 41 50	J0121+1149	03 36 29	41.0	225.5	2.2	26.0	-24	8870	No stop
09 43 40	=0119+115	03 38 20	40.8	226.1	2.3	26.2	86	8885	09 41 51
09 44 20	NR4	03 39 00	38.0	228.4	2.5	27.2	16	8885	09 44 20
09 49 20	---	03 44 01	37.4	229.8	2.5	27.8	300	8923	09 44 21
09 50 00	J0121+1149	03 44 41	40.1	227.9	2.4	27.1	16	8923	09 50 00
09 51 30	=0119+115	03 46 11	39.9	228.3	2.4	27.3	90	8935	09 50 01
09 52 10	NR4	03 46 51	37.1	230.6	2.6	28.1	16	8935	09 52 10
09 57 10	---	03 51 52	36.5	231.9	2.7	28.7	300	8974	09 52 11
09 57 10	J0121+1149	03 51 52	39.3	229.9	2.5	28.0	-24	8974	No stop
09 59 00	=0119+115	03 53 42	39.1	230.4	2.5	28.2	86	8988	09 57 11
09 59 40	NR4	03 54 22	36.2	232.6	2.7	29.0	16	8988	09 59 40
10 04 40	---	03 59 23	35.6	233.9	2.8	29.6	300	9026	09 59 41
10 05 20	J0121+1149	04 00 03	38.3	232.2	2.6	29.0	16	9026	10 05 20
10 06 50	=0119+115	04 01 33	38.1	232.6	2.6	29.2	90	9038	10 05 21
10 07 30	NR4	04 02 14	35.2	234.7	2.8	29.9	15	9038	10 07 30
10 12 30	---	04 07 14	34.6	236.0	2.9	30.4	300	9077	10 07 31
10 13 00	J0121+1149	04 07 44	37.4	234.3	2.7	29.9	6	9077	10 13 00
10 14 30	=0119+115	04 09 15	37.2	234.7	2.8	30.0	90	9088	10 13 01
10 14 30	J0121+1127	04 09 15	36.8	234.5	2.8	29.9	-12	9088	No stop
10 17 30	=0118+111	04 12 15	36.5	235.3	2.8	30.2	168	9111	10 14 31
10 17 30	J0121+1149	04 12 15	36.8	235.5	2.8	30.4	-12	9111	No stop
10 19 20	=0119+115	04 14 05	36.6	235.9	2.9	30.6	98	9126	10 17 31
10 25 00	J0854+2006	04 19 46	28.4	94.1	-4.6	-39.6	41	9126	10 25 00
10 30 00	=0J287	04 24 47	29.1	95.1	-4.5	-39.5	300	9164	10 25 01

## SETUP FILE INFORMATION:

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

==== Setup file: sess221.L1024

Setup group: 11

Station: TORUN

Total bit rate: 1024

Format: VDIF                    Bits per sample: 2  
Number of channels: 8        DBE type: DBBC\_DDC

Sample rate: 64.000  
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
Net SB=	L	L	U	U	L	L	U	U
IF SB =	L	L	L	L	L	L	L	L
Pol. =	RCP	LCP	RCP	LCP	RCP	LCP	RCP	LCP
BBC =	1	9	1	9	2	10	2	10
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: 9 Setup file default. Used with PCAL = off  
 LO sum= 1626.49 1626.49 1626.49 1626.49 1690.49 1690.49 1690.49 1690.49  
 BBC fr= 673.51 673.51 673.51 673.51 609.51 609.51 609.51 609.51  
 Bandwd= 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00  
 Matching frequency sets: 9

Track assignments are:

track1= 1, 2, 3, 4, 5, 6, 7, 8  
 barrel=roll\_off

#### POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec)		(Date)	Error (mas)
	(B1950)	(J2000)		
* R4	10 30 12.945855	* 10 34 12.720000	10 35 52.676296	0.00
	73 56 54.58222	* 73 41 25.35000	73 35 10.83728	0.00
* R13	14 33 08.288098	* 14 34 46.040000	14 35 29.294050	0.00
	53 31 51.31527	* 53 18 47.17000	53 13 23.00656	0.00
* R16	22 04 22.983159	* 22 06 46.830000	22 07 47.659989	0.00
	17 07 52.02348	* 17 22 31.79000	17 28 34.41814	0.00
* R17	13 50 04.229468	* 13 52 03.140000	13 52 54.820418	0.00
	48 22 05.54569	* 48 07 19.06000	48 01 13.40591	0.00
* R19	16 40 36.377744	* 16 42 17.670000	16 43 02.158284	0.00
	39 53 09.10874	* 39 47 32.46000	39 45 08.00929	0.00
* R21	12 18 51.922073	* 12 21 08.930000	12 22 08.359115	0.00
	70 57 47.03497	* 70 41 09.05000	70 34 24.39217	0.00
* R25	16 35 41.917621	* 16 37 20.480000	16 38 03.867554	0.00
	41 32 56.66686	* 41 26 59.80000	41 24 27.11132	0.00
* NR1	06 52 54.975940	* 07 14 48.730000	07 23 26.536981	0.00
	86 52 08.80085	* 86 47 32.93000	86 45 24.71866	0.00
* NR2	14 45 56.309448	* 14 48 26.610000	14 49 31.192309	0.00
	04 34 03.67957	* 04 21 36.64000	04 16 19.99188	0.00
* NR3	04 30 46.745937	* 04 35 08.810000	04 36 56.899200	0.00
	60 08 49.12606	* 60 15 00.48000	60 17 32.27404	0.00
* NR4	01 07 59.653565	* 01 10 36.930000	01 11 42.467690	0.00
	09 52 54.04071	* 10 08 50.67000	10 15 28.19922	0.00
* NR5	00 11 59.959782	* 00 14 38.260000	00 15 44.280824	0.00

	49 16 43.36813	* 49 33 23.57000	49 40 09.48818	0.00
* NR6	23 33 50.274534	* 23 36 16.680000	23 37 17.985087	0.00
	45 18 18.09887	* 45 34 54.09000	45 41 38.31078	0.00
* NR7	18 25 05.513998	* 18 26 33.360000	18 27 12.050434	0.00
	44 47 47.16859	* 44 49 39.89000	44 50 18.61652	0.00
* R15	12 30 22.543095	* 12 32 23.920000	12 33 17.475559	0.00
	74 24 26.71249	* 74 07 54.30000	74 01 12.04855	0.00
* B0355+54	03 55 00.536080	* 03 58 53.723800	04 00 30.053341	0.00
	54 04 41.38687	* 54 13 13.78400	54 16 43.04656	0.00
* B1933+16	19 33 31.840243	* 19 35 47.825900	19 36 46.129200	0.00
	16 09 57.71854	* 16 16 39.98600	16 19 23.39715	0.00
* J1759+4627	17 58 18.322446	* 17 59 41.799400	18 00 18.811430	0.00
	46 28 04.21524	* 46 27 59.91700	46 27 50.64921	0.00
0001+459	00 01 41.453154	* 00 04 16.127656	00 05 20.726964	0.17
* J0004+4615	45 58 36.14556	* 46 15 17.97052	46 22 04.95558	0.12
	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 148 observations.			
0118+111	01 18 50.654449	* 01 21 28.999188	01 22 34.938776	0.12
* J0121+1127	11 11 19.09001	* 11 27 00.50306	11 33 31.34667	0.20
	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 84 observations.			
0119+115	01 19 03.080126	* 01 21 41.595043	01 22 47.604795	0.00
* J0121+1149	11 34 09.31522	* 11 49 50.41321	11 56 21.02873	0.01
J0121+11	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 62476 observations.			
0354+559	03 54 31.306914	* 03 58 30.188163	04 00 08.838342	0.24
* J0358+5606	55 58 10.41714	* 56 06 44.46027	56 10 14.29184	0.17
	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 69 observations.			
0444+634	04 44 42.365041	* 04 49 23.310568	04 51 19.080004	0.04
* J0449+6332	63 26 55.93297	* 63 32 09.43401	63 34 17.61745	0.02
J0449+63	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 1127 observations.			
0446+595	04 46 56.740666	* 04 51 18.721781	04 53 06.777348	0.11
* J0451+5935	59 30 27.33126	* 59 35 32.18353	59 37 37.05118	0.05
	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 336 observations.			
0645+858	06 45 00.718446	* 07 02 32.817025	07 09 32.687842	2.73
* J0702+8549	85 53 45.59517	* 85 49 52.47982	85 48 06.27085	0.17
	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 84 observations.			
OJ287	08 51 57.250615	* 08 54 48.874927	08 56 00.521901	0.00
* J0854+2006	20 17 58.41740	* 20 06 30.64085	20 01 43.24624	0.00
0851+202	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
J0854+20	GSFC 2016a X/S astro solution, 270807 observations.			
0916+864	09 16 13.303854	* 09 29 43.057528	09 34 56.053066	2.21
* J0929+8612	86 25 17.24114	* 86 12 21.27882	86 07 03.81844	0.10
	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 101 observations.			

1044+719	10 44 49.735100	* 10 48 27.619916	10 49 58.896435	0.34
* J1048+7143	71 59 26.88543	* 71 43 35.93846	71 37 12.27761	0.18
J1048+71	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 131737 observations.			
1053+704	10 53 27.724045	* 10 56 53.617501	10 58 20.115250	0.02
* J1056+7011	70 27 47.93567	* 70 11 45.91563	70 05 17.45624	0.01
J1056+70	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 14774 observations.			
1238+702	12 38 32.658121	* 12 40 34.700389	12 41 28.177371	0.83
* J1240+6958	70 14 57.51748	* 69 58 30.61002	69 51 49.77579	0.43
J1240+6958	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 49 observations.			
1245+710	12 45 12.422838	* 12 47 07.552605	12 47 58.351925	0.28
* J1247+7046	71 03 06.65769	* 70 46 45.12132	70 40 06.37466	0.11
J1247+7046	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 89 observations.			
1333+459	13 33 15.707438	* 13 35 21.962221	13 36 16.551591	0.15
* J1335+4542	45 57 56.43928	* 45 42 38.23225	45 36 19.52393	0.08
J1335+45	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 136 observations.			
1343+451	13 43 28.829762	* 13 45 33.172486	13 46 27.002584	0.14
* J1345+4452	45 07 59.03593	* 44 52 59.57262	44 46 48.14409	0.09
J1345+4452	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 154 observations.			
1418+546	14 18 06.187310	* 14 19 46.597405	14 20 30.938097	0.01
* J1419+5423	54 36 58.06476	* 54 23 14.78717	54 17 35.21531	0.00
J1419+54	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 71191 observations.			
1427+543	14 27 44.050456	* 14 29 21.878793	14 30 05.176604	0.16
* J1429+5406	54 19 29.74795	* 54 06 11.12296	54 00 41.30030	0.11
J1429+54	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 232 observations.			
1446+042	14 46 19.815447	* 14 48 50.361091	14 49 55.047524	0.17
* J1448+0402	04 14 45.78467	* 04 02 19.89224	03 57 03.67584	0.38
J1448+0402	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 69 observations.			
1456+044	14 56 29.152723	* 14 58 59.356213	15 00 03.925924	0.03
* J1458+0416	04 28 09.34454	* 04 16 13.82044	04 11 10.40787	0.04
J1458+0416	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 1518 observations.			
NRA0512	16 38 48.169688	* 16 40 29.632773	16 41 14.193711	0.00
* J1640+3946	39 52 30.08664	* 39 46 46.02845	39 44 18.55747	0.00
1638+398	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
J1640+39	GSFC 2016a X/S astro solution, 124178 observations.			
1645+410	16 45 18.214793	* 16 46 56.858700	16 47 40.261054	0.09
* J1646+4059	41 04 34.49967	* 40 59 17.17206	40 57 00.58632	0.13
J1646+4059	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 111 observations.			
1806+456	18 06 56.514675	* 18 08 21.885888	18 08 59.637518	0.01
* J1808+4542	45 41 47.34683	* 45 42 20.86644	45 42 27.11335	0.01
J1808+45	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			

GSFC 2016a X/S astro solution, 16758 observations.

1928+154	19 28 36.092055	* 19 30 52.766980	19 31 51.378885	0.06
* J1930+1532	15 26 11.96598	* 15 32 34.42737	15 35 09.74683	0.08
J1930+15	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 219 observations.			
2201+171	22 01 03.345094	* 22 03 26.893679	22 04 27.616913	0.05
* J2203+1725	17 11 15.54383	* 17 25 48.24774	17 31 47.89877	0.09
J2203+17	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 284 observations.			
2216+178	22 16 49.646729	* 22 19 14.092480	22 20 15.104715	0.05
* J2219+1806	17 51 31.06967	* 18 06 35.58083	18 12 48.34994	0.11
	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 302 observations.			
2309+454	23 09 28.211650	* 23 11 47.408977	23 12 45.842693	0.01
* J2311+4543	45 27 37.24968	* 45 43 56.01642	45 50 32.69845	0.01
J2311+45	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 6992 observations.			
2319+444	23 19 57.705336	* 23 22 20.358083	23 23 20.181364	0.02
* J2322+4445	44 29 14.78867	* 44 45 42.35356	44 52 23.03625	0.02
	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 2751 observations.			
2352+495	23 52 37.783439	* 23 55 09.458151	23 56 12.814699	0.14
* J2355+4950	49 33 26.79879	* 49 50 08.33945	49 56 54.38722	0.11
J2355+49	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 358 observations.			



VLBI FOLLOW-UP OF THE FIRST (OF MANY) OH MEGAMASERS DETECTED WITH A  
 PI: *John McKean*

Address: ASTRON

Observing mode: 21cm 512-4-2

Schedule for TORUN (Code Tr )

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VLBI follow-up of the first (of many) OH Megamasers detected with Aperti

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 1 Jun 2021 Day 152 ---										
Next scan frequencies: 1351.84 1351.84 1351.84 1351.84 1370.59 1370.59 1370.59 1370.59										
1389.09 1389.09 1389.09 1389.09 1434.34 1434.34 1434.34 1434.34										
Next BBC frequencies: 748.16 748.16 748.16 748.16 729.41 729.41 729.41 729.41										
710.91 710.91 710.91 710.91 665.66 665.66 665.66 665.66										
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										
11 30 00	J1102+5941	05 24 57	45.8	46.4	-5.7		-59.1	0	0	11 30 00
11 31 30	=1059+599	05 26 27	46.0	46.5	-5.6		-59.3	90	6	11 30 01
11 31 30	IRAS10597+59	05 26 27	45.7	47.1	-5.6		-58.9	-12	6	No stop
11 35 00	---	05 29 58	46.1	47.5	-5.6		-59.4	198	19	11 31 31
11 35 30	J1102+5941	05 30 28	46.4	46.9	-5.6		-59.9	18	19	11 35 30
11 37 00	=1059+599	05 31 58	46.6	47.0	-5.5		-60.2	90	25	11 35 31
11 37 00	IRAS10597+59	05 31 58	46.3	47.6	-5.5		-59.7	-12	25	No stop
11 40 30	---	05 35 29	46.7	48.0	-5.5		-60.2	198	39	11 37 01
11 40 30	J1102+5941	05 35 29	47.0	47.3	-5.5		-60.7	-12	39	No stop
11 42 00	=1059+599	05 36 59	47.2	47.5	-5.5		-60.9	78	44	11 40 31
11 42 00	IRAS10597+59	05 36 59	46.9	48.1	-5.5		-60.4	-12	44	No stop
11 45 30	---	05 40 30	47.3	48.4	-5.4		-60.9	198	58	11 42 01
11 46 00	J1102+5941	05 41 00	47.6	47.8	-5.4		-61.5	18	58	11 46 00
11 47 30	=1059+599	05 42 30	47.8	48.0	-5.4		-61.7	90	64	11 46 01
11 47 30	IRAS10597+59	05 42 30	47.5	48.6	-5.4		-61.2	-12	64	No stop
11 51 00	---	05 46 01	47.9	48.9	-5.3		-61.7	198	77	11 47 31
11 51 00	J1102+5941	05 46 01	48.2	48.3	-5.3		-62.3	-12	77	No stop
11 52 30	=1059+599	05 47 31	48.3	48.4	-5.3		-62.5	78	83	11 51 01
11 52 30	IRAS10597+59	05 47 31	48.1	49.1	-5.3		-62.0	-12	83	No stop
11 56 00	---	05 51 01	48.5	49.4	-5.2		-62.5	198	97	11 52 31
11 56 30	J1102+5941	05 51 31	48.8	48.8	-5.2		-63.1	18	97	11 56 30
11 58 00	=1059+599	05 53 02	48.9	48.9	-5.2		-63.3	90	102	11 56 31
11 58 00	IRAS10597+59	05 53 02	48.7	49.6	-5.2		-62.8	-12	102	No stop
12 01 30	---	05 56 32	49.1	49.9	-5.1		-63.3	198	116	11 58 01

Schedule for TORUN (Code Tr )

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VLBI follow-up of the first (of many) OH Megamasers detected with Aperti

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

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SYNC: Time correlator 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 1 Jun 2021	Day 152					---				
12 01 30	J1102+5941	05 56 32	49.3	49.2	-5.1		-63.8	-12	116	No stop	
12 03 00	=1059+599	05 58 03	49.5	49.3	-5.1		-64.1	78	122	12 01 31	
12 03 00	IRAS10597+59	05 58 03	49.3	50.0	-5.1		-63.5	-13	122	No stop	
12 06 30	---	06 01 33	49.7	50.3	-5.0		-64.0	197	135	12 03 01	
12 07 00	J1102+5941	06 02 03	50.0	49.7	-5.0		-64.7	18	135	12 07 00	
12 08 30	=1059+599	06 03 33	50.1	49.8	-5.0		-64.9	90	141	12 07 01	
12 08 30	IRAS10597+59	06 03 33	49.9	50.5	-5.0		-64.3	-13	141	No stop	
12 12 00	---	06 07 04	50.3	50.8	-4.9		-64.9	197	155	12 08 31	
12 12 00	J1102+5941	06 07 04	50.5	50.1	-4.9		-65.4	-13	155	No stop	
12 13 30	=1059+599	06 08 34	50.7	50.2	-4.9		-65.7	77	160	12 12 01	
12 13 30	IRAS10597+59	06 08 34	50.5	50.9	-4.9		-65.1	-13	160	No stop	
12 17 00	---	06 12 05	50.9	51.2	-4.9		-65.6	197	174	12 13 31	
12 17 30	J1102+5941	06 12 35	51.2	50.5	-4.9		-66.3	17	174	12 17 30	
12 19 00	=1059+599	06 14 05	51.4	50.6	-4.8		-66.5	90	180	12 17 31	
12 19 00	IRAS10597+59	06 14 05	51.1	51.4	-4.8		-65.9	-13	180	No stop	
12 22 30	---	06 17 36	51.6	51.7	-4.8		-66.4	197	193	12 19 01	
12 22 30	J1102+5941	06 17 36	51.8	50.9	-4.8		-67.0	-13	193	No stop	
12 24 00	=1059+599	06 19 06	51.9	51.1	-4.7		-67.3	77	199	12 22 31	
12 24 00	IRAS10597+59	06 19 06	51.7	51.8	-4.7		-66.7	-13	199	No stop	
12 27 30	---	06 22 37	52.2	52.1	-4.7		-67.2	197	213	12 24 01	
12 28 00	J1102+5941	06 23 07	52.4	51.4	-4.7		-67.9	17	213	12 28 00	
12 29 30	=1059+599	06 24 37	52.6	51.5	-4.7		-68.1	90	218	12 28 01	
12 29 30	IRAS10597+59	06 24 37	52.4	52.3	-4.7		-67.5	-13	218	No stop	
12 33 00	---	06 28 07	52.8	52.5	-4.6		-68.0	197	232	12 29 31	
12 33 00	J1102+5941	06 28 07	53.0	51.8	-4.6		-68.7	-13	232	No stop	
12 34 30	=1059+599	06 29 38	53.2	51.9	-4.6		-68.9	77	238	12 33 01	
12 34 30	IRAS10597+59	06 29 38	53.0	52.7	-4.6		-68.2	-13	238	No stop	
12 38 00	---	06 33 08	53.4	52.9	-4.5		-68.8	197	251	12 34 31	
12 38 30	J1102+5941	06 33 38	53.7	52.2	-4.5		-69.5	17	251	12 38 30	
12 40 00	=1059+599	06 35 09	53.8	52.3	-4.5		-69.7	90	257	12 38 31	
12 40 00	IRAS10597+59	06 35 09	53.6	53.1	-4.5		-69.1	-13	257	No stop	
12 43 30	---	06 38 39	54.1	53.4	-4.4		-69.6	197	271	12 40 01	

Schedule for TORUN (Code Tr )

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VLBI follow-up of the first (of many) OH Megamasers detected with Aperti

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SYNC: Time correlator 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 1 Jun 2021 Day 152 ---										
12 43 30	J1102+5941	06 38 39	54.3	52.5	-4.4		-70.3	-13	271	No stop
12 45 00	=1059+599	06 40 09	54.4	52.7	-4.4		-70.5	77	276	12 43 31
12 45 00	IRAS10597+59	06 40 09	54.2	53.5	-4.4		-69.8	-13	276	No stop
12 48 30	---	06 43 40	54.7	53.7	-4.3		-70.4	197	290	12 45 01
12 49 00	J1102+5941	06 44 10	54.9	52.9	-4.3		-71.2	17	290	12 49 00
12 50 30	=1059+599	06 45 40	55.1	53.0	-4.3		-71.4	90	296	12 49 01
12 50 30	IRAS10597+59	06 45 40	54.9	53.9	-4.3		-70.7	-13	296	No stop
12 54 00	---	06 49 11	55.3	54.1	-4.2		-71.2	197	309	12 50 31
12 54 00	J1102+5941	06 49 11	55.5	53.3	-4.2		-71.9	-13	309	No stop
12 55 30	=1059+599	06 50 41	55.7	53.4	-4.2		-72.2	77	315	12 54 01
13 00 30	4C39.25	06 55 42	60.4	103.1	-2.5		-48.8	187	315	13 00 30
13 05 30	---	07 00 43	61.2	104.4	-2.5		-48.4	300	334	13 00 31
13 10 30	J1102+5941	07 05 44	57.5	54.4	-4.0		-74.6	185	334	13 10 30
13 15 30	=1059+599	07 10 44	58.1	54.7	-3.9		-75.4	300	354	13 10 31
13 15 30	IRAS10597+59	07 10 44	58.0	55.6	-3.9		-74.6	-14	354	No stop
13 19 00	---	07 14 15	58.4	55.8	-3.8		-75.2	196	367	13 15 31
13 19 30	J1102+5941	07 14 45	58.6	54.9	-3.8		-76.1	16	367	13 19 30
13 21 00	=1059+599	07 16 15	58.8	55.0	-3.8		-76.3	90	373	13 19 31
13 21 00	IRAS10597+59	07 16 15	58.7	56.0	-3.8		-75.5	-14	373	No stop
13 24 30	---	07 19 46	59.1	56.2	-3.7		-76.1	196	386	13 21 01
13 24 30	J1102+5941	07 19 46	59.2	55.2	-3.7		-76.9	-14	386	No stop
13 26 00	=1059+599	07 21 16	59.4	55.3	-3.7		-77.2	76	392	13 24 31
13 26 00	IRAS10597+59	07 21 16	59.3	56.3	-3.7		-76.3	-14	392	No stop
13 29 30	---	07 24 47	59.7	56.5	-3.7		-76.9	196	406	13 26 01
13 30 00	J1102+5941	07 25 17	59.9	55.5	-3.6		-77.8	16	406	13 30 00
13 31 30	=1059+599	07 26 47	60.1	55.6	-3.6		-78.1	90	412	13 30 01
13 31 30	IRAS10597+59	07 26 47	60.0	56.6	-3.6		-77.2	-14	412	No stop
13 35 00	---	07 30 18	60.4	56.8	-3.6		-77.8	196	425	13 31 31
13 35 00	J1102+5941	07 30 18	60.5	55.8	-3.6		-78.7	-14	425	No stop
13 36 30	=1059+599	07 31 48	60.7	55.9	-3.5		-79.0	76	431	13 35 01

Schedule for TORUN (Code Tr )

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VLBI follow-up of the first (of many) OH Megamasers detected with Aperti

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Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Tue 1 Jun 2021 Day 152 ---										
13 36 30	IRAS10597+59	07 31 48	60.6	56.9	-3.5		-78.1	-14	431	No stop
13 40 00	---	07 35 18	61.1	57.1	-3.5		-78.6	196	444	13 36 31
13 40 30	J1102+5941	07 35 49	61.2	56.0	-3.5		-79.7	16	444	13 40 30
13 42 00	=1059+599	07 37 19	61.4	56.1	-3.4		-79.9	90	450	13 40 31
13 42 00	IRAS10597+59	07 37 19	61.3	57.2	-3.4		-79.0	-14	450	No stop
13 45 30	---	07 40 49	61.8	57.3	-3.4		-79.6	196	464	13 42 01
13 45 30	J1102+5941	07 40 49	61.9	56.3	-3.4		-80.5	-14	464	No stop
13 47 00	=1059+599	07 42 20	62.0	56.3	-3.4		-80.8	76	470	13 45 31
13 47 00	IRAS10597+59	07 42 20	61.9	57.4	-3.4		-79.8	-14	470	No stop
13 50 30	---	07 45 50	62.4	57.6	-3.3		-80.4	196	483	13 47 01
13 51 00	J1102+5941	07 46 20	62.5	56.5	-3.3		-81.5	16	483	13 51 00
13 52 30	=1059+599	07 47 50	62.7	56.6	-3.3		-81.8	90	489	13 51 01
13 52 30	IRAS10597+59	07 47 50	62.6	57.7	-3.3		-80.8	-14	489	No stop
13 56 00	---	07 51 21	63.1	57.8	-3.2		-81.4	196	502	13 52 31
13 56 00	J1102+5941	07 51 21	63.2	56.7	-3.2		-82.4	-14	502	No stop
13 57 30	=1059+599	07 52 51	63.4	56.8	-3.2		-82.7	76	508	13 56 01
13 57 30	IRAS10597+59	07 52 51	63.3	57.9	-3.2		-81.7	-15	508	No stop
14 01 00	---	07 56 22	63.7	58.0	-3.1		-82.3	195	522	13 57 31
14 01 30	J1102+5941	07 56 52	63.9	56.9	-3.1		-83.4	15	522	14 01 30
14 03 00	=1059+599	07 58 22	64.1	56.9	-3.1		-83.7	90	528	14 01 31
14 03 00	IRAS10597+59	07 58 22	64.0	58.1	-3.1		-82.7	-15	528	No stop
14 06 30	---	08 01 53	64.4	58.2	-3.0		-83.3	195	541	14 03 01
14 06 30	J1102+5941	08 01 53	64.5	57.1	-3.0		-84.4	-15	541	No stop
14 08 00	=1059+599	08 03 23	64.7	57.1	-3.0		-84.7	75	547	14 06 31
14 08 00	IRAS10597+59	08 03 23	64.6	58.3	-3.0		-83.6	-15	547	No stop
14 11 30	---	08 06 54	65.1	58.4	-3.0		-84.2	195	560	14 08 01
14 12 00	J1102+5941	08 07 24	65.2	57.2	-2.9		-85.4	15	560	14 12 00
14 13 30	=1059+599	08 08 54	65.4	57.2	-2.9		-85.7	90	566	14 12 01
14 13 30	IRAS10597+59	08 08 54	65.3	58.5	-2.9		-84.6	-15	566	No stop
14 17 00	---	08 12 25	65.8	58.6	-2.9		-85.3	195	580	14 13 31

Schedule for TORUN (Code Tr )

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VLBI follow-up of the first (of many) OH Megamasers detected with Aperti

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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 1 Jun 2021 Day 152 ---										
14 17 00	J1102+5941	08 12 25	65.8	57.3	-2.9		-86.4	-15	580	No stop
14 18 30	=1059+599	08 13 55	66.0	57.3	-2.8		-86.7	75	585	14 17 01
14 18 30	IRAS10597+59	08 13 55	66.0	58.6	-2.8		-85.6	-15	585	No stop
14 22 00	---	08 17 25	66.4	58.7	-2.8		-86.2	195	599	14 18 31
14 22 30	J1102+5941	08 17 55	66.5	57.4	-2.8		-87.5	15	599	14 22 30
14 24 00	=1059+599	08 19 26	66.7	57.4	-2.7		-87.8	90	605	14 22 31
14 24 00	IRAS10597+59	08 19 26	66.7	58.7	-2.7		-86.6	-15	605	No stop
14 27 30	---	08 22 56	67.1	58.8	-2.7		-87.3	195	618	14 24 01
14 27 30	J1102+5941	08 22 56	67.2	57.5	-2.7		-88.6	-15	618	No stop
14 29 00	=1059+599	08 24 26	67.3	57.5	-2.7		-88.9	75	624	14 27 31
14 29 00	IRAS10597+59	08 24 26	67.3	58.8	-2.7		-87.6	-15	624	No stop
14 32 30	---	08 27 57	67.8	58.8	-2.6		-88.3	195	638	14 29 01
14 33 00	J1102+5941	08 28 27	67.9	57.5	-2.6		-89.7	15	638	14 33 00
14 34 30	=1059+599	08 29 57	68.0	57.5	-2.6		-90.0	90	643	14 33 01
14 34 30	IRAS10597+59	08 29 57	68.0	58.9	-2.6		-88.8	-15	643	No stop
14 38 00	---	08 33 28	68.5	58.9	-2.5		-89.5	195	657	14 34 31
14 38 00	J1102+5941	08 33 28	68.5	57.5	-2.5		-90.8	-16	657	No stop
14 39 30	=1059+599	08 34 58	68.7	57.5	-2.5		-91.1	74	663	14 38 01
14 39 30	IRAS10597+59	08 34 58	68.7	58.9	-2.5		-89.8	-16	663	No stop
14 43 00	---	08 38 29	69.1	58.9	-2.4		-90.6	194	676	14 39 31
14 43 30	J1102+5941	08 38 59	69.2	57.4	-2.4		-92.0	14	676	14 43 30
14 45 00	=1059+599	08 40 29	69.4	57.4	-2.4		-92.4	90	682	14 43 31
14 45 00	IRAS10597+59	08 40 29	69.4	58.9	-2.4		-91.0	-16	682	No stop
14 48 30	---	08 44 00	69.8	58.8	-2.3		-91.8	194	696	14 45 01
14 48 30	J1102+5941	08 44 00	69.8	57.3	-2.3		-93.2	-16	696	No stop
14 50 00	=1059+599	08 45 30	70.0	57.3	-2.3		-93.6	74	701	14 48 31
14 50 00	IRAS10597+59	08 45 30	70.0	58.8	-2.3		-92.1	-16	701	No stop
14 53 30	---	08 49 01	70.5	58.7	-2.3		-92.9	194	715	14 50 01
14 54 00	J1102+5941	08 49 31	70.5	57.2	-2.2		-94.5	14	715	14 54 00
14 55 30	=1059+599	08 51 01	70.7	57.2	-2.2		-94.9	90	721	14 54 01

Schedule for TORUN (Code Tr )

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VLBI follow-up of the first (of many) OH Megamasers detected with Aperti

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SYNC: Time correlator 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 1 Jun 2021 Day 152 ---										
14 55 30	IRAS10597+59	08 51 01	70.7	58.7	-2.2		-93.4	-16	721	No stop
14 59 00	---	08 54 31	71.2	58.6	-2.2		-94.3	194	734	14 55 31
14 59 00	J1102+5941	08 54 31	71.1	57.0	-2.2		-95.8	-16	734	No stop
15 00 30	=1059+599	08 56 02	71.3	57.0	-2.1		-96.2	74	740	14 59 01
15 00 30	IRAS10597+59	08 56 02	71.4	58.6	-2.1		-94.6	-16	740	No stop
15 04 00	---	08 59 32	71.8	58.4	-2.1		-95.5	194	754	15 00 31
15 04 30	J1102+5941	09 00 02	71.8	56.8	-2.1		-97.2	14	754	15 04 30
15 06 00	=1059+599	09 01 33	72.0	56.7	-2.0		-97.6	90	759	15 04 31
15 06 00	IRAS10597+59	09 01 33	72.1	58.4	-2.0		-96.0	-16	759	No stop
15 09 30	---	09 05 03	72.5	58.2	-2.0		-96.9	194	773	15 06 01
15 09 30	J1102+5941	09 05 03	72.5	56.5	-2.0		-98.5	-17	773	No stop
15 11 00	=1059+599	09 06 33	72.7	56.4	-2.0		-99.0	73	779	15 09 31
15 11 00	IRAS10597+59	09 06 33	72.7	58.1	-2.0		-97.3	-17	779	No stop
15 14 30	---	09 10 04	73.2	57.9	-1.9		-98.3	193	792	15 11 01
15 15 00	J1102+5941	09 10 34	73.2	56.1	-1.9		-100.1	13	792	15 15 00
15 16 30	=1059+599	09 12 04	73.3	56.0	-1.9		-100.5	90	798	15 15 01
15 16 30	IRAS10597+59	09 12 04	73.4	57.8	-1.9		-98.8	-17	798	No stop
15 20 00	---	09 15 35	73.9	57.5	-1.8		-99.8	193	812	15 16 31
15 20 00	J1102+5941	09 15 35	73.8	55.7	-1.8		-101.6	-17	812	No stop
15 21 30	=1059+599	09 17 05	74.0	55.6	-1.8		-102.0	73	817	15 20 01
15 21 30	IRAS10597+59	09 17 05	74.1	57.4	-1.8		-100.3	-17	817	No stop
15 25 00	---	09 20 36	74.5	57.1	-1.7		-101.3	193	831	15 21 31
15 25 30	J1102+5941	09 21 06	74.5	55.1	-1.7		-103.3	13	831	15 25 30
15 27 00	=1059+599	09 22 36	74.7	55.0	-1.7		-103.8	90	837	15 25 31
15 27 00	IRAS10597+59	09 22 36	74.8	56.9	-1.7		-101.9	-17	837	No stop
15 30 30	---	09 26 07	75.2	56.5	-1.6		-103.1	193	850	15 27 01
15 30 30	J1102+5941	09 26 07	75.1	54.6	-1.6		-104.9	-18	850	No stop
15 32 00	=1059+599	09 27 37	75.3	54.4	-1.6		-105.5	72	856	15 30 31
15 32 00	IRAS10597+59	09 27 37	75.4	56.3	-1.6		-103.5	-17	856	No stop
15 35 30	---	09 31 07	75.8	55.9	-1.5		-104.7	193	870	15 32 01

Schedule for TORUN (Code Tr )

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VLBI follow-up of the first (of many) OH Megamasers detected with Aperti

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SYNC: Time correlator 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 1 Jun 2021 Day 152 ---										
15 36 00	J1102+5941	09 31 37	75.8	53.8	-1.5		-106.9	12	870	15 36 00
15 37 30	=1059+599	09 33 08	75.9	53.6	-1.5		-107.4	90	875	15 36 01
15 37 30	IRAS10597+59	09 33 08	76.1	55.6	-1.5		-105.4	-18	875	No stop
15 41 00	---	09 36 38	76.5	55.1	-1.5		-106.7	192	889	15 37 31
15 41 00	J1102+5941	09 36 38	76.4	53.0	-1.5		-108.7	-18	889	No stop
15 42 30	=1059+599	09 38 09	76.5	52.7	-1.4		-109.3	72	895	15 41 01
15 42 30	IRAS10597+59	09 38 09	76.7	54.8	-1.4		-107.2	-18	895	No stop
15 46 00	---	09 41 39	77.1	54.2	-1.4		-108.6	192	908	15 42 31
15 46 30	J1102+5941	09 42 09	77.0	52.0	-1.4		-110.9	12	908	15 46 30
15 48 00	=1059+599	09 43 39	77.2	51.7	-1.3		-111.5	90	914	15 46 31
15 48 00	IRAS10597+59	09 43 39	77.4	53.8	-1.3		-109.4	-18	914	No stop
15 51 30	---	09 47 10	77.8	53.1	-1.3		-110.9	192	927	15 48 01
15 51 30	J1102+5941	09 47 10	77.6	50.9	-1.3		-113.1	-19	927	No stop
15 53 00	=1059+599	09 48 40	77.8	50.5	-1.3		-113.7	71	933	15 51 31
15 53 00	IRAS10597+59	09 48 40	78.0	52.8	-1.3		-111.5	-18	933	No stop
15 56 30	---	09 52 11	78.4	52.0	-1.2		-113.1	192	947	15 53 01
15 57 00	J1102+5941	09 52 41	78.2	49.5	-1.2		-115.6	11	947	15 57 00
15 58 30	=1059+599	09 54 11	78.4	49.1	-1.2		-116.3	90	953	15 57 01
15 58 30	IRAS10597+59	09 54 11	78.6	51.4	-1.2		-114.0	-19	953	No stop
16 02 00	---	09 57 42	79.0	50.5	-1.1		-115.7	191	966	15 58 31
16 02 00	J1102+5941	09 57 42	78.8	48.1	-1.1		-118.1	-19	966	No stop
16 03 30	=1059+599	09 59 12	79.0	47.6	-1.1		-118.9	71	972	16 02 01
16 03 30	IRAS10597+59	09 59 12	79.2	50.0	-1.1		-116.5	-19	972	No stop
16 07 00	---	10 02 43	79.6	48.9	-1.0		-118.3	191	985	16 03 31
16 07 30	J1102+5941	10 03 13	79.4	46.2	-1.0		-121.1	11	985	16 07 30
16 09 00	=1059+599	10 04 43	79.6	45.7	-1.0		-121.9	90	991	16 07 31
16 09 00	IRAS10597+59	10 04 43	79.8	48.2	-1.0		-119.5	-19	991	No stop
16 12 30	---	10 08 13	80.2	46.9	-0.9		-121.5	191	1005	16 09 01
16 12 30	J1102+5941	10 08 13	79.9	44.3	-0.9		-124.0	-19	1005	No stop
16 14 00	=1059+599	10 09 44	80.1	43.7	-0.9		-125.0	71	1011	16 12 31

Schedule for TORUN (Code Tr )

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Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Tue 1 Jun 2021 Day 152 ---										
16 14 00	IRAS10597+59	10 09 44	80.4	46.3	-0.9	-122.4	-19	1011	No stop	
16 17 30	---	10 13 14	80.8	44.7	-0.8	-124.7	191	1024	16 14 01	
16 18 00	J1102+5941	10 13 44	80.5	41.9	-0.8	-127.6	10	1024	16 18 00	
16 19 30	=1059+599	10 15 15	80.7	41.2	-0.8	-128.6	90	1030	16 18 01	
16 19 30	IRAS10597+59	10 15 15	81.0	43.8	-0.8	-126.0	-19	1030	No stop	
16 23 00	---	10 18 45	81.3	42.0	-0.8	-128.6	191	1043	16 19 31	
16 23 00	J1102+5941	10 18 45	81.0	39.4	-0.8	-131.1	-20	1043	No stop	
16 24 30	=1059+599	10 20 15	81.1	38.6	-0.7	-132.3	70	1049	16 23 01	
16 24 30	IRAS10597+59	10 20 15	81.5	41.2	-0.7	-129.7	-19	1049	No stop	
16 28 00	---	10 23 46	81.8	39.2	-0.7	-132.5	191	1063	16 24 31	
16 28 30	J1102+5941	10 24 16	81.5	36.3	-0.7	-135.4	10	1063	16 28 30	
16 30 00	=1059+599	10 25 46	81.6	35.3	-0.6	-136.7	90	1069	16 28 31	
16 30 00	IRAS10597+59	10 25 46	82.0	37.9	-0.6	-134.1	-19	1069	No stop	
16 33 30	---	10 29 17	82.3	35.5	-0.6	-137.2	191	1082	16 30 01	
16 33 30	J1102+5941	10 29 17	81.9	33.0	-0.6	-139.7	-20	1082	No stop	
16 35 00	=1059+599	10 30 47	82.1	32.0	-0.6	-141.1	70	1088	16 33 31	
16 35 00	IRAS10597+59	10 30 47	82.4	34.5	-0.6	-138.6	-19	1088	No stop	
16 38 30	---	10 34 18	82.7	31.8	-0.5	-142.0	191	1101	16 35 01	
16 39 00	J1102+5941	10 34 48	82.4	29.0	-0.5	-144.9	11	1101	16 39 00	
16 40 30	=1059+599	10 36 18	82.5	27.8	-0.5	-146.4	90	1107	16 39 01	
16 40 30	IRAS10597+59	10 36 18	82.9	30.1	-0.5	-144.1	-18	1107	No stop	
16 44 00	---	10 39 49	83.1	27.0	-0.4	-147.9	192	1121	16 40 31	
16 44 00	J1102+5941	10 39 49	82.7	24.8	-0.4	-150.1	-19	1121	No stop	
16 45 30	=1059+599	10 41 19	82.8	23.5	-0.4	-151.7	71	1127	16 44 01	
16 45 30	IRAS10597+59	10 41 19	83.2	25.7	-0.4	-149.6	-17	1127	No stop	
16 49 00	---	10 44 49	83.5	22.2	-0.3	-153.8	193	1140	16 45 31	
16 49 30	J1102+5941	10 45 20	83.0	19.8	-0.3	-156.3	12	1140	16 49 30	
16 51 00	=1059+599	10 46 50	83.1	18.4	-0.3	-158.0	90	1146	16 49 31	
16 51 00	IRAS10597+59	10 46 50	83.6	20.2	-0.3	-156.3	-16	1146	No stop	
16 54 30	---	10 50 20	83.7	16.4	-0.2	-160.8	194	1159	16 51 01	



Schedule for TORUN (Code Tr )

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Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Tue 1 Jun 2021 Day 152 ---										
16 54 30	J1102+5941	10 50 20	83.2	14.9	-0.2		-162.3	-17	1159	No stop
16 56 00	=1059+599	10 51 51	83.3	13.3	-0.2		-164.2	73	1165	16 54 31
16 56 00	IRAS10597+59	10 51 51	83.8	14.7	-0.2		-162.8	-15	1165	No stop
16 59 30	---	10 55 21	83.9	10.6	-0.1		-167.6	195	1179	16 56 01
17 00 00	J1102+5941	10 55 51	83.4	9.0	-0.1		-169.3	15	1179	17 00 00
17 01 30	=1059+599	10 57 22	83.5	7.4	-0.1		-171.2	90	1184	17 00 01
17 01 30	IRAS10597+59	10 57 22	84.0	8.2	-0.1		-170.4	-13	1184	No stop
17 05 00	---	11 00 52	84.0	3.9	-0.1		-175.4	197	1198	17 01 31
17 05 00	J1102+5941	11 00 52	83.5	3.5	-0.1		-175.8	-13	1198	No stop
17 06 30	=1059+599	11 02 22	83.5	1.8	-0.0		-177.8	77	1204	17 05 01
17 06 30	IRAS10597+59	11 02 22	84.0	2.1	-0.0		-177.6	-13	1204	No stop
17 10 00	---	11 05 53	84.0	-2.2	0.0		177.4	197	1217	17 06 31
17 10 30	J1102+5941	11 06 23	83.5	-2.7	0.0		176.8	17	1217	17 10 30
17 12 00	=1059+599	11 07 53	83.5	-4.4	0.1		174.8	90	1223	17 10 31
17 12 00	IRAS10597+59	11 07 53	84.0	-4.7	0.1		174.5	-13	1223	No stop
17 15 30	---	11 11 24	83.9	-9.0	0.1		169.5	197	1237	17 12 01
17 15 30	J1102+5941	11 11 24	83.4	-8.2	0.1		170.2	-13	1237	No stop
17 17 00	=1059+599	11 12 54	83.4	-9.9	0.1		168.3	77	1242	17 15 31
17 17 00	IRAS10597+59	11 12 54	83.9	-10.8	0.1		167.4	-14	1242	No stop
17 20 30	---	11 16 25	83.8	-14.8	0.2		162.6	196	1256	17 17 01
17 21 00	J1102+5941	11 16 55	83.3	-14.1	0.2		163.2	16	1256	17 21 00
17 22 30	=1059+599	11 18 25	83.2	-15.6	0.2		161.4	90	1262	17 21 01
17 22 30	IRAS10597+59	11 18 25	83.7	-17.1	0.2		160.0	-16	1262	No stop
17 26 00	---	11 21 56	83.5	-20.8	0.3		155.5	194	1275	17 22 31
17 26 00	J1102+5941	11 21 56	83.1	-19.1	0.3		157.1	-16	1275	No stop
17 27 30	=1059+599	11 23 26	83.0	-20.6	0.3		155.4	74	1281	17 26 01
17 27 30	IRAS10597+59	11 23 26	83.4	-22.4	0.3		153.6	-18	1281	No stop
17 31 00	---	11 26 56	83.2	-25.8	0.4		149.5	192	1295	17 27 31
17 31 30	J1102+5941	11 27 26	82.8	-24.2	0.4		150.9	13	1295	17 31 30
17 33 00	=1059+599	11 28 57	82.7	-25.5	0.4		149.3	90	1300	17 31 31

Schedule for TORUN (Code Tr )

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Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Tue 1 Jun 2021 Day 152 ---										
17 33 00	IRAS10597+59	11 28 57	83.1	-27.6	0.4		147.2	-19	1300	No stop
17 36 30	---	11 32 27	82.8	-30.6	0.5		143.5	191	1314	17 33 01
17 36 30	J1102+5941	11 32 27	82.4	-28.4	0.5		145.7	-18	1314	No stop
17 38 00	=1059+599	11 33 58	82.3	-29.6	0.5		144.2	72	1320	17 36 31
17 43 00	3C345	11 38 58	38.4	72.4	-5.1		-48.1	82	1320	17 43 00
17 48 00	---	11 43 59	39.2	73.2	-5.0		-48.4	300	1339	17 43 01
17 53 00	J1102+5941	11 49 00	81.0	-39.3	0.8		131.3	61	1339	17 53 00
17 58 00	=1059+599	11 54 01	80.5	-41.8	0.8		127.7	300	1358	17 53 01
17 58 00	IRAS10597+59	11 54 01	80.8	-44.3	0.8		125.3	-19	1358	No stop
18 01 30	---	11 57 31	80.5	-45.9	0.9		123.0	191	1372	17 58 01
18 02 00	J1102+5941	11 58 01	80.1	-43.6	0.9		125.1	11	1372	18 02 00
18 03 30	=1059+599	11 59 32	80.0	-44.2	0.9		124.2	90	1378	18 02 01
18 03 30	IRAS10597+59	11 59 32	80.3	-46.7	0.9		121.7	-19	1378	No stop
18 07 00	---	12 03 02	79.9	-48.1	1.0		119.7	191	1391	18 03 31
18 07 00	J1102+5941	12 03 02	79.6	-45.6	1.0		122.1	-19	1391	No stop
18 08 30	=1059+599	12 04 33	79.4	-46.2	1.0		121.2	71	1397	18 07 01
18 08 30	IRAS10597+59	12 04 33	79.7	-48.6	1.0		118.8	-19	1397	No stop
18 12 00	---	12 08 03	79.3	-49.7	1.1		116.9	191	1411	18 08 31
18 12 30	J1102+5941	12 08 33	79.0	-47.5	1.1		119.0	11	1411	18 12 30
18 14 00	=1059+599	12 10 03	78.8	-48.0	1.1		118.2	90	1416	18 12 31
18 14 00	IRAS10597+59	12 10 03	79.1	-50.4	1.1		115.9	-19	1416	No stop
18 17 30	---	12 13 34	78.7	-51.3	1.2		114.2	191	1430	18 14 01
18 17 30	J1102+5941	12 13 34	78.4	-49.0	1.2		116.4	-18	1430	No stop
18 19 00	=1059+599	12 15 04	78.3	-49.4	1.2		115.7	72	1436	18 17 31
18 19 00	IRAS10597+59	12 15 04	78.5	-51.7	1.2		113.5	-19	1436	No stop
18 22 30	---	12 18 35	78.1	-52.6	1.2		111.9	191	1449	18 19 01
18 23 00	J1102+5941	12 19 05	77.8	-50.5	1.3		113.8	12	1449	18 23 00
18 24 30	=1059+599	12 20 35	77.6	-50.8	1.3		113.2	90	1455	18 23 01
18 24 30	IRAS10597+59	12 20 35	77.8	-53.0	1.3		111.0	-18	1455	No stop
18 28 00	---	12 24 06	77.4	-53.8	1.3		109.5	192	1469	18 24 31

Schedule for TORUN (Code Tr )

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VLBI follow-up of the first (of many) OH Megamasers detected with Aperti

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 1 Jun 2021 Day 152 ---										
18 28 00	J1102+5941	12 24 06	77.2	-51.6	1.3		111.7	-18	1469	No stop
18 29 30	=1059+599	12 25 36	77.0	-51.9	1.4		111.0	72	1474	18 28 01
18 29 30	IRAS10597+59	12 25 36	77.2	-54.1	1.4		108.9	-18	1474	No stop
18 33 00	---	12 29 07	76.8	-54.7	1.4		107.6	192	1488	18 29 31
18 33 30	J1102+5941	12 29 37	76.6	-52.7	1.4		109.4	12	1488	18 33 30
18 35 00	=1059+599	12 31 07	76.4	-52.9	1.5		108.8	90	1494	18 33 31
18 35 00	IRAS10597+59	12 31 07	76.6	-55.0	1.5		106.8	-18	1494	No stop
18 38 30	---	12 34 37	76.1	-55.6	1.5		105.6	192	1507	18 35 01
18 38 30	J1102+5941	12 34 37	76.0	-53.5	1.5		107.5	-18	1507	No stop
18 40 00	=1059+599	12 36 08	75.8	-53.8	1.5		107.0	72	1513	18 38 31
18 40 00	IRAS10597+59	12 36 08	75.9	-55.8	1.5		105.0	-18	1513	No stop
18 43 30	---	12 39 38	75.5	-56.2	1.6		103.8	192	1527	18 40 01
18 44 00	J1102+5941	12 40 08	75.3	-54.3	1.6		105.5	13	1527	18 44 00
18 45 30	=1059+599	12 41 39	75.1	-54.5	1.6		105.0	90	1532	18 44 01
18 45 30	IRAS10597+59	12 41 39	75.2	-56.5	1.6		103.2	-18	1532	No stop
18 49 00	---	12 45 09	74.8	-56.8	1.7		102.1	192	1546	18 45 31
18 49 00	J1102+5941	12 45 09	74.7	-55.0	1.7		103.9	-17	1546	No stop
18 50 30	=1059+599	12 46 39	74.5	-55.1	1.7		103.4	73	1552	18 49 01
18 50 30	IRAS10597+59	12 46 39	74.6	-57.0	1.7		101.6	-17	1552	No stop
18 54 00	---	12 50 10	74.2	-57.3	1.8		100.5	193	1565	18 50 31
18 54 30	J1102+5941	12 50 40	74.0	-55.5	1.8		102.1	13	1565	18 54 30
18 56 00	=1059+599	12 52 10	73.8	-55.7	1.8		101.7	90	1571	18 54 31
18 56 00	IRAS10597+59	12 52 10	73.9	-57.5	1.8		99.9	-17	1571	No stop
18 59 30	---	12 55 41	73.5	-57.7	1.9		98.9	193	1584	18 56 01
18 59 30	J1102+5941	12 55 41	73.4	-56.0	1.9		100.6	-17	1584	No stop
19 01 00	=1059+599	12 57 11	73.2	-56.1	1.9		100.2	73	1590	18 59 31
19 01 00	IRAS10597+59	12 57 11	73.3	-57.8	1.9		98.5	-17	1590	No stop
19 04 30	---	13 00 42	72.8	-58.1	1.9		97.5	193	1604	19 01 01
19 05 00	J1102+5941	13 01 12	72.7	-56.4	2.0		99.0	13	1604	19 05 00
19 06 30	=1059+599	13 02 42	72.5	-56.5	2.0		98.6	90	1610	19 05 01

Schedule for TORUN (Code Tr )

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VLBI follow-up of the first (of many) OH Megamasers detected with Aperti

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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 1 Jun 2021 Day 152 ---										
19 06 30	IRAS10597+59	13 02 42	72.6	-58.2	2.0		97.0	-17	1610	No stop
19 10 00	---	13 06 13	72.1	-58.3	2.0		96.1	193	1623	19 06 31
19 10 00	J1102+5941	13 06 13	72.1	-56.7	2.0		97.7	-16	1623	No stop
19 11 30	=1059+599	13 07 43	71.9	-56.8	2.1		97.3	74	1629	19 10 01
19 11 30	IRAS10597+59	13 07 43	71.9	-58.4	2.1		95.7	-16	1629	No stop
19 15 00	---	13 11 13	71.5	-58.5	2.1		94.8	194	1642	19 11 31
19 15 30	J1102+5941	13 11 44	71.4	-57.0	2.1		96.2	14	1642	19 15 30
19 17 00	=1059+599	13 13 14	71.2	-57.0	2.2		95.8	90	1648	19 15 31
19 17 00	IRAS10597+59	13 13 14	71.2	-58.6	2.2		94.3	-16	1648	No stop
19 20 30	---	13 16 44	70.8	-58.7	2.2		93.5	194	1662	19 17 01
19 20 30	J1102+5941	13 16 44	70.7	-57.1	2.2		95.0	-16	1662	No stop
19 22 00	=1059+599	13 18 15	70.5	-57.2	2.2		94.6	74	1668	19 20 31
19 22 00	IRAS10597+59	13 18 15	70.6	-58.7	2.2		93.1	-16	1668	No stop
19 25 30	---	13 21 45	70.1	-58.8	2.3		92.3	194	1681	19 22 01
19 26 00	J1102+5941	13 22 15	70.0	-57.3	2.3		93.6	14	1681	19 26 00
19 27 30	=1059+599	13 23 46	69.9	-57.3	2.3		93.3	90	1687	19 26 01
19 27 30	IRAS10597+59	13 23 46	69.9	-58.8	2.3		91.9	-16	1687	No stop
19 31 00	---	13 27 16	69.4	-58.9	2.4		91.1	194	1700	19 27 31
19 31 00	J1102+5941	13 27 16	69.4	-57.4	2.4		92.4	-16	1700	No stop
19 32 30	=1059+599	13 28 46	69.2	-57.4	2.4		92.1	74	1706	19 31 01
19 32 30	IRAS10597+59	13 28 46	69.2	-58.9	2.4		90.8	-16	1706	No stop
19 36 00	---	13 32 17	68.8	-58.9	2.5		90.0	194	1720	19 32 31
19 36 30	J1102+5941	13 32 47	68.7	-57.5	2.5		91.2	14	1720	19 36 30
19 38 00	=1059+599	13 34 17	68.5	-57.5	2.5		90.9	90	1726	19 36 31
19 38 00	IRAS10597+59	13 34 17	68.5	-58.9	2.5		89.6	-16	1726	No stop
19 41 30	---	13 37 48	68.1	-58.9	2.6		88.8	194	1739	19 38 01
19 41 30	J1102+5941	13 37 48	68.1	-57.5	2.6		90.1	-15	1739	No stop
19 43 00	=1059+599	13 39 18	67.9	-57.5	2.6		89.8	75	1745	19 41 31
19 43 00	IRAS10597+59	13 39 18	67.9	-58.8	2.6		88.5	-15	1745	No stop
19 46 30	---	13 42 49	67.4	-58.8	2.6		87.8	195	1758	19 43 01

Schedule for TORUN (Code Tr )

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VLBI follow-up of the first (of many) OH Megamasers detected with Aperti

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SYNC: Time correlator 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 1 Jun 2021 Day 152 ---										
19 47 00	J1102+5941	13 43 19	67.4	-57.5	2.7		88.9	15	1758	19 47 00
19 48 30	=1059+599	13 44 49	67.2	-57.5	2.7		88.6	90	1764	19 47 01
19 48 30	IRAS10597+59	13 44 49	67.2	-58.8	2.7		87.4	-15	1764	No stop
19 52 00	---	13 48 20	66.7	-58.7	2.7		86.7	195	1778	19 48 31
19 52 00	J1102+5941	13 48 20	66.7	-57.4	2.7		87.9	-15	1778	No stop
19 53 30	=1059+599	13 49 50	66.6	-57.4	2.8		87.6	75	1784	19 52 01
19 53 30	IRAS10597+59	13 49 50	66.5	-58.7	2.8		86.4	-15	1784	No stop
19 57 00	---	13 53 20	66.1	-58.6	2.8		85.7	195	1797	19 53 31
19 57 30	J1102+5941	13 53 50	66.0	-57.3	2.8		86.8	15	1797	19 57 30
19 59 00	=1059+599	13 55 21	65.9	-57.3	2.9		86.5	90	1803	19 57 31
19 59 00	IRAS10597+59	13 55 21	65.8	-58.6	2.9		85.3	-15	1803	No stop
20 02 30	---	13 58 51	65.4	-58.5	2.9		84.7	195	1816	19 59 01
20 02 30	J1102+5941	13 58 51	65.4	-57.2	2.9		85.8	-15	1816	No stop
20 04 00	=1059+599	14 00 22	65.2	-57.2	2.9		85.5	75	1822	20 02 31
20 09 00	3C345	14 05 22	60.1	100.4	-2.6		-50.2	-30	1822	20 09 00
20 14 00	---	14 10 23	60.9	101.6	-2.6		-49.9	270	1841	20 09 01
20 19 00	J1102+5941	14 15 24	63.3	-56.8	3.2		82.7	-32	1841	20 19 00
20 24 00	=1059+599	14 20 25	62.7	-56.6	3.3		81.7	268	1861	20 19 01
20 24 00	IRAS10597+59	14 20 25	62.6	-57.7	3.3		80.8	-14	1861	No stop
20 27 30	---	14 23 55	62.2	-57.5	3.3		80.2	196	1874	20 24 01
20 28 00	J1102+5941	14 24 25	62.2	-56.4	3.3		81.0	16	1874	20 28 00
20 29 30	=1059+599	14 25 56	62.0	-56.3	3.4		80.8	90	1880	20 28 01
20 29 30	IRAS10597+59	14 25 56	61.9	-57.4	3.4		79.8	-14	1880	No stop
20 33 00	---	14 29 26	61.5	-57.2	3.4		79.2	196	1894	20 29 31
20 33 00	J1102+5941	14 29 26	61.6	-56.2	3.4		80.1	-14	1894	No stop
20 34 30	=1059+599	14 30 57	61.4	-56.1	3.4		79.9	76	1899	20 33 01
20 34 30	IRAS10597+59	14 30 57	61.3	-57.2	3.4		79.0	-14	1899	No stop
20 38 00	---	14 34 27	60.9	-57.0	3.5		78.4	196	1913	20 34 31
20 38 30	J1102+5941	14 34 57	60.9	-55.9	3.5		79.2	16	1913	20 38 30
20 40 00	=1059+599	14 36 27	60.7	-55.8	3.5		78.9	90	1919	20 38 31

Schedule for TORUN (Code Tr )

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VLBI follow-up of the first (of many) OH Megamasers detected with Aperti

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SYNC: Time correlator 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 1 Jun 2021 Day 152 ---										
20 40 00	IRAS10597+59	14 36 27	60.6	-56.9	3.5		78.0	-14	1919	No stop
20 43 30	---	14 39 58	60.2	-56.7	3.6		77.5	196	1932	20 40 01
20 43 30	J1102+5941	14 39 58	60.3	-55.7	3.6		78.3	-14	1932	No stop
20 45 00	=1059+599	14 41 28	60.1	-55.6	3.6		78.1	76	1938	20 43 31
20 45 00	IRAS10597+59	14 41 28	60.0	-56.6	3.6		77.2	-14	1938	No stop
20 48 30	---	14 44 59	59.5	-56.4	3.7		76.6	196	1952	20 45 01
20 49 00	J1102+5941	14 45 29	59.6	-55.4	3.7		77.4	16	1952	20 49 00
20 50 30	=1059+599	14 46 59	59.4	-55.3	3.7		77.1	90	1957	20 49 01
20 50 30	IRAS10597+59	14 46 59	59.3	-56.3	3.7		76.3	-14	1957	No stop
20 54 00	---	14 50 30	58.8	-56.1	3.8		75.7	196	1971	20 50 31
20 54 00	J1102+5941	14 50 30	59.0	-55.1	3.8		76.5	-14	1971	No stop
20 55 30	=1059+599	14 52 00	58.8	-55.0	3.8		76.3	76	1977	20 54 01
20 55 30	IRAS10597+59	14 52 00	58.7	-56.0	3.8		75.5	-14	1977	No stop
20 59 00	---	14 55 31	58.2	-55.7	3.9		74.9	196	1990	20 55 31
20 59 30	J1102+5941	14 56 01	58.3	-54.8	3.9		75.6	16	1990	20 59 30
21 01 00	=1059+599	14 57 31	58.1	-54.7	3.9		75.4	90	1996	20 59 31
21 01 00	IRAS10597+59	14 57 31	58.0	-55.6	3.9		74.6	-14	1996	No stop
21 04 30	---	15 01 01	57.5	-55.4	3.9		74.0	196	2010	21 01 01
21 04 30	J1102+5941	15 01 01	57.7	-54.5	4.0		74.8	-14	2010	No stop
21 06 00	=1059+599	15 02 32	57.5	-54.4	4.0		74.6	76	2015	21 04 31
21 06 00	IRAS10597+59	15 02 32	57.4	-55.3	4.0		73.8	-14	2015	No stop
21 09 30	---	15 06 02	56.9	-55.1	4.0		73.2	196	2029	21 06 01
21 10 00	J1102+5941	15 06 32	57.0	-54.1	4.0		73.9	16	2029	21 10 00
21 11 30	=1059+599	15 08 03	56.8	-54.0	4.1		73.7	90	2035	21 10 01
21 11 30	IRAS10597+59	15 08 03	56.7	-54.9	4.1		72.9	-13	2035	No stop
21 15 00	---	15 11 33	56.2	-54.7	4.1		72.4	197	2048	21 11 31
21 15 00	J1102+5941	15 11 33	56.4	-53.8	4.1		73.1	-13	2048	No stop
21 16 30	=1059+599	15 13 03	56.2	-53.7	4.2		72.9	77	2054	21 15 01
21 16 30	IRAS10597+59	15 13 03	56.1	-54.6	4.1		72.1	-13	2054	No stop
21 20 00	---	15 16 34	55.6	-54.3	4.2		71.6	197	2068	21 16 31

Schedule for TORUN (Code Tr )

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VLBI follow-up of the first (of many) OH Megamasers detected with Aperti

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Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Tue 1 Jun 2021 Day 152 ---										
21 20 30	J1102+5941	15 17 04	55.7	-53.4	4.2		72.2	17	2068	21 20 30
21 22 00	=1059+599	15 18 34	55.5	-53.3	4.2		72.0	90	2073	21 20 31
21 22 00	IRAS10597+59	15 18 34	55.4	-54.2	4.2		71.3	-13	2073	No stop
21 25 30	---	15 22 05	55.0	-53.9	4.3		70.7	197	2087	21 22 01
21 25 30	J1102+5941	15 22 05	55.1	-53.1	4.3		71.4	-13	2087	No stop
21 27 00	=1059+599	15 23 35	54.9	-53.0	4.3		71.2	77	2093	21 25 31
21 27 00	IRAS10597+59	15 23 35	54.8	-53.8	4.3		70.5	-13	2093	No stop
21 30 30	---	15 27 06	54.4	-53.5	4.4		70.0	197	2106	21 27 01
21 31 00	J1102+5941	15 27 36	54.5	-52.7	4.4		70.6	17	2106	21 31 00
21 32 30	=1059+599	15 29 06	54.3	-52.6	4.4		70.3	90	2112	21 31 01
21 32 30	IRAS10597+59	15 29 06	54.1	-53.4	4.4		69.7	-13	2112	No stop
21 36 00	---	15 32 37	53.7	-53.1	4.5		69.1	197	2126	21 32 31
21 36 00	J1102+5941	15 32 37	53.9	-52.3	4.5		69.8	-13	2126	No stop
21 37 30	=1059+599	15 34 07	53.7	-52.2	4.5		69.5	77	2131	21 36 01
21 37 30	IRAS10597+59	15 34 07	53.5	-53.0	4.5		68.9	-13	2131	No stop
21 41 00	---	15 37 37	53.1	-52.7	4.6		68.4	197	2145	21 37 31
21 41 30	J1102+5941	15 38 08	53.2	-51.9	4.6		68.9	17	2145	21 41 30
21 43 00	=1059+599	15 39 38	53.0	-51.8	4.6		68.7	90	2151	21 41 31
21 43 00	IRAS10597+59	15 39 38	52.9	-52.6	4.6		68.1	-13	2151	No stop
21 46 30	---	15 43 08	52.4	-52.3	4.7		67.5	197	2164	21 43 01
21 46 30	J1102+5941	15 43 08	52.6	-51.5	4.7		68.1	-13	2164	No stop
21 48 00	=1059+599	15 44 39	52.4	-51.4	4.7		67.9	77	2170	21 46 31
21 48 00	IRAS10597+59	15 44 39	52.3	-52.2	4.7		67.3	-13	2170	No stop
21 51 30	---	15 48 09	51.8	-51.9	4.7		66.8	197	2183	21 48 01
21 52 00	J1102+5941	15 48 39	52.0	-51.1	4.7		67.3	17	2183	21 52 00
21 53 30	=1059+599	15 50 10	51.8	-51.0	4.8		67.1	90	2189	21 52 01
21 53 30	IRAS10597+59	15 50 10	51.6	-51.7	4.8		66.5	-13	2189	No stop
21 57 00	---	15 53 40	51.2	-51.4	4.8		66.0	197	2203	21 53 31
21 57 00	J1102+5941	15 53 40	51.4	-50.7	4.8		66.5	-13	2203	No stop
21 58 30	=1059+599	15 55 10	51.2	-50.5	4.9		66.3	77	2209	21 57 01

Schedule for TORUN (Code Tr )

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VLBI follow-up of the first (of many) OH Megamasers detected with Aperti

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SYNC: Time correlator 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 1 Jun 2021 Day 152 ---										
21 58 30	IRAS10597+59	15 55 10	51.0	-51.3	4.9		65.7	-13	2209	No stop
22 02 00	---	15 58 41	50.6	-51.0	4.9		65.2	197	2222	21 58 31
22 02 30	J1102+5941	15 59 11	50.8	-50.2	4.9		65.7	17	2222	22 02 30
22 04 00	=1059+599	16 00 41	50.6	-50.1	4.9		65.5	90	2228	22 02 31
22 04 00	IRAS10597+59	16 00 41	50.4	-50.8	4.9		64.9	-13	2228	No stop
22 07 30	---	16 04 12	50.0	-50.5	5.0		64.4	197	2241	22 04 01
22 07 30	J1102+5941	16 04 12	50.2	-49.8	5.0		64.9	-13	2241	No stop
22 09 00	=1059+599	16 05 42	50.0	-49.7	5.0		64.7	77	2247	22 07 31
22 09 00	IRAS10597+59	16 05 42	49.8	-50.4	5.0		64.2	-13	2247	No stop
22 12 30	---	16 09 13	49.4	-50.1	5.1		63.7	197	2261	22 09 01
22 13 00	J1102+5941	16 09 43	49.5	-49.3	5.1		64.1	17	2261	22 13 00
22 14 30	=1059+599	16 11 13	49.4	-49.2	5.1		63.9	90	2267	22 13 01
22 14 30	IRAS10597+59	16 11 13	49.2	-49.9	5.1		63.4	-12	2267	No stop
22 18 00	---	16 14 44	48.8	-49.6	5.2		62.8	198	2280	22 14 31
22 18 00	J1102+5941	16 14 44	49.0	-48.9	5.2		63.3	-13	2280	No stop
22 19 30	=1059+599	16 16 14	48.8	-48.8	5.2		63.1	77	2286	22 18 01
22 19 30	IRAS10597+59	16 16 14	48.6	-49.5	5.2		62.6	-12	2286	No stop
22 23 00	---	16 19 44	48.2	-49.2	5.3		62.1	198	2299	22 19 31
22 23 30	J1102+5941	16 20 14	48.4	-48.4	5.3		62.5	18	2299	22 23 30
22 25 00	=1059+599	16 21 45	48.2	-48.3	5.3		62.3	90	2305	22 23 31
22 25 00	IRAS10597+59	16 21 45	48.0	-49.0	5.3		61.8	-12	2305	No stop
22 28 30	---	16 25 15	47.6	-48.7	5.4		61.3	198	2319	22 25 01
22 28 30	J1102+5941	16 25 15	47.8	-48.0	5.4		61.8	-12	2319	No stop
22 30 00	=1059+599	16 26 46	47.6	-47.8	5.4		61.5	78	2325	22 28 31
22 30 00	IRAS10597+59	16 26 46	47.4	-48.5	5.4		61.1	-12	2325	No stop
22 33 30	---	16 30 16	47.0	-48.2	5.4		60.6	198	2338	22 30 01
22 34 00	J1102+5941	16 30 46	47.2	-47.5	5.4		60.9	18	2338	22 34 00
22 35 30	=1059+599	16 32 16	47.0	-47.4	5.5		60.7	90	2344	22 34 01
22 35 30	IRAS10597+59	16 32 16	46.8	-48.0	5.5		60.3	-12	2344	No stop
22 39 00	---	16 35 47	46.4	-47.7	5.5		59.7	198	2357	22 35 31



Schedule for TORUN (Code Tr )

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VLBI follow-up of the first (of many) OH Megamasers detected with Aperti

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 1 Jun 2021 Day 152 ---										
22 39 00	J1102+5941	16 35 47	46.6	-47.0	5.5		60.2	-12	2357	No stop
22 40 30	=1059+599	16 37 17	46.5	-46.9	5.6		60.0	78	2363	22 39 01
22 40 30	IRAS10597+59	16 37 17	46.2	-47.5	5.6		59.5	-12	2363	No stop
22 44 00	---	16 40 48	45.8	-47.2	5.6		59.0	198	2377	22 40 31
22 44 30	J1102+5941	16 41 18	46.0	-46.5	5.6		59.4	18	2377	22 44 30
22 46 00	=1059+599	16 42 48	45.9	-46.4	5.6		59.2	90	2383	22 44 31
22 46 00	IRAS10597+59	16 42 48	45.6	-47.0	5.6		58.7	-12	2383	No stop
22 49 30	---	16 46 19	45.2	-46.7	5.7		58.2	198	2396	22 46 01
22 49 30	J1102+5941	16 46 19	45.5	-46.1	5.7		58.6	-12	2396	No stop
22 51 00	=1059+599	16 47 49	45.3	-45.9	5.7		58.4	78	2402	22 49 31
22 51 00	IRAS10597+59	16 47 49	45.1	-46.5	5.7		58.0	-12	2402	No stop
22 54 30	---	16 51 20	44.7	-46.2	5.8		57.5	198	2415	22 51 01
22 55 00	J1102+5941	16 51 50	44.9	-45.5	5.8		57.8	18	2415	22 55 00
22 56 30	=1059+599	16 53 20	44.7	-45.4	5.8		57.6	90	2421	22 55 01
22 56 30	IRAS10597+59	16 53 20	44.5	-46.0	5.8		57.2	-12	2421	No stop
23 00 00	---	16 56 50	44.1	-45.7	5.9		56.7	198	2435	22 56 31
23 00 00	J1102+5941	16 56 50	44.4	-45.1	5.9		57.1	-12	2435	No stop
23 01 30	=1059+599	16 58 21	44.2	-44.9	5.9		56.8	78	2440	23 00 01
23 01 30	IRAS10597+59	16 58 21	43.9	-45.5	5.9		56.4	-12	2440	No stop
23 05 00	---	17 01 51	43.5	-45.2	6.0		55.9	198	2454	23 01 31
23 05 30	J1102+5941	17 02 21	43.8	-44.5	6.0		56.3	18	2454	23 05 30
23 07 00	=1059+599	17 03 52	43.6	-44.4	6.0		56.0	90	2460	23 05 31
23 07 00	IRAS10597+59	17 03 52	43.3	-45.0	6.0		55.6	-12	2460	No stop
23 10 30	---	17 07 22	43.0	-44.6	6.1		55.1	198	2473	23 07 01
23 10 30	J1102+5941	17 07 22	43.2	-44.0	6.1		55.5	-12	2473	No stop
23 12 00	=1059+599	17 08 52	43.1	-43.9	6.1		55.3	78	2479	23 10 31
23 12 00	IRAS10597+59	17 08 52	42.8	-44.5	6.1		54.9	-12	2479	No stop
23 15 30	---	17 12 23	42.4	-44.1	6.1		54.4	198	2493	23 12 01
23 16 00	J1102+5941	17 12 53	42.7	-43.5	6.1		54.7	18	2493	23 16 00
23 17 30	=1059+599	17 14 23	42.5	-43.3	6.2		54.5	90	2498	23 16 01

Schedule for TORUN (Code Tr )

Page 19

VLBI follow-up of the first (of many) OH Megamasers detected with Aperti

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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   1 Jun 2021   Day 152 ---

23 17 30 IRAS10597+59  17 14 23  42.2 -43.9  6.2      54.1  -12    2498  No stop
23 21 00 ---          17 17 54  41.9 -43.5  6.2      53.6  198    2512  23 17 31

23 21 00 J1102+5941  17 17 54  42.2 -43.0  6.2      53.9  -12    2512  No stop
23 22 30 =1059+599  17 19 24  42.0 -42.8  6.3      53.7   78    2518  23 21 01

23 22 30 IRAS10597+59  17 19 24  41.7 -43.4  6.3      53.4  -12    2518  No stop
23 26 00 ---          17 22 55  41.3 -43.0  6.3      52.9  198    2531  23 22 31

23 26 30 J1102+5941  17 23 25  41.6 -42.4  6.3      53.1   18    2531  23 26 30
23 28 00 =1059+599  17 24 55  41.4 -42.3  6.3      52.9   90    2537  23 26 31

23 28 00 IRAS10597+59  17 24 55  41.1 -42.8  6.3      52.6  -12    2537  No stop
23 30 00 ---          17 26 55  40.9 -42.6  6.4      52.3  108    2545  23 28 01

```

## SETUP FILE INFORMATION:

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

==== Setup file: sess221.H512

```

Setup group:   10          Station: TORUN          Total bit rate:   512
Format: VDIF          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=	2100.00	2100.00	2100.00	2100.00	2100.00	2100.00	2100.00	2100.00	2100.00
	2100.00	2100.00	2100.00	2100.00	2100.00	2100.00	2100.00	2100.00	2100.00
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	9	1	9	2	10	2	10	10
	3	11	3	11	4	12	4	12	12
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=	1351.84	1351.84	1351.84	1351.84	1370.59	1370.59	1370.59	1370.59
	1389.09	1389.09	1389.09	1389.09	1434.34	1434.34	1434.34	1434.34
BBC fr=	748.16	748.16	748.16	748.16	729.41	729.41	729.41	729.41
	710.91	710.91	710.91	710.91	665.66	665.66	665.66	665.66
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= 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16

barrel=roll\_off

#### POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* IRAS10597+59	10 59 44.785916	* 11 02 47.066000	11 04 03.883889	0.00
	59 26 45.43336	* 59 10 36.31000	59 04 02.92774	0.00
* 4C39.25	09 23 55.319216	* 09 27 03.013937	09 28 21.445308	0.31
J0927+3902	39 15 23.56644	* 39 02 20.85185	38 56 59.56008	0.16
0923+392	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc2016			
J0927+39	GSFC 2016a X/S astro solution, 250526 observations.			
1059+599	10 59 39.855860	* 11 02 42.762822	11 03 59.839818	0.87
* J1102+5941	59 57 28.62234	* 59 41 19.58540	59 34 46.34722	0.48
	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc2016			
	GSFC 2016a X/S astro solution, 37 observations.			
* 3C345	16 41 17.606229	* 16 42 58.809967	16 43 43.269429	0.79
J1642+3948	39 54 10.81492	* 39 48 36.99399	39 46 13.94338	0.59
1641+399	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc2016			
J1642+39	GSFC 2016a X/S astro solution, 53724 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)
IRAS10597+59	74.2
4C39.25	62.8
J1102+5941	74.0
3C345	118.1

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

RESOLVING THE AGN/STARBURST CONNECTION IN A HIGH-Z QUASAR ON PC-SCA  
 PI: *John McKean*

Address: ASTRON

Observing mode: 18cm 1024-8-2

Schedule for TORUN (Code Tr )

Page 2

Resolving the AGN/starburst connection in a high-z quasar on pc-scales

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 2 Jun 2021 Day 153 ---										
Next scan frequencies: 1626.49 1626.49 1626.49 1626.49 1690.49 1690.49 1690.49 1690.49										
Next BBC frequencies: 673.51 673.51 673.51 673.51 609.51 609.51 609.51 609.51										
Next scan bandwidths: 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00										
14 30 00	J1415+1320	08 29 23	12.4	84.4	-5.8		-37.9	0	0	14 30 00
14 31 30	=1413+135	08 30 53	12.6	84.7	-5.8		-37.9	90	12	14 30 01
14 31 30	H1413+117	08 30 53	11.2	85.9	-5.8		-37.7	-19	12	No stop
14 35 00	---	08 34 24	11.7	86.6	-5.7		-37.7	191	39	14 31 31
14 35 30	J1415+1320	08 34 54	13.2	85.5	-5.7		-37.9	11	39	14 35 30
14 37 00	=1413+135	08 36 24	13.4	85.8	-5.7		-38.0	90	50	14 35 31
14 37 00	H1413+117	08 36 24	12.0	87.0	-5.7		-37.7	-19	50	No stop
14 40 30	---	08 39 55	12.5	87.7	-5.6		-37.7	191	77	14 37 01
14 40 30	J1415+1320	08 39 55	14.0	86.5	-5.6		-38.0	-19	77	No stop
14 42 00	=1413+135	08 41 25	14.2	86.8	-5.6		-38.0	71	89	14 40 31
14 42 00	H1413+117	08 41 25	12.8	88.0	-5.6		-37.7	-19	89	No stop
14 45 30	---	08 44 56	13.3	88.7	-5.5		-37.8	191	116	14 42 01
14 46 00	J1415+1320	08 45 26	14.8	87.6	-5.5		-38.0	11	116	14 46 00
14 47 30	=1413+135	08 46 56	15.0	87.8	-5.5		-38.1	90	128	14 46 01
14 47 30	H1413+117	08 46 56	13.6	89.1	-5.5		-37.8	-19	128	No stop
14 51 00	---	08 50 27	14.1	89.8	-5.4		-37.8	191	155	14 47 31
14 51 00	J1415+1320	08 50 27	15.6	88.5	-5.4		-38.1	-19	155	No stop
14 52 30	=1413+135	08 51 57	15.8	88.8	-5.4		-38.1	71	166	14 51 01
14 52 30	H1413+117	08 51 57	14.4	90.1	-5.4		-37.8	-19	166	No stop
14 56 00	---	08 55 27	14.9	90.8	-5.4		-37.8	191	193	14 52 31
14 56 30	J1415+1320	08 55 58	16.4	89.6	-5.4		-38.1	11	193	14 56 30
14 58 00	=1413+135	08 57 28	16.6	89.9	-5.3		-38.1	90	205	14 56 31
14 58 00	H1413+117	08 57 28	15.2	91.2	-5.3		-37.8	-19	205	No stop
15 01 30	---	09 00 58	15.7	91.9	-5.3		-37.8	191	232	14 58 01
15 01 30	J1415+1320	09 00 58	17.1	90.6	-5.3		-38.1	-19	232	No stop
15 03 00	=1413+135	09 02 29	17.4	91.0	-5.2		-38.1	71	243	15 01 31

Schedule for TORUN (Code Tr )

Page 3

Resolving the AGN/starburst connection in a high-z quasar on pc-scales

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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	2 Jun 2021	Day 153					---			
15 08 00	4C39.25	09 07 29	75.4	163.7	-0.3		-12.5	69	243	15 08 00	
15 13 00	---	09 12 30	75.6	167.5	-0.3		-9.6	300	282	15 08 01	
15 18 00	J1415+1320	09 17 31	19.6	94.0	-5.0		-38.0	75	282	15 18 00	
15 23 00	=1413+135	09 22 32	20.4	95.0	-4.9		-37.9	300	321	15 18 01	
15 23 00	H1413+117	09 22 32	18.9	96.3	-4.9		-37.5	-19	321	No stop	
15 26 30	---	09 26 02	19.5	97.0	-4.8		-37.4	191	348	15 23 01	
15 27 00	J1415+1320	09 26 33	21.0	95.8	-4.8		-37.9	11	348	15 27 00	
15 28 30	=1413+135	09 28 03	21.2	96.1	-4.8		-37.8	90	359	15 27 01	
15 28 30	H1413+117	09 28 03	19.8	97.4	-4.8		-37.4	-19	359	No stop	
15 32 00	---	09 31 33	20.3	98.1	-4.8		-37.3	191	386	15 28 31	
15 32 00	J1415+1320	09 31 33	21.7	96.9	-4.8		-37.8	-19	386	No stop	
15 33 30	=1413+135	09 33 04	21.9	97.2	-4.7		-37.7	71	398	15 32 01	
15 33 30	H1413+117	09 33 04	20.5	98.4	-4.7		-37.3	-19	398	No stop	
15 37 00	---	09 36 34	21.0	99.2	-4.7		-37.2	191	425	15 33 31	
15 37 30	J1415+1320	09 37 04	22.5	98.0	-4.7		-37.7	11	425	15 37 30	
15 39 00	=1413+135	09 38 35	22.8	98.3	-4.6		-37.6	90	437	15 37 31	
15 39 00	H1413+117	09 38 35	21.3	99.6	-4.6		-37.2	-19	437	No stop	
15 42 30	---	09 42 05	21.8	100.3	-4.6		-37.1	191	464	15 39 01	
15 42 30	J1415+1320	09 42 05	23.3	99.1	-4.6		-37.5	-19	464	No stop	
15 44 00	=1413+135	09 43 35	23.5	99.4	-4.6		-37.5	71	475	15 42 31	
15 44 00	H1413+117	09 43 35	22.1	100.6	-4.6		-37.0	-19	475	No stop	
15 47 30	---	09 47 06	22.6	101.4	-4.5		-36.9	191	502	15 44 01	
15 48 00	J1415+1320	09 47 36	24.1	100.2	-4.5		-37.4	11	502	15 48 00	
15 49 30	=1413+135	09 49 06	24.3	100.6	-4.5		-37.3	90	514	15 48 01	
15 49 30	H1413+117	09 49 06	22.9	101.8	-4.5		-36.8	-19	514	No stop	
15 53 00	---	09 52 37	23.4	102.6	-4.4		-36.7	191	541	15 49 31	
15 53 00	J1415+1320	09 52 37	24.8	101.3	-4.4		-37.2	-19	541	No stop	
15 54 30	=1413+135	09 54 07	25.1	101.6	-4.4		-37.2	71	553	15 53 01	
15 54 30	H1413+117	09 54 07	23.6	102.9	-4.4		-36.7	-19	553	No stop	
15 58 00	---	09 57 38	24.1	103.6	-4.3		-36.5	191	580	15 54 31	
15 58 30	J1415+1320	09 58 08	25.6	102.5	-4.3		-37.0	11	580	15 58 30	
16 00 00	=1413+135	09 59 38	25.9	102.8	-4.3		-37.0	90	591	15 58 31	

Schedule for TORUN (Code Tr )

Page 4

Resolving the AGN/starburst connection in a high-z quasar on pc-scales

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 2 Jun 2021 Day 153 ---										
16 00 00	H1413+117	09 59 38	24.4	104.1	-4.3		-36.5	-19	591	No stop
16 03 30	---	10 03 09	24.9	104.8	-4.2		-36.3	191	618	16 00 01
16 03 30	J1415+1320	10 03 09	26.4	103.6	-4.2		-36.8	-19	618	No stop
16 05 00	=1413+135	10 04 39	26.6	103.9	-4.2		-36.8	71	630	16 03 31
16 05 00	H1413+117	10 04 39	25.1	105.2	-4.2		-36.2	-19	630	No stop
16 08 30	---	10 08 09	25.7	105.9	-4.1		-36.1	191	657	16 05 01
16 09 00	J1415+1320	10 08 39	27.2	104.8	-4.1		-36.6	11	657	16 09 00
16 10 30	=1413+135	10 10 10	27.4	105.1	-4.1		-36.6	90	669	16 09 01
16 10 30	H1413+117	10 10 10	25.9	106.4	-4.1		-36.0	-19	669	No stop
16 14 00	---	10 13 40	26.4	107.1	-4.1		-35.8	191	696	16 10 31
16 14 00	J1415+1320	10 13 40	27.9	105.9	-4.1		-36.4	-19	696	No stop
16 15 30	=1413+135	10 15 11	28.1	106.2	-4.0		-36.3	71	707	16 14 01
16 15 30	H1413+117	10 15 11	26.7	107.5	-4.0		-35.8	-19	707	No stop
16 19 00	---	10 18 41	27.2	108.3	-4.0		-35.6	191	734	16 15 31
16 19 30	J1415+1320	10 19 11	28.7	107.1	-4.0		-36.1	11	734	16 19 30
16 21 00	=1413+135	10 20 41	28.9	107.4	-3.9		-36.1	90	746	16 19 31
16 21 00	H1413+117	10 20 41	27.4	108.7	-3.9		-35.5	-19	746	No stop
16 24 30	---	10 24 12	27.9	109.5	-3.9		-35.3	191	773	16 21 01
16 24 30	J1415+1320	10 24 12	29.4	108.2	-3.9		-35.9	-19	773	No stop
16 26 00	=1413+135	10 25 42	29.6	108.6	-3.9		-35.8	71	785	16 24 31
16 26 00	H1413+117	10 25 42	28.2	109.8	-3.9		-35.2	-19	785	No stop
16 29 30	---	10 29 13	28.7	110.6	-3.8		-35.0	191	812	16 26 01
16 30 00	J1415+1320	10 29 43	30.2	109.5	-3.8		-35.6	11	812	16 30 00
16 31 30	=1413+135	10 31 13	30.4	109.8	-3.8		-35.5	90	823	16 30 01
16 31 30	H1413+117	10 31 13	28.9	111.1	-3.8		-34.9	-19	823	No stop
16 35 00	---	10 34 44	29.4	111.9	-3.7		-34.6	191	850	16 31 31
16 35 00	J1415+1320	10 34 44	30.9	110.6	-3.7		-35.3	-19	850	No stop
16 36 30	=1413+135	10 36 14	31.1	111.0	-3.7		-35.2	71	862	16 35 01
16 36 30	H1413+117	10 36 14	29.6	112.3	-3.7		-34.5	-19	862	No stop
16 40 00	---	10 39 45	30.1	113.1	-3.6		-34.3	191	889	16 36 31

Schedule for TORUN (Code Tr )

Page 5

Resolving the AGN/starburst connection in a high-z quasar on pc-scales

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 2 Jun 2021 Day 153 ---										
16 40 30	J1415+1320	10 40 15	31.7	111.9	-3.6		-34.9	11	889	16 40 30
16 42 00	=1413+135	10 41 45	31.9	112.3	-3.6		-34.8	90	900	16 40 31
16 42 00	H1413+117	10 41 45	30.4	113.6	-3.6		-34.2	-19	900	No stop
16 45 30	---	10 45 15	30.9	114.4	-3.5		-33.9	191	927	16 42 01
16 45 30	J1415+1320	10 45 15	32.4	113.1	-3.5		-34.6	-19	927	No stop
16 47 00	=1413+135	10 46 46	32.6	113.5	-3.5		-34.5	71	939	16 45 31
16 47 00	H1413+117	10 46 46	31.1	114.7	-3.5		-33.8	-19	939	No stop
16 50 30	---	10 50 16	31.6	115.6	-3.4		-33.5	191	966	16 47 01
16 51 00	J1415+1320	10 50 46	33.1	114.4	-3.4		-34.2	11	966	16 51 00
16 52 30	=1413+135	10 52 17	33.3	114.8	-3.4		-34.1	90	978	16 51 01
16 52 30	H1413+117	10 52 17	31.8	116.1	-3.4		-33.4	-19	978	No stop
16 56 00	---	10 55 47	32.3	116.9	-3.4		-33.1	191	1005	16 52 31
16 56 00	J1415+1320	10 55 47	33.8	115.6	-3.4		-33.8	-19	1005	No stop
16 57 30	=1413+135	10 57 17	34.0	116.0	-3.3		-33.7	71	1016	16 56 01
16 57 30	H1413+117	10 57 17	32.5	117.3	-3.3		-33.0	-19	1016	No stop
17 01 00	---	11 00 48	33.0	118.1	-3.3		-32.7	191	1043	16 57 31
17 01 30	J1415+1320	11 01 18	34.6	117.0	-3.3		-33.3	11	1043	17 01 30
17 03 00	=1413+135	11 02 48	34.8	117.4	-3.2		-33.2	90	1055	17 01 31
17 03 00	H1413+117	11 02 48	33.2	118.6	-3.2		-32.5	-19	1055	No stop
17 06 30	---	11 06 19	33.7	119.5	-3.2		-32.2	191	1082	17 03 01
17 06 30	J1415+1320	11 06 19	35.2	118.2	-3.2		-32.9	-19	1082	No stop
17 08 00	=1413+135	11 07 49	35.4	118.6	-3.2		-32.8	71	1094	17 06 31
17 08 00	H1413+117	11 07 49	33.9	119.9	-3.1		-32.1	-19	1094	No stop
17 11 30	---	11 11 20	34.3	120.8	-3.1		-31.8	191	1121	17 08 01
17 12 00	J1415+1320	11 11 50	35.9	119.6	-3.1		-32.4	11	1121	17 12 00
17 13 30	=1413+135	11 13 20	36.1	120.0	-3.1		-32.3	90	1132	17 12 01
17 13 30	H1413+117	11 13 20	34.6	121.3	-3.1		-31.6	-19	1132	No stop
17 17 00	---	11 16 51	35.1	122.2	-3.0		-31.2	191	1159	17 13 31
17 17 00	J1415+1320	11 16 51	36.6	120.9	-3.0		-32.0	-19	1159	No stop
17 18 30	=1413+135	11 18 21	36.8	121.3	-3.0		-31.8	71	1171	17 17 01



Schedule for TORUN (Code Tr )

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Resolving the AGN/starburst connection in a high-z quasar on pc-scales

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 2 Jun 2021 Day 153 ---										
17 18 30	H1413+117	11 18 21	35.2	122.5	-3.0		-31.1	-19	1171	No stop
17 22 00	---	11 21 51	35.7	123.4	-2.9		-30.7	191	1198	17 18 31
17 22 30	J1415+1320	11 22 22	37.3	122.3	-2.9		-31.4	10	1198	17 22 30
17 24 00	=1413+135	11 23 52	37.5	122.7	-2.9		-31.3	90	1210	17 22 31
17 24 00	H1413+117	11 23 52	35.9	124.0	-2.9		-30.5	-19	1210	No stop
17 27 30	---	11 27 22	36.4	124.9	-2.8		-30.2	191	1237	17 24 01
17 27 30	J1415+1320	11 27 22	37.9	123.7	-2.8		-30.9	-20	1237	No stop
17 29 00	=1413+135	11 28 53	38.1	124.1	-2.8		-30.7	70	1248	17 27 31
17 29 00	H1413+117	11 28 53	36.6	125.3	-2.8		-30.0	-19	1248	No stop
17 32 30	---	11 32 23	37.0	126.2	-2.7		-29.6	191	1275	17 29 01
17 33 00	J1415+1320	11 32 53	38.6	125.1	-2.7		-30.3	10	1275	17 33 00
17 34 30	=1413+135	11 34 24	38.8	125.5	-2.7		-30.1	90	1287	17 33 01
17 34 30	H1413+117	11 34 24	37.2	126.8	-2.7		-29.4	-19	1287	No stop
17 38 00	---	11 37 54	37.6	127.7	-2.6		-29.0	191	1314	17 34 31
17 38 00	J1415+1320	11 37 54	39.2	126.5	-2.7		-29.7	-20	1314	No stop
17 39 30	=1413+135	11 39 24	39.4	126.9	-2.6		-29.6	70	1326	17 38 01
17 39 30	H1413+117	11 39 24	37.8	128.1	-2.6		-28.8	-19	1326	No stop
17 43 00	---	11 42 55	38.2	129.1	-2.6		-28.4	191	1353	17 39 31
17 43 30	J1415+1320	11 43 25	39.9	128.0	-2.6		-29.1	10	1353	17 43 30
17 45 00	=1413+135	11 44 55	40.1	128.4	-2.5		-28.9	90	1364	17 43 31
17 45 00	H1413+117	11 44 55	38.5	129.6	-2.5		-28.2	-19	1364	No stop
17 48 30	---	11 48 26	38.9	130.6	-2.5		-27.7	191	1391	17 45 01
17 48 30	J1415+1320	11 48 26	40.5	129.4	-2.5		-28.5	-20	1391	No stop
17 50 00	=1413+135	11 49 56	40.6	129.8	-2.5		-28.3	70	1403	17 48 31
17 50 00	H1413+117	11 49 56	39.0	131.0	-2.4		-27.5	-20	1403	No stop
17 53 30	---	11 53 27	39.4	132.0	-2.4		-27.1	190	1430	17 50 01
17 54 00	J1415+1320	11 53 57	41.1	131.0	-2.4		-27.8	10	1430	17 54 00
17 55 30	=1413+135	11 55 27	41.3	131.4	-2.4		-27.6	90	1441	17 54 01
17 55 30	H1413+117	11 55 27	39.7	132.6	-2.4		-26.8	-20	1441	No stop
17 59 00	---	11 58 58	40.0	133.6	-2.3		-26.4	190	1469	17 55 31

Schedule for TORUN (Code Tr )

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Resolving the AGN/starburst connection in a high-z quasar on pc-scales

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 2 Jun 2021 Day 153 ---										
17 59 00	J1415+1320	11 58 58	41.7	132.4	-2.3		-27.1	-20	1469	No stop
18 00 30	=1413+135	12 00 28	41.8	132.8	-2.3		-26.9	70	1480	17 59 01
18 00 30	H1413+117	12 00 28	40.2	134.0	-2.3		-26.1	-20	1480	No stop
18 04 00	---	12 03 58	40.6	135.0	-2.2		-25.7	190	1507	18 00 31
18 04 30	J1415+1320	12 04 28	42.3	134.0	-2.2		-26.3	10	1507	18 04 30
18 06 00	=1413+135	12 05 59	42.4	134.5	-2.2		-26.1	90	1519	18 04 31
18 06 00	H1413+117	12 05 59	40.8	135.6	-2.2		-25.4	-20	1519	No stop
18 09 30	---	12 09 29	41.2	136.6	-2.1		-24.9	190	1546	18 06 01
18 09 30	J1415+1320	12 09 29	42.8	135.5	-2.1		-25.6	-20	1546	No stop
18 11 00	=1413+135	12 11 00	43.0	136.0	-2.1		-25.4	70	1557	18 09 31
18 11 00	H1413+117	12 11 00	41.3	137.1	-2.1		-24.7	-20	1557	No stop
18 14 30	---	12 14 30	41.7	138.1	-2.0		-24.1	190	1584	18 11 01
18 15 00	J1415+1320	12 15 00	43.4	137.2	-2.0		-24.8	10	1584	18 15 00
18 16 30	=1413+135	12 16 30	43.5	137.6	-2.0		-24.6	90	1596	18 15 01
18 16 30	H1413+117	12 16 30	41.9	138.7	-2.0		-23.8	-20	1596	No stop
18 20 00	---	12 20 01	42.2	139.8	-1.9		-23.3	190	1623	18 16 31
18 20 00	J1415+1320	12 20 01	43.9	138.7	-2.0		-24.0	-20	1623	No stop
18 21 30	=1413+135	12 21 31	44.0	139.2	-1.9		-23.8	70	1635	18 20 01
18 21 30	H1413+117	12 21 31	42.4	140.2	-1.9		-23.1	-20	1635	No stop
18 25 00	---	12 25 02	42.7	141.3	-1.9		-22.5	190	1662	18 21 31
18 25 30	J1415+1320	12 25 32	44.4	140.4	-1.9		-23.1	10	1662	18 25 30
18 27 00	=1413+135	12 27 02	44.6	140.9	-1.8		-22.9	90	1673	18 25 31
18 27 00	H1413+117	12 27 02	42.9	141.9	-1.8		-22.2	-20	1673	No stop
18 30 30	---	12 30 33	43.2	143.0	-1.8		-21.6	190	1700	18 27 01
18 30 30	J1415+1320	12 30 33	44.9	142.0	-1.8		-22.3	-20	1700	No stop
18 32 00	=1413+135	12 32 03	45.0	142.5	-1.7		-22.1	70	1712	18 30 31
18 32 00	H1413+117	12 32 03	43.3	143.5	-1.7		-21.4	-20	1712	No stop
18 35 30	---	12 35 34	43.6	144.6	-1.7		-20.8	190	1739	18 32 01
18 36 00	J1415+1320	12 36 04	45.4	143.8	-1.7		-21.4	10	1739	18 36 00
18 37 30	=1413+135	12 37 34	45.5	144.3	-1.7		-21.1	90	1751	18 36 01

Schedule for TORUN (Code Tr )

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Resolving the AGN/starburst connection in a high-z quasar on pc-scales

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 2 Jun 2021 Day 153 ---										
18 37 30	H1413+117	12 37 34	43.8	145.2	-1.7		-20.4	-20	1751	No stop
18 41 00	---	12 41 04	44.1	146.4	-1.6		-19.8	190	1778	18 37 31
18 41 00	J1415+1320	12 41 04	45.8	145.4	-1.6		-20.5	-20	1778	No stop
18 42 30	=1413+135	12 42 35	46.0	145.9	-1.6		-20.2	70	1789	18 41 01
18 42 30	H1413+117	12 42 35	44.2	146.8	-1.6		-19.6	-20	1789	No stop
18 46 00	---	12 46 05	44.5	148.0	-1.5		-19.0	190	1816	18 42 31
18 46 30	J1415+1320	12 46 35	46.3	147.2	-1.5		-19.5	10	1816	18 46 30
18 48 00	=1413+135	12 48 06	46.4	147.7	-1.5		-19.2	90	1828	18 46 31
18 48 00	H1413+117	12 48 06	44.7	148.6	-1.5		-18.6	-20	1828	No stop
18 51 30	---	12 51 36	44.9	149.8	-1.4		-18.0	190	1855	18 48 01
18 51 30	J1415+1320	12 51 36	46.7	148.9	-1.4		-18.6	-20	1855	No stop
18 53 00	=1413+135	12 53 06	46.8	149.4	-1.4		-18.3	70	1867	18 51 31
18 53 00	H1413+117	12 53 06	45.1	150.3	-1.4		-17.7	-20	1867	No stop
18 56 30	---	12 56 37	45.3	151.4	-1.3		-17.0	190	1894	18 53 01
18 57 00	J1415+1320	12 57 07	47.1	150.8	-1.3		-17.5	10	1894	18 57 00
18 58 30	=1413+135	12 58 37	47.2	151.3	-1.3		-17.2	90	1905	18 57 01
18 58 30	H1413+117	12 58 37	45.5	152.1	-1.3		-16.6	-20	1905	No stop
19 02 00	---	13 02 08	45.7	153.3	-1.2		-16.0	190	1932	18 58 31
19 02 00	J1415+1320	13 02 08	47.5	152.5	-1.2		-16.6	-20	1932	No stop
19 03 30	=1413+135	13 03 38	47.6	153.0	-1.2		-16.3	70	1944	19 02 01
19 03 30	H1413+117	13 03 38	45.8	153.8	-1.2		-15.7	-20	1944	No stop
19 07 00	---	13 07 09	46.0	155.0	-1.2		-15.0	190	1971	19 03 31
19 07 30	J1415+1320	13 07 39	47.8	154.4	-1.2		-15.5	10	1971	19 07 30
19 09 00	=1413+135	13 09 09	47.9	154.9	-1.1		-15.2	90	1983	19 07 31
19 09 00	H1413+117	13 09 09	46.2	155.7	-1.1		-14.6	-20	1983	No stop
19 12 30	---	13 12 40	46.4	156.9	-1.1		-13.9	190	2010	19 09 01
19 12 30	J1415+1320	13 12 40	48.1	156.2	-1.1		-14.4	-20	2010	No stop
19 14 00	=1413+135	13 14 10	48.2	156.7	-1.0		-14.1	70	2021	19 12 31
19 19 00	3C345	13 19 11	53.2	90.1	-3.4		-51.4	151	2021	19 19 00
19 24 00	---	13 24 12	54.0	91.2	-3.3		-51.4	300	2060	19 19 01

Schedule for TORUN (Code Tr )

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Resolving the AGN/starburst connection in a high-z quasar on pc-scales

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 2 Jun 2021 Day 153 ---										
19 29 00	J1415+1320	13 29 12	49.0	162.1	-0.8		-10.9	145	2060	19 29 00
19 34 00	=1413+135	13 34 13	49.2	163.9	-0.7		-9.8	300	2098	19 29 01
19 34 00	H1413+117	13 34 13	47.4	164.5	-0.7		-9.4	-20	2098	No stop
19 37 30	---	13 37 44	47.6	165.7	-0.7		-8.7	190	2126	19 34 01
19 38 00	J1415+1320	13 38 14	49.4	165.4	-0.6		-8.9	9	2126	19 38 00
19 39 30	=1413+135	13 39 44	49.5	166.0	-0.6		-8.6	90	2137	19 38 01
19 39 30	H1413+117	13 39 44	47.6	166.4	-0.6		-8.3	-21	2137	No stop
19 43 00	---	13 43 15	47.8	167.7	-0.6		-7.5	189	2164	19 39 31
19 43 00	J1415+1320	13 43 15	49.6	167.3	-0.6		-7.8	-21	2164	No stop
19 44 30	=1413+135	13 44 45	49.6	167.8	-0.5		-7.5	69	2176	19 43 01
19 44 30	H1413+117	13 44 45	47.8	168.3	-0.5		-7.2	-21	2176	No stop
19 48 00	---	13 48 15	47.9	169.5	-0.5		-6.4	189	2203	19 44 31
19 48 30	J1415+1320	13 48 46	49.8	169.3	-0.5		-6.6	9	2203	19 48 30
19 50 00	=1413+135	13 50 16	49.8	169.9	-0.4		-6.2	90	2214	19 48 31
19 50 00	H1413+117	13 50 16	48.0	170.3	-0.4		-6.0	-21	2214	No stop
19 53 30	---	13 53 46	48.0	171.5	-0.4		-5.2	189	2241	19 50 01
19 53 30	J1415+1320	13 53 46	49.9	171.2	-0.4		-5.4	-21	2241	No stop
19 55 00	=1413+135	13 55 17	49.9	171.8	-0.4		-5.1	69	2253	19 53 31
19 55 00	H1413+117	13 55 17	48.1	172.1	-0.4		-4.8	-21	2253	No stop
19 58 30	---	13 58 47	48.1	173.4	-0.3		-4.1	189	2280	19 55 01
19 59 00	J1415+1320	13 59 17	50.0	173.3	-0.3		-4.1	9	2280	19 59 00
20 00 30	=1413+135	14 00 48	50.0	173.8	-0.3		-3.8	90	2292	19 59 01
20 00 30	H1413+117	14 00 48	48.2	174.1	-0.3		-3.6	-21	2292	No stop
20 04 00	---	14 04 18	48.2	175.4	-0.2		-2.8	189	2319	20 00 31
20 04 00	J1415+1320	14 04 18	50.1	175.2	-0.2		-3.0	-21	2319	No stop
20 05 30	=1413+135	14 05 48	50.1	175.7	-0.2		-2.6	69	2330	20 04 01
20 05 30	H1413+117	14 05 48	48.2	175.9	-0.2		-2.5	-21	2330	No stop
20 09 00	---	14 09 19	48.3	177.2	-0.1		-1.7	189	2357	20 05 31
20 09 30	J1415+1320	14 09 49	50.1	177.3	-0.1		-1.7	9	2357	20 09 30
20 11 00	=1413+135	14 11 19	50.1	177.8	-0.1		-1.3	90	2369	20 09 31

Schedule for TORUN (Code Tr )

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Resolving the AGN/starburst connection in a high-z quasar on pc-scales

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 2 Jun 2021 Day 153 ---										
20 11 00	H1413+117	14 11 19	48.3	178.0	-0.1		-1.2	-21	2369	No stop
20 14 30	---	14 14 50	48.3	179.3	-0.0		-0.4	189	2396	20 11 01
20 14 30	J1415+1320	14 14 50	50.1	179.2	-0.0		-0.5	-21	2396	No stop
20 16 00	=1413+135	14 16 20	50.1	179.7	-0.0		-0.2	69	2408	20 14 31
20 16 00	H1413+117	14 16 20	48.3	179.8	-0.0		-0.1	-21	2408	No stop
20 19 30	---	14 19 51	48.3	181.1	0.1		0.7	189	2435	20 16 01
20 20 00	J1415+1320	14 20 21	50.1	181.3	0.1		0.8	9	2435	20 20 00
20 21 30	=1413+135	14 21 51	50.1	181.8	0.1		1.1	90	2446	20 20 01
20 21 30	H1413+117	14 21 51	48.3	181.9	0.1		1.1	-21	2446	No stop
20 25 00	---	14 25 22	48.3	183.1	0.1		1.9	189	2473	20 21 31
20 25 00	J1415+1320	14 25 22	50.1	183.2	0.1		2.0	-21	2473	No stop
20 26 30	=1413+135	14 26 52	50.1	183.7	0.2		2.3	69	2485	20 25 01
20 26 30	H1413+117	14 26 52	48.3	183.7	0.2		2.3	-21	2485	No stop
20 30 00	---	14 30 22	48.2	185.0	0.2		3.1	189	2512	20 26 31
20 30 30	J1415+1320	14 30 52	50.1	185.3	0.2		3.2	9	2512	20 30 30
20 32 00	=1413+135	14 32 23	50.0	185.8	0.3		3.6	90	2524	20 30 31
20 32 00	H1413+117	14 32 23	48.2	185.7	0.3		3.5	-21	2524	No stop
20 35 30	---	14 35 53	48.1	187.0	0.3		4.3	189	2551	20 32 01
20 35 30	J1415+1320	14 35 53	50.0	187.2	0.3		4.4	-21	2551	No stop
20 37 00	=1413+135	14 37 23	49.9	187.7	0.3		4.8	69	2562	20 35 31
20 37 00	H1413+117	14 37 23	48.1	187.6	0.3		4.6	-21	2562	No stop
20 40 30	---	14 40 54	48.0	188.8	0.4		5.4	189	2589	20 37 01
20 41 00	J1415+1320	14 41 24	49.9	189.2	0.4		5.7	9	2589	20 41 00
20 42 30	=1413+135	14 42 54	49.8	189.8	0.4		6.0	90	2601	20 41 01
20 42 30	H1413+117	14 42 54	48.0	189.6	0.4		5.8	-21	2601	No stop
20 46 00	---	14 46 25	47.9	190.9	0.5		6.6	189	2628	20 42 31
20 46 00	J1415+1320	14 46 25	49.7	191.1	0.5		6.8	-21	2628	No stop
20 47 30	=1413+135	14 47 55	49.7	191.7	0.5		7.2	69	2640	20 46 01
20 47 30	H1413+117	14 47 55	47.8	191.4	0.5		7.0	-21	2640	No stop
20 51 00	---	14 51 26	47.7	192.7	0.6		7.7	189	2667	20 47 31

Schedule for TORUN (Code Tr )

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Resolving the AGN/starburst connection in a high-z quasar on pc-scales

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 2 Jun 2021 Day 153 ---										
20 51 30	J1415+1320	14 51 56	49.5	193.2	0.6		8.1	9	2667	20 51 30
20 53 00	=1413+135	14 53 26	49.5	193.7	0.6		8.4	90	2678	20 51 31
20 53 00	H1413+117	14 53 26	47.7	193.4	0.6		8.2	-21	2678	No stop
20 56 30	---	14 56 57	47.5	194.7	0.7		8.9	189	2705	20 53 01
20 56 30	J1415+1320	14 56 57	49.4	195.0	0.7		9.2	-21	2705	No stop
20 58 00	=1413+135	14 58 27	49.3	195.6	0.7		9.5	69	2717	20 56 31
20 58 00	H1413+117	14 58 27	47.5	195.2	0.7		9.2	-21	2717	No stop
21 01 30	---	15 01 58	47.3	196.4	0.8		10.0	189	2744	20 58 01
21 02 00	J1415+1320	15 02 28	49.1	197.0	0.8		10.4	9	2744	21 02 00
21 03 30	=1413+135	15 03 58	49.1	197.6	0.8		10.7	90	2755	21 02 01
21 03 30	H1413+117	15 03 58	47.2	197.2	0.8		10.4	-21	2755	No stop
21 07 00	---	15 07 28	47.1	198.4	0.8		11.1	189	2782	21 03 31
21 07 00	J1415+1320	15 07 28	48.9	198.9	0.8		11.5	-21	2782	No stop
21 08 30	=1413+135	15 08 59	48.8	199.4	0.9		11.8	69	2794	21 07 01
21 08 30	H1413+117	15 08 59	47.0	198.9	0.9		11.5	-21	2794	No stop
21 12 00	---	15 12 29	46.8	200.2	0.9		12.2	189	2821	21 08 31
21 12 30	J1415+1320	15 12 59	48.6	200.9	0.9		12.7	10	2821	21 12 30
21 14 00	=1413+135	15 14 30	48.5	201.4	1.0		13.0	90	2833	21 12 31
21 14 00	H1413+117	15 14 30	46.7	200.9	1.0		12.6	-21	2833	No stop
21 17 30	---	15 18 00	46.5	202.1	1.0		13.3	189	2860	21 14 01
21 17 30	J1415+1320	15 18 00	48.3	202.7	1.0		13.7	-20	2860	No stop
21 19 00	=1413+135	15 19 30	48.3	203.2	1.0		14.1	70	2871	21 17 31
21 19 00	H1413+117	15 19 30	46.5	202.6	1.0		13.6	-21	2871	No stop
21 22 30	---	15 23 01	46.2	203.8	1.1		14.3	189	2898	21 19 01
21 23 00	J1415+1320	15 23 31	48.0	204.6	1.1		14.9	10	2898	21 23 00
21 24 30	=1413+135	15 25 01	47.9	205.1	1.1		15.2	90	2910	21 23 01
21 24 30	H1413+117	15 25 01	46.1	204.5	1.1		14.7	-21	2910	No stop
21 28 00	---	15 28 32	45.9	205.7	1.2		15.4	189	2937	21 24 31
21 28 00	J1415+1320	15 28 32	47.7	206.4	1.2		15.9	-20	2937	No stop
21 29 30	=1413+135	15 30 02	47.6	206.9	1.2		16.2	70	2949	21 28 01

Schedule for TORUN (Code Tr )

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Resolving the AGN/starburst connection in a high-z quasar on pc-scales

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

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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 2 Jun 2021 Day 153 ---										
21 29 30	H1413+117	15 30 02	45.8	206.2	1.2		15.7	-21	2949	No stop
21 33 00	---	15 33 33	45.6	207.4	1.3		16.4	189	2976	21 29 31
21 33 30	J1415+1320	15 34 03	47.3	208.3	1.3		17.0	10	2976	21 33 30
21 35 00	=1413+135	15 35 33	47.2	208.8	1.3		17.3	90	2987	21 33 31
21 35 00	H1413+117	15 35 33	45.4	208.1	1.3		16.7	-20	2987	No stop
21 38 30	---	15 39 04	45.2	209.2	1.4		17.4	190	3014	21 35 01
21 38 30	J1415+1320	15 39 04	46.9	210.0	1.4		17.9	-20	3014	No stop
21 40 00	=1413+135	15 40 34	46.8	210.5	1.4		18.2	70	3026	21 38 31
21 40 00	H1413+117	15 40 34	45.1	209.7	1.4		17.7	-20	3026	No stop
21 43 30	---	15 44 04	44.8	210.9	1.5		18.3	190	3053	21 40 01
21 44 00	J1415+1320	15 44 35	46.5	211.8	1.5		19.0	10	3053	21 44 00
21 45 30	=1413+135	15 46 05	46.4	212.3	1.5		19.3	90	3065	21 44 01
21 45 30	H1413+117	15 46 05	44.6	211.5	1.5		18.7	-20	3065	No stop
21 49 00	---	15 49 35	44.4	212.7	1.5		19.3	190	3092	21 45 31
21 49 00	J1415+1320	15 49 35	46.1	213.5	1.5		19.9	-20	3092	No stop
21 50 30	=1413+135	15 51 06	46.0	214.0	1.6		20.2	70	3103	21 49 01
21 50 30	H1413+117	15 51 06	44.2	213.2	1.6		19.6	-20	3103	No stop
21 54 00	---	15 54 36	43.9	214.3	1.6		20.2	190	3130	21 50 31
21 54 30	J1415+1320	15 55 06	45.6	215.3	1.6		20.9	10	3130	21 54 30
21 56 00	=1413+135	15 56 36	45.5	215.8	1.7		21.1	90	3142	21 54 31
21 56 00	H1413+117	15 56 36	43.8	214.9	1.7		20.5	-20	3142	No stop
21 59 30	---	16 00 07	43.5	216.0	1.7		21.1	190	3169	21 56 01
21 59 30	J1415+1320	16 00 07	45.2	216.9	1.7		21.7	-20	3169	No stop
22 01 00	=1413+135	16 01 37	45.1	217.4	1.7		22.0	70	3181	21 59 31
22 01 00	H1413+117	16 01 37	43.3	216.5	1.7		21.4	-20	3181	No stop
22 04 30	---	16 05 08	43.0	217.6	1.8		22.0	190	3208	22 01 01
22 05 00	J1415+1320	16 05 38	44.7	218.7	1.8		22.7	10	3208	22 05 00
22 06 30	=1413+135	16 07 08	44.5	219.1	1.8		22.9	90	3219	22 05 01
22 06 30	H1413+117	16 07 08	42.8	218.2	1.8		22.3	-20	3219	No stop
22 10 00	---	16 10 39	42.5	219.3	1.9		22.8	190	3246	22 06 31

Schedule for TORUN (Code Tr )

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Resolving the AGN/starburst connection in a high-z quasar on pc-scales

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

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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 2 Jun 2021 Day 153 ---										
22 10 00	J1415+1320	16 10 39	44.2	220.2	1.9		23.5	-20	3246	No stop
22 11 30	=1413+135	16 12 09	44.1	220.7	1.9		23.7	70	3258	22 10 01
22 11 30	H1413+117	16 12 09	42.4	219.8	1.9		23.1	-20	3258	No stop
22 15 00	---	16 15 40	42.0	220.8	2.0		23.6	190	3285	22 11 31
22 15 30	J1415+1320	16 16 10	43.7	221.9	2.0		24.4	10	3285	22 15 30
22 17 00	=1413+135	16 17 40	43.5	222.4	2.0		24.6	90	3296	22 15 31
22 17 00	H1413+117	16 17 40	41.8	221.4	2.0		23.9	-20	3296	No stop
22 20 30	---	16 21 11	41.5	222.5	2.1		24.4	190	3324	22 17 01
22 20 30	J1415+1320	16 21 11	43.2	223.5	2.1		25.1	-20	3324	No stop
22 22 00	=1413+135	16 22 41	43.0	223.9	2.1		25.3	70	3335	22 20 31
22 22 00	H1413+117	16 22 41	41.3	222.9	2.1		24.7	-20	3335	No stop
22 25 30	---	16 26 11	40.9	224.0	2.2		25.2	190	3362	22 22 01
22 26 00	J1415+1320	16 26 41	42.6	225.1	2.2		25.9	10	3362	22 26 00
22 27 30	=1413+135	16 28 12	42.4	225.6	2.2		26.1	90	3374	22 26 01
22 27 30	H1413+117	16 28 12	40.7	224.6	2.2		25.5	-20	3374	No stop
22 31 00	---	16 31 42	40.4	225.6	2.2		25.9	190	3401	22 27 31
22 31 00	J1415+1320	16 31 42	42.0	226.6	2.2		26.6	-20	3401	No stop
22 32 30	=1413+135	16 33 12	41.9	227.0	2.3		26.8	70	3412	22 31 01
22 32 30	H1413+117	16 33 12	40.2	226.0	2.3		26.2	-20	3412	No stop
22 36 00	---	16 36 43	39.8	227.0	2.3		26.6	190	3439	22 32 31
22 36 30	J1415+1320	16 37 13	41.4	228.2	2.3		27.4	10	3439	22 36 30
22 38 00	=1413+135	16 38 43	41.3	228.6	2.4		27.6	90	3451	22 36 31
22 38 00	H1413+117	16 38 43	39.6	227.6	2.4		26.9	-20	3451	No stop
22 41 30	---	16 42 14	39.2	228.6	2.4		27.3	190	3478	22 38 01
22 41 30	J1415+1320	16 42 14	40.9	229.6	2.4		28.0	-20	3478	No stop
22 43 00	=1413+135	16 43 44	40.7	230.1	2.4		28.2	70	3490	22 41 31
22 43 00	H1413+117	16 43 44	39.0	229.0	2.4		27.5	-20	3490	No stop
22 46 30	---	16 47 15	38.6	230.0	2.5		28.0	190	3517	22 43 01
22 47 00	J1415+1320	16 47 45	40.2	231.2	2.5		28.7	10	3517	22 47 00
22 48 30	=1413+135	16 49 15	40.0	231.6	2.5		28.9	90	3528	22 47 01



Schedule for TORUN (Code Tr )

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Resolving the AGN/starburst connection in a high-z quasar on pc-scales

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 2 Jun 2021 Day 153 ---										
22 48 30	H1413+117	16 49 15	38.4	230.5	2.5		28.2	-20	3528	No stop
22 52 00	---	16 52 46	38.0	231.5	2.6		28.6	190	3555	22 48 31
22 52 00	J1415+1320	16 52 46	39.6	232.6	2.6		29.3	-20	3555	No stop
22 53 30	=1413+135	16 54 16	39.5	233.0	2.6		29.5	70	3567	22 52 01
22 53 30	H1413+117	16 54 16	37.8	231.9	2.6		28.8	-20	3567	No stop
22 57 00	---	16 57 46	37.4	232.9	2.7		29.2	190	3594	22 53 31
22 57 30	J1415+1320	16 58 17	39.0	234.1	2.7		30.0	10	3594	22 57 30
22 59 00	=1413+135	16 59 47	38.8	234.5	2.7		30.1	90	3606	22 57 31
22 59 00	H1413+117	16 59 47	37.2	233.4	2.7		29.5	-20	3606	No stop
23 02 30	---	17 03 17	36.7	234.3	2.8		29.8	190	3633	22 59 01
23 02 30	J1415+1320	17 03 17	38.4	235.4	2.8		30.5	-20	3633	No stop
23 04 00	=1413+135	17 04 48	38.2	235.8	2.8		30.7	70	3644	23 02 31
23 04 00	H1413+117	17 04 48	36.5	234.7	2.8		30.0	-20	3644	No stop
23 07 30	---	17 08 18	36.1	235.6	2.9		30.4	190	3671	23 04 01
23 08 00	J1415+1320	17 08 48	37.7	236.9	2.9		31.1	10	3671	23 08 00
23 09 30	=1413+135	17 10 19	37.5	237.3	2.9		31.3	90	3683	23 08 01
23 09 30	H1413+117	17 10 19	35.9	236.2	2.9		30.6	-20	3683	No stop
23 13 00	---	17 13 49	35.4	237.1	3.0		30.9	190	3710	23 09 31
23 13 00	J1415+1320	17 13 49	37.0	238.2	2.9		31.6	-19	3710	No stop
23 14 30	=1413+135	17 15 19	36.8	238.6	3.0		31.8	71	3722	23 13 01
23 14 30	H1413+117	17 15 19	35.2	237.5	3.0		31.1	-20	3722	No stop
23 18 00	---	17 18 50	34.8	238.4	3.0		31.4	190	3749	23 14 31
23 18 30	J1415+1320	17 19 20	36.3	239.6	3.0		32.2	11	3749	23 18 30
23 20 00	=1413+135	17 20 50	36.1	240.0	3.1		32.3	90	3760	23 18 31
23 20 00	H1413+117	17 20 50	34.5	238.9	3.1		31.6	-20	3760	No stop
23 23 30	---	17 24 21	34.1	239.8	3.1		32.0	190	3787	23 20 01
23 23 30	J1415+1320	17 24 21	35.7	240.9	3.1		32.6	-19	3787	No stop
23 25 00	=1413+135	17 25 51	35.5	241.3	3.1		32.8	71	3799	23 23 31
23 25 00	H1413+117	17 25 51	33.9	240.1	3.2		32.1	-20	3799	No stop
23 28 30	---	17 29 22	33.4	241.0	3.2		32.4	190	3826	23 25 01

Schedule for TORUN (Code Tr )

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Resolving the AGN/starburst connection in a high-z quasar on pc-scales

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

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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 2 Jun 2021 Day 153 ---										
23 29 00	J1415+1320	17 29 52	34.9	242.3	3.2		33.1	11	3826	23 29 00
23 30 30	=1413+135	17 31 22	34.7	242.7	3.2		33.2	90	3838	23 29 01
23 30 30	H1413+117	17 31 22	33.2	241.5	3.2		32.6	-20	3838	No stop
23 34 00	---	17 34 53	32.7	242.4	3.3		32.9	190	3865	23 30 31
23 34 00	J1415+1320	17 34 53	34.3	243.5	3.3		33.5	-19	3865	No stop
23 35 30	=1413+135	17 36 23	34.1	243.9	3.3		33.6	71	3876	23 34 01
23 35 30	H1413+117	17 36 23	32.5	242.7	3.3		33.0	-20	3876	No stop
23 39 00	---	17 39 53	32.0	243.6	3.4		33.3	190	3903	23 35 31
23 39 30	J1415+1320	17 40 23	33.5	244.9	3.4		34.0	11	3903	23 39 30
23 41 00	=1413+135	17 41 54	33.3	245.2	3.4		34.1	90	3915	23 39 31
23 41 00	H1413+117	17 41 54	31.8	244.1	3.4		33.4	-20	3915	No stop
23 44 30	---	17 45 24	31.3	244.9	3.5		33.7	190	3942	23 41 01
23 44 30	J1415+1320	17 45 24	32.8	246.1	3.5		34.3	-19	3942	No stop
23 46 00	=1413+135	17 46 55	32.6	246.4	3.5		34.4	71	3953	23 44 31
23 51 00	3C345	17 51 55	72.3	227.9	1.1		35.4	136	3953	23 51 00
23 56 00	---	17 56 56	71.8	230.4	1.2		37.0	300	3992	23 51 01
--- Thu 3 Jun 2021 Day 154 ---										
00 01 00	J1415+1320	18 01 57	30.5	250.0	3.7		35.4	133	3992	00 01 00
00 06 00	=1413+135	18 06 58	29.8	251.1	3.8		35.7	300	4031	00 01 01
00 06 00	H1413+117	18 06 58	28.3	249.9	3.8		35.1	-19	4031	No stop
00 09 30	---	18 10 28	27.8	250.7	3.9		35.3	191	4058	00 06 01
00 10 00	J1415+1320	18 10 58	29.3	252.0	3.9		35.9	11	4058	00 10 00
00 11 30	=1413+135	18 12 29	29.0	252.4	3.9		36.0	90	4069	00 10 01
00 11 30	H1413+117	18 12 29	27.5	251.2	3.9		35.4	-19	4069	No stop
00 15 00	---	18 15 59	27.0	252.0	4.0		35.6	191	4096	00 11 31
00 15 00	J1415+1320	18 15 59	28.5	253.1	4.0		36.2	-19	4096	No stop
00 16 30	=1413+135	18 17 30	28.3	253.5	4.0		36.3	71	4108	00 15 01
00 16 30	H1413+117	18 17 30	26.8	252.3	4.0		35.7	-19	4108	No stop
00 20 00	---	18 21 00	26.3	253.1	4.1		35.9	191	4135	00 16 31

Schedule for TORUN (Code Tr )

Page 16

Resolving the AGN/starburst connection in a high-z quasar on pc-scales

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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	3 Jun 2021	Day 154		---					
00 20 30	J1415+1320	18 21 30	27.7	254.4	4.1		36.4	11	4135	00 20 30
00 22 00	=1413+135	18 23 00	27.5	254.7	4.1		36.5	90	4147	00 20 31
00 22 00	H1413+117	18 23 00	26.0	253.5	4.1		36.0	-19	4147	No stop
00 25 30	---	18 26 31	25.5	254.3	4.2		36.1	191	4174	00 22 01
00 25 30	J1415+1320	18 26 31	27.0	255.5	4.2		36.7	-19	4174	No stop
00 27 00	=1413+135	18 28 01	26.8	255.8	4.2		36.7	71	4185	00 25 31
00 27 00	H1413+117	18 28 01	25.3	254.6	4.2		36.2	-19	4185	No stop
00 30 30	---	18 31 32	24.8	255.4	4.2		36.4	191	4212	00 27 01
00 31 00	J1415+1320	18 32 02	26.2	256.7	4.3		36.9	11	4212	00 31 00
00 32 30	=1413+135	18 33 32	26.0	257.0	4.3		36.9	90	4224	00 31 01
00 32 30	H1413+117	18 33 32	24.5	255.8	4.3		36.4	-19	4224	No stop
00 36 00	---	18 37 03	24.0	256.6	4.3		36.6	191	4251	00 32 31
00 36 00	J1415+1320	18 37 03	25.5	257.8	4.3		37.1	-19	4251	No stop
00 37 30	=1413+135	18 38 33	25.3	258.1	4.4		37.1	71	4263	00 36 01
00 37 30	H1413+117	18 38 33	23.8	256.9	4.4		36.6	-19	4263	No stop
00 41 00	---	18 42 04	23.2	257.7	4.4		36.8	191	4290	00 37 31
00 41 30	J1415+1320	18 42 34	24.7	258.9	4.4		37.3	11	4290	00 41 30
00 43 00	=1413+135	18 44 04	24.4	259.3	4.5		37.3	90	4301	00 41 31
00 43 00	H1413+117	18 44 04	22.9	258.1	4.5		36.8	-19	4301	No stop
00 46 30	---	18 47 34	22.4	258.8	4.5		36.9	191	4328	00 43 01
00 46 30	J1415+1320	18 47 34	23.9	260.0	4.5		37.4	-19	4328	No stop
00 48 00	=1413+135	18 49 05	23.7	260.3	4.5		37.5	71	4340	00 46 31
00 48 00	H1413+117	18 49 05	22.2	259.2	4.5		37.0	-19	4340	No stop
00 51 30	---	18 52 35	21.7	259.9	4.6		37.1	191	4367	00 48 01
00 52 00	J1415+1320	18 53 05	23.1	261.2	4.6		37.6	11	4367	00 52 00
00 53 30	=1413+135	18 54 36	22.9	261.5	4.6		37.6	90	4379	00 52 01
00 53 30	H1413+117	18 54 36	21.4	260.3	4.6		37.1	-19	4379	No stop
00 57 00	---	18 58 06	20.9	261.1	4.7		37.2	191	4406	00 53 31
00 57 00	J1415+1320	18 58 06	22.4	262.2	4.7		37.7	-19	4406	No stop
00 58 30	=1413+135	18 59 36	22.1	262.5	4.7		37.7	71	4417	00 57 01

Schedule for TORUN (Code Tr )

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Resolving the AGN/starburst connection in a high-z quasar on pc-scales

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

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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 3 Jun 2021 Day 154 ---										
00 58 30	H1413+117	18 59 36	20.6	261.4	4.7		37.3	-19	4417	No stop
01 02 00	---	19 03 07	20.1	262.1	4.8		37.4	191	4444	00 58 31
01 02 30	J1415+1320	19 03 37	21.5	263.4	4.8		37.8	11	4444	01 02 30
01 04 00	=1413+135	19 05 07	21.3	263.7	4.8		37.8	90	4456	01 02 31
01 04 00	H1413+117	19 05 07	19.8	262.5	4.8		37.4	-19	4456	No stop
01 07 30	---	19 08 38	19.3	263.2	4.9		37.5	191	4483	01 04 01
01 07 30	J1415+1320	19 08 38	20.8	264.4	4.9		37.9	-19	4483	No stop
01 09 00	=1413+135	19 10 08	20.6	264.7	4.9		37.9	71	4495	01 07 31
01 09 00	H1413+117	19 10 08	19.1	263.5	4.9		37.5	-19	4495	No stop
01 12 30	---	19 13 39	18.6	264.3	4.9		37.6	191	4522	01 09 01
01 13 00	J1415+1320	19 14 09	20.0	265.5	5.0		38.0	11	4522	01 13 00
01 14 30	=1413+135	19 15 39	19.7	265.8	5.0		38.0	90	4533	01 13 01
01 14 30	H1413+117	19 15 39	18.3	264.7	5.0		37.6	-19	4533	No stop
01 18 00	---	19 19 10	17.7	265.4	5.0		37.6	191	4560	01 14 31
01 18 00	J1415+1320	19 19 10	19.2	266.5	5.0		38.0	-19	4560	No stop
01 19 30	=1413+135	19 20 40	19.0	266.9	5.1		38.0	71	4572	01 18 01
01 19 30	H1413+117	19 20 40	17.5	265.7	5.1		37.7	-19	4572	No stop
01 23 00	---	19 24 10	17.0	266.4	5.1		37.7	191	4599	01 19 31
01 23 30	J1415+1320	19 24 41	18.4	267.7	5.1		38.1	11	4599	01 23 30
01 25 00	=1413+135	19 26 11	18.2	268.0	5.2		38.1	90	4610	01 23 31
01 25 00	H1413+117	19 26 11	16.7	266.8	5.2		37.7	-19	4610	No stop
01 28 30	---	19 29 41	16.2	267.5	5.2		37.7	191	4637	01 25 01
01 28 30	J1415+1320	19 29 41	17.6	268.7	5.2		38.1	-19	4637	No stop
01 30 00	=1413+135	19 31 12	17.4	269.0	5.2		38.1	71	4649	01 28 31
01 30 00	H1413+117	19 31 12	15.9	267.8	5.2		37.7	-19	4649	No stop
01 33 30	---	19 34 42	15.4	268.5	5.3		37.8	191	4676	01 30 01
01 34 00	J1415+1320	19 35 12	16.8	269.8	5.3		38.1	11	4676	01 34 00
01 35 30	=1413+135	19 36 43	16.6	270.1	5.3		38.1	90	4688	01 34 01
01 35 30	H1413+117	19 36 43	15.1	268.9	5.3		37.8	-19	4688	No stop
01 39 00	---	19 40 13	14.6	269.6	5.4		37.8	191	4715	01 35 31

Schedule for TORUN (Code Tr )

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Resolving the AGN/starburst connection in a high-z quasar on pc-scales

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

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SYNC: Time correlator 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 3 Jun 2021 Day 154 ---										
01 39 00	J1415+1320	19 40 13	16.1	270.8	5.4		38.1	-19	4715	No stop
01 40 30	=1413+135	19 41 43	15.8	271.1	5.4		38.1	71	4726	01 39 01
01 40 30	H1413+117	19 41 43	14.3	269.9	5.4		37.8	-19	4726	No stop
01 44 00	---	19 45 14	13.8	270.6	5.5		37.8	191	4753	01 40 31
01 44 30	J1415+1320	19 45 44	15.2	271.9	5.5		38.1	11	4753	01 44 30
01 46 00	=1413+135	19 47 14	15.0	272.2	5.5		38.1	90	4765	01 44 31
01 46 00	H1413+117	19 47 14	13.5	271.0	5.5		37.8	-19	4765	No stop
01 49 30	---	19 50 45	13.0	271.7	5.6		37.8	191	4792	01 46 01
01 49 30	J1415+1320	19 50 45	14.5	272.9	5.6		38.0	-19	4792	No stop
01 51 00	=1413+135	19 52 15	14.3	273.2	5.6		38.0	71	4804	01 49 31
01 51 00	H1413+117	19 52 15	12.8	272.0	5.6		37.7	-19	4804	No stop
01 54 30	---	19 55 46	12.2	272.7	5.6		37.7	191	4831	01 51 01
01 55 00	J1415+1320	19 56 16	13.7	274.0	5.7		38.0	11	4831	01 55 00
01 56 30	=1413+135	19 57 46	13.4	274.3	5.7		38.0	90	4842	01 55 01
01 56 30	H1413+117	19 57 46	11.9	273.1	5.7		37.7	-19	4842	No stop
02 00 00	---	20 01 17	11.4	273.8	5.7		37.7	191	4869	01 56 31
02 00 00	J1415+1320	20 01 17	12.9	275.0	5.7		37.9	-19	4869	No stop
02 01 30	=1413+135	20 02 47	12.7	275.2	5.8		37.9	71	4881	02 00 01
02 01 30	H1413+117	20 02 47	11.2	274.1	5.8		37.7	-19	4881	No stop
02 05 00	---	20 06 17	10.7	274.8	5.8		37.6	191	4908	02 01 31
02 05 30	J1415+1320	20 06 47	12.1	276.0	5.8		37.8	11	4908	02 05 30
02 07 00	=1413+135	20 08 18	11.9	276.3	5.9		37.8	90	4920	02 05 31
02 07 00	H1413+117	20 08 18	10.4	275.2	5.9		37.6	-19	4920	No stop
02 10 30	---	20 11 48	9.8	275.9	5.9		37.5	191	4947	02 07 01
02 10 30	J1415+1320	20 11 48	11.3	277.0	5.9		37.8	-19	4947	No stop
02 12 00	=1413+135	20 13 19	11.1	277.3	5.9		37.7	71	4958	02 10 31
02 12 00	H1413+117	20 13 19	9.6	276.2	5.9		37.5	-19	4958	No stop
02 15 30	---	20 16 49	9.1	276.9	6.0		37.5	191	4985	02 12 01
02 16 00	J1415+1320	20 17 19	10.5	278.1	6.0		37.6	11	4985	02 16 00
02 17 30	=1413+135	20 18 49	10.3	278.4	6.0		37.6	90	4997	02 16 01

Schedule for TORUN (Code Tr )

Page 19

Resolving the AGN/starburst connection in a high-z quasar on pc-scales

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

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SYNC: Time correlator 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   3 Jun 2021   Day 154 ---

02 17 30  H1413+117   20 18 49   8.8 277.3  6.0      37.4  -19   4997  No stop
02 21 00  ---         20 22 20   8.3 278.0  6.1      37.3  191   5024  02 17 31

02 21 00  J1415+1320  20 22 20   9.8 279.1  6.1      37.5  -19   5024  No stop
02 22 30  =1413+135   20 23 50   9.5 279.4  6.1      37.5   71   5036  02 21 01

02 22 30  H1413+117   20 23 50   8.0 278.3  6.1      37.3  -19   5036  No stop
02 26 00  ---         20 27 21   7.5 279.0  6.2      37.2  191   5063  02 22 31

02 26 30  J1415+1320  20 27 51   8.9 280.2  6.2      37.4   11   5063  02 26 30
02 28 00  =1413+135   20 29 21   8.7 280.5  6.2      37.3   90   5074  02 26 31

02 28 00  H1413+117   20 29 21   7.2 279.4  6.2      37.2  -19   5074  No stop
02 30 00  ---         20 31 21   6.9 279.8  6.2      37.1  101   5090  02 28 01

```

## SETUP FILE INFORMATION:

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

==== Setup file: sess221.L1024

```

Setup group:   11          Station: TORUN          Total bit rate: 1024
Format: VDIF          Bits per sample: 2          Sample rate: 64.000
Number of channels: 8    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
Net SB=	L	L	U	U	L	L	U	U
IF SB =	L	L	L	L	L	L	L	L
Pol. =	RCP	LCP	RCP	LCP	RCP	LCP	RCP	LCP
BBC =	1	9	1	9	2	10	2	10
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: 6 Setup file default. Used with PCAL = off  
 LO sum= 1626.49 1626.49 1626.49 1626.49 1690.49 1690.49 1690.49 1690.49  
 BBC fr= 673.51 673.51 673.51 673.51 609.51 609.51 609.51 609.51  
 Bandwd= 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00  
 Matching frequency sets: 6

Track assignments are:

track1= 1, 2, 3, 4, 5, 6, 7, 8  
 barrel=roll\_off

#### POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(Date)	Error (mas)
* H1413+117	14 13 20.080188 * 14 15 46.249900	14 16 48.990898	0.00
	11 43 37.63508 * 11 29 43.40040	11 23 51.79554	0.00
* 4C39.25	09 23 55.319216 * 09 27 03.013937	09 28 21.426496	0.31
J0927+3902	39 15 23.56644 * 39 02 20.85185	38 56 59.59153	0.16
0923+392	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc2016		
J0927+39	GSFC 2016a X/S astro solution, 250526 observations.		
1413+135	14 13 33.910858 * 14 15 58.817510	14 17 01.034156	0.02
* J1415+1320	13 34 17.40464 * 13 20 23.71288	13 14 32.72829	0.03
J1415+13	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc2016		
	GSFC 2016a X/S astro solution, 2103 observations.		
* 3C345	16 41 17.606229 * 16 42 58.809967	16 43 43.275401	0.79
J1642+3948	39 54 10.81492 * 39 48 36.99399	39 46 14.23148	0.59
1641+399	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc2016		
J1642+39	GSFC 2016a X/S astro solution, 53724 observations.		

RESOLVING EXTREME STAR FORMATION AND AGN ACTIVITY IN A HIGH REDSHIF  
 PI: *John McKean*

Address: ASTRON

Observing mode: 18cm 1024-8-2

Schedule for TORUN (Code Tr )

Page 2

Resolving extreme star formation and AGN activity in a high redshift qua

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

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

--- Thu 3 Jun 2021 Day 154 ---

Next scan frequencies:		1626.00	1626.00	1626.00	1626.00	1690.00	1690.00	1690.00	1690.00
Next BBC frequencies:		674.00	674.00	674.00	674.00	610.00	610.00	610.00	610.00
Next scan bandwidths:		32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
10 30 00	J0827+5217	04 32 40	55.1	66.9	-3.9	-64.4	0	0	10 30 00
10 31 30	=0824+524	04 34 11	55.3	67.1	-3.9	-64.6	90	12	10 30 01
10 31 30	APM08279+525	04 34 11	55.0	66.0	-4.0	-64.8	-15	12	No stop
10 35 00	---	04 37 41	55.5	66.4	-3.9	-65.2	195	39	10 31 31
10 35 30	J0827+5217	04 38 11	55.9	67.6	-3.9	-65.0	15	39	10 35 30
10 37 00	=0824+524	04 39 41	56.1	67.8	-3.8	-65.2	90	50	10 35 31
10 37 00	APM08279+525	04 39 41	55.8	66.6	-3.9	-65.4	-15	50	No stop
10 40 30	---	04 43 12	56.3	67.0	-3.8	-65.7	195	77	10 37 01
10 40 30	J0827+5217	04 43 12	56.6	68.2	-3.8	-65.5	-15	77	No stop
10 42 00	=0824+524	04 44 42	56.8	68.3	-3.7	-65.7	75	89	10 40 31
10 42 00	APM08279+525	04 44 42	56.5	67.2	-3.8	-65.9	-15	89	No stop
10 45 30	---	04 48 13	56.9	67.5	-3.8	-66.3	195	116	10 42 01
10 46 00	J0827+5217	04 48 43	57.4	68.8	-3.7	-66.1	15	116	10 46 00
10 47 30	=0824+524	04 50 13	57.6	69.0	-3.7	-66.2	90	128	10 46 01
10 47 30	APM08279+525	04 50 13	57.2	67.8	-3.7	-66.5	-15	128	No stop
10 51 00	---	04 53 44	57.7	68.2	-3.7	-66.9	195	155	10 47 31
10 51 00	J0827+5217	04 53 44	58.1	69.4	-3.6	-66.6	-15	155	No stop
10 52 30	=0824+524	04 55 14	58.3	69.5	-3.6	-66.7	75	166	10 51 01
10 52 30	APM08279+525	04 55 14	57.9	68.3	-3.6	-67.0	-15	166	No stop
10 56 00	---	04 58 45	58.4	68.7	-3.6	-67.4	195	193	10 52 31
10 56 30	J0827+5217	04 59 15	58.8	70.0	-3.5	-67.1	15	193	10 56 30
10 58 00	=0824+524	05 00 45	59.1	70.2	-3.5	-67.3	90	205	10 56 31
10 58 00	APM08279+525	05 00 45	58.7	68.9	-3.5	-67.6	-15	205	No stop
11 01 30	---	05 04 16	59.2	69.3	-3.5	-67.9	195	232	10 58 01
11 01 30	J0827+5217	05 04 16	59.6	70.6	-3.4	-67.6	-15	232	No stop
11 03 00	=0824+524	05 05 46	59.8	70.8	-3.4	-67.8	75	243	11 01 31



Schedule for TORUN (Code Tr )

Page 3

Resolving extreme star formation and AGN activity in a high redshift qua

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SYNC: Time correlator 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 3 Jun 2021	Day 154					---				
11 03 00	APM08279+525	05 05 46	59.4	69.5	-3.5		-68.1	-15	243	No stop	
11 06 30	---	05 09 16	59.9	69.9	-3.4		-68.5	195	271	11 03 01	
11 07 00	J0827+5217	05 09 46	60.3	71.2	-3.3		-68.2	15	271	11 07 00	
11 08 30	=0824+524	05 11 17	60.5	71.4	-3.3		-68.3	90	282	11 07 01	
11 08 30	APM08279+525	05 11 17	60.2	70.1	-3.4		-68.7	-15	282	No stop	
11 12 00	---	05 14 47	60.7	70.5	-3.3		-69.0	195	309	11 08 31	
11 12 00	J0827+5217	05 14 47	61.0	71.8	-3.2		-68.7	-15	309	No stop	
11 13 30	=0824+524	05 16 17	61.3	72.0	-3.2		-68.8	75	321	11 12 01	
11 13 30	APM08279+525	05 16 17	60.9	70.7	-3.3		-69.2	-15	321	No stop	
11 17 00	---	05 19 48	61.4	71.1	-3.2		-69.5	195	348	11 13 31	
11 17 30	J0827+5217	05 20 18	61.8	72.4	-3.2		-69.2	15	348	11 17 30	
11 19 00	=0824+524	05 21 48	62.1	72.6	-3.1		-69.3	90	359	11 17 31	
11 19 00	APM08279+525	05 21 48	61.7	71.3	-3.2		-69.7	-15	359	No stop	
11 22 30	---	05 25 19	62.2	71.7	-3.1		-70.1	195	386	11 19 01	
11 22 30	J0827+5217	05 25 19	62.6	73.0	-3.1		-69.7	-15	386	No stop	
11 24 00	=0824+524	05 26 49	62.8	73.2	-3.0		-69.8	75	398	11 22 31	
11 24 00	APM08279+525	05 26 49	62.4	71.8	-3.1		-70.3	-15	398	No stop	
11 27 30	---	05 30 20	62.9	72.2	-3.0		-70.6	195	425	11 24 01	
11 28 00	J0827+5217	05 30 50	63.3	73.6	-3.0		-70.2	14	425	11 28 00	
11 29 30	=0824+524	05 32 20	63.6	73.8	-3.0		-70.3	90	437	11 28 01	
11 29 30	APM08279+525	05 32 20	63.2	72.4	-3.0		-70.8	-15	437	No stop	
11 33 00	---	05 35 51	63.7	72.8	-3.0		-71.2	195	464	11 29 31	
11 33 00	J0827+5217	05 35 51	64.1	74.2	-2.9		-70.7	-16	464	No stop	
11 34 30	=0824+524	05 37 21	64.3	74.4	-2.9		-70.8	74	475	11 33 01	
11 34 30	APM08279+525	05 37 21	63.9	73.0	-2.9		-71.3	-16	475	No stop	
11 38 00	---	05 40 52	64.4	73.4	-2.9		-71.7	194	502	11 34 31	
11 38 30	J0827+5217	05 41 22	64.9	74.9	-2.8		-71.2	14	502	11 38 30	
11 40 00	=0824+524	05 42 52	65.1	75.0	-2.8		-71.3	90	514	11 38 31	
11 40 00	APM08279+525	05 42 52	64.7	73.6	-2.8		-71.9	-16	514	No stop	
11 43 30	---	05 46 22	65.2	74.0	-2.8		-72.2	194	541	11 40 01	
11 43 30	J0827+5217	05 46 22	65.6	75.5	-2.7		-71.6	-16	541	No stop	
11 45 00	=0824+524	05 47 53	65.8	75.6	-2.7		-71.8	74	553	11 43 31	

Schedule for TORUN (Code Tr )

Page 4

Resolving extreme star formation and AGN activity in a high redshift qua

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Thu 3 Jun 2021 Day 154 ---										
11 45 00	APM08279+525	05 47 53	65.4	74.2	-2.8		-72.4	-16	553	No stop
11 48 30	---	05 51 23	65.9	74.5	-2.7		-72.7	194	580	11 45 01
11 49 00	J0827+5217	05 51 53	66.4	76.1	-2.6		-72.1	14	580	11 49 00
11 50 30	=0824+524	05 53 24	66.6	76.3	-2.6		-72.3	90	591	11 49 01
11 50 30	APM08279+525	05 53 24	66.2	74.8	-2.7		-72.9	-16	591	No stop
11 54 00	---	05 56 54	66.7	75.2	-2.6		-73.2	194	618	11 50 31
11 54 00	J0827+5217	05 56 54	67.1	76.7	-2.5		-72.6	-16	618	No stop
11 55 30	=0824+524	05 58 24	67.4	76.9	-2.5		-72.7	74	630	11 54 01
11 55 30	APM08279+525	05 58 24	66.9	75.3	-2.6		-73.4	-16	630	No stop
11 59 00	---	06 01 55	67.4	75.7	-2.5		-73.7	194	657	11 55 31
11 59 30	J0827+5217	06 02 25	67.9	77.3	-2.5		-73.1	14	657	11 59 30
12 01 00	=0824+524	06 03 55	68.2	77.5	-2.4		-73.2	90	669	11 59 31
12 01 00	APM08279+525	06 03 55	67.7	75.9	-2.5		-73.9	-16	669	No stop
12 04 30	---	06 07 26	68.2	76.3	-2.4		-74.3	194	696	12 01 01
12 04 30	J0827+5217	06 07 26	68.7	77.9	-2.4		-73.5	-16	696	No stop
12 06 00	=0824+524	06 08 56	68.9	78.1	-2.3		-73.6	74	707	12 04 31
12 06 00	APM08279+525	06 08 56	68.5	76.5	-2.4		-74.4	-16	707	No stop
12 09 30	---	06 12 27	69.0	76.9	-2.3		-74.7	194	734	12 06 01
12 10 00	J0827+5217	06 12 57	69.5	78.6	-2.3		-74.0	13	734	12 10 00
12 11 30	=0824+524	06 14 27	69.7	78.8	-2.2		-74.1	90	746	12 10 01
12 11 30	APM08279+525	06 14 27	69.3	77.1	-2.3		-74.9	-17	746	No stop
12 15 00	---	06 17 58	69.8	77.5	-2.3		-75.3	193	773	12 11 31
12 15 00	J0827+5217	06 17 58	70.2	79.2	-2.2		-74.4	-17	773	No stop
12 16 30	=0824+524	06 19 28	70.4	79.4	-2.2		-74.5	73	785	12 15 01
12 16 30	APM08279+525	06 19 28	70.0	77.7	-2.2		-75.4	-17	785	No stop
12 20 00	---	06 22 58	70.5	78.0	-2.2		-75.7	193	812	12 16 31
12 20 30	J0827+5217	06 23 28	71.0	79.9	-2.1		-74.8	13	812	12 20 30
12 22 00	=0824+524	06 24 59	71.3	80.1	-2.1		-75.0	90	823	12 20 31
12 22 00	APM08279+525	06 24 59	70.8	78.3	-2.1		-75.9	-17	823	No stop
12 25 30	---	06 28 29	71.3	78.7	-2.1		-76.2	193	850	12 22 01

Schedule for TORUN (Code Tr )

Page 5

Resolving extreme star formation and AGN activity in a high redshift qua

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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	3 Jun 2021	Day 154		---					
12 25 30	J0827+5217	06 28 29	71.8	80.5	-2.0		-75.2	-17	850	No stop
12 27 00	=0824+524	06 30 00	72.0	80.7	-2.0		-75.4	73	862	12 25 31
12 27 00	APM08279+525	06 30 00	71.5	78.8	-2.1		-76.4	-17	862	No stop
12 30 30	---	06 33 30	72.1	79.2	-2.0		-76.7	193	889	12 27 01
12 31 00	J0827+5217	06 34 00	72.6	81.2	-1.9		-75.7	13	889	12 31 00
12 32 30	=0824+524	06 35 30	72.8	81.4	-1.9		-75.8	90	900	12 31 01
12 32 30	APM08279+525	06 35 30	72.4	79.5	-2.0		-76.9	-17	900	No stop
12 36 00	---	06 39 01	72.9	79.9	-1.9		-77.2	193	927	12 32 31
12 36 00	J0827+5217	06 39 01	73.3	81.8	-1.8		-76.1	-18	927	No stop
12 37 30	=0824+524	06 40 31	73.6	82.0	-1.8		-76.2	72	939	12 36 01
12 42 30	4C39.25	06 45 32	58.9	100.5	-2.7		-49.4	229	939	12 42 30
12 47 30	---	06 50 33	59.7	101.7	-2.6		-49.1	300	978	12 42 31
12 52 30	J0827+5217	06 55 34	75.8	84.0	-1.6		-77.2	228	978	12 52 30
12 57 30	=0824+524	07 00 35	76.6	84.7	-1.5		-77.5	300	1016	12 52 31
12 57 30	APM08279+525	07 00 35	76.1	82.4	-1.5		-79.1	-19	1016	No stop
13 01 00	---	07 04 05	76.6	82.8	-1.5		-79.4	191	1043	12 57 31
13 01 30	J0827+5217	07 04 35	77.2	85.3	-1.4		-77.7	11	1043	13 01 30
13 03 00	=0824+524	07 06 05	77.4	85.5	-1.4		-77.8	90	1055	13 01 31
13 03 00	APM08279+525	07 06 05	76.9	83.0	-1.5		-79.5	-19	1055	No stop
13 06 30	---	07 09 36	77.4	83.5	-1.4		-79.8	191	1082	13 03 01
13 06 30	J0827+5217	07 09 36	77.9	86.1	-1.3		-78.0	-20	1082	No stop
13 08 00	=0824+524	07 11 06	78.1	86.3	-1.3		-78.1	70	1094	13 06 31
13 08 00	APM08279+525	07 11 06	77.6	83.7	-1.4		-79.9	-19	1094	No stop
13 11 30	---	07 14 37	78.2	84.1	-1.3		-80.2	191	1121	13 08 01
13 12 00	J0827+5217	07 15 07	78.7	86.9	-1.2		-78.2	10	1121	13 12 00
13 13 30	=0824+524	07 16 37	79.0	87.2	-1.2		-78.3	90	1132	13 12 01
13 13 30	APM08279+525	07 16 37	78.5	84.3	-1.3		-80.3	-20	1132	No stop
13 17 00	---	07 20 08	79.0	84.8	-1.2		-80.6	190	1159	13 13 31
13 17 00	J0827+5217	07 20 08	79.5	87.8	-1.2		-78.4	-20	1159	No stop
13 18 30	=0824+524	07 21 38	79.7	88.0	-1.1		-78.5	70	1171	13 17 01

Schedule for TORUN (Code Tr )

Page 6

Resolving extreme star formation and AGN activity in a high redshift qua

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
---	Thu	3 Jun 2021	Day 154		---					
13 18 30	APM08279+525	07 21 38	79.2	85.0	-1.2		-80.7	-20	1171	No stop
13 22 00	---	07 25 09	79.7	85.5	-1.1		-80.9	190	1198	13 18 31
13 22 30	J0827+5217	07 25 39	80.3	88.7	-1.1		-78.6	9	1198	13 22 30
13 24 00	=0824+524	07 27 09	80.5	89.0	-1.0		-78.6	90	1210	13 22 31
13 24 00	APM08279+525	07 27 09	80.0	85.7	-1.1		-81.1	-21	1210	No stop
13 27 30	---	07 30 39	80.6	86.2	-1.0		-81.3	189	1237	13 24 01
13 27 30	J0827+5217	07 30 39	81.1	89.6	-1.0		-78.6	-22	1237	No stop
13 29 00	=0824+524	07 32 10	81.3	89.9	-1.0		-78.6	68	1248	13 27 31
13 29 00	APM08279+525	07 32 10	80.8	86.4	-1.0		-81.4	-22	1248	No stop
13 32 30	---	07 35 40	81.3	86.9	-1.0		-81.6	188	1275	13 29 01
13 33 00	J0827+5217	07 36 10	81.9	90.8	-0.9		-78.6	8	1275	13 33 00
13 34 30	=0824+524	07 37 41	82.1	91.1	-0.9		-78.6	90	1287	13 33 01
13 34 30	APM08279+525	07 37 41	81.6	87.2	-0.9		-81.7	-22	1287	No stop
13 38 00	---	07 41 11	82.1	87.8	-0.9		-81.8	188	1314	13 34 31
13 38 00	J0827+5217	07 41 11	82.6	91.9	-0.8		-78.5	-23	1314	No stop
13 39 30	=0824+524	07 42 41	82.9	92.3	-0.8		-78.4	67	1326	13 38 01
13 39 30	APM08279+525	07 42 41	82.4	88.0	-0.8		-81.9	-23	1326	No stop
13 43 00	---	07 46 12	82.9	88.6	-0.8		-82.0	187	1353	13 39 31
13 43 30	J0827+5217	07 46 42	83.5	93.3	-0.7		-78.2	6	1353	13 43 30
13 45 00	=0824+524	07 48 12	83.7	93.7	-0.7		-78.1	90	1364	13 43 31
13 45 00	APM08279+525	07 48 12	83.2	88.9	-0.8		-82.1	-24	1364	No stop
13 48 30	---	07 51 43	83.7	89.6	-0.7		-82.1	186	1391	13 45 01
13 48 30	J0827+5217	07 51 43	84.2	94.8	-0.6		-77.7	-26	1391	No stop
13 50 00	=0824+524	07 53 13	84.4	95.3	-0.6		-77.5	64	1403	13 48 31
13 50 00	APM08279+525	07 53 13	84.0	89.9	-0.7		-82.1	-26	1403	No stop
13 53 30	---	07 56 44	84.5	90.6	-0.6		-82.1	184	1430	13 50 01
13 54 00	J0827+5217	07 57 14	85.0	96.8	-0.5		-76.8	3	1430	13 54 00
13 55 30	=0824+524	07 58 44	85.3	97.4	-0.5		-76.5	90	1441	13 54 01
13 55 30	APM08279+525	07 58 44	84.8	91.0	-0.6		-82.1	-28	1441	No stop
13 59 00	---	08 02 15	85.3	91.9	-0.5		-81.9	182	1469	13 55 31

Schedule for TORUN (Code Tr )

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Resolving extreme star formation and AGN activity in a high redshift qua

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

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

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SYNC: Time correlator 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 3 Jun 2021 Day 154 ---										
13 59 00	J0827+5217	08 02 15	85.8	99.1	-0.5		-75.5	-30	1469	No stop
14 00 30	=0824+524	08 03 45	86.0	99.9	-0.4		-75.0	60	1480	13 59 01
14 00 30	APM08279+525	08 03 45	85.5	92.3	-0.5		-81.8	-30	1480	No stop
14 04 00	---	08 07 15	86.1	93.4	-0.4		-81.5	180	1507	14 00 31
14 04 30	J0827+5217	08 07 46	86.6	102.5	-0.4		-73.1	-3	1507	14 04 30
14 06 00	=0824+524	08 09 16	86.8	103.7	-0.3		-72.2	87	1519	14 04 31
14 06 00	APM08279+525	08 09 16	86.4	94.1	-0.4		-81.2	-34	1519	No stop
14 09 30	---	08 12 46	86.9	95.5	-0.3		-80.4	176	1546	14 06 01
14 09 30	J0827+5217	08 12 46	87.3	107.2	-0.3		-69.5	-40	1546	No stop
14 11 00	=0824+524	08 14 17	87.5	109.1	-0.3		-67.9	50	1557	14 09 31
14 11 00	APM08279+525	08 14 17	87.1	96.2	-0.3		-80.0	-40	1557	No stop
14 14 30	---	08 17 47	87.6	98.4	-0.3		-78.5	170	1584	14 11 01
14 15 00	J0827+5217	08 18 17	88.1	115.9	-0.2		-61.9	-21	1584	14 15 00
14 16 30	=0824+524	08 19 48	88.3	119.6	-0.2		-58.5	69	1596	14 15 01
14 16 30	APM08279+525	08 19 48	87.9	100.1	-0.2		-77.3	-52	1596	No stop
14 20 00	---	08 23 18	88.4	104.3	-0.2		-73.7	158	1623	14 16 31
14 20 00	J0827+5217	08 23 18	88.7	132.2	-0.1		-46.5	-82	1623	No stop
14 21 30	=0824+524	08 24 48	88.9	140.4	-0.1		-38.7	8	1635	14 20 01
14 21 30	APM08279+525	08 24 48	88.7	107.0	-0.1		-71.3	-76	1635	No stop
14 25 00	---	08 28 19	89.2	118.4	-0.1		-60.7	134	1662	14 21 31
14 27 00	APM08279+525	08 30 19	89.4	132.6	-0.0		-46.8	98	1662	14 27 00
14 30 00	---	08 33 20	89.6	181.8	0.0		1.8	180	1685	14 27 01
14 30 30	J0827+5217	08 33 50	88.9	218.1	0.1		37.2	-68	1685	14 30 30
14 32 00	=0824+524	08 35 20	88.8	226.6	0.1		45.4	22	1697	14 30 31
14 32 00	APM08279+525	08 35 20	89.5	217.8	0.0		37.4	-21	1697	No stop
14 35 30	---	08 38 51	89.1	244.7	0.1		63.6	189	1724	14 32 01
14 36 00	J0827+5217	08 39 21	88.3	241.1	0.2		59.1	7	1724	14 36 00
14 37 30	=0824+524	08 40 51	88.1	244.6	0.2		62.4	90	1735	14 36 01
14 37 30	APM08279+525	08 40 51	88.8	251.1	0.1		69.6	-30	1735	No stop
14 41 00	---	08 44 22	88.3	257.4	0.2		75.2	180	1762	14 37 31

Schedule for TORUN (Code Tr )

Page 8

Resolving extreme star formation and AGN activity in a high redshift qua

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop				Early	Disk	TPStart		
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Thu 3 Jun 2021 Day 154 ---										
14 41 00	J0827+5217	08 44 22	87.6	250.6	0.2		67.6	-28	1762	No stop
14 42 30	=0824+524	08 45 52	87.4	252.5	0.3		69.3	62	1774	14 41 01
14 42 30	APM08279+525	08 45 52	88.1	259.1	0.2		76.6	-29	1774	No stop
14 46 00	---	08 49 22	87.5	262.1	0.3		78.8	181	1801	14 42 31
14 46 30	J0827+5217	08 49 52	86.8	256.5	0.3		72.4	4	1801	14 46 30
14 48 00	=0824+524	08 51 23	86.6	257.6	0.4		73.3	90	1812	14 46 31
14 48 00	APM08279+525	08 51 23	87.2	263.3	0.3		79.7	-27	1812	No stop
14 51 30	---	08 54 53	86.7	265.0	0.4		80.7	183	1840	14 48 01
14 51 30	J0827+5217	08 54 53	86.0	259.9	0.4		74.9	-25	1840	No stop
14 53 00	=0824+524	08 56 24	85.8	260.8	0.4		75.4	65	1851	14 51 31
14 53 00	APM08279+525	08 56 24	86.5	265.6	0.4		81.0	-25	1851	No stop
14 56 30	---	08 59 54	86.0	266.9	0.4		81.5	185	1878	14 53 01
14 57 00	J0827+5217	09 00 24	85.2	262.7	0.5		76.5	7	1878	14 57 00
14 58 30	=0824+524	09 01 54	85.0	263.3	0.5		76.8	90	1890	14 57 01
14 58 30	APM08279+525	09 01 54	85.7	267.5	0.5		81.7	-23	1890	No stop
15 02 00	---	09 05 25	85.1	268.4	0.5		82.0	187	1917	14 58 31
15 02 00	J0827+5217	09 05 25	84.5	264.6	0.6		77.4	-22	1917	No stop
15 03 30	=0824+524	09 06 55	84.3	265.1	0.6		77.7	68	1928	15 02 01
15 03 30	APM08279+525	09 06 55	84.9	268.8	0.6		82.0	-22	1928	No stop
15 07 00	---	09 10 26	84.4	269.5	0.6		82.1	188	1955	15 03 31
15 07 30	J0827+5217	09 10 56	83.7	266.3	0.7		78.1	9	1955	15 07 30
15 09 00	=0824+524	09 12 26	83.4	266.8	0.7		78.2	90	1967	15 07 31
15 09 00	APM08279+525	09 12 26	84.1	270.0	0.7		82.1	-21	1967	No stop
15 12 30	---	09 15 57	83.6	270.6	0.7		82.1	189	1994	15 09 01
15 12 30	J0827+5217	09 15 57	82.9	267.7	0.8		78.4	-20	1994	No stop
15 14 00	=0824+524	09 17 27	82.7	268.0	0.8		78.5	70	2006	15 12 31
15 14 00	APM08279+525	09 17 27	83.3	270.9	0.7		82.1	-20	2006	No stop
15 17 30	---	09 20 58	82.8	271.5	0.8		82.0	190	2033	15 14 01
15 18 00	J0827+5217	09 21 28	82.1	269.0	0.9		78.6	11	2033	15 18 00
15 19 30	=0824+524	09 22 58	81.9	269.3	0.9		78.6	90	2044	15 18 01

Schedule for TORUN (Code Tr )

Page 9

Resolving extreme star formation and AGN activity in a high redshift qua

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

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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 3 Jun 2021 Day 154 ---										
15 19 30	APM08279+525	09 22 58	82.5	271.9	0.8		81.9	-19	2044	No stop
15 23 00	---	09 26 28	82.0	272.4	0.9		81.8	191	2071	15 19 31
15 23 00	J0827+5217	09 26 28	81.3	270.0	1.0		78.7	-19	2071	No stop
15 24 30	=0824+524	09 27 59	81.1	270.3	1.0		78.6	71	2083	15 23 01
15 24 30	APM08279+525	09 27 59	81.7	272.6	0.9		81.7	-19	2083	No stop
15 28 00	---	09 31 29	81.2	273.2	1.0		81.5	191	2110	15 24 31
15 28 30	J0827+5217	09 31 59	80.5	271.1	1.0		78.6	12	2110	15 28 30
15 30 00	=0824+524	09 33 30	80.3	271.3	1.1		78.6	90	2122	15 28 31
15 30 00	APM08279+525	09 33 30	80.9	273.5	1.0		81.4	-18	2122	No stop
15 33 30	---	09 37 00	80.4	274.0	1.1		81.2	192	2149	15 30 01
15 33 30	J0827+5217	09 37 00	79.7	272.0	1.1		78.5	-18	2149	No stop
15 35 00	=0824+524	09 38 30	79.5	272.2	1.2		78.4	72	2160	15 33 31
15 35 00	APM08279+525	09 38 30	80.2	274.2	1.1		81.1	-18	2160	No stop
15 38 30	---	09 42 01	79.6	274.6	1.1		80.9	192	2187	15 35 01
15 39 00	J0827+5217	09 42 31	78.9	272.9	1.2		78.3	13	2187	15 39 00
15 40 30	=0824+524	09 44 01	78.7	273.1	1.2		78.2	90	2199	15 39 01
15 40 30	APM08279+525	09 44 01	79.3	274.9	1.2		80.7	-17	2199	No stop
15 44 00	---	09 47 32	78.8	275.4	1.2		80.5	193	2226	15 40 31
15 44 00	J0827+5217	09 47 32	78.2	273.7	1.3		78.1	-17	2226	No stop
15 45 30	=0824+524	09 49 02	77.9	273.9	1.3		78.0	73	2238	15 44 01
15 45 30	APM08279+525	09 49 02	78.6	275.5	1.3		80.4	-17	2238	No stop
15 49 00	---	09 52 33	78.1	276.0	1.3		80.1	193	2265	15 45 31
15 49 30	J0827+5217	09 53 03	77.3	274.5	1.4		77.8	14	2265	15 49 30
15 51 00	=0824+524	09 54 33	77.1	274.7	1.4		77.7	90	2276	15 49 31
15 51 00	APM08279+525	09 54 33	77.8	276.2	1.4		80.0	-16	2276	No stop
15 54 30	---	09 58 04	77.2	276.7	1.4		79.7	194	2303	15 51 01
15 54 30	J0827+5217	09 58 04	76.6	275.2	1.5		77.5	-16	2303	No stop
15 56 00	=0824+524	09 59 34	76.4	275.4	1.5		77.4	74	2315	15 54 31
15 56 00	APM08279+525	09 59 34	77.0	276.9	1.4		79.6	-16	2315	No stop
15 59 30	---	10 03 04	76.5	277.3	1.5		79.3	194	2342	15 56 01

Schedule for TORUN (Code Tr )

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Resolving extreme star formation and AGN activity in a high redshift qua

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

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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 3 Jun 2021 Day 154 ---										
16 00 00	J0827+5217	10 03 35	75.8	276.0	1.6		77.2	15	2342	16 00 00
16 01 30	=0824+524	10 05 05	75.5	276.2	1.6		77.1	90	2354	16 00 01
16 01 30	APM08279+525	10 05 05	76.2	277.5	1.5		79.1	-15	2354	No stop
16 05 00	---	10 08 35	75.7	277.9	1.6		78.8	195	2381	16 01 31
16 05 00	J0827+5217	10 08 35	75.0	276.7	1.7		76.9	-15	2381	No stop
16 06 30	=0824+524	10 10 06	74.8	276.9	1.7		76.8	75	2392	16 05 01
16 06 30	APM08279+525	10 10 06	75.5	278.1	1.6		78.7	-15	2392	No stop
16 10 00	---	10 13 36	74.9	278.5	1.7		78.4	195	2419	16 06 31
16 10 30	J0827+5217	10 14 06	74.2	277.4	1.7		76.5	15	2419	16 10 30
16 12 00	=0824+524	10 15 37	74.0	277.6	1.8		76.4	90	2431	16 10 31
16 12 00	APM08279+525	10 15 37	74.6	278.8	1.7		78.2	-15	2431	No stop
16 15 30	---	10 19 07	74.1	279.2	1.8		77.9	195	2458	16 12 01
16 15 30	J0827+5217	10 19 07	73.4	278.1	1.8		76.1	-15	2458	No stop
16 17 00	=0824+524	10 20 37	73.2	278.3	1.9		76.0	75	2469	16 15 31
16 17 00	APM08279+525	10 20 37	73.9	279.4	1.8		77.8	-14	2469	No stop
16 20 30	---	10 24 08	73.4	279.8	1.8		77.5	196	2497	16 17 01
16 21 00	J0827+5217	10 24 38	72.6	278.8	1.9		75.7	15	2497	16 21 00
16 22 30	=0824+524	10 26 08	72.4	279.0	1.9		75.6	90	2508	16 21 01
16 22 30	APM08279+525	10 26 08	73.1	280.0	1.9		77.3	-14	2508	No stop
16 26 00	---	10 29 39	72.6	280.4	1.9		77.0	196	2535	16 22 31
16 26 00	J0827+5217	10 29 39	71.9	279.4	2.0		75.3	-15	2535	No stop
16 27 30	=0824+524	10 31 09	71.7	279.6	2.0		75.2	75	2547	16 26 01
16 32 30	4C39.25	10 36 10	71.7	226.2	1.1		33.9	175	2547	16 32 30
16 37 30	---	10 41 11	71.1	228.7	1.2		35.5	300	2585	16 32 31
16 42 30	J0827+5217	10 46 12	69.4	281.4	2.3		73.9	180	2585	16 42 30
16 44 30	=0824+524	10 48 12	69.1	281.7	2.3		73.8	120	2601	16 42 31
16 44 30	APM08279+525	10 48 12	69.8	282.5	2.2		75.3	-14	2601	No stop
16 48 00	---	10 51 42	69.3	282.9	2.3		75.0	196	2628	16 44 31
16 48 30	J0827+5217	10 52 13	68.6	282.1	2.4		73.4	15	2628	16 48 30
16 50 00	=0824+524	10 53 43	68.3	282.3	2.4		73.3	90	2640	16 48 31



Schedule for TORUN (Code Tr )

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Resolving extreme star formation and AGN activity in a high redshift qua

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Start UT	Source	Start / Stop				Early	Disk	TPStart		
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Thu 3 Jun 2021 Day 154 ---										
16 50 00	APM08279+525	10 53 43	69.0	283.1	2.3		74.8	-14	2640	No stop
16 53 30	---	10 57 13	68.5	283.5	2.4		74.4	196	2667	16 50 01
16 53 30	J0827+5217	10 57 13	67.8	282.7	2.5		73.0	-15	2667	No stop
16 55 00	=0824+524	10 58 44	67.6	282.9	2.5		72.9	75	2678	16 53 31
16 55 00	APM08279+525	10 58 44	68.3	283.6	2.4		74.3	-14	2678	No stop
16 58 30	---	11 02 14	67.8	284.0	2.5		74.0	196	2705	16 55 01
16 59 00	J0827+5217	11 02 44	67.0	283.4	2.6		72.5	15	2705	16 59 00
17 00 30	=0824+524	11 04 14	66.8	283.6	2.6		72.4	90	2717	16 59 01
17 00 30	APM08279+525	11 04 14	67.5	284.3	2.5		73.8	-14	2717	No stop
17 04 00	---	11 07 45	67.0	284.6	2.6		73.4	196	2744	17 00 31
17 04 00	J0827+5217	11 07 45	66.3	284.0	2.6		72.1	-15	2744	No stop
17 05 30	=0824+524	11 09 15	66.1	284.2	2.7		71.9	75	2755	17 04 01
17 05 30	APM08279+525	11 09 15	66.8	284.8	2.6		73.3	-14	2755	No stop
17 09 00	---	11 12 46	66.2	285.2	2.7		72.9	196	2782	17 05 31
17 09 30	J0827+5217	11 13 16	65.5	284.6	2.7		71.6	15	2782	17 09 30
17 11 00	=0824+524	11 14 46	65.3	284.8	2.8		71.4	90	2794	17 09 31
17 11 00	APM08279+525	11 14 46	66.0	285.4	2.7		72.7	-14	2794	No stop
17 14 30	---	11 18 17	65.5	285.8	2.8		72.4	196	2821	17 11 01
17 14 30	J0827+5217	11 18 17	64.8	285.2	2.8		71.1	-15	2821	No stop
17 16 00	=0824+524	11 19 47	64.5	285.4	2.8		71.0	75	2833	17 14 31
17 16 00	APM08279+525	11 19 47	65.2	286.0	2.8		72.2	-14	2833	No stop
17 19 30	---	11 23 18	64.7	286.4	2.8		71.9	196	2860	17 16 01
17 20 00	J0827+5217	11 23 48	64.0	285.9	2.9		70.6	15	2860	17 20 00
17 21 30	=0824+524	11 25 18	63.7	286.0	2.9		70.4	90	2871	17 20 01
17 21 30	APM08279+525	11 25 18	64.4	286.6	2.9		71.7	-14	2871	No stop
17 25 00	---	11 28 49	63.9	287.0	2.9		71.3	196	2898	17 21 31
17 25 00	J0827+5217	11 28 49	63.2	286.4	3.0		70.1	-15	2898	No stop
17 26 30	=0824+524	11 30 19	63.0	286.6	3.0		70.0	75	2910	17 25 01
17 26 30	APM08279+525	11 30 19	63.7	287.1	3.0		71.2	-14	2910	No stop
17 30 00	---	11 33 49	63.2	287.5	3.0		70.8	196	2937	17 26 31

Schedule for TORUN (Code Tr )

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Resolving extreme star formation and AGN activity in a high redshift qua

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

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Start UT	Source	Start / Stop				Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA UP	ParA Dwell	GBytes	SYNC	
-----									
---	Thu	3 Jun 2021	Day 154	---					
17 30 30	J0827+5217	11 34 19	62.4	287.1	3.1	69.6	15	2937	17 30 30
17 32 00	=0824+524	11 35 50	62.2	287.2	3.1	69.4	90	2949	17 30 31
17 32 00	APM08279+525	11 35 50	62.9	287.7	3.0	70.6	-14	2949	No stop
17 35 30	---	11 39 20	62.4	288.1	3.1	70.3	196	2976	17 32 01
17 35 30	J0827+5217	11 39 20	61.7	287.7	3.2	69.1	-15	2976	No stop
17 37 00	=0824+524	11 40 50	61.5	287.8	3.2	69.0	75	2987	17 35 31
17 37 00	APM08279+525	11 40 50	62.2	288.3	3.1	70.1	-15	2987	No stop
17 40 30	---	11 44 21	61.7	288.7	3.2	69.8	195	3014	17 37 01
17 41 00	J0827+5217	11 44 51	60.9	288.3	3.3	68.6	15	3014	17 41 00
17 42 30	=0824+524	11 46 21	60.7	288.5	3.3	68.4	90	3026	17 41 01
17 42 30	APM08279+525	11 46 21	61.4	288.9	3.2	69.6	-15	3026	No stop
17 46 00	---	11 49 52	60.9	289.3	3.3	69.2	195	3053	17 42 31
17 46 00	J0827+5217	11 49 52	60.2	288.9	3.3	68.1	-15	3053	No stop
17 47 30	=0824+524	11 51 22	60.0	289.0	3.4	67.9	75	3065	17 46 01
17 47 30	APM08279+525	11 51 22	60.7	289.5	3.3	69.1	-15	3065	No stop
17 51 00	---	11 54 53	60.2	289.9	3.4	68.7	195	3092	17 47 31
17 51 30	J0827+5217	11 55 23	59.4	289.5	3.4	67.5	15	3092	17 51 30
17 53 00	=0824+524	11 56 53	59.2	289.7	3.5	67.4	90	3103	17 51 31
17 53 00	APM08279+525	11 56 53	59.9	290.1	3.4	68.5	-15	3103	No stop
17 56 30	---	12 00 24	59.4	290.5	3.5	68.1	195	3130	17 53 01
17 56 30	J0827+5217	12 00 24	58.7	290.1	3.5	67.1	-15	3130	No stop
17 58 00	=0824+524	12 01 54	58.5	290.3	3.5	66.9	75	3142	17 56 31
17 58 00	APM08279+525	12 01 54	59.2	290.6	3.5	68.0	-15	3142	No stop
18 01 30	---	12 05 25	58.7	291.0	3.5	67.6	195	3169	17 58 01
18 02 00	J0827+5217	12 05 55	58.0	290.7	3.6	66.5	15	3169	18 02 00
18 03 30	=0824+524	12 07 25	57.7	290.9	3.6	66.4	90	3181	18 02 01
18 03 30	APM08279+525	12 07 25	58.5	291.2	3.6	67.4	-15	3181	No stop
18 07 00	---	12 10 55	58.0	291.6	3.6	67.0	195	3208	18 03 31
18 07 00	J0827+5217	12 10 55	57.3	291.3	3.7	66.0	-15	3208	No stop
18 08 30	=0824+524	12 12 26	57.0	291.5	3.7	65.8	75	3219	18 07 01

Schedule for TORUN (Code Tr )

Page 13

Resolving extreme star formation and AGN activity in a high redshift qua

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Start UT	Source	Start / Stop				Early	Disk	TPStart		
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Thu 3 Jun 2021 Day 154 ---										
18 08 30	APM08279+525	12 12 26	57.8	291.8	3.7		66.9	-15	3219	No stop
18 12 00	---	12 15 56	57.3	292.2	3.7		66.5	195	3246	18 08 31
18 12 30	J0827+5217	12 16 26	56.5	291.9	3.8		65.4	15	3246	18 12 30
18 14 00	=0824+524	12 17 57	56.3	292.1	3.8		65.3	90	3258	18 12 31
18 14 00	APM08279+525	12 17 57	57.0	292.4	3.7		66.3	-15	3258	No stop
18 17 30	---	12 21 27	56.5	292.8	3.8		65.9	195	3285	18 14 01
18 17 30	J0827+5217	12 21 27	55.8	292.5	3.9		64.9	-15	3285	No stop
18 19 00	=0824+524	12 22 57	55.6	292.7	3.9		64.8	75	3296	18 17 31
18 19 00	APM08279+525	12 22 57	56.3	293.0	3.8		65.8	-15	3296	No stop
18 22 30	---	12 26 28	55.8	293.4	3.9		65.4	195	3324	18 19 01
18 23 00	J0827+5217	12 26 58	55.0	293.1	4.0		64.4	15	3324	18 23 00
18 24 30	=0824+524	12 28 28	54.8	293.3	4.0		64.2	90	3335	18 23 01
18 24 30	APM08279+525	12 28 28	55.5	293.6	3.9		65.2	-15	3335	No stop
18 28 00	---	12 31 59	55.1	294.0	4.0		64.8	195	3362	18 24 31
18 28 00	J0827+5217	12 31 59	54.3	293.7	4.0		63.8	-15	3362	No stop
18 29 30	=0824+524	12 33 29	54.1	293.9	4.1		63.7	75	3374	18 28 01
18 29 30	APM08279+525	12 33 29	54.8	294.2	4.0		64.7	-15	3374	No stop
18 33 00	---	12 37 00	54.4	294.6	4.1		64.3	195	3401	18 29 31
18 33 30	J0827+5217	12 37 30	53.6	294.4	4.1		63.3	15	3401	18 33 30
18 35 00	=0824+524	12 39 00	53.4	294.5	4.2		63.1	90	3412	18 33 31
18 35 00	APM08279+525	12 39 00	54.1	294.8	4.1		64.1	-15	3412	No stop
18 38 30	---	12 42 31	53.6	295.2	4.2		63.7	195	3439	18 35 01
18 38 30	J0827+5217	12 42 31	52.9	294.9	4.2		62.7	-15	3439	No stop
18 40 00	=0824+524	12 44 01	52.7	295.1	4.2		62.6	75	3451	18 38 31
18 40 00	APM08279+525	12 44 01	53.4	295.4	4.2		63.5	-15	3451	No stop
18 43 30	---	12 47 31	52.9	295.8	4.2		63.2	195	3478	18 40 01
18 44 00	J0827+5217	12 48 01	52.1	295.6	4.3		62.2	15	3478	18 44 00
18 45 30	=0824+524	12 49 32	51.9	295.8	4.3		62.0	90	3490	18 44 01
18 45 30	APM08279+525	12 49 32	52.7	296.0	4.3		62.9	-15	3490	No stop
18 49 00	---	12 53 02	52.2	296.4	4.3		62.6	195	3517	18 45 31

Schedule for TORUN (Code Tr )

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Resolving extreme star formation and AGN activity in a high redshift qua

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

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SYNC: Time correlator 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 3 Jun 2021 Day 154 ---										
18 49 00	J0827+5217	12 53 02	51.5	296.2	4.4		61.6	-15	3517	No stop
18 50 30	=0824+524	12 54 33	51.3	296.3	4.4		61.5	75	3528	18 49 01
18 50 30	APM08279+525	12 54 33	52.0	296.5	4.4		62.4	-15	3528	No stop
18 54 00	---	12 58 03	51.5	296.9	4.4		62.0	195	3555	18 50 31
18 54 30	J0827+5217	12 58 33	50.7	296.8	4.5		61.0	15	3555	18 54 30
18 56 00	=0824+524	13 00 03	50.5	297.0	4.5		60.9	90	3567	18 54 31
18 56 00	APM08279+525	13 00 03	51.3	297.2	4.4		61.8	-15	3567	No stop
18 59 30	---	13 03 34	50.8	297.6	4.5		61.4	195	3594	18 56 01
18 59 30	J0827+5217	13 03 34	50.1	297.4	4.6		60.5	-15	3594	No stop
19 01 00	=0824+524	13 05 04	49.9	297.6	4.6		60.3	75	3606	18 59 31
19 01 00	APM08279+525	13 05 04	50.6	297.8	4.5		61.2	-15	3606	No stop
19 04 30	---	13 08 35	50.1	298.2	4.6		60.9	195	3633	19 01 01
19 05 00	J0827+5217	13 09 05	49.3	298.0	4.7		59.9	15	3633	19 05 00
19 06 30	=0824+524	13 10 35	49.1	298.2	4.7		59.8	90	3644	19 05 01
19 06 30	APM08279+525	13 10 35	49.9	298.4	4.6		60.6	-15	3644	No stop
19 10 00	---	13 14 06	49.4	298.8	4.7		60.2	195	3671	19 06 31
19 10 00	J0827+5217	13 14 06	48.7	298.6	4.7		59.4	-15	3671	No stop
19 11 30	=0824+524	13 15 36	48.5	298.8	4.8		59.2	75	3683	19 10 01
19 11 30	APM08279+525	13 15 36	49.2	299.0	4.7		60.1	-15	3683	No stop
19 15 00	---	13 19 07	48.7	299.4	4.8		59.7	195	3710	19 11 31
19 15 30	J0827+5217	13 19 37	47.9	299.3	4.8		58.8	15	3710	19 15 30
19 17 00	=0824+524	13 21 07	47.7	299.5	4.9		58.6	90	3722	19 15 31
19 17 00	APM08279+525	13 21 07	48.5	299.6	4.8		59.5	-15	3722	No stop
19 20 30	---	13 24 37	48.0	300.0	4.9		59.1	195	3749	19 17 01
19 20 30	J0827+5217	13 24 37	47.3	299.9	4.9		58.2	-15	3749	No stop
19 22 00	=0824+524	13 26 08	47.1	300.1	4.9		58.1	75	3760	19 20 31
19 22 00	APM08279+525	13 26 08	47.8	300.2	4.9		58.9	-15	3760	No stop
19 25 30	---	13 29 38	47.4	300.6	4.9		58.5	195	3787	19 22 01
19 26 00	J0827+5217	13 30 08	46.6	300.5	5.0		57.6	15	3787	19 26 00
19 27 30	=0824+524	13 31 39	46.4	300.7	5.0		57.4	90	3799	19 26 01

Schedule for TORUN (Code Tr )

Page 15

Resolving extreme star formation and AGN activity in a high redshift qua

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 3 Jun 2021 Day 154 ---										
19 27 30	APM08279+525	13 31 39	47.1	300.8	5.0		58.3	-15	3799	No stop
19 31 00	---	13 35 09	46.7	301.2	5.0		57.9	195	3826	19 27 31
19 31 00	J0827+5217	13 35 09	45.9	301.1	5.1		57.0	-15	3826	No stop
19 32 30	=0824+524	13 36 39	45.7	301.3	5.1		56.9	75	3838	19 31 01
19 32 30	APM08279+525	13 36 39	46.5	301.4	5.1		57.7	-15	3838	No stop
19 36 00	---	13 40 10	46.0	301.8	5.1		57.3	195	3865	19 32 31
19 36 30	J0827+5217	13 40 40	45.2	301.8	5.2		56.4	15	3865	19 36 30
19 38 00	=0824+524	13 42 10	45.0	302.0	5.2		56.3	90	3876	19 36 31
19 38 00	APM08279+525	13 42 10	45.8	302.1	5.1		57.1	-15	3876	No stop
19 41 30	---	13 45 41	45.3	302.5	5.2		56.7	195	3903	19 38 01
19 41 30	J0827+5217	13 45 41	44.6	302.4	5.3		55.9	-15	3903	No stop
19 43 00	=0824+524	13 47 11	44.4	302.6	5.3		55.7	75	3915	19 41 31
19 43 00	APM08279+525	13 47 11	45.1	302.7	5.2		56.5	-15	3915	No stop
19 46 30	---	13 50 42	44.7	303.1	5.3		56.1	195	3942	19 43 01
19 47 00	J0827+5217	13 51 12	43.9	303.1	5.4		55.2	15	3942	19 47 00
19 48 30	=0824+524	13 52 42	43.7	303.3	5.4		55.1	90	3953	19 47 01
19 48 30	APM08279+525	13 52 42	44.4	303.3	5.3		55.9	-15	3953	No stop
19 52 00	---	13 56 13	44.0	303.7	5.4		55.5	195	3981	19 48 31
19 52 00	J0827+5217	13 56 13	43.3	303.7	5.4		54.7	-15	3981	No stop
19 53 30	=0824+524	13 57 43	43.1	303.9	5.5		54.5	75	3992	19 52 01
19 58 30	4C39.25	14 02 44	42.3	281.7	4.6		49.1	239	3992	19 58 30
20 03 30	---	14 07 45	41.6	282.6	4.7		48.9	300	4031	19 58 31
20 08 30	J0827+5217	14 12 45	41.2	305.7	5.7		52.8	240	4031	20 08 30
20 13 30	=0824+524	14 17 46	40.6	306.3	5.8		52.2	300	4069	20 08 31
20 13 30	APM08279+525	14 17 46	41.3	306.3	5.7		52.9	-15	4069	No stop
20 17 00	---	14 21 17	40.9	306.8	5.8		52.5	195	4096	20 13 31
20 17 30	J0827+5217	14 21 47	40.1	306.8	5.9		51.7	15	4096	20 17 30
20 19 00	=0824+524	14 23 17	39.9	307.0	5.9		51.5	90	4108	20 17 31
20 19 00	APM08279+525	14 23 17	40.7	307.0	5.8		52.3	-15	4108	No stop
20 22 30	---	14 26 48	40.3	307.4	5.9		51.9	195	4135	20 19 01

Schedule for TORUN (Code Tr )

Page 16

Resolving extreme star formation and AGN activity in a high redshift qua

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop				Early	Disk	TPStart		
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Thu 3 Jun 2021 Day 154 ---										
20 22 30	J0827+5217	14 26 48	39.5	307.4	6.0		51.1	-15	4135	No stop
20 24 00	=0824+524	14 28 18	39.3	307.6	6.0		50.9	75	4147	20 22 31
20 24 00	APM08279+525	14 28 18	40.1	307.6	5.9		51.7	-15	4147	No stop
20 27 30	---	14 31 48	39.7	308.1	6.0		51.3	195	4174	20 24 01
20 28 00	J0827+5217	14 32 19	38.9	308.1	6.0		50.5	15	4174	20 28 00
20 29 30	=0824+524	14 33 49	38.7	308.3	6.1		50.3	90	4185	20 28 01
20 29 30	APM08279+525	14 33 49	39.4	308.3	6.0		51.0	-15	4185	No stop
20 33 00	---	14 37 19	39.0	308.7	6.1		50.6	195	4212	20 29 31
20 33 00	J0827+5217	14 37 19	38.3	308.8	6.1		49.9	-15	4212	No stop
20 34 30	=0824+524	14 38 50	38.1	309.0	6.2		49.7	75	4224	20 33 01
20 34 30	APM08279+525	14 38 50	38.8	308.9	6.1		50.4	-15	4224	No stop
20 38 00	---	14 42 20	38.4	309.4	6.2		50.0	195	4251	20 34 31
20 38 30	J0827+5217	14 42 50	37.6	309.5	6.2		49.2	15	4251	20 38 30
20 40 00	=0824+524	14 44 21	37.5	309.7	6.2		49.0	90	4263	20 38 31
20 40 00	APM08279+525	14 44 21	38.2	309.6	6.2		49.7	-15	4263	No stop
20 43 30	---	14 47 51	37.8	310.0	6.2		49.3	195	4290	20 40 01
20 43 30	J0827+5217	14 47 51	37.1	310.1	6.3		48.6	-15	4290	No stop
20 45 00	=0824+524	14 49 21	36.9	310.3	6.3		48.4	75	4301	20 43 31
20 45 00	APM08279+525	14 49 21	37.6	310.2	6.3		49.1	-15	4301	No stop
20 48 30	---	14 52 52	37.2	310.7	6.3		48.7	195	4328	20 45 01
20 49 00	J0827+5217	14 53 22	36.4	310.8	6.4		47.9	15	4328	20 49 00
20 50 30	=0824+524	14 54 52	36.3	311.0	6.4		47.7	90	4340	20 49 01
20 50 30	APM08279+525	14 54 52	37.0	310.9	6.4		48.5	-15	4340	No stop
20 54 00	---	14 58 23	36.6	311.4	6.4		48.0	195	4367	20 50 31
20 54 00	J0827+5217	14 58 23	35.9	311.4	6.5		47.3	-15	4367	No stop
20 55 30	=0824+524	14 59 53	35.7	311.6	6.5		47.1	75	4379	20 54 01
20 55 30	APM08279+525	14 59 53	36.4	311.6	6.4		47.8	-15	4379	No stop
20 59 00	---	15 03 24	36.0	312.0	6.5		47.4	195	4406	20 55 31
20 59 30	J0827+5217	15 03 54	35.2	312.1	6.6		46.6	15	4406	20 59 30
21 01 00	=0824+524	15 05 24	35.1	312.3	6.6		46.4	90	4417	20 59 31

Schedule for TORUN (Code Tr )

Page 17

Resolving extreme star formation and AGN activity in a high redshift qua

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

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SYNC: Time correlator 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 3 Jun 2021 Day 154 ---										
21 01 00	APM08279+525	15 05 24	35.8	312.3	6.5		47.2	-15	4417	No stop
21 04 30	---	15 08 55	35.4	312.7	6.6		46.7	195	4444	21 01 01
21 04 30	J0827+5217	15 08 55	34.7	312.8	6.7		46.0	-15	4444	No stop
21 06 00	=0824+524	15 10 25	34.5	313.0	6.7		45.8	75	4456	21 04 31
21 06 00	APM08279+525	15 10 25	35.3	312.9	6.6		46.5	-15	4456	No stop
21 09 30	---	15 13 55	34.9	313.3	6.7		46.1	195	4483	21 06 01
21 10 00	J0827+5217	15 14 25	34.1	313.5	6.7		45.3	15	4483	21 10 00
21 11 30	=0824+524	15 15 56	33.9	313.7	6.8		45.1	90	4495	21 10 01
21 11 30	APM08279+525	15 15 56	34.7	313.6	6.7		45.8	-15	4495	No stop
21 15 00	---	15 19 26	34.3	314.1	6.8		45.4	195	4522	21 11 31
21 15 00	J0827+5217	15 19 26	33.5	314.2	6.8		44.7	-15	4522	No stop
21 16 30	=0824+524	15 20 57	33.4	314.4	6.9		44.5	75	4533	21 15 01
21 16 30	APM08279+525	15 20 57	34.1	314.2	6.8		45.2	-15	4533	No stop
21 20 00	---	15 24 27	33.7	314.7	6.9		44.8	195	4560	21 16 31
21 20 30	J0827+5217	15 24 57	32.9	314.9	6.9		44.0	15	4560	21 20 30
21 22 00	=0824+524	15 26 27	32.8	315.1	7.0		43.8	90	4572	21 20 31
21 22 00	APM08279+525	15 26 27	33.5	315.0	6.9		44.5	-15	4572	No stop
21 25 30	---	15 29 58	33.1	315.4	6.9		44.1	195	4599	21 22 01
21 25 30	J0827+5217	15 29 58	32.4	315.5	7.0		43.4	-15	4599	No stop
21 27 00	=0824+524	15 31 28	32.3	315.7	7.0		43.2	75	4610	21 25 31
21 27 00	APM08279+525	15 31 28	33.0	315.6	7.0		43.9	-15	4610	No stop
21 30 30	---	15 34 59	32.6	316.1	7.0		43.4	195	4637	21 27 01
21 31 00	J0827+5217	15 35 29	31.8	316.3	7.1		42.7	15	4637	21 31 00
21 32 30	=0824+524	15 36 59	31.7	316.5	7.1		42.5	90	4649	21 31 01
21 32 30	APM08279+525	15 36 59	32.4	316.3	7.1		43.2	-15	4649	No stop
21 36 00	---	15 40 30	32.1	316.8	7.1		42.7	195	4676	21 32 31
21 36 00	J0827+5217	15 40 30	31.3	316.9	7.2		42.0	-15	4676	No stop
21 37 30	=0824+524	15 42 00	31.2	317.1	7.2		41.8	75	4688	21 36 01
21 37 30	APM08279+525	15 42 00	31.9	317.0	7.1		42.5	-15	4688	No stop
21 41 00	---	15 45 31	31.5	317.5	7.2		42.1	195	4715	21 37 31

Schedule for TORUN (Code Tr )

Page 18

Resolving extreme star formation and AGN activity in a high redshift qua

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

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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 3 Jun 2021 Day 154 ---										
21 41 30	J0827+5217	15 46 01	30.8	317.7	7.3		41.3	15	4715	21 41 30
21 43 00	=0824+524	15 47 31	30.6	317.9	7.3		41.1	90	4726	21 41 31
21 43 00	APM08279+525	15 47 31	31.3	317.7	7.2		41.8	-15	4726	No stop
21 46 30	---	15 51 01	31.0	318.2	7.3		41.3	195	4753	21 43 01
21 46 30	J0827+5217	15 51 01	30.3	318.3	7.4		40.7	-15	4753	No stop
21 48 00	=0824+524	15 52 32	30.1	318.5	7.4		40.5	75	4765	21 46 31
21 48 00	APM08279+525	15 52 32	30.8	318.4	7.3		41.1	-15	4765	No stop
21 51 30	---	15 56 02	30.5	318.9	7.4		40.7	195	4792	21 48 01
21 52 00	J0827+5217	15 56 32	29.7	319.1	7.5		39.9	15	4792	21 52 00
21 53 30	=0824+524	15 58 03	29.6	319.3	7.5		39.7	90	4804	21 52 01
21 53 30	APM08279+525	15 58 03	30.3	319.1	7.4		40.4	-15	4804	No stop
21 57 00	---	16 01 33	29.9	319.6	7.5		40.0	195	4831	21 53 31
21 57 00	J0827+5217	16 01 33	29.2	319.8	7.5		39.3	-15	4831	No stop
21 58 30	=0824+524	16 03 03	29.1	320.0	7.6		39.1	75	4842	21 57 01
21 58 30	APM08279+525	16 03 03	29.8	319.8	7.5		39.8	-15	4842	No stop
22 02 00	---	16 06 34	29.5	320.3	7.6		39.3	195	4869	21 58 31
22 02 30	J0827+5217	16 07 04	28.7	320.5	7.6		38.6	15	4869	22 02 30
22 04 00	=0824+524	16 08 34	28.6	320.7	7.7		38.4	90	4881	22 02 31
22 04 00	APM08279+525	16 08 34	29.3	320.5	7.6		39.0	-15	4881	No stop
22 07 30	---	16 12 05	28.9	321.0	7.6		38.6	195	4908	22 04 01
22 07 30	J0827+5217	16 12 05	28.2	321.2	7.7		37.9	-15	4908	No stop
22 09 00	=0824+524	16 13 35	28.1	321.4	7.7		37.7	75	4920	22 07 31
22 09 00	APM08279+525	16 13 35	28.8	321.2	7.7		38.4	-15	4920	No stop
22 12 30	---	16 17 06	28.5	321.7	7.7		37.9	195	4947	22 09 01
22 13 00	J0827+5217	16 17 36	27.7	322.0	7.8		37.2	15	4947	22 13 00
22 14 30	=0824+524	16 19 06	27.6	322.2	7.8		37.0	90	4958	22 13 01
22 14 30	APM08279+525	16 19 06	28.3	322.0	7.8		37.6	-15	4958	No stop
22 18 00	---	16 22 37	28.0	322.4	7.8		37.1	195	4985	22 14 31
22 18 00	J0827+5217	16 22 37	27.2	322.7	7.9		36.5	-15	4985	No stop
22 19 30	=0824+524	16 24 07	27.1	322.9	7.9		36.3	75	4997	22 18 01



Schedule for TORUN (Code Tr )

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Resolving extreme star formation and AGN activity in a high redshift qua

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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   3 Jun 2021   Day 154 ---

22 19 30  APM08279+525  16 24 07  27.8 322.6  7.8      36.9  -15   4997  No stop
22 23 00  ---                16 27 37  27.5 323.1  7.9      36.5  195   5024  22 19 31

22 23 30  J0827+5217      16 28 08  26.7 323.4  8.0      35.8   15   5024  22 23 30
22 25 00  =0824+524       16 29 38  26.6 323.6  8.0      35.5   90   5036  22 23 31

22 25 00  APM08279+525  16 29 38  27.3 323.4  7.9      36.2  -15   5036  No stop
22 28 30  ---                16 33 08  27.0 323.9  8.0      35.7  195   5063  22 25 01

22 28 30  J0827+5217      16 33 08  26.3 324.1  8.1      35.1  -15   5063  No stop
22 30 00  =0824+524       16 34 39  26.2 324.3  8.1      34.9   75   5074  22 28 31

```

## SETUP FILE INFORMATION:

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

==== Setup file: sess221.L1024glob

```

Setup group:   20          Station: TORUN          Total bit rate: 1024
Format: VDIF          Bits per sample: 2          Sample rate: 64.000
Number of channels: 8    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
Net SB=	L	L	U	U	L	L	U	U
IF SB =	L	L	L	L	L	L	L	L
Pol. =	RCP	LCP	RCP	LCP	RCP	LCP	RCP	LCP
BBC =	1	9	1	9	2	10	2	10
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: 9 Setup file default. Used with PCAL = off  
 LO sum= 1626.00 1626.00 1626.00 1626.00 1690.00 1690.00 1690.00 1690.00  
 BBC fr= 674.00 674.00 674.00 674.00 610.00 610.00 610.00 610.00  
 Bandwd= 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00  
 Matching frequency sets: 9

Track assignments are:

track1= 1, 2, 3, 4, 5, 6, 7, 8  
 barrel=roll\_off

#### POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* APM08279+525	08 27 58.009421	* 08 31 41.709536	08 33 14.545864	0.00
	52 55 26.95765	* 52 45 17.62034	52 41 10.34807	0.00
0824+524	08 24 10.281445	* 08 27 53.698140	08 29 26.407262	0.19
* J0827+5217	52 27 54.37285	* 52 17 58.29635	52 13 56.35400	0.11
	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc2016			
	GSFC 2016a X/S astro solution, 124 observations.			
* 4C39.25	09 23 55.319216	* 09 27 03.013937	09 28 21.410343	0.31
J0927+3902	39 15 23.56644	* 39 02 20.85185	38 56 59.61195	0.16
0923+392	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc2016			
J0927+39	GSFC 2016a X/S astro solution, 250526 observations.			

## APPEARANCE OF A JET FEATURE IN KUG 1141+371?

PI: *Krisztina Gabanyi*

Address: Eotvos University, Department of Astronomy

Observing mode: 18 cm 1 Gb/s

Schedule for TORUN (Code Tr )

Page 2

Appearance of a jet feature in KUG 1141+371?

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 4 Jun 2021 Day 155 ---										
Next scan frequencies: 1626.49 1626.49 1626.49 1626.49 1690.49 1690.49 1690.49 1690.49										
Next BBC frequencies: 673.51 673.51 673.51 673.51 609.51 609.51 609.51 609.51										
Next scan bandwidths: 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00										
13 00 00	J1130+3815	07 07 02	43.2	80.7	-4.4		-48.9	0	0	13 00 00
13 05 00	=1128+385	07 12 02	43.9	81.6	-4.3		-49.1	300	39	13 00 01
13 06 00	J1149+3559	07 13 03	39.8	80.7	-4.6		-47.0	30	39	13 06 00
13 08 00	=1146+362	07 15 03	40.1	81.1	-4.6		-47.1	120	54	13 06 01
13 08 20	KUG1141+371	07 15 23	41.5	81.2	-4.5		-47.8	1	54	13 08 20
13 15 50	---	07 22 54	42.6	82.5	-4.4		-48.0	450	112	13 08 21
13 16 10	J1149+3559	07 23 14	41.3	82.6	-4.5		-47.3	2	112	13 16 10
13 17 10	=1146+362	07 24 14	41.4	82.8	-4.4		-47.3	60	120	13 16 11
13 17 25	J1149+3559	07 24 29	41.5	82.8	-4.4		-47.3	9	120	13 17 25
13 18 25	=1146+362	07 25 30	41.6	83.0	-4.4		-47.3	60	128	13 17 26
13 18 45	KUG1141+371	07 25 50	43.0	83.1	-4.3		-48.1	1	128	13 18 45
13 26 15	---	07 33 21	44.2	84.5	-4.2		-48.3	450	185	13 18 46
13 26 35	J1149+3559	07 33 41	42.8	84.5	-4.3		-47.5	2	185	13 26 35
13 27 35	=1146+362	07 34 41	43.0	84.7	-4.3		-47.5	60	193	13 26 36
13 27 50	J1149+3559	07 34 56	43.0	84.7	-4.3		-47.6	9	193	13 27 50
13 28 50	=1146+362	07 35 56	43.2	84.9	-4.2		-47.6	60	201	13 27 51
13 29 10	KUG1141+371	07 36 16	44.6	85.0	-4.2		-48.3	1	201	13 29 10
13 36 40	---	07 43 48	45.7	86.4	-4.0		-48.4	450	259	13 29 11
13 37 00	J1149+3559	07 44 08	44.4	86.5	-4.1		-47.7	2	259	13 37 00
13 38 00	=1146+362	07 45 08	44.6	86.7	-4.1		-47.7	60	267	13 37 01
13 38 15	J1149+3559	07 45 23	44.6	86.7	-4.1		-47.7	9	267	13 38 15
13 39 15	=1146+362	07 46 23	44.7	86.9	-4.1		-47.7	60	274	13 38 16
13 39 35	KUG1141+371	07 46 43	46.2	87.0	-4.0		-48.5	1	274	13 39 35
13 47 05	---	07 54 14	47.3	88.4	-3.9		-48.5	450	332	13 39 36
13 47 25	J1149+3559	07 54 34	46.0	88.5	-3.9		-47.8	2	332	13 47 25
13 48 25	=1146+362	07 55 34	46.1	88.7	-3.9		-47.8	60	340	13 47 26



Schedule for TORUN (Code Tr )

Page 3

Appearance of a jet feature in KUG 1141+371?

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 4 Jun 2021	Day 155					---				
13 48 40	J1149+3559	07 55 50	46.2	88.7	-3.9		-47.8	9	340	13 48 40	
13 49 40	=1146+362	07 56 50	46.3	88.9	-3.9		-47.8	60	348	13 48 41	
13 50 00	KUG1141+371	07 57 10	47.7	89.0	-3.8		-48.5	1	348	13 50 00	
13 57 30	---	08 04 41	48.8	90.5	-3.7		-48.6	450	406	13 50 01	
13 57 50	J1149+3559	08 05 01	47.5	90.6	-3.8		-47.8	2	406	13 57 50	
13 58 50	=1146+362	08 06 01	47.7	90.8	-3.7		-47.8	60	414	13 57 51	
13 59 05	J1149+3559	08 06 16	47.7	90.8	-3.7		-47.8	9	414	13 59 05	
14 00 05	=1146+362	08 07 16	47.9	91.0	-3.7		-47.8	60	421	13 59 06	
14 00 25	KUG1141+371	08 07 36	49.3	91.1	-3.6		-48.5	1	421	14 00 25	
14 07 55	---	08 15 08	50.4	92.6	-3.5		-48.5	450	479	14 00 26	
14 08 15	J1149+3559	08 15 28	49.1	92.7	-3.6		-47.7	2	479	14 08 15	
14 09 15	=1146+362	08 16 28	49.3	92.9	-3.6		-47.7	60	487	14 08 16	
14 09 30	J1149+3559	08 16 43	49.3	93.0	-3.6		-47.7	9	487	14 09 30	
14 10 30	=1146+362	08 17 43	49.4	93.2	-3.5		-47.7	60	495	14 09 31	
14 10 50	KUG1141+371	08 18 03	50.9	93.3	-3.5		-48.5	1	495	14 10 50	
14 18 20	---	08 25 34	52.0	94.9	-3.3		-48.3	450	553	14 10 51	
14 18 40	J1149+3559	08 25 54	50.7	94.9	-3.4		-47.6	2	553	14 18 40	
14 19 40	=1146+362	08 26 55	50.8	95.1	-3.4		-47.6	60	560	14 18 41	
14 19 55	J1149+3559	08 27 10	50.9	95.2	-3.4		-47.6	9	560	14 19 55	
14 20 55	=1146+362	08 28 10	51.0	95.4	-3.4		-47.5	60	568	14 19 56	
14 21 15	KUG1141+371	08 28 30	52.4	95.5	-3.3		-48.3	1	568	14 21 15	
14 28 45	---	08 36 01	53.5	97.2	-3.2		-48.1	450	626	14 21 16	
14 29 05	J1149+3559	08 36 21	52.2	97.2	-3.2		-47.3	2	626	14 29 05	
14 30 05	=1146+362	08 37 21	52.4	97.4	-3.2		-47.3	60	634	14 29 06	
14 30 20	J1149+3559	08 37 36	52.4	97.5	-3.2		-47.3	9	634	14 30 20	
14 31 20	=1146+362	08 38 37	52.6	97.7	-3.2		-47.2	60	642	14 30 21	
14 31 40	KUG1141+371	08 38 57	54.0	97.8	-3.1		-48.0	1	642	14 31 40	
14 39 10	---	08 46 28	55.1	99.6	-3.0		-47.7	450	699	14 31 41	
14 39 30	J1149+3559	08 46 48	53.8	99.6	-3.1		-46.9	2	699	14 39 30	
14 40 30	=1146+362	08 47 48	53.9	99.8	-3.0		-46.9	60	707	14 39 31	
14 40 45	J1149+3559	08 48 03	54.0	99.9	-3.0		-46.9	9	707	14 40 45	
14 41 45	=1146+362	08 49 03	54.1	100.1	-3.0		-46.8	60	715	14 40 46	

Schedule for TORUN (Code Tr )

Page 4

Appearance of a jet feature in KUG 1141+371?

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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	4 Jun 2021	Day 155		---					
14 42 05	KUG1141+371	08 49 23	55.5	100.3	-2.9		-47.5	1	715	14 42 05
14 49 35	---	08 56 55	56.6	102.1	-2.8		-47.1	450	773	14 42 06
14 49 55	J1149+3559	08 57 15	55.3	102.1	-2.9		-46.4	2	773	14 49 55
14 50 55	=1146+362	08 58 15	55.5	102.3	-2.9		-46.4	60	781	14 49 56
14 51 10	J1149+3559	08 58 30	55.5	102.4	-2.9		-46.4	9	781	14 51 10
14 52 10	=1146+362	08 59 30	55.7	102.7	-2.9		-46.3	60	788	14 51 11
14 52 30	KUG1141+371	08 59 50	57.1	102.8	-2.8		-47.0	1	788	14 52 30
15 00 00	---	09 07 21	58.2	104.8	-2.6		-46.5	450	846	14 52 31
15 00 20	J1149+3559	09 07 41	56.8	104.7	-2.7		-45.8	2	846	15 00 20
15 01 20	=1146+362	09 08 41	57.0	105.0	-2.7		-45.7	60	854	15 00 21
15 01 35	J1149+3559	09 08 57	57.0	105.1	-2.7		-45.7	9	854	15 01 35
15 02 35	=1146+362	09 09 57	57.2	105.3	-2.7		-45.6	60	862	15 01 36
15 02 55	KUG1141+371	09 10 17	58.6	105.5	-2.6		-46.2	1	862	15 02 55
15 10 25	---	09 17 48	59.7	107.6	-2.5		-45.6	450	920	15 02 56
15 10 45	J1149+3559	09 18 08	58.4	107.5	-2.5		-45.0	2	920	15 10 45
15 11 45	=1146+362	09 19 08	58.5	107.8	-2.5		-44.9	60	927	15 10 46
15 12 00	J1149+3559	09 19 23	58.5	107.8	-2.5		-44.9	9	927	15 12 00
15 13 00	=1146+362	09 20 23	58.7	108.1	-2.5		-44.8	60	935	15 12 01
15 13 20	KUG1141+371	09 20 43	60.1	108.4	-2.4		-45.3	1	935	15 13 20
15 20 50	---	09 28 15	61.1	110.6	-2.3		-44.6	450	993	15 13 21
15 21 10	J1149+3559	09 28 35	59.8	110.4	-2.4		-44.0	2	993	15 21 10
15 22 10	=1146+362	09 29 35	60.0	110.7	-2.4		-43.9	60	1001	15 21 11
15 22 25	J1149+3559	09 29 50	60.0	110.8	-2.3		-43.8	9	1001	15 22 25
15 23 25	=1146+362	09 30 50	60.2	111.1	-2.3		-43.7	60	1009	15 22 26
15 23 45	KUG1141+371	09 31 10	61.6	111.4	-2.2		-44.3	1	1009	15 23 45
15 31 15	---	09 38 41	62.6	113.7	-2.1		-43.3	450	1067	15 23 46
15 31 35	J1149+3559	09 39 01	61.3	113.6	-2.2		-42.8	2	1067	15 31 35
15 32 35	=1146+362	09 40 02	61.4	113.9	-2.2		-42.7	60	1074	15 31 36
15 32 50	J1149+3559	09 40 17	61.5	114.0	-2.2		-42.6	9	1074	15 32 50
15 33 50	=1146+362	09 41 17	61.6	114.3	-2.2		-42.5	60	1082	15 32 51

Schedule for TORUN (Code Tr )

Page 5

Appearance of a jet feature in KUG 1141+371?

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 4 Jun 2021 Day 155 ---

```
15 34 10  KUG1141+371  09 41 37  63.0 114.7 -2.1    -42.9    1    1082  15 34 10
15 41 40  ---                09 49 08  64.0 117.2 -1.9    -41.8   450    1140  15 34 11

15 42 00  J1149+3559  09 49 28  62.7 116.9 -2.0    -41.4    2    1140  15 42 00
15 43 00  =1146+362   09 50 28  62.8 117.3 -2.0    -41.2    60    1148  15 42 01

15 43 15  J1149+3559  09 50 43  62.9 117.3 -2.0    -41.2    9    1148  15 43 15
15 44 15  =1146+362   09 51 44  63.0 117.7 -2.0    -41.0    60    1156  15 43 16

15 44 35  KUG1141+371  09 52 04  64.4 118.2 -1.9    -41.4    1    1156  15 44 35
15 52 05  ---                09 59 35  65.4 120.9 -1.8    -40.0   450    1213  15 44 36

15 52 25  J1149+3559  09 59 55  64.1 120.5 -1.8    -39.7    2    1213  15 52 25
15 54 55  =1146+362   10 02 25  64.4 121.4 -1.8    -39.2   150    1233  15 52 26

15 55 15  J1130+3815  10 02 45  68.6 125.2 -1.5    -38.6   -9    1233  15 55 15
16 00 00  =1128+385   10 07 31  69.1 127.3 -1.4    -37.4   276    1270  15 55 16
```

## SETUP FILE INFORMATION:

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

==== Setup file: sess221.L1024

```
Setup group: 10          Station: TORUN          Total bit rate: 1024
Format: VDIF           Bits per sample: 2      Sample rate: 64.000
Number of channels: 8   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
Net SB=	L	L	U	U	L	L	U	U
IF SB =	L	L	L	L	L	L	L	L
Pol. =	RCP	LCP	RCP	LCP	RCP	LCP	RCP	LCP
BBC =	1	9	1	9	2	10	2	10
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: 9 Setup file default. Used with PCAL = off
LO sum= 1626.49 1626.49 1626.49 1626.49 1690.49 1690.49 1690.49 1690.49
BBC fr= 673.51 673.51 673.51 673.51 609.51 609.51 609.51 609.51
Bandwd= 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00
Matching frequency sets: 9

```

Track assignments are:

```

track1= 1, 2, 3, 4, 5, 6, 7, 8
barrel=roll_off

```

#### POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	Source position (RA/Dec) (J2000)	(Date)	Error (mas)
* KUG1141+371	11 41 52.419715	* 11 44 29.870844	11 45 36.570503	0.00
	37 09 47.82893	* 36 53 08.61540	36 46 16.93431	0.00
* J1130+3815	11 28 12.513445	* 11 30 53.282614	11 32 01.274518	0.13
1128+385	38 31 51.62112	* 38 15 18.54689	38 08 29.93431	0.10
J1130+38	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.vlba.2012jul rfc_2012b Petrov, 2012, unpublished 78094 observations			
* J1149+3559	11 46 57.721483	* 11 49 33.975654	11 50 40.207810	0.18
1146+362	36 15 48.69360	* 35 59 08.09514	35 52 15.52344	0.24
	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.vlba.2012jul rfc_2012b Petrov, 2012, unpublished 146 observations			



RESOLVING A GRAVITATIONALLY LENSED DUAL BACK-HOLE SYSTEM AT  $Z = 2.3$ PI: *John McKean*

Address: ASTRON

Observing mode: 18cm 1024-8-2

Schedule for TORUN (Code Tr )

Page 2

Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Fri 4 Jun 2021 Day 155 ---										
Next scan frequencies: 1626.49 1626.49 1626.49 1626.49 1690.49 1690.49 1690.49 1690.49										
Next BBC frequencies: 673.51 673.51 673.51 673.51 609.51 609.51 609.51 609.51										
Next scan bandwidths: 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00										
18 00 00	J1639+8631	12 07 51	54.4	5.5	-4.4	-109.1	0	0	18 00 00	
18 01 30	=1654+866	12 09 21	54.4	5.5	-4.4	-109.5	90	12	18 00 01	
18 01 30	PSJ1721+8842	12 09 21	53.4	2.1	-4.9	-104.7	-21	12	No stop	
18 04 55	---	12 12 47	53.5	2.1	-4.8	-105.6	184	38	18 01 31	
18 05 40	J1639+8631	12 13 32	54.5	5.5	-4.3	-110.5	24	38	18 05 40	
18 07 05	=1654+866	12 14 57	54.5	5.5	-4.3	-110.9	85	49	18 05 41	
18 07 05	PSJ1721+8842	12 14 57	53.5	2.1	-4.8	-106.1	-21	49	No stop	
18 10 30	---	12 18 23	53.5	2.1	-4.8	-107.0	184	75	18 07 06	
18 10 30	J1639+8631	12 18 23	54.5	5.4	-4.3	-111.8	-21	75	No stop	
18 12 00	=1654+866	12 19 53	54.5	5.4	-4.2	-112.2	69	87	18 10 31	
18 12 00	PSJ1721+8842	12 19 53	53.5	2.1	-4.7	-107.4	-21	87	No stop	
18 15 25	---	12 23 18	53.5	2.1	-4.7	-108.2	184	113	18 12 01	
18 16 10	J1639+8631	12 24 03	54.6	5.4	-4.2	-113.3	24	113	18 16 10	
18 17 35	=1654+866	12 25 29	54.6	5.4	-4.1	-113.6	85	124	18 16 11	
18 17 35	PSJ1721+8842	12 25 29	53.5	2.1	-4.6	-108.8	-21	124	No stop	
18 21 00	---	12 28 54	53.6	2.1	-4.6	-109.7	184	151	18 17 36	
18 21 00	J1639+8631	12 28 54	54.7	5.3	-4.1	-114.5	-21	151	No stop	
18 22 30	=1654+866	12 30 25	54.7	5.3	-4.1	-114.9	69	162	18 21 01	
18 22 30	PSJ1721+8842	12 30 25	53.6	2.1	-4.6	-110.0	-21	162	No stop	
18 25 55	---	12 33 50	53.6	2.1	-4.5	-110.9	184	189	18 22 31	
18 26 40	J1639+8631	12 34 35	54.8	5.3	-4.0	-116.0	24	189	18 26 40	
18 28 05	=1654+866	12 36 00	54.8	5.2	-4.0	-116.3	85	200	18 26 41	
18 28 05	PSJ1721+8842	12 36 00	53.6	2.0	-4.5	-111.4	-21	200	No stop	
18 31 30	---	12 39 26	53.6	2.0	-4.4	-112.3	184	226	18 28 06	
18 31 30	J1639+8631	12 39 26	54.8	5.2	-3.9	-117.2	-21	226	No stop	
18 33 00	=1654+866	12 40 56	54.8	5.2	-3.9	-117.6	69	238	18 31 31	



Schedule for TORUN (Code Tr )

Page 3

Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 4 Jun 2021	Day 155					---				
18 33 00	PSJ1721+8842	12 40 56	53.6	2.0	-4.4		-112.7	-21	238	No stop	
18 36 25	---	12 44 22	53.6	2.0	-4.3		-113.6	184	264	18 33 01	
18 37 10	J1639+8631	12 45 07	54.9	5.1	-3.8		-118.7	24	264	18 37 10	
18 38 35	=1654+866	12 46 32	54.9	5.1	-3.8		-119.1	85	275	18 37 11	
18 38 35	PSJ1721+8842	12 46 32	53.7	2.0	-4.3		-114.1	-21	275	No stop	
18 42 00	---	12 49 58	53.7	2.0	-4.2		-115.0	184	301	18 38 36	
18 42 00	J1639+8631	12 49 58	55.0	5.1	-3.7		-120.0	-21	301	No stop	
18 43 30	=1654+866	12 51 28	55.0	5.0	-3.7		-120.4	69	313	18 42 01	
18 43 30	PSJ1721+8842	12 51 28	53.7	2.0	-4.2		-115.4	-21	313	No stop	
18 46 55	---	12 54 54	53.7	2.0	-4.1		-116.2	184	339	18 43 31	
18 47 40	J1639+8631	12 55 39	55.0	5.0	-3.6		-121.4	24	339	18 47 40	
18 49 05	=1654+866	12 57 04	55.1	5.0	-3.6		-121.8	85	350	18 47 41	
18 49 05	PSJ1721+8842	12 57 04	53.7	2.0	-4.1		-116.8	-21	350	No stop	
18 52 30	---	13 00 29	53.7	1.9	-4.1		-117.6	184	377	18 49 06	
18 52 30	J1639+8631	13 00 29	55.1	4.9	-3.6		-122.7	-20	377	No stop	
18 54 00	=1654+866	13 02 00	55.1	4.9	-3.5		-123.1	70	388	18 52 31	
18 54 00	PSJ1721+8842	13 02 00	53.7	1.9	-4.0		-118.0	-20	388	No stop	
18 57 25	---	13 05 25	53.7	1.9	-4.0		-118.9	185	415	18 54 01	
18 58 10	J1639+8631	13 06 10	55.2	4.8	-3.5		-124.2	25	415	18 58 10	
18 59 35	=1654+866	13 07 36	55.2	4.8	-3.4		-124.6	85	426	18 58 11	
18 59 35	PSJ1721+8842	13 07 36	53.8	1.9	-3.9		-119.4	-20	426	No stop	
19 03 00	---	13 11 01	53.8	1.9	-3.9		-120.3	185	452	18 59 36	
19 03 00	J1639+8631	13 11 01	55.2	4.8	-3.4		-125.5	-20	452	No stop	
19 04 30	=1654+866	13 12 31	55.2	4.7	-3.4		-125.9	70	464	19 03 01	
19 04 30	PSJ1721+8842	13 12 31	53.8	1.9	-3.9		-120.7	-20	464	No stop	
19 07 55	---	13 15 57	53.8	1.9	-3.8		-121.6	185	490	19 04 31	
19 08 40	J1639+8631	13 16 42	55.3	4.7	-3.3		-127.0	25	490	19 08 40	
19 10 05	=1654+866	13 18 07	55.3	4.7	-3.3		-127.3	85	501	19 08 41	
19 10 05	PSJ1721+8842	13 18 07	53.8	1.9	-3.8		-122.1	-20	501	No stop	
19 13 30	---	13 21 33	53.8	1.8	-3.7		-123.0	185	528	19 10 06	
19 13 30	J1639+8631	13 21 33	55.4	4.6	-3.2		-128.2	-20	528	No stop	
19 15 00	=1654+866	13 23 03	55.4	4.6	-3.2		-128.6	70	539	19 13 31	

Schedule for TORUN (Code Tr )

Page 4

Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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	4 Jun 2021	Day 155		---					
19 15 00	PSJ1721+8842	13 23 03	53.8	1.8	-3.7		-123.4	-20	539	No stop
19 18 25	---	13 26 29	53.9	1.8	-3.6		-124.2	185	566	19 15 01
19 19 10	J1639+8631	13 27 14	55.4	4.5	-3.1		-129.7	25	566	19 19 10
19 20 35	=1654+866	13 28 39	55.4	4.5	-3.1		-130.1	85	576	19 19 11
19 20 35	PSJ1721+8842	13 28 39	53.9	1.8	-3.6		-124.8	-20	576	No stop
19 24 00	---	13 32 05	53.9	1.8	-3.5		-125.7	185	603	19 20 36
19 24 00	J1639+8631	13 32 05	55.5	4.4	-3.0		-131.0	-20	603	No stop
19 25 30	=1654+866	13 33 35	55.5	4.4	-3.0		-131.4	70	614	19 24 01
19 30 30	3C345	13 38 36	56.2	94.2	-3.1		-51.2	106	614	19 30 30
19 35 30	---	13 43 37	56.9	95.3	-3.0		-51.1	300	653	19 30 31
19 40 30	J1639+8631	13 48 37	55.7	4.1	-2.8		-135.4	103	653	19 40 30
19 45 30	=1654+866	13 53 38	55.7	4.0	-2.7		-136.7	300	692	19 40 31
19 45 30	PSJ1721+8842	13 53 38	54.0	1.7	-3.2		-131.2	-20	692	No stop
19 48 55	---	13 57 04	54.0	1.6	-3.1		-132.0	185	718	19 45 31
19 49 40	J1639+8631	13 57 49	55.8	3.9	-2.6		-137.8	25	718	19 49 40
19 51 05	=1654+866	13 59 14	55.8	3.9	-2.6		-138.2	85	729	19 49 41
19 51 05	PSJ1721+8842	13 59 14	54.0	1.6	-3.1		-132.6	-20	729	No stop
19 54 30	---	14 02 40	54.0	1.6	-3.0		-133.5	185	756	19 51 06
19 54 30	J1639+8631	14 02 40	55.8	3.8	-2.5		-139.1	-20	756	No stop
19 56 00	=1654+866	14 04 10	55.8	3.8	-2.5		-139.5	70	767	19 54 31
19 56 00	PSJ1721+8842	14 04 10	54.0	1.6	-3.0		-133.9	-21	767	No stop
19 59 25	---	14 07 35	54.0	1.6	-2.9		-134.7	184	794	19 56 01
20 00 10	J1639+8631	14 08 21	55.9	3.7	-2.4		-140.6	24	794	20 00 10
20 01 35	=1654+866	14 09 46	55.9	3.7	-2.4		-141.0	85	804	20 00 11
20 01 35	PSJ1721+8842	14 09 46	54.0	1.5	-2.9		-135.3	-21	804	No stop
20 05 00	---	14 13 11	54.1	1.5	-2.8		-136.2	184	831	20 01 36
20 05 00	J1639+8631	14 13 11	55.9	3.6	-2.3		-141.9	-21	831	No stop
20 06 30	=1654+866	14 14 42	55.9	3.6	-2.3		-142.3	69	842	20 05 01
20 06 30	PSJ1721+8842	14 14 42	54.1	1.5	-2.8		-136.5	-21	842	No stop
20 09 55	---	14 18 07	54.1	1.5	-2.8		-137.4	184	869	20 06 31

Schedule for TORUN (Code Tr )

Page 5

Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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	4 Jun 2021	Day 155		---					
20 10 40	J1639+8631	14 18 52	56.0	3.5	-2.2		-143.5	24	869	20 10 40
20 12 05	=1654+866	14 20 18	56.0	3.4	-2.2		-143.8	85	880	20 10 41
20 12 05	PSJ1721+8842	14 20 18	54.1	1.5	-2.7		-138.0	-21	880	No stop
20 15 30	---	14 23 43	54.1	1.4	-2.7		-138.9	184	906	20 12 06
20 15 30	J1639+8631	14 23 43	56.0	3.4	-2.2		-144.8	-21	906	No stop
20 17 00	=1654+866	14 25 13	56.0	3.3	-2.1		-145.2	69	918	20 15 31
20 17 00	PSJ1721+8842	14 25 13	54.1	1.4	-2.6		-139.2	-21	918	No stop
20 20 25	---	14 28 39	54.1	1.4	-2.6		-140.1	184	944	20 17 01
20 21 10	J1639+8631	14 29 24	56.1	3.2	-2.1		-146.3	24	944	20 21 10
20 22 35	=1654+866	14 30 49	56.1	3.2	-2.0		-146.7	85	955	20 21 11
20 22 35	PSJ1721+8842	14 30 49	54.1	1.4	-2.5		-140.7	-21	955	No stop
20 26 00	---	14 34 15	54.1	1.4	-2.5		-141.5	184	982	20 22 36
20 26 00	J1639+8631	14 34 15	56.1	3.1	-2.0		-147.6	-21	982	No stop
20 27 30	=1654+866	14 35 45	56.1	3.1	-2.0		-148.0	69	993	20 26 01
20 27 30	PSJ1721+8842	14 35 45	54.1	1.4	-2.5		-141.9	-21	993	No stop
20 30 55	---	14 39 11	54.2	1.3	-2.4		-142.8	184	1020	20 27 31
20 31 40	J1639+8631	14 39 56	56.1	3.0	-1.9		-149.1	24	1020	20 31 40
20 33 05	=1654+866	14 41 21	56.2	3.0	-1.9		-149.5	85	1031	20 31 41
20 33 05	PSJ1721+8842	14 41 21	54.2	1.3	-2.4		-143.4	-21	1031	No stop
20 36 30	---	14 44 47	54.2	1.3	-2.3		-144.2	184	1057	20 33 06
20 36 30	J1639+8631	14 44 47	56.2	2.9	-1.8		-150.4	-21	1057	No stop
20 38 00	=1654+866	14 46 17	56.2	2.8	-1.8		-150.8	69	1069	20 36 31
20 38 00	PSJ1721+8842	14 46 17	54.2	1.3	-2.3		-144.6	-21	1069	No stop
20 41 25	---	14 49 42	54.2	1.2	-2.2		-145.5	184	1095	20 38 01
20 42 10	J1639+8631	14 50 27	56.2	2.7	-1.7		-152.0	24	1095	20 42 10
20 43 35	=1654+866	14 51 53	56.2	2.7	-1.7		-152.3	85	1106	20 42 11
20 43 35	PSJ1721+8842	14 51 53	54.2	1.2	-2.2		-146.1	-21	1106	No stop
20 47 00	---	14 55 18	54.2	1.2	-2.1		-146.9	184	1132	20 43 36
20 47 00	J1639+8631	14 55 18	56.3	2.6	-1.6		-153.3	-22	1132	No stop
20 48 30	=1654+866	14 56 48	56.3	2.6	-1.6		-153.7	68	1144	20 47 01

Schedule for TORUN (Code Tr )

Page 6

Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 4 Jun 2021 Day 155 ---										
20 48 30	PSJ1721+8842	14 56 48	54.2	1.2	-2.1		-147.3	-22	1144	No stop
20 51 55	---	15 00 14	54.2	1.2	-2.1		-148.2	183	1170	20 48 31
20 52 40	J1639+8631	15 00 59	56.3	2.5	-1.5		-154.8	23	1170	20 52 40
20 54 05	=1654+866	15 02 24	56.3	2.5	-1.5		-155.2	85	1181	20 52 41
20 54 05	PSJ1721+8842	15 02 24	54.2	1.1	-2.0		-148.8	-22	1181	No stop
20 57 30	---	15 05 50	54.2	1.1	-2.0		-149.6	183	1208	20 54 06
20 57 30	J1639+8631	15 05 50	56.3	2.4	-1.5		-156.1	-22	1208	No stop
20 59 00	=1654+866	15 07 20	56.3	2.3	-1.4		-156.5	68	1219	20 57 31
20 59 00	PSJ1721+8842	15 07 20	54.2	1.1	-1.9		-150.0	-22	1219	No stop
21 02 25	---	15 10 46	54.3	1.1	-1.9		-150.9	183	1246	20 59 01
21 03 10	J1639+8631	15 11 31	56.4	2.2	-1.4		-157.6	23	1246	21 03 10
21 04 35	=1654+866	15 12 56	56.4	2.2	-1.3		-158.0	85	1257	21 03 11
21 04 35	PSJ1721+8842	15 12 56	54.3	1.0	-1.8		-151.5	-22	1257	No stop
21 08 00	---	15 16 22	54.3	1.0	-1.8		-152.4	183	1283	21 04 36
21 08 00	J1639+8631	15 16 22	56.4	2.1	-1.3		-159.0	-22	1283	No stop
21 09 30	=1654+866	15 17 52	56.4	2.1	-1.3		-159.4	68	1295	21 08 01
21 09 30	PSJ1721+8842	15 17 52	54.3	1.0	-1.8		-152.7	-22	1295	No stop
21 12 55	---	15 21 18	54.3	1.0	-1.7		-153.6	183	1321	21 09 31
21 13 40	J1639+8631	15 22 03	56.4	2.0	-1.2		-160.5	23	1321	21 13 40
21 15 05	=1654+866	15 23 28	56.4	1.9	-1.2		-160.9	85	1332	21 13 41
21 15 05	PSJ1721+8842	15 23 28	54.3	1.0	-1.7		-154.2	-22	1332	No stop
21 18 30	---	15 26 53	54.3	0.9	-1.6		-155.1	183	1358	21 15 06
21 18 30	J1639+8631	15 26 53	56.4	1.8	-1.1		-161.8	-22	1358	No stop
21 20 00	=1654+866	15 28 24	56.5	1.8	-1.1		-162.2	68	1370	21 18 31
21 20 00	PSJ1721+8842	15 28 24	54.3	0.9	-1.6		-155.4	-22	1370	No stop
21 23 25	---	15 31 49	54.3	0.9	-1.5		-156.3	183	1396	21 20 01
21 24 10	J1639+8631	15 32 34	56.5	1.7	-1.0		-163.4	23	1396	21 24 10
21 25 35	=1654+866	15 34 00	56.5	1.6	-1.0		-163.7	85	1407	21 24 11
21 25 35	PSJ1721+8842	15 34 00	54.3	0.9	-1.5		-156.9	-22	1407	No stop
21 29 00	---	15 37 25	54.3	0.8	-1.4		-157.8	183	1434	21 25 36

Schedule for TORUN (Code Tr )

Page 7

Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 4 Jun 2021 Day 155 ---										
21 29 00	J1639+8631	15 37 25	56.5	1.5	-0.9		-164.7	-22	1434	No stop
21 30 30	=1654+866	15 38 55	56.5	1.5	-0.9		-165.1	68	1445	21 29 01
21 30 30	PSJ1721+8842	15 38 55	54.3	0.8	-1.4		-158.2	-22	1445	No stop
21 33 55	---	15 42 21	54.3	0.8	-1.4		-159.0	183	1472	21 30 31
21 34 40	J1639+8631	15 43 06	56.5	1.4	-0.8		-166.2	23	1472	21 34 40
21 36 05	=1654+866	15 44 31	56.5	1.4	-0.8		-166.6	85	1483	21 34 41
21 36 05	PSJ1721+8842	15 44 31	54.3	0.8	-1.3		-159.6	-22	1483	No stop
21 39 30	---	15 47 57	54.3	0.7	-1.3		-160.5	183	1509	21 36 06
21 39 30	J1639+8631	15 47 57	56.5	1.3	-0.8		-167.5	-22	1509	No stop
21 41 00	=1654+866	15 49 27	56.5	1.2	-0.7		-167.9	68	1521	21 39 31
21 41 00	PSJ1721+8842	15 49 27	54.3	0.7	-1.2		-160.9	-22	1521	No stop
21 44 25	---	15 52 53	54.4	0.7	-1.2		-161.8	183	1547	21 41 01
21 45 10	J1639+8631	15 53 38	56.5	1.1	-0.7		-169.1	23	1547	21 45 10
21 46 35	=1654+866	15 55 03	56.6	1.1	-0.6		-169.5	85	1558	21 45 11
21 46 35	PSJ1721+8842	15 55 03	54.4	0.7	-1.1		-162.3	-22	1558	No stop
21 50 00	---	15 58 29	54.4	0.6	-1.1		-163.2	183	1584	21 46 36
21 50 00	J1639+8631	15 58 29	56.6	1.0	-0.6		-170.4	-22	1584	No stop
21 51 30	=1654+866	15 59 59	56.6	0.9	-0.6		-170.8	68	1596	21 50 01
21 51 30	PSJ1721+8842	15 59 59	54.4	0.6	-1.1		-163.6	-22	1596	No stop
21 54 55	---	16 03 24	54.4	0.6	-1.0		-164.5	183	1622	21 51 31
21 55 40	J1639+8631	16 04 10	56.6	0.8	-0.5		-171.9	23	1622	21 55 40
21 57 05	=1654+866	16 05 35	56.6	0.8	-0.5		-172.3	85	1633	21 55 41
21 57 05	PSJ1721+8842	16 05 35	54.4	0.6	-1.0		-165.0	-22	1633	No stop
22 00 30	---	16 09 00	54.4	0.5	-0.9		-165.9	183	1660	21 57 06
22 00 30	J1639+8631	16 09 00	56.6	0.7	-0.4		-173.3	-22	1660	No stop
22 02 00	=1654+866	16 10 31	56.6	0.6	-0.4		-173.7	68	1671	22 00 31
22 02 00	PSJ1721+8842	16 10 31	54.4	0.5	-0.9		-166.3	-22	1671	No stop
22 05 25	---	16 13 56	54.4	0.5	-0.8		-167.2	183	1698	22 02 01
22 06 10	J1639+8631	16 14 41	56.6	0.5	-0.3		-174.8	23	1698	22 06 10
22 07 35	=1654+866	16 16 06	56.6	0.5	-0.3		-175.2	85	1709	22 06 11

Schedule for TORUN (Code Tr )

Page 8

Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 4 Jun 2021 Day 155 ---										
22 07 35	PSJ1721+8842	16 16 06	54.4	0.5	-0.8		-167.7	-22	1709	No stop
22 11 00	---	16 19 32	54.4	0.4	-0.7		-168.6	183	1735	22 07 36
22 11 00	J1639+8631	16 19 32	56.6	0.4	-0.2		-176.1	-22	1735	No stop
22 12 30	=1654+866	16 21 02	56.6	0.4	-0.2		-176.6	68	1747	22 11 01
22 12 30	PSJ1721+8842	16 21 02	54.4	0.4	-0.7		-169.0	-22	1747	No stop
22 15 55	---	16 24 28	54.4	0.4	-0.7		-169.9	183	1773	22 12 31
22 16 40	J1639+8631	16 25 13	56.6	0.2	-0.1		-177.7	23	1773	22 16 40
22 18 05	=1654+866	16 26 38	56.6	0.2	-0.1		-178.1	85	1784	22 16 41
22 18 05	PSJ1721+8842	16 26 38	54.4	0.4	-0.6		-170.5	-22	1784	No stop
22 21 30	---	16 30 04	54.4	0.3	-0.6		-171.3	183	1811	22 18 06
22 21 30	J1639+8631	16 30 04	56.6	0.1	-0.1		-179.0	-22	1811	No stop
22 23 00	=1654+866	16 31 34	56.6	0.1	-0.0		-179.4	68	1822	22 21 31
22 23 00	PSJ1721+8842	16 31 34	54.4	0.3	-0.5		-171.7	-22	1822	No stop
22 26 25	---	16 35 00	54.4	0.3	-0.5		-172.6	183	1849	22 23 01
22 27 10	J1639+8631	16 35 45	56.6	-0.1	0.0		179.4	23	1849	22 27 10
22 28 35	=1654+866	16 37 10	56.6	-0.1	0.1		179.0	85	1860	22 27 11
22 28 35	PSJ1721+8842	16 37 10	54.4	0.3	-0.4		-173.2	-22	1860	No stop
22 32 00	---	16 40 36	54.4	0.2	-0.4		-174.1	183	1886	22 28 36
22 32 00	J1639+8631	16 40 36	56.6	-0.2	0.1		178.1	-22	1886	No stop
22 33 30	=1654+866	16 42 06	56.6	-0.2	0.1		177.7	68	1898	22 32 01
22 33 30	PSJ1721+8842	16 42 06	54.4	0.2	-0.4		-174.4	-22	1898	No stop
22 36 55	---	16 45 31	54.4	0.2	-0.3		-175.3	183	1924	22 33 31
22 37 40	J1639+8631	16 46 16	56.6	-0.3	0.2		176.6	23	1924	22 37 40
22 39 05	=1654+866	16 47 42	56.6	-0.4	0.2		176.2	85	1935	22 37 41
22 39 05	PSJ1721+8842	16 47 42	54.4	0.2	-0.3		-175.9	-22	1935	No stop
22 42 30	---	16 51 07	54.4	0.1	-0.2		-176.8	183	1961	22 39 06
22 42 30	J1639+8631	16 51 07	56.6	-0.5	0.3		175.2	-22	1961	No stop
22 44 00	=1654+866	16 52 37	56.6	-0.5	0.3		174.8	68	1973	22 42 31
22 44 00	PSJ1721+8842	16 52 37	54.4	0.1	-0.2		-177.2	-22	1973	No stop
22 47 25	---	16 56 03	54.4	0.1	-0.1		-178.0	183	1999	22 44 01



Schedule for TORUN (Code Tr )

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Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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	4 Jun 2021	Day 155		---					
22 48 10	J1639+8631	16 56 48	56.6	-0.6	0.4		173.7	23	1999	22 48 10
22 49 35	=1654+866	16 58 13	56.6	-0.7	0.4		173.3	85	2010	22 48 11
22 49 35	PSJ1721+8842	16 58 13	54.4	0.1	-0.1		-178.6	-22	2010	No stop
22 53 00	---	17 01 39	54.4	0.0	-0.0		-179.5	183	2037	22 49 36
22 53 00	J1639+8631	17 01 39	56.6	-0.8	0.5		172.4	-22	2037	No stop
22 54 30	=1654+866	17 03 09	56.6	-0.8	0.5		172.0	68	2048	22 53 01
22 54 30	PSJ1721+8842	17 03 09	54.4	0.0	-0.0		-179.9	-22	2048	No stop
22 57 55	---	17 06 35	54.4	-0.0	0.0		179.2	183	2075	22 54 31
22 58 40	J1639+8631	17 07 20	56.6	-0.9	0.6		170.8	23	2075	22 58 40
23 00 05	=1654+866	17 08 45	56.6	-1.0	0.6		170.4	85	2086	22 58 41
23 00 05	PSJ1721+8842	17 08 45	54.4	-0.1	0.1		178.7	-22	2086	No stop
23 03 30	---	17 12 11	54.4	-0.1	0.1		177.8	183	2112	23 00 06
23 03 30	J1639+8631	17 12 11	56.6	-1.1	0.6		169.5	-22	2112	No stop
23 05 00	=1654+866	17 13 41	56.5	-1.1	0.7		169.1	68	2124	23 03 31
23 05 00	PSJ1721+8842	17 13 41	54.4	-0.1	0.2		177.4	-22	2124	No stop
23 08 25	---	17 17 06	54.4	-0.1	0.2		176.5	183	2150	23 05 01
23 09 10	J1639+8631	17 17 52	56.5	-1.2	0.7		168.0	23	2150	23 09 10
23 10 35	=1654+866	17 19 17	56.5	-1.3	0.8		167.6	85	2161	23 09 11
23 10 35	PSJ1721+8842	17 19 17	54.4	-0.2	0.3		176.0	-22	2161	No stop
23 14 00	---	17 22 42	54.4	-0.2	0.3		175.1	183	2187	23 10 36
23 14 00	J1639+8631	17 22 42	56.5	-1.4	0.8		166.6	-22	2187	No stop
23 15 30	=1654+866	17 24 13	56.5	-1.4	0.8		166.2	68	2199	23 14 01
23 15 30	PSJ1721+8842	17 24 13	54.4	-0.2	0.3		174.7	-22	2199	No stop
23 18 55	---	17 27 38	54.4	-0.2	0.4		173.8	183	2225	23 15 31
23 19 40	J1639+8631	17 28 23	56.5	-1.5	0.9		165.1	23	2225	23 19 40
23 21 05	=1654+866	17 29 49	56.5	-1.5	0.9		164.7	85	2236	23 19 41
23 21 05	PSJ1721+8842	17 29 49	54.4	-0.3	0.4		173.3	-22	2236	No stop
23 24 30	---	17 33 14	54.4	-0.3	0.5		172.4	183	2263	23 21 06
23 24 30	J1639+8631	17 33 14	56.5	-1.6	1.0		163.8	-22	2263	No stop
23 26 00	=1654+866	17 34 44	56.5	-1.7	1.0		163.4	68	2274	23 24 31

Schedule for TORUN (Code Tr )

Page 10

Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 4 Jun 2021 Day 155 ---										
23 26 00	PSJ1721+8842	17 34 44	54.4	-0.3	0.5		172.0	-22	2274	No stop
23 29 25	---	17 38 10	54.4	-0.3	0.6		171.1	183	2301	23 26 01
23 30 10	J1639+8631	17 38 55	56.5	-1.8	1.1		162.2	23	2301	23 30 10
23 31 35	=1654+866	17 40 20	56.4	-1.8	1.1		161.8	85	2312	23 30 11
23 31 35	PSJ1721+8842	17 40 20	54.4	-0.4	0.6		170.5	-22	2312	No stop
23 35 00	---	17 43 46	54.4	-0.4	0.7		169.7	183	2338	23 31 36
23 35 00	J1639+8631	17 43 46	56.4	-1.9	1.2		160.9	-21	2338	No stop
23 36 30	=1654+866	17 45 16	56.4	-1.9	1.2		160.5	69	2350	23 35 01
23 36 30	PSJ1721+8842	17 45 16	54.4	-0.4	0.7		169.3	-21	2350	No stop
23 39 55	---	17 48 42	54.4	-0.4	0.8		168.4	184	2376	23 36 31
23 40 40	J1639+8631	17 49 27	56.4	-2.1	1.3		159.4	24	2376	23 40 40
23 42 05	=1654+866	17 50 52	56.4	-2.1	1.3		159.0	85	2387	23 40 41
23 42 05	PSJ1721+8842	17 50 52	54.4	-0.5	0.8		167.8	-21	2387	No stop
23 45 30	---	17 54 18	54.4	-0.5	0.8		166.9	184	2413	23 42 06
23 45 30	J1639+8631	17 54 18	56.4	-2.2	1.3		158.1	-21	2413	No stop
23 47 00	=1654+866	17 55 48	56.4	-2.2	1.4		157.7	69	2425	23 45 31
23 47 00	PSJ1721+8842	17 55 48	54.4	-0.5	0.9		166.6	-21	2425	No stop
23 50 25	---	17 59 13	54.4	-0.5	0.9		165.7	184	2451	23 47 01
23 51 10	J1639+8631	17 59 59	56.3	-2.3	1.4		156.5	24	2451	23 51 10
23 52 35	=1654+866	18 01 24	56.3	-2.4	1.5		156.1	85	2462	23 51 11
23 52 35	PSJ1721+8842	18 01 24	54.4	-0.6	1.0		165.1	-21	2462	No stop
23 56 00	---	18 04 49	54.4	-0.6	1.0		164.2	184	2489	23 52 36
23 56 00	J1639+8631	18 04 49	56.3	-2.5	1.5		155.2	-21	2489	No stop
23 57 30	=1654+866	18 06 20	56.3	-2.5	1.5		154.8	69	2500	23 56 01
-----										
--- Sat 5 Jun 2021 Day 156 ---										
00 02 30	3C454.3	18 11 20	24.4	95.2	-4.7		-38.5	90	2500	00 02 30
00 07 30	---	18 16 21	25.1	96.3	-4.6		-38.4	300	2539	00 02 31
00 12 30	J1639+8631	18 21 22	56.2	-2.9	1.8		150.7	87	2539	00 12 30
00 17 30	=1654+866	18 26 23	56.2	-3.0	1.9		149.4	300	2578	00 12 31

Schedule for TORUN (Code Tr )

Page 11

Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
---	Sat	5 Jun 2021	Day 156		---					
00 17 30	PSJ1721+8842	18 26 23	54.3	-0.8	1.4		158.7	-21	2578	No stop
00 20 55	---	18 29 48	54.3	-0.8	1.4		157.8	184	2604	00 17 31
00 21 40	J1639+8631	18 30 34	56.1	-3.1	1.9		148.3	24	2604	00 21 40
00 23 05	=1654+866	18 31 59	56.1	-3.1	2.0		147.9	85	2615	00 21 41
00 23 05	PSJ1721+8842	18 31 59	54.3	-0.9	1.5		157.2	-20	2615	No stop
00 26 30	---	18 35 24	54.3	-0.9	1.5		156.4	185	2641	00 23 06
00 26 30	J1639+8631	18 35 24	56.1	-3.2	2.0		147.0	-20	2641	No stop
00 28 00	=1654+866	18 36 55	56.1	-3.2	2.1		146.6	70	2653	00 26 31
00 28 00	PSJ1721+8842	18 36 55	54.3	-0.9	1.6		156.0	-20	2653	No stop
00 31 25	---	18 40 20	54.3	-0.9	1.6		155.1	185	2679	00 28 01
00 32 10	J1639+8631	18 41 05	56.0	-3.3	2.1		145.4	25	2679	00 32 10
00 33 35	=1654+866	18 42 30	56.0	-3.3	2.1		145.1	85	2690	00 32 11
00 33 35	PSJ1721+8842	18 42 30	54.3	-0.9	1.6		154.5	-20	2690	No stop
00 37 00	---	18 45 56	54.3	-1.0	1.7		153.6	185	2717	00 33 36
00 37 00	J1639+8631	18 45 56	56.0	-3.4	2.2		144.1	-20	2717	No stop
00 38 30	=1654+866	18 47 26	56.0	-3.5	2.2		143.7	70	2728	00 37 01
00 38 30	PSJ1721+8842	18 47 26	54.3	-1.0	1.7		153.3	-20	2728	No stop
00 41 55	---	18 50 52	54.3	-1.0	1.8		152.4	185	2755	00 38 31
00 42 40	J1639+8631	18 51 37	55.9	-3.5	2.3		142.6	25	2755	00 42 40
00 44 05	=1654+866	18 53 02	55.9	-3.6	2.3		142.2	85	2766	00 42 41
00 44 05	PSJ1721+8842	18 53 02	54.3	-1.0	1.8		151.8	-20	2766	No stop
00 47 30	---	18 56 28	54.3	-1.1	1.9		150.9	185	2792	00 44 06
00 47 30	J1639+8631	18 56 28	55.9	-3.7	2.4		141.3	-20	2792	No stop
00 49 00	=1654+866	18 57 58	55.9	-3.7	2.4		140.9	70	2804	00 47 31
00 49 00	PSJ1721+8842	18 57 58	54.2	-1.1	1.9		150.6	-20	2804	No stop
00 52 25	---	19 01 24	54.2	-1.1	2.0		149.7	185	2830	00 49 01
00 53 10	J1639+8631	19 02 09	55.8	-3.8	2.5		139.8	25	2830	00 53 10
00 54 35	=1654+866	19 03 34	55.8	-3.8	2.5		139.4	85	2841	00 53 11
00 54 35	PSJ1721+8842	19 03 34	54.2	-1.1	2.0		149.1	-20	2841	No stop
00 58 00	---	19 06 59	54.2	-1.2	2.1		148.2	185	2868	00 54 36

Schedule for TORUN (Code Tr )

Page 12

Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 5 Jun 2021 Day 156 ---										
00 58 00	J1639+8631	19 06 59	55.8	-3.9	2.6		138.5	-20	2868	No stop
00 59 30	=1654+866	19 08 30	55.8	-3.9	2.6		138.1	70	2879	00 58 01
00 59 30	PSJ1721+8842	19 08 30	54.2	-1.2	2.1		147.8	-20	2879	No stop
01 02 55	---	19 11 55	54.2	-1.2	2.1		147.0	185	2906	00 59 31
01 03 40	J1639+8631	19 12 40	55.7	-4.0	2.6		137.0	25	2906	01 03 40
01 05 05	=1654+866	19 14 06	55.7	-4.0	2.7		136.6	85	2916	01 03 41
01 05 05	PSJ1721+8842	19 14 06	54.2	-1.2	2.2		146.4	-20	2916	No stop
01 08 30	---	19 17 31	54.2	-1.2	2.2		145.5	185	2943	01 05 06
01 08 30	J1639+8631	19 17 31	55.7	-4.1	2.7		135.7	-20	2943	No stop
01 10 00	=1654+866	19 19 01	55.7	-4.1	2.8		135.3	70	2954	01 08 31
01 10 00	PSJ1721+8842	19 19 01	54.2	-1.3	2.3		145.1	-20	2954	No stop
01 13 25	---	19 22 27	54.2	-1.3	2.3		144.3	185	2981	01 10 01
01 14 10	J1639+8631	19 23 12	55.6	-4.2	2.8		134.2	25	2981	01 14 10
01 15 35	=1654+866	19 24 37	55.6	-4.2	2.8		133.8	85	2992	01 14 11
01 15 35	PSJ1721+8842	19 24 37	54.2	-1.3	2.3		143.7	-20	2992	No stop
01 19 00	---	19 28 03	54.2	-1.3	2.4		142.8	185	3018	01 15 36
01 19 00	J1639+8631	19 28 03	55.6	-4.3	2.9		132.9	-20	3018	No stop
01 20 30	=1654+866	19 29 33	55.5	-4.3	2.9		132.5	70	3030	01 19 01
01 20 30	PSJ1721+8842	19 29 33	54.1	-1.3	2.4		142.4	-20	3030	No stop
01 23 55	---	19 32 59	54.1	-1.4	2.5		141.6	185	3056	01 20 31
01 24 40	J1639+8631	19 33 44	55.5	-4.4	3.0		131.4	24	3056	01 24 40
01 26 05	=1654+866	19 35 09	55.5	-4.4	3.0		131.1	85	3067	01 24 41
01 26 05	PSJ1721+8842	19 35 09	54.1	-1.4	2.5		141.0	-21	3067	No stop
01 29 30	---	19 38 35	54.1	-1.4	2.6		140.1	184	3094	01 26 06
01 29 30	J1639+8631	19 38 35	55.4	-4.5	3.1		130.1	-21	3094	No stop
01 31 00	=1654+866	19 40 05	55.4	-4.5	3.1		129.7	69	3105	01 29 31
01 31 00	PSJ1721+8842	19 40 05	54.1	-1.4	2.6		139.8	-21	3105	No stop
01 34 25	---	19 43 30	54.1	-1.4	2.7		138.9	184	3132	01 31 01
01 35 10	J1639+8631	19 44 16	55.4	-4.6	3.2		128.6	24	3132	01 35 10
01 36 35	=1654+866	19 45 41	55.4	-4.6	3.2		128.3	85	3143	01 35 11

Schedule for TORUN (Code Tr )

Page 13

Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop				Early	Disk	TPStart		
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 5 Jun 2021 Day 156 ---										
01 36 35	PSJ1721+8842	19 45 41	54.1	-1.5	2.7		138.3	-21	3143	No stop
01 40 00	---	19 49 06	54.1	-1.5	2.8		137.4	184	3169	01 36 36
01 40 00	J1639+8631	19 49 06	55.3	-4.6	3.3		127.4	-21	3169	No stop
01 41 30	=1654+866	19 50 37	55.3	-4.7	3.3		127.0	69	3181	01 40 01
01 41 30	PSJ1721+8842	19 50 37	54.1	-1.5	2.8		137.1	-21	3181	No stop
01 44 55	---	19 54 02	54.1	-1.5	2.8		136.2	184	3207	01 41 31
01 45 40	J1639+8631	19 54 47	55.2	-4.7	3.4		125.9	24	3207	01 45 40
01 47 05	=1654+866	19 56 13	55.2	-4.8	3.4		125.5	85	3218	01 45 41
01 47 05	PSJ1721+8842	19 56 13	54.0	-1.5	2.9		135.6	-21	3218	No stop
01 50 30	---	19 59 38	54.0	-1.6	2.9		134.7	184	3244	01 47 06
01 50 30	J1639+8631	19 59 38	55.2	-4.8	3.4		124.6	-21	3244	No stop
01 52 00	=1654+866	20 01 08	55.2	-4.8	3.5		124.2	69	3256	01 50 31
01 52 00	PSJ1721+8842	20 01 08	54.0	-1.6	3.0		134.4	-21	3256	No stop
01 55 25	---	20 04 34	54.0	-1.6	3.0		133.5	184	3282	01 52 01
01 56 10	J1639+8631	20 05 19	55.1	-4.9	3.5		123.1	24	3282	01 56 10
01 57 35	=1654+866	20 06 44	55.1	-4.9	3.6		122.7	85	3293	01 56 11
01 57 35	PSJ1721+8842	20 06 44	54.0	-1.6	3.1		132.9	-21	3293	No stop
02 01 00	---	20 10 10	54.0	-1.6	3.1		132.1	184	3320	01 57 36
02 01 00	J1639+8631	20 10 10	55.1	-5.0	3.6		121.9	-21	3320	No stop
02 02 30	=1654+866	20 11 40	55.0	-5.0	3.6		121.5	69	3331	02 01 01
02 02 30	PSJ1721+8842	20 11 40	54.0	-1.6	3.1		131.7	-21	3331	No stop
02 05 55	---	20 15 06	54.0	-1.7	3.2		130.8	184	3358	02 02 31
02 06 40	J1639+8631	20 15 51	55.0	-5.0	3.7		120.4	24	3358	02 06 40
02 08 05	=1654+866	20 17 16	55.0	-5.1	3.7		120.0	85	3369	02 06 41
02 08 05	PSJ1721+8842	20 17 16	54.0	-1.7	3.2		130.2	-21	3369	No stop
02 11 30	---	20 20 42	53.9	-1.7	3.3		129.4	184	3395	02 08 06
02 11 30	J1639+8631	20 20 42	54.9	-5.1	3.8		119.1	-22	3395	No stop
02 13 00	=1654+866	20 22 12	54.9	-5.1	3.8		118.7	68	3407	02 11 31
02 13 00	PSJ1721+8842	20 22 12	53.9	-1.7	3.3		129.0	-22	3407	No stop
02 16 25	---	20 25 37	53.9	-1.7	3.4		128.1	183	3433	02 13 01

Schedule for TORUN (Code Tr )

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Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
---	Sat	5 Jun 2021	Day 156		---					
02 17 10	J1639+8631	20 26 22	54.8	-5.2	3.9		117.6	23	3433	02 17 10
02 18 35	=1654+866	20 27 48	54.8	-5.2	3.9		117.3	85	3444	02 17 11
02 18 35	PSJ1721+8842	20 27 48	53.9	-1.7	3.4		127.6	-22	3444	No stop
02 22 00	---	20 31 13	53.9	-1.8	3.5		126.7	183	3470	02 18 36
02 22 00	J1639+8631	20 31 13	54.8	-5.2	4.0		116.4	-22	3470	No stop
02 23 30	=1654+866	20 32 44	54.8	-5.3	4.0		116.0	68	3482	02 22 01
02 23 30	PSJ1721+8842	20 32 44	53.9	-1.8	3.5		126.3	-22	3482	No stop
02 26 55	---	20 36 09	53.9	-1.8	3.5		125.4	183	3508	02 23 31
02 27 40	J1639+8631	20 36 54	54.7	-5.3	4.1		114.9	23	3508	02 27 40
02 29 05	=1654+866	20 38 19	54.7	-5.3	4.1		114.5	85	3519	02 27 41
02 29 05	PSJ1721+8842	20 38 19	53.9	-1.8	3.6		124.9	-22	3519	No stop
02 32 30	---	20 41 45	53.8	-1.8	3.6		124.0	183	3546	02 29 06
02 32 30	J1639+8631	20 41 45	54.6	-5.4	4.1		113.7	-22	3546	No stop
02 34 00	=1654+866	20 43 15	54.6	-5.4	4.2		113.3	68	3557	02 32 31
02 34 00	PSJ1721+8842	20 43 15	53.8	-1.8	3.7		123.6	-22	3557	No stop
02 37 25	---	20 46 41	53.8	-1.8	3.7		122.8	183	3584	02 34 01
02 38 10	J1639+8631	20 47 26	54.5	-5.4	4.2		112.2	23	3584	02 38 10
02 39 35	=1654+866	20 48 51	54.5	-5.4	4.3		111.8	85	3595	02 38 11
02 39 35	PSJ1721+8842	20 48 51	53.8	-1.9	3.8		122.2	-22	3595	No stop
02 43 00	---	20 52 17	53.8	-1.9	3.8		121.3	183	3621	02 39 36
02 43 00	J1639+8631	20 52 17	54.5	-5.5	4.3		110.9	-22	3621	No stop
02 44 30	=1654+866	20 53 47	54.5	-5.5	4.3		110.6	68	3633	02 43 01
02 44 30	PSJ1721+8842	20 53 47	53.8	-1.9	3.8		121.0	-22	3633	No stop
02 47 55	---	20 57 13	53.8	-1.9	3.9		120.1	183	3659	02 44 31
02 48 40	J1639+8631	20 57 58	54.4	-5.5	4.4		109.5	23	3659	02 48 40
02 50 05	=1654+866	20 59 23	54.4	-5.5	4.4		109.1	85	3670	02 48 41
02 50 05	PSJ1721+8842	20 59 23	53.8	-1.9	3.9		119.5	-22	3670	No stop
02 53 30	---	21 02 48	53.7	-1.9	4.0		118.7	183	3696	02 50 06
02 53 30	J1639+8631	21 02 48	54.3	-5.6	4.5		108.2	-22	3696	No stop
02 55 00	=1654+866	21 04 19	54.3	-5.6	4.5		107.9	68	3708	02 53 31

Schedule for TORUN (Code Tr )

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Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 5 Jun 2021 Day 156 ---										
02 55 00	PSJ1721+8842	21 04 19	53.7	-1.9	4.0		118.3	-22	3708	No stop
02 58 25	---	21 07 44	53.7	-2.0	4.1		117.4	183	3734	02 55 01
02 59 10	J1639+8631	21 08 29	54.2	-5.6	4.6		106.8	23	3734	02 59 10
03 00 35	=1654+866	21 09 55	54.2	-5.6	4.6		106.4	85	3745	02 59 11
03 00 35	PSJ1721+8842	21 09 55	53.7	-2.0	4.1		116.9	-22	3745	No stop
03 04 00	---	21 13 20	53.7	-2.0	4.2		116.0	183	3772	03 00 36
03 04 00	J1639+8631	21 13 20	54.2	-5.6	4.7		105.5	-22	3772	No stop
03 05 30	=1654+866	21 14 50	54.1	-5.6	4.7		105.2	68	3783	03 04 01
03 05 30	PSJ1721+8842	21 14 50	53.7	-2.0	4.2		115.6	-22	3783	No stop
03 08 55	---	21 18 16	53.7	-2.0	4.2		114.7	183	3810	03 05 31
03 09 40	J1639+8631	21 19 01	54.1	-5.7	4.8		104.1	23	3810	03 09 40
03 11 05	=1654+866	21 20 26	54.1	-5.7	4.8		103.7	85	3821	03 09 41
03 11 05	PSJ1721+8842	21 20 26	53.7	-2.0	4.3		114.2	-22	3821	No stop
03 14 30	---	21 23 52	53.6	-2.0	4.3		113.3	183	3847	03 11 06
03 14 30	J1639+8631	21 23 52	54.0	-5.7	4.8		102.9	-22	3847	No stop
03 16 00	=1654+866	21 25 22	54.0	-5.7	4.9		102.5	68	3859	03 14 31
03 16 00	PSJ1721+8842	21 25 22	53.6	-2.0	4.4		112.9	-22	3859	No stop
03 19 25	---	21 28 48	53.6	-2.0	4.4		112.1	183	3885	03 16 01
03 20 10	J1639+8631	21 29 33	53.9	-5.7	4.9		101.4	23	3885	03 20 10
03 21 35	=1654+866	21 30 58	53.9	-5.7	5.0		101.1	85	3896	03 20 11
03 21 35	PSJ1721+8842	21 30 58	53.6	-2.0	4.5		111.5	-22	3896	No stop
03 25 00	---	21 34 24	53.6	-2.1	4.5		110.7	183	3923	03 21 36
03 25 00	J1639+8631	21 34 24	53.9	-5.8	5.0		100.2	-22	3923	No stop
03 26 30	=1654+866	21 35 54	53.8	-5.8	5.0		99.8	68	3934	03 25 01
03 26 30	PSJ1721+8842	21 35 54	53.6	-2.1	4.5		110.3	-22	3934	No stop
03 29 55	---	21 39 19	53.6	-2.1	4.6		109.4	183	3961	03 26 31
03 30 40	J1639+8631	21 40 05	53.8	-5.8	5.1		98.8	23	3961	03 30 40
03 32 05	=1654+866	21 41 30	53.7	-5.8	5.1		98.4	85	3972	03 30 41
03 32 05	PSJ1721+8842	21 41 30	53.5	-2.1	4.6		108.9	-22	3972	No stop
03 35 30	---	21 44 55	53.5	-2.1	4.7		108.0	183	3998	03 32 06

Schedule for TORUN (Code Tr )

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Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 5 Jun 2021 Day 156 ---										
03 35 30	J1639+8631	21 44 55	53.7	-5.8	5.2		97.5	-22	3998	No stop
03 37 00	=1654+866	21 46 26	53.7	-5.8	5.2		97.2	68	4010	03 35 31
03 37 00	PSJ1721+8842	21 46 26	53.5	-2.1	4.7		107.6	-22	4010	No stop
03 40 25	---	21 49 51	53.5	-2.1	4.8		106.8	183	4036	03 37 01
03 41 10	J1639+8631	21 50 36	53.6	-5.8	5.3		96.1	23	4036	03 41 10
03 42 35	=1654+866	21 52 02	53.6	-5.8	5.3		95.7	85	4047	03 41 11
03 42 35	PSJ1721+8842	21 52 02	53.5	-2.1	4.8		106.2	-22	4047	No stop
03 46 00	---	21 55 27	53.5	-2.1	4.9		105.4	183	4073	03 42 36
03 46 00	J1639+8631	21 55 27	53.5	-5.8	5.4		94.9	-22	4073	No stop
03 47 30	=1654+866	21 56 57	53.5	-5.8	5.4		94.5	68	4085	03 46 01
03 47 30	PSJ1721+8842	21 56 57	53.5	-2.1	4.9		105.0	-22	4085	No stop
03 50 55	---	22 00 23	53.4	-2.1	4.9		104.1	183	4111	03 47 31
03 51 40	J1639+8631	22 01 08	53.5	-5.8	5.5		93.5	23	4111	03 51 40
03 53 05	=1654+866	22 02 33	53.4	-5.8	5.5		93.1	85	4122	03 51 41
03 53 05	PSJ1721+8842	22 02 33	53.4	-2.1	5.0		103.6	-22	4122	No stop
03 56 30	---	22 05 59	53.4	-2.1	5.0		102.7	183	4149	03 53 06
03 56 30	J1639+8631	22 05 59	53.4	-5.8	5.5		92.2	-22	4149	No stop
03 58 00	=1654+866	22 07 29	53.4	-5.8	5.6		91.9	68	4160	03 56 31
03 58 00	PSJ1721+8842	22 07 29	53.4	-2.1	5.1		102.3	-22	4160	No stop
04 01 25	---	22 10 55	53.4	-2.2	5.1		101.5	183	4187	03 58 01
04 02 10	J1639+8631	22 11 40	53.3	-5.9	5.6		90.8	23	4187	04 02 10
04 03 35	=1654+866	22 13 05	53.3	-5.9	5.7		90.5	85	4198	04 02 11
04 03 35	PSJ1721+8842	22 13 05	53.4	-2.2	5.2		100.9	-22	4198	No stop
04 07 00	---	22 16 31	53.3	-2.2	5.2		100.1	183	4224	04 03 36
04 07 00	J1639+8631	22 16 31	53.2	-5.9	5.7		89.6	-22	4224	No stop
04 08 30	=1654+866	22 18 01	53.2	-5.9	5.7		89.2	68	4236	04 07 01
04 13 30	3C84	22 23 02	40.6	71.7	-5.0		-49.6	131	4236	04 13 30
04 18 30	---	22 28 02	41.3	72.5	-4.9		-49.9	300	4274	04 13 31
04 23 30	J1639+8631	22 33 03	53.0	-5.8	6.0		85.5	128	4274	04 23 30
04 28 30	=1654+866	22 38 04	52.9	-5.8	6.1		84.3	300	4313	04 23 31



Schedule for TORUN (Code Tr )

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Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop				Early	Disk	TPStart		
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 5 Jun 2021 Day 156 ---										
04 28 30	PSJ1721+8842	22 38 04	53.2	-2.2	5.6		94.6	-22	4313	No stop
04 31 55	---	22 41 30	53.2	-2.2	5.6		93.8	183	4339	04 28 31
04 32 40	J1639+8631	22 42 15	52.8	-5.8	6.1		83.2	23	4339	04 32 40
04 34 05	=1654+866	22 43 40	52.8	-5.8	6.2		82.9	85	4350	04 32 41
04 34 05	PSJ1721+8842	22 43 40	53.2	-2.2	5.7		93.2	-22	4350	No stop
04 37 30	---	22 47 06	53.2	-2.2	5.7		92.4	183	4377	04 34 06
04 37 30	J1639+8631	22 47 06	52.7	-5.8	6.2		82.0	-22	4377	No stop
04 39 00	=1654+866	22 48 36	52.7	-5.8	6.2		81.7	68	4388	04 37 31
04 39 00	PSJ1721+8842	22 48 36	53.2	-2.2	5.7		92.0	-22	4388	No stop
04 42 25	---	22 52 01	53.1	-2.2	5.8		91.2	183	4415	04 39 01
04 43 10	J1639+8631	22 52 46	52.7	-5.8	6.3		80.6	23	4415	04 43 10
04 44 35	=1654+866	22 54 12	52.6	-5.8	6.3		80.3	85	4426	04 43 11
04 44 35	PSJ1721+8842	22 54 12	53.1	-2.2	5.8		90.6	-22	4426	No stop
04 48 00	---	22 57 37	53.1	-2.2	5.9		89.8	183	4452	04 44 36
04 48 00	J1639+8631	22 57 37	52.6	-5.8	6.4		79.4	-22	4452	No stop
04 49 30	=1654+866	22 59 08	52.6	-5.7	6.4		79.1	68	4464	04 48 01
04 49 30	PSJ1721+8842	22 59 08	53.1	-2.2	5.9		89.4	-22	4464	No stop
04 52 55	---	23 02 33	53.1	-2.2	6.0		88.5	183	4490	04 49 31
04 53 40	J1639+8631	23 03 18	52.5	-5.7	6.5		78.0	23	4490	04 53 40
04 55 05	=1654+866	23 04 43	52.5	-5.7	6.5		77.7	85	4501	04 53 41
04 55 05	PSJ1721+8842	23 04 43	53.1	-2.2	6.0		88.0	-22	4501	No stop
04 58 30	---	23 08 09	53.0	-2.2	6.1		87.1	183	4527	04 55 06
04 58 30	J1639+8631	23 08 09	52.4	-5.7	6.6		76.8	-22	4527	No stop
05 00 00	=1654+866	23 09 39	52.4	-5.7	6.6		76.5	68	4539	04 58 31
05 00 00	PSJ1721+8842	23 09 39	53.0	-2.2	6.1		86.7	-22	4539	No stop
05 03 25	---	23 13 05	53.0	-2.2	6.2		85.9	183	4565	05 00 01
05 04 10	J1639+8631	23 13 50	52.3	-5.7	6.7		75.5	23	4565	05 04 10
05 05 35	=1654+866	23 15 15	52.3	-5.7	6.7		75.1	85	4576	05 04 11
05 05 35	PSJ1721+8842	23 15 15	53.0	-2.2	6.2		85.4	-22	4576	No stop
05 09 00	---	23 18 41	53.0	-2.2	6.3		84.5	183	4603	05 05 36

Schedule for TORUN (Code Tr )

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Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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

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Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
---	Sat	5 Jun 2021	Day 156		---					
05 09 00	J1639+8631	23 18 41	52.3	-5.6	6.7		74.3	-22	4603	No stop
05 10 30	=1654+866	23 20 11	52.3	-5.6	6.8		73.9	68	4614	05 09 01
05 10 30	PSJ1721+8842	23 20 11	53.0	-2.2	6.3		84.1	-22	4614	No stop
05 13 55	---	23 23 37	53.0	-2.2	6.3		83.3	183	4641	05 10 31
05 14 40	J1639+8631	23 24 22	52.2	-5.6	6.8		72.9	23	4641	05 14 40
05 16 05	=1654+866	23 25 47	52.2	-5.6	6.9		72.5	85	4652	05 14 41
05 16 05	PSJ1721+8842	23 25 47	52.9	-2.2	6.4		82.7	-21	4652	No stop
05 19 30	---	23 29 12	52.9	-2.2	6.4		81.9	184	4678	05 16 06
05 19 30	J1639+8631	23 29 12	52.1	-5.6	6.9		71.7	-21	4678	No stop
05 21 00	=1654+866	23 30 43	52.1	-5.5	7.0		71.3	69	4690	05 19 31
05 21 00	PSJ1721+8842	23 30 43	52.9	-2.2	6.5		81.5	-21	4690	No stop
05 24 25	---	23 34 08	52.9	-2.2	6.5		80.6	184	4716	05 21 01
05 25 10	J1639+8631	23 34 53	52.0	-5.5	7.0		70.3	24	4716	05 25 10
05 26 35	=1654+866	23 36 19	52.0	-5.5	7.0		70.0	85	4727	05 25 11
05 26 35	PSJ1721+8842	23 36 19	52.9	-2.2	6.5		80.1	-21	4727	No stop
05 30 00	---	23 39 44	52.9	-2.2	6.6		79.3	184	4753	05 26 36
05 30 00	J1639+8631	23 39 44	52.0	-5.5	7.1		69.1	-21	4753	No stop
05 31 30	=1654+866	23 41 14	51.9	-5.5	7.1		68.8	69	4765	05 30 01
05 31 30	PSJ1721+8842	23 41 14	52.9	-2.2	6.6		78.9	-21	4765	No stop
05 34 55	---	23 44 40	52.8	-2.1	6.7		78.0	184	4791	05 31 31
05 35 40	J1639+8631	23 45 25	51.9	-5.4	7.2		67.8	24	4791	05 35 40
05 37 05	=1654+866	23 46 50	51.9	-5.4	7.2		67.4	85	4802	05 35 41
05 37 05	PSJ1721+8842	23 46 50	52.8	-2.1	6.7		77.5	-21	4802	No stop
05 40 30	---	23 50 16	52.8	-2.1	6.8		76.6	184	4829	05 37 06
05 40 30	J1639+8631	23 50 16	51.8	-5.4	7.3		66.6	-21	4829	No stop
05 42 00	=1654+866	23 51 46	51.8	-5.4	7.3		66.2	69	4840	05 40 31
05 42 00	PSJ1721+8842	23 51 46	52.8	-2.1	6.8		76.3	-21	4840	No stop
05 45 25	---	23 55 12	52.8	-2.1	6.9		75.4	184	4867	05 42 01
05 46 10	J1639+8631	23 55 57	51.7	-5.3	7.4		65.2	24	4867	05 46 10
05 47 35	=1654+866	23 57 22	51.7	-5.3	7.4		64.9	85	4878	05 46 11

Schedule for TORUN (Code Tr )

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Resolving a gravitationally lensed dual back-hole system at  $z = 2.37$ 

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Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

```
-----
```

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 5 Jun 2021 Day 156 ---										
05 47 35	PSJ1721+8842	23 57 22	52.8	-2.1	6.9		74.9	-21	4878	No stop
05 51 00	---	00 00 48	52.8	-2.1	7.0		74.0	184	4904	05 47 36
05 51 00	J1639+8631	00 00 48	51.7	-5.3	7.5		64.1	-21	4904	No stop
05 52 30	=1654+866	00 02 18	51.7	-5.2	7.5		63.7	69	4916	05 51 01
05 52 30	PSJ1721+8842	00 02 18	52.7	-2.1	7.0		73.7	-21	4916	No stop
05 55 55	---	00 05 43	52.7	-2.1	7.0		72.8	184	4942	05 52 31
05 56 35	J1639+8631	00 06 24	51.6	-5.2	7.5		62.7	19	4942	05 56 35
05 58 00	=1654+866	00 07 49	51.6	-5.2	7.6		62.4	85	4953	05 56 36
05 58 00	PSJ1721+8842	00 07 49	52.7	-2.1	7.1		72.3	-21	4953	No stop
06 00 00	---	00 09 49	52.7	-2.1	7.1		71.8	99	4969	05 58 01

```
-----
```

## SETUP FILE INFORMATION:

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

==== Setup file: sess221.L1024

```

Setup group:      9          Station: TORUN          Total bit rate: 1024
Format: VDIF      Bits per sample: 2          Sample rate: 64.000
Number of channels: 8    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
Net SB=	L	L	U	U	L	L	U	U
IF SB =	L	L	L	L	L	L	L	L
Pol. =	RCP	LCP	RCP	LCP	RCP	LCP	RCP	LCP
BBC =	1	9	1	9	2	10	2	10
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: 8 Setup file default. Used with PCAL = off  
 LO sum= 1626.49 1626.49 1626.49 1626.49 1690.49 1690.49 1690.49 1690.49  
 BBC fr= 673.51 673.51 673.51 673.51 609.51 609.51 609.51 609.51  
 Bandwd= 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00  
 Matching frequency sets: 8

Track assignments are:

track1= 1, 2, 3, 4, 5, 6, 7, 8  
 barrel=roll\_off

#### POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* PSJ1721+8842	18 08 47.084813	* 17 21 43.936000	17 03 39.358204	0.00
	88 43 26.13207	* 88 42 21.42800	88 40 50.86305	0.00
* 3C84	03 16 29.567265	* 03 19 48.160096	03 21 10.455581	1.50
J0319+4130	41 19 51.91692	* 41 30 42.10404	41 35 07.95163	2.86
0316+413	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
J0319+41	GSFC 2016a X/S astro solution, 10291 observations.			
1654+866	16 54 31.289232	* 16 39 25.014806	16 33 40.945152	10.77
* J1639+8631	86 37 07.15444	* 86 31 53.13177	86 29 21.91471	0.62
J1639+86	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 43 observations.			
* 3C345	16 41 17.606229	* 16 42 58.809967	16 43 43.280984	0.79
J1642+3948	39 54 10.81492	* 39 48 36.99399	39 46 14.84933	0.59
1641+399	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
J1642+39	GSFC 2016a X/S astro solution, 53724 observations.			
* 3C454.3	22 51 29.519739	* 22 53 57.747939	22 55 00.276064	0.65
J2253+1608	15 52 54.34808	* 16 08 53.56091	16 15 30.58628	0.73
2251+158	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
J2253+16	GSFC 2016a X/S astro solution, 41272 observations.			

THE SUBARCSEC-SCALE RADIO EMISSION IN IRAS17020+4544  
PI: *Salome*

Address: INAOE

Observing mode: Continuum

Schedule for TORUN (Code Tr )

Page 2

The subarcsec-scale radio emission in IRAS17020+4544

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 5 Jun 2021 Day 156 ---										
Next scan frequencies: 1626.49 1626.49 1626.49 1626.49 1690.49 1690.49 1690.49 1690.49										
Next BBC frequencies: 673.51 673.51 673.51 673.51 609.51 609.51 609.51 609.51										
Next scan bandwidths: 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00										
16 00 00	0Q208	10 11 28	40.6	95.7	-3.9		-42.8	0	0	16 00 00
16 05 00	---	10 16 28	41.4	96.8	-3.9		-42.7	300	39	16 00 01
16 07 00	3C345	10 18 29	27.4	59.4	-6.4		-42.3	30	39	16 07 00
16 12 00	---	10 23 30	28.1	60.2	-6.3		-42.7	300	77	16 07 01
16 13 00	J1707+4536	10 24 30	29.5	52.1	-6.7		-42.6	29	77	16 13 00
16 15 00	=1705+456	10 26 30	29.7	52.4	-6.7		-42.8	120	93	16 13 01
16 15 20	IRAS17020+45	10 26 50	30.2	53.0	-6.6		-43.3	7	93	16 15 20
16 18 20	---	10 29 51	30.6	53.4	-6.6		-43.6	180	116	16 15 21
16 18 40	J1707+4536	10 30 11	30.1	53.0	-6.6		-43.2	7	116	16 18 40
16 20 20	=1705+456	10 31 51	30.3	53.2	-6.6		-43.4	100	129	16 18 41
16 20 40	IRAS17020+45	10 32 11	30.9	53.8	-6.5		-43.9	7	129	16 20 40
16 23 40	---	10 35 12	31.3	54.2	-6.5		-44.2	180	152	16 20 41
16 24 00	J1707+4536	10 35 32	30.8	53.8	-6.5		-43.8	7	152	16 24 00
16 25 40	=1705+456	10 37 12	31.0	54.0	-6.5		-44.0	100	165	16 24 01
16 26 00	IRAS17020+45	10 37 32	31.5	54.6	-6.4		-44.4	7	165	16 26 00
16 29 00	---	10 40 32	31.9	55.0	-6.4		-44.7	180	188	16 26 01
16 29 20	J1707+4536	10 40 52	31.4	54.6	-6.5		-44.3	7	188	16 29 20
16 31 00	=1705+456	10 42 33	31.6	54.8	-6.4		-44.5	100	201	16 29 21
16 31 20	IRAS17020+45	10 42 53	32.2	55.3	-6.4		-45.0	7	201	16 31 20
16 34 20	---	10 45 53	32.6	55.8	-6.3		-45.3	180	224	16 31 21
16 34 40	J1707+4536	10 46 13	32.1	55.3	-6.4		-44.9	7	224	16 34 40
16 36 20	=1705+456	10 47 54	32.3	55.6	-6.3		-45.0	100	237	16 34 41
16 36 40	IRAS17020+45	10 48 14	32.9	56.1	-6.3		-45.5	7	237	16 36 40
16 39 40	---	10 51 14	33.2	56.6	-6.2		-45.8	180	260	16 36 41
16 40 00	J1707+4536	10 51 34	32.8	56.1	-6.3		-45.4	7	260	16 40 00
16 41 40	=1705+456	10 53 15	33.0	56.4	-6.2		-45.6	100	273	16 40 01

Schedule for TORUN (Code Tr ) Page 3

The subarcsec-scale radio emission in IRAS17020+4544

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
---	Sat 5 Jun 2021	Day 156	---							
16 42 00	IRAS17020+45	10 53 35	33.5	56.9	-6.2		-46.0	6	273	16 42 00
16 45 00	---	10 56 35	33.9	57.3	-6.1		-46.3	180	296	16 42 01
16 45 20	J1707+4536	10 56 55	33.4	56.9	-6.2		-45.9	7	296	16 45 20
16 47 00	=1705+456	10 58 35	33.6	57.1	-6.2		-46.1	100	309	16 45 21
16 47 20	IRAS17020+45	10 58 55	34.2	57.7	-6.1		-46.5	6	309	16 47 20
16 50 20	---	11 01 56	34.6	58.1	-6.0		-46.8	180	332	16 47 21
16 50 40	J1707+4536	11 02 16	34.1	57.7	-6.1		-46.5	7	332	16 50 40
16 52 20	=1705+456	11 03 56	34.3	57.9	-6.1		-46.6	100	345	16 50 41
16 52 40	IRAS17020+45	11 04 16	34.9	58.5	-6.0		-47.1	6	345	16 52 40
16 55 40	---	11 07 17	35.3	58.9	-5.9		-47.3	180	368	16 52 41
16 56 00	J1707+4536	11 07 37	34.8	58.5	-6.0		-47.0	7	368	16 56 00
16 57 40	=1705+456	11 09 17	35.0	58.7	-6.0		-47.1	100	381	16 56 01
16 58 00	IRAS17020+45	11 09 37	35.6	59.2	-5.9		-47.6	6	381	16 58 00
17 01 00	---	11 12 38	36.0	59.7	-5.9		-47.9	180	404	16 58 01
17 01 20	J1707+4536	11 12 58	35.5	59.2	-5.9		-47.5	7	404	17 01 20
17 03 00	=1705+456	11 14 38	35.7	59.5	-5.9		-47.6	100	417	17 01 21
17 03 20	IRAS17020+45	11 14 58	36.3	60.0	-5.8		-48.1	6	417	17 03 20
17 06 20	---	11 17 59	36.7	60.4	-5.8		-48.4	180	441	17 03 21
17 06 40	J1707+4536	11 18 19	36.2	60.0	-5.8		-48.0	7	441	17 06 40
17 08 20	=1705+456	11 19 59	36.4	60.3	-5.8		-48.1	100	453	17 06 41
17 08 40	IRAS17020+45	11 20 19	37.0	60.8	-5.7		-48.6	6	453	17 08 40
17 11 40	---	11 23 19	37.4	61.2	-5.7		-48.8	180	477	17 08 41
17 12 00	J1707+4536	11 23 39	36.9	60.8	-5.7		-48.5	7	477	17 12 00
17 13 40	=1705+456	11 25 20	37.1	61.0	-5.7		-48.6	100	490	17 12 01
17 14 00	IRAS17020+45	11 25 40	37.7	61.6	-5.6		-49.1	6	490	17 14 00
17 17 00	---	11 28 40	38.1	62.0	-5.6		-49.3	180	513	17 14 01
17 17 20	J1707+4536	11 29 00	37.6	61.6	-5.6		-49.0	7	513	17 17 20
17 19 00	=1705+456	11 30 41	37.8	61.8	-5.6		-49.1	100	526	17 17 21
17 19 20	IRAS17020+45	11 31 01	38.4	62.3	-5.6		-49.5	6	526	17 19 20
17 22 20	---	11 34 01	38.8	62.8	-5.5		-49.8	180	549	17 19 21
17 22 40	J1707+4536	11 34 21	38.3	62.3	-5.6		-49.4	7	549	17 22 40
17 24 20	=1705+456	11 36 02	38.5	62.6	-5.5		-49.6	100	562	17 22 41

Schedule for TORUN (Code Tr ) Page 4

The subarcsec-scale radio emission in IRAS17020+4544

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart		
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC	
-----											
---	Sat	5 Jun 2021	Day 156			---					
17 24 40	IRAS17020+45	11 36 22	39.1	63.1	-5.5		-50.0	6	562	17 24 40	
17 27 40	---	11 39 22	39.5	63.5	-5.4		-50.3	180	585	17 24 41	
17 28 00	J1707+4536	11 39 42	39.0	63.1	-5.5		-49.9	7	585	17 28 00	
17 29 40	=1705+456	11 41 22	39.2	63.4	-5.4		-50.1	100	598	17 28 01	
17 30 00	IRAS17020+45	11 41 42	39.8	63.9	-5.4		-50.5	6	598	17 30 00	
17 33 00	---	11 44 43	40.2	64.3	-5.3		-50.7	180	621	17 30 01	
17 33 20	J1707+4536	11 45 03	39.7	63.9	-5.4		-50.4	7	621	17 33 20	
17 35 00	=1705+456	11 46 43	39.9	64.1	-5.4		-50.5	100	634	17 33 21	
17 35 20	IRAS17020+45	11 47 03	40.5	64.7	-5.3		-50.9	6	634	17 35 20	
17 38 20	---	11 50 04	40.9	65.1	-5.2		-51.2	180	657	17 35 21	
17 38 40	J1707+4536	11 50 24	40.4	64.7	-5.3		-50.8	6	657	17 38 40	
17 40 20	=1705+456	11 52 04	40.7	64.9	-5.3		-51.0	100	670	17 38 41	
17 40 40	IRAS17020+45	11 52 24	41.3	65.4	-5.2		-51.4	6	670	17 40 40	
17 43 40	---	11 55 25	41.7	65.9	-5.1		-51.6	180	693	17 40 41	
17 44 00	J1707+4536	11 55 45	41.2	65.4	-5.2		-51.3	6	693	17 44 00	
17 45 40	=1705+456	11 57 25	41.4	65.7	-5.2		-51.4	100	706	17 44 01	
17 46 00	IRAS17020+45	11 57 45	42.0	66.2	-5.1		-51.8	6	706	17 46 00	
17 49 00	---	12 00 46	42.4	66.6	-5.1		-52.1	180	729	17 46 01	
17 49 20	J1707+4536	12 01 06	41.9	66.2	-5.1		-51.7	6	729	17 49 20	
17 51 00	=1705+456	12 02 46	42.1	66.5	-5.1		-51.9	100	742	17 49 21	
17 51 20	IRAS17020+45	12 03 06	42.7	67.0	-5.0		-52.2	6	742	17 51 20	
17 54 20	---	12 06 06	43.1	67.4	-5.0		-52.5	180	765	17 51 21	
17 54 40	J1707+4536	12 06 26	42.6	67.0	-5.0		-52.2	6	765	17 54 40	
17 56 20	=1705+456	12 08 07	42.9	67.2	-5.0		-52.3	100	778	17 54 41	
17 56 40	IRAS17020+45	12 08 27	43.5	67.8	-4.9		-52.7	6	778	17 56 40	
17 59 40	---	12 11 27	43.9	68.2	-4.9		-52.9	180	801	17 56 41	
18 00 00	J1707+4536	12 11 47	43.4	67.8	-4.9		-52.6	6	801	18 00 00	
18 01 40	=1705+456	12 13 28	43.6	68.0	-4.9		-52.7	100	814	18 00 01	
18 02 00	IRAS17020+45	12 13 48	44.2	68.5	-4.8		-53.1	6	814	18 02 00	
18 05 00	---	12 16 48	44.6	69.0	-4.8		-53.3	180	837	18 02 01	

Schedule for TORUN (Code Tr ) Page 5

The subarcsec-scale radio emission in IRAS17020+4544

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart		
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC	
-----											
---	Sat	5 Jun 2021	Day 156			---					
18 05 20	J1707+4536	12 17 08	44.1	68.6	-4.8		-53.0	6	837	18 05 20	
18 07 00	=1705+456	12 18 49	44.3	68.8	-4.8		-53.1	100	850	18 05 21	
18 07 20	IRAS17020+45	12 19 09	45.0	69.3	-4.8		-53.5	6	850	18 07 20	
18 10 20	---	12 22 09	45.4	69.8	-4.7		-53.7	180	873	18 07 21	
18 10 40	J1707+4536	12 22 29	44.9	69.3	-4.8		-53.4	6	873	18 10 40	
18 12 20	=1705+456	12 24 09	45.1	69.6	-4.7		-53.5	100	886	18 10 41	
18 12 40	IRAS17020+45	12 24 29	45.7	70.1	-4.7		-53.9	6	886	18 12 40	
18 15 40	---	12 27 30	46.1	70.6	-4.6		-54.1	180	909	18 12 41	
18 16 00	J1707+4536	12 27 50	45.6	70.1	-4.7		-53.8	6	909	18 16 00	
18 17 40	=1705+456	12 29 30	45.9	70.4	-4.6		-53.9	100	922	18 16 01	
18 18 00	IRAS17020+45	12 29 50	46.5	70.9	-4.6		-54.3	6	922	18 18 00	
18 21 00	---	12 32 51	46.9	71.4	-4.5		-54.5	180	946	18 18 01	
18 21 20	J1707+4536	12 33 11	46.4	70.9	-4.6		-54.2	6	946	18 21 20	
18 23 00	=1705+456	12 34 51	46.6	71.2	-4.6		-54.3	100	958	18 21 21	
18 23 20	IRAS17020+45	12 35 11	47.2	71.7	-4.5		-54.6	6	958	18 23 20	
18 26 20	---	12 38 12	47.7	72.2	-4.4		-54.9	180	982	18 23 21	
18 26 40	J1707+4536	12 38 32	47.1	71.7	-4.5		-54.5	6	982	18 26 40	
18 28 20	=1705+456	12 40 12	47.4	72.0	-4.5		-54.7	100	994	18 26 41	
18 28 40	IRAS17020+45	12 40 32	48.0	72.5	-4.4		-55.0	6	994	18 28 40	
18 31 40	---	12 43 33	48.4	73.0	-4.3		-55.2	180	1018	18 28 41	
18 32 00	J1707+4536	12 43 53	47.9	72.5	-4.4		-54.9	6	1018	18 32 00	
18 33 40	=1705+456	12 45 33	48.1	72.8	-4.4		-55.0	100	1031	18 32 01	
18 34 00	IRAS17020+45	12 45 53	48.8	73.3	-4.3		-55.4	6	1031	18 34 00	
18 37 00	---	12 48 53	49.2	73.8	-4.3		-55.6	180	1054	18 34 01	
18 37 20	J1707+4536	12 49 14	48.7	73.3	-4.3		-55.3	6	1054	18 37 20	
18 39 00	=1705+456	12 50 54	48.9	73.6	-4.3		-55.4	100	1067	18 37 21	
18 39 20	IRAS17020+45	12 51 14	49.5	74.1	-4.2		-55.7	6	1067	18 39 20	
18 42 20	---	12 54 14	50.0	74.6	-4.2		-55.9	180	1090	18 39 21	
18 42 40	J1707+4536	12 54 34	49.4	74.1	-4.2		-55.6	6	1090	18 42 40	
18 44 20	=1705+456	12 56 15	49.7	74.4	-4.2		-55.7	100	1103	18 42 41	



Schedule for TORUN (Code Tr ) Page 6

The subarcsec-scale radio emission in IRAS17020+4544

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
---	Sat	5 Jun 2021	Day 156		---					
18 44 40	IRAS17020+45	12 56 35	50.3	74.9	-4.1		-56.0	6	1103	18 44 40
18 47 40	---	12 59 35	50.8	75.4	-4.1		-56.2	180	1126	18 44 41
18 48 00	J1707+4536	12 59 55	50.2	75.0	-4.1		-55.9	6	1126	18 48 00
18 49 40	=1705+456	13 01 36	50.5	75.2	-4.1		-56.0	100	1139	18 48 01
18 50 00	IRAS17020+45	13 01 56	51.1	75.7	-4.0		-56.4	6	1139	18 50 00
18 53 00	---	13 04 56	51.5	76.2	-4.0		-56.5	180	1162	18 50 01
18 53 20	J1707+4536	13 05 16	51.0	75.8	-4.0		-56.3	6	1162	18 53 20
18 55 00	=1705+456	13 06 56	51.2	76.0	-4.0		-56.4	100	1175	18 53 21
18 55 20	IRAS17020+45	13 07 16	51.9	76.6	-3.9		-56.7	6	1175	18 55 20
18 58 20	---	13 10 17	52.3	77.0	-3.9		-56.8	180	1198	18 55 21
18 58 40	J1707+4536	13 10 37	51.8	76.6	-4.0		-56.6	6	1198	18 58 40
19 00 20	=1705+456	13 12 17	52.0	76.9	-3.9		-56.7	100	1211	18 58 41
19 00 40	IRAS17020+45	13 12 37	52.7	77.4	-3.9		-57.0	6	1211	19 00 40
19 03 40	---	13 15 38	53.1	77.9	-3.8		-57.1	180	1234	19 00 41
19 04 00	J1707+4536	13 15 58	52.5	77.4	-3.9		-56.9	6	1234	19 04 00
19 05 40	=1705+456	13 17 38	52.8	77.7	-3.8		-57.0	100	1247	19 04 01
19 06 00	IRAS17020+45	13 17 58	53.4	78.3	-3.8		-57.2	6	1247	19 06 00
19 09 00	---	13 20 59	53.9	78.7	-3.7		-57.4	180	1270	19 06 01
19 09 20	J1707+4536	13 21 19	53.3	78.3	-3.8		-57.1	6	1270	19 09 20
19 11 00	=1705+456	13 22 59	53.6	78.6	-3.7		-57.2	100	1283	19 09 21
19 11 20	IRAS17020+45	13 23 19	54.2	79.1	-3.7		-57.5	6	1283	19 11 20
19 14 20	---	13 26 20	54.7	79.6	-3.6		-57.7	180	1306	19 11 21
19 14 40	J1707+4536	13 26 40	54.1	79.1	-3.7		-57.4	6	1306	19 14 40
19 16 20	=1705+456	13 28 20	54.4	79.4	-3.7		-57.5	100	1319	19 14 41
19 16 40	IRAS17020+45	13 28 40	55.0	80.0	-3.6		-57.8	6	1319	19 16 40
19 19 40	---	13 31 40	55.5	80.5	-3.5		-57.9	180	1342	19 16 41
19 20 00	J1707+4536	13 32 01	54.9	80.0	-3.6		-57.7	6	1342	19 20 00
19 21 40	=1705+456	13 33 41	55.2	80.3	-3.6		-57.7	100	1355	19 20 01
19 22 00	IRAS17020+45	13 34 01	55.8	80.8	-3.5		-58.0	6	1355	19 22 00
19 25 00	---	13 37 01	56.3	81.3	-3.5		-58.1	180	1378	19 22 01

Schedule for TORUN (Code Tr )

Page 7

The subarcsec-scale radio emission in IRAS17020+4544

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart		
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC	
-----											
---	Sat	5 Jun 2021	Day 156			---					
19 25 20	J1707+4536	13 37 21	55.7	80.9	-3.5		-57.9	6	1378	19 25 20	
19 27 00	=1705+456	13 39 02	55.9	81.2	-3.5		-58.0	100	1391	19 25 21	
19 27 20	IRAS17020+45	13 39 22	56.6	81.7	-3.4		-58.2	6	1391	19 27 20	
19 30 20	---	13 42 22	57.0	82.2	-3.4		-58.3	180	1414	19 27 21	
19 30 40	J1707+4536	13 42 42	56.5	81.8	-3.4		-58.1	6	1414	19 30 40	
19 32 20	=1705+456	13 44 23	56.7	82.1	-3.4		-58.2	100	1427	19 30 41	
19 32 40	IRAS17020+45	13 44 43	57.4	82.6	-3.3		-58.4	6	1427	19 32 40	
19 35 40	---	13 47 43	57.8	83.2	-3.3		-58.5	180	1451	19 32 41	
19 36 00	J1707+4536	13 48 03	57.3	82.7	-3.3		-58.3	6	1451	19 36 00	
19 37 40	=1705+456	13 49 43	57.5	83.0	-3.3		-58.4	100	1463	19 36 01	
19 38 00	IRAS17020+45	13 50 03	58.2	83.6	-3.2		-58.6	6	1463	19 38 00	
19 41 00	---	13 53 04	58.6	84.1	-3.2		-58.7	180	1487	19 38 01	
19 41 20	J1707+4536	13 53 24	58.1	83.6	-3.2		-58.5	6	1487	19 41 20	
19 43 00	=1705+456	13 55 04	58.3	83.9	-3.2		-58.5	100	1499	19 41 21	
19 43 20	IRAS17020+45	13 55 24	59.0	84.5	-3.1		-58.8	6	1499	19 43 20	
19 46 20	---	13 58 25	59.4	85.0	-3.1		-58.8	180	1523	19 43 21	
19 46 40	J1707+4536	13 58 45	58.9	84.5	-3.2		-58.6	6	1523	19 46 40	
19 48 20	=1705+456	14 00 25	59.1	84.8	-3.1		-58.7	100	1536	19 46 41	
19 48 40	IRAS17020+45	14 00 45	59.8	85.4	-3.1		-58.9	6	1536	19 48 40	
19 51 40	---	14 03 46	60.2	86.0	-3.0		-59.0	180	1559	19 48 41	
19 52 00	J1707+4536	14 04 06	59.7	85.5	-3.1		-58.8	6	1559	19 52 00	
19 53 40	=1705+456	14 05 46	59.9	85.8	-3.0		-58.8	100	1572	19 52 01	
19 54 00	IRAS17020+45	14 06 06	60.6	86.4	-3.0		-59.0	6	1572	19 54 00	
19 57 00	---	14 09 07	61.0	87.0	-2.9		-59.1	180	1595	19 54 01	
19 57 20	J1707+4536	14 09 27	60.5	86.5	-3.0		-58.9	6	1595	19 57 20	
19 59 00	=1705+456	14 11 07	60.7	86.8	-2.9		-58.9	100	1608	19 57 21	
19 59 20	IRAS17020+45	14 11 27	61.4	87.4	-2.9		-59.1	6	1608	19 59 20	
20 02 20	---	14 14 27	61.8	88.0	-2.8		-59.1	180	1631	19 59 21	
20 02 40	J1707+4536	14 14 48	61.3	87.4	-2.9		-59.0	6	1631	20 02 40	
20 04 20	=1705+456	14 16 28	61.5	87.8	-2.9		-59.0	100	1644	20 02 41	

Schedule for TORUN (Code Tr ) Page 8

The subarcsec-scale radio emission in IRAS17020+4544

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart		
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC	
-----											
---	Sat	5 Jun 2021	Day 156			---					
20 04 40	IRAS17020+45	14 16 48	62.2	88.4	-2.8		-59.2	6	1644	20 04 40	
20 07 40	---	14 19 48	62.6	89.0	-2.7		-59.2	180	1667	20 04 41	
20 08 00	J1707+4536	14 20 08	62.1	88.5	-2.8		-59.0	6	1667	20 08 00	
20 09 40	=1705+456	14 21 49	62.3	88.8	-2.8		-59.1	100	1680	20 08 01	
20 12 40	OQ208	14 24 49	65.1	188.8	0.3		6.0	-36	1680	20 12 40	
20 17 40	---	14 29 50	64.9	191.4	0.4		7.8	264	1718	20 12 41	
20 22 40	BLLAC	14 34 51	21.8	47.5	-7.5		-36.8	-3	1718	20 22 40	
20 27 40	---	14 39 52	22.4	48.3	-7.4		-37.3	297	1757	20 22 41	
20 30 40	3C345	14 42 52	65.6	110.8	-2.0		-46.9	4	1757	20 30 40	
20 35 40	---	14 47 53	66.3	112.4	-1.9		-46.2	300	1796	20 30 41	
20 36 40	J1707+4536	14 48 53	66.4	94.4	-2.3		-58.8	9	1796	20 36 40	
20 38 40	=1705+456	14 50 53	66.7	94.9	-2.3		-58.7	120	1811	20 36 41	
20 39 00	IRAS17020+45	14 51 13	67.4	95.7	-2.2		-58.7	6	1811	20 39 00	
20 42 00	---	14 54 14	67.8	96.4	-2.2		-58.6	180	1834	20 39 01	
20 42 20	J1707+4536	14 54 34	67.3	95.7	-2.2		-58.6	6	1834	20 42 20	
20 44 00	=1705+456	14 56 14	67.5	96.1	-2.2		-58.5	100	1847	20 42 21	
20 44 20	IRAS17020+45	14 56 34	68.2	97.0	-2.1		-58.5	6	1847	20 44 20	
20 47 20	---	14 59 35	68.6	97.7	-2.1		-58.3	180	1870	20 44 21	
20 47 40	J1707+4536	14 59 55	68.0	97.0	-2.1		-58.4	6	1870	20 47 40	
20 49 20	=1705+456	15 01 35	68.3	97.4	-2.1		-58.3	100	1883	20 47 41	
20 49 40	IRAS17020+45	15 01 55	69.0	98.3	-2.0		-58.2	6	1883	20 49 40	
20 52 40	---	15 04 56	69.4	99.1	-2.0		-58.0	180	1907	20 49 41	
20 53 00	J1707+4536	15 05 16	68.8	98.4	-2.0		-58.1	6	1907	20 53 00	
20 54 40	=1705+456	15 06 56	69.1	98.8	-2.0		-58.0	100	1919	20 53 01	
20 55 00	IRAS17020+45	15 07 16	69.7	99.7	-1.9		-57.9	6	1919	20 55 00	
20 58 00	---	15 10 17	70.2	100.5	-1.9		-57.6	180	1943	20 55 01	
20 58 20	J1707+4536	15 10 37	69.6	99.8	-2.0		-57.7	6	1943	20 58 20	
21 00 00	=1705+456	15 12 17	69.9	100.2	-1.9		-57.6	100	1955	20 58 21	
21 00 20	IRAS17020+45	15 12 37	70.5	101.2	-1.9		-57.4	6	1955	21 00 20	
21 03 20	---	15 15 37	71.0	102.1	-1.8		-57.1	180	1979	21 00 21	

Schedule for TORUN (Code Tr ) Page 9

The subarcsec-scale radio emission in IRAS17020+4544

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
---	Sat	5 Jun 2021	Day 156		---					
21 03 40	J1707+4536	15 15 58	70.4	101.3	-1.9		-57.3	6	1979	21 03 40
21 05 20	=1705+456	15 17 38	70.7	101.7	-1.8		-57.1	100	1992	21 03 41
21 05 40	IRAS17020+45	15 17 58	71.3	102.7	-1.8		-56.9	6	1992	21 05 40
21 08 40	---	15 20 58	71.8	103.7	-1.7		-56.6	180	2015	21 05 41
21 09 00	J1707+4536	15 21 18	71.2	102.8	-1.8		-56.8	6	2015	21 09 00
21 10 40	=1705+456	15 22 59	71.5	103.3	-1.7		-56.6	100	2028	21 09 01
21 11 00	IRAS17020+45	15 23 19	72.1	104.4	-1.7		-56.3	6	2028	21 11 00
21 14 00	---	15 26 19	72.5	105.3	-1.6		-55.9	180	2051	21 11 01
21 14 20	J1707+4536	15 26 39	72.0	104.4	-1.7		-56.2	6	2051	21 14 20
21 16 00	=1705+456	15 28 20	72.2	105.0	-1.7		-56.0	100	2064	21 14 21
21 16 20	IRAS17020+45	15 28 40	72.9	106.1	-1.6		-55.6	6	2064	21 16 20
21 19 20	---	15 31 40	73.3	107.1	-1.5		-55.2	180	2087	21 16 21
21 19 40	J1707+4536	15 32 00	72.8	106.2	-1.6		-55.5	6	2087	21 19 40
21 21 20	=1705+456	15 33 40	73.0	106.7	-1.6		-55.2	100	2100	21 19 41
21 21 40	IRAS17020+45	15 34 01	73.6	108.0	-1.5		-54.8	5	2100	21 21 40
21 24 40	---	15 37 01	74.1	109.1	-1.5		-54.3	180	2123	21 21 41
21 25 00	J1707+4536	15 37 21	73.5	108.0	-1.5		-54.7	6	2123	21 25 00
21 26 40	=1705+456	15 39 01	73.8	108.6	-1.5		-54.4	100	2136	21 25 01
21 27 00	IRAS17020+45	15 39 21	74.4	109.9	-1.4		-53.8	5	2136	21 27 00
21 30 00	---	15 42 22	74.8	111.1	-1.4		-53.3	180	2159	21 27 01
21 30 20	J1707+4536	15 42 42	74.3	110.0	-1.4		-53.7	5	2159	21 30 20
21 32 00	=1705+456	15 44 22	74.5	110.6	-1.4		-53.4	100	2172	21 30 21
21 32 20	IRAS17020+45	15 44 42	75.1	112.1	-1.3		-52.8	5	2172	21 32 20
21 35 20	---	15 47 43	75.6	113.3	-1.3		-52.1	180	2195	21 32 21
21 35 40	J1707+4536	15 48 03	75.0	112.1	-1.3		-52.6	5	2195	21 35 40
21 37 20	=1705+456	15 49 43	75.3	112.8	-1.3		-52.3	100	2208	21 35 41
21 37 40	IRAS17020+45	15 50 03	75.9	114.4	-1.2		-51.5	4	2208	21 37 40
21 40 40	---	15 53 04	76.3	115.7	-1.2		-50.7	180	2231	21 37 41
21 41 00	J1707+4536	15 53 24	75.8	114.4	-1.2		-51.4	4	2231	21 41 00
21 42 40	=1705+456	15 55 04	76.0	115.2	-1.2		-50.9	100	2244	21 41 01

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The subarcsec-scale radio emission in IRAS17020+4544

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart		
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC	
-----											
---	Sat	5 Jun 2021	Day 156			---					
21 43 00	IRAS17020+45	15 55 24	76.6	116.9	-1.1		-50.0	4	2244	21 43 00	
21 46 00	---	15 58 25	77.0	118.4	-1.1		-49.1	180	2267	21 43 01	
21 46 20	J1707+4536	15 58 45	76.5	116.9	-1.2		-49.9	4	2267	21 46 20	
21 48 00	=1705+456	16 00 25	76.7	117.7	-1.1		-49.4	100	2280	21 46 21	
21 48 20	IRAS17020+45	16 00 45	77.3	119.6	-1.1		-48.3	3	2280	21 48 20	
21 51 20	---	16 03 45	77.7	121.2	-1.0		-47.3	180	2303	21 48 21	
21 51 40	J1707+4536	16 04 05	77.2	119.6	-1.1		-48.2	3	2303	21 51 40	
21 53 20	=1705+456	16 05 46	77.4	120.5	-1.0		-47.7	100	2316	21 51 41	
21 53 40	IRAS17020+45	16 06 06	78.0	122.5	-1.0		-46.4	2	2316	21 53 40	
21 56 40	---	16 09 06	78.4	124.3	-0.9		-45.2	180	2339	21 53 41	
21 57 00	J1707+4536	16 09 26	77.9	122.5	-1.0		-46.3	3	2339	21 57 00	
21 58 40	=1705+456	16 11 07	78.1	123.5	-0.9		-45.7	100	2352	21 57 01	
21 59 00	IRAS17020+45	16 11 27	78.7	125.8	-0.9		-44.2	2	2352	21 59 00	
22 02 00	---	16 14 27	79.0	127.8	-0.8		-42.8	180	2375	21 59 01	
22 02 20	J1707+4536	16 14 47	78.6	125.8	-0.9		-44.1	2	2375	22 02 20	
22 04 00	=1705+456	16 16 27	78.8	126.8	-0.9		-43.4	100	2388	22 02 21	
22 04 20	IRAS17020+45	16 16 48	79.3	129.4	-0.8		-41.6	1	2388	22 04 20	
22 07 20	---	16 19 48	79.7	131.5	-0.7		-40.0	180	2411	22 04 21	
22 07 40	J1707+4536	16 20 08	79.2	129.3	-0.8		-41.6	1	2411	22 07 40	
22 09 20	=1705+456	16 21 48	79.4	130.5	-0.8		-40.7	100	2424	22 07 41	
22 09 40	IRAS17020+45	16 22 08	79.9	133.3	-0.7		-38.7	0	2424	22 09 40	
22 12 40	---	16 25 09	80.2	135.7	-0.7		-36.8	180	2448	22 09 41	
22 13 00	J1707+4536	16 25 29	79.8	133.3	-0.7		-38.7	1	2448	22 13 00	
22 14 40	=1705+456	16 27 09	80.0	134.6	-0.7		-37.7	100	2460	22 13 01	
22 15 00	IRAS17020+45	16 27 29	80.5	137.7	-0.6		-35.3	-1	2460	22 15 00	
22 18 00	---	16 30 30	80.8	140.4	-0.6		-33.2	179	2484	22 15 01	
22 18 20	J1707+4536	16 30 50	80.4	137.6	-0.6		-35.3	0	2484	22 18 20	
22 20 00	=1705+456	16 32 30	80.5	139.0	-0.6		-34.2	100	2497	22 18 21	
22 20 20	IRAS17020+45	16 32 50	81.0	142.6	-0.5		-31.5	-2	2497	22 20 20	
22 23 20	---	16 35 51	81.3	145.5	-0.5		-29.1	178	2520	22 20 21	

Schedule for TORUN (Code Tr )

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The subarcsec-scale radio emission in IRAS17020+4544

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
---	Sat	5 Jun 2021	Day 156		---					
22 23 40	J1707+4536	16 36 11	80.9	142.4	-0.5		-31.6	-1	2520	22 23 40
22 25 20	=1705+456	16 37 51	81.0	144.0	-0.5		-30.3	99	2533	22 23 41
22 25 40	IRAS17020+45	16 38 11	81.4	147.9	-0.4		-27.2	-3	2533	22 25 40
22 28 40	---	16 41 12	81.7	151.1	-0.4		-24.5	177	2556	22 25 41
22 29 00	J1707+4536	16 41 32	81.3	147.7	-0.4		-27.3	-2	2556	22 29 00
22 30 40	=1705+456	16 43 12	81.5	149.4	-0.4		-25.9	98	2569	22 29 01
22 31 00	IRAS17020+45	16 43 32	81.8	153.7	-0.3		-22.3	-4	2569	22 31 00
22 34 00	---	16 46 32	82.0	157.2	-0.3		-19.4	176	2592	22 31 01
22 34 20	J1707+4536	16 46 52	81.7	153.4	-0.4		-22.6	-3	2592	22 34 20
22 36 00	=1705+456	16 48 33	81.8	155.3	-0.3		-21.0	97	2605	22 34 21
22 36 20	IRAS17020+45	16 48 53	82.2	160.1	-0.3		-17.0	-4	2605	22 36 20
22 39 20	---	16 51 53	82.3	163.8	-0.2		-13.9	176	2628	22 36 21
22 39 40	J1707+4536	16 52 13	82.1	159.7	-0.3		-17.3	-3	2628	22 39 40
22 41 20	=1705+456	16 53 54	82.1	161.7	-0.2		-15.6	97	2641	22 39 41
22 41 40	IRAS17020+45	16 54 14	82.4	166.8	-0.2		-11.3	-5	2641	22 41 40
22 44 40	---	16 57 14	82.5	170.7	-0.1		-7.9	175	2664	22 41 41
22 45 00	J1707+4536	16 57 34	82.3	166.3	-0.2		-11.7	-4	2664	22 45 00
22 46 40	=1705+456	16 59 14	82.3	168.5	-0.1		-9.9	96	2677	22 45 01
22 48 40	3C345	17 01 15	76.3	194.4	0.3		11.2	55	2677	22 48 40
22 53 40	---	17 06 16	76.1	198.4	0.4		14.2	300	2716	22 48 41
22 56 40	BLLAC	17 09 16	41.6	71.5	-4.9		-50.4	-88	2716	22 56 40
23 01 40	---	17 14 17	42.3	72.2	-4.8		-50.7	212	2754	22 56 41
23 04 40	J1707+4536	17 17 17	82.3	192.3	0.2		10.6	-78	2754	23 04 40
23 06 40	=1705+456	17 19 18	82.3	194.9	0.2		12.8	42	2770	23 04 41
23 07 00	IRAS17020+45	17 19 38	82.1	200.2	0.3		17.2	-6	2770	23 07 00
23 10 00	---	17 22 38	82.0	203.8	0.3		20.3	174	2793	23 07 01
23 10 20	J1707+4536	17 22 58	82.1	199.5	0.3		16.6	-4	2793	23 10 20
23 12 00	=1705+456	17 24 39	82.0	201.5	0.3		18.3	96	2806	23 10 21
23 12 20	IRAS17020+45	17 24 59	81.8	206.5	0.3		22.5	-5	2806	23 12 20
23 15 20	---	17 27 59	81.6	209.8	0.4		25.3	175	2829	23 12 21

Schedule for TORUN (Code Tr )

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The subarcsec-scale radio emission in IRAS17020+4544

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop				Early	Disk	TPStart		
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
---	Sat	5 Jun 2021	Day 156		---					
23 15 40	J1707+4536	17 28 19	81.8	205.8	0.3		21.9	-3	2829	23 15 40
23 17 20	=1705+456	17 30 00	81.7	207.7	0.4		23.5	97	2842	23 15 41
23 17 40	IRAS17020+45	17 30 20	81.4	212.3	0.4		27.3	-4	2842	23 17 40
23 20 40	---	17 33 20	81.2	215.4	0.5		29.8	176	2865	23 17 41
23 21 00	J1707+4536	17 33 40	81.4	211.6	0.4		26.7	-2	2865	23 21 00
23 22 40	=1705+456	17 35 20	81.3	213.3	0.5		28.1	98	2878	23 21 01
23 23 00	IRAS17020+45	17 35 40	81.0	217.6	0.5		31.6	-3	2878	23 23 00
23 26 00	---	17 38 41	80.7	220.4	0.6		33.8	177	2901	23 23 01
23 26 20	J1707+4536	17 39 01	80.9	217.0	0.5		31.1	-2	2901	23 26 20
23 28 00	=1705+456	17 40 41	80.8	218.5	0.5		32.3	98	2914	23 26 21
23 28 20	IRAS17020+45	17 41 01	80.5	222.5	0.6		35.4	-3	2914	23 28 20
23 31 20	---	17 44 02	80.1	225.0	0.7		37.4	177	2937	23 28 21
23 31 40	J1707+4536	17 44 22	80.4	221.8	0.6		34.9	-1	2937	23 31 40
23 33 20	=1705+456	17 46 02	80.3	223.2	0.6		36.0	99	2950	23 31 41
23 33 40	IRAS17020+45	17 46 22	79.9	226.8	0.7		38.8	-2	2950	23 33 40
23 36 40	---	17 49 23	79.6	229.1	0.8		40.5	178	2973	23 33 41
23 37 00	J1707+4536	17 49 43	79.9	226.2	0.7		38.3	0	2973	23 37 00
23 38 40	=1705+456	17 51 23	79.7	227.5	0.7		39.2	100	2986	23 37 01
23 39 00	IRAS17020+45	17 51 43	79.3	230.8	0.8		41.7	-1	2986	23 39 00
23 42 00	---	17 54 44	78.9	232.8	0.8		43.2	179	3009	23 39 01
23 42 20	J1707+4536	17 55 04	79.3	230.2	0.8		41.2	0	3009	23 42 20
23 44 00	=1705+456	17 56 44	79.1	231.4	0.8		42.1	100	3022	23 42 21
23 44 20	IRAS17020+45	17 57 04	78.6	234.3	0.9		44.3	0	3022	23 44 20
23 47 20	---	18 00 04	78.3	236.2	0.9		45.6	180	3045	23 44 21
23 47 40	J1707+4536	18 00 24	78.6	233.8	0.9		43.8	1	3045	23 47 40
23 49 20	=1705+456	18 02 05	78.4	234.9	0.9		44.5	100	3058	23 47 41
23 49 40	IRAS17020+45	18 02 25	78.0	237.6	1.0		46.5	0	3058	23 49 40
23 52 40	---	18 05 25	77.6	239.3	1.0		47.6	180	3081	23 49 41
23 53 00	J1707+4536	18 05 45	78.0	237.1	1.0		46.1	1	3081	23 53 00
23 54 40	=1705+456	18 07 26	77.8	238.0	1.0		46.7	100	3094	23 53 01

Schedule for TORUN (Code Tr )

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The subarcsec-scale radio emission in IRAS17020+4544

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop				Early	Disk	TPStart		
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
---	Sat	5 Jun 2021	Day 156		---					
23 55 00	IRAS17020+45	18 07 46	77.3	240.5	1.1		48.4	1	3094	23 55 00
23 58 00	---	18 10 46	76.9	242.1	1.1		49.4	180	3117	23 55 01
23 58 20	J1707+4536	18 11 06	77.3	240.0	1.1		48.0	2	3117	23 58 20
23 59 59	=1705+456	18 12 47	77.1	240.9	1.1		48.6	99	3130	23 58 21
-----										
---	Sun	6 Jun 2021	Day 157		---					
00 00 20	IRAS17020+45	18 13 07	76.6	243.2	1.1		50.1	2	3130	00 00 20
00 03 20	---	18 16 07	76.2	244.7	1.2		50.9	180	3153	00 00 21
00 03 40	J1707+4536	18 16 27	76.6	242.8	1.1		49.7	3	3153	00 03 40
00 05 20	=1705+456	18 18 07	76.4	243.6	1.2		50.2	100	3166	00 03 41
00 05 40	IRAS17020+45	18 18 27	75.9	245.7	1.2		51.5	2	3166	00 05 40
00 08 40	---	18 21 28	75.4	247.0	1.3		52.3	180	3190	00 05 41
00 09 00	J1707+4536	18 21 48	75.9	245.3	1.2		51.2	3	3190	00 09 00
00 10 40	=1705+456	18 23 28	75.6	246.0	1.3		51.6	100	3202	00 09 01
00 11 00	IRAS17020+45	18 23 48	75.1	248.0	1.3		52.8	3	3202	00 11 00
00 14 00	---	18 26 49	74.7	249.2	1.4		53.4	180	3226	00 11 01
00 14 20	J1707+4536	18 27 09	75.1	247.6	1.3		52.5	3	3226	00 14 20
00 16 00	=1705+456	18 28 49	74.9	248.3	1.3		52.8	100	3239	00 14 21
00 16 20	IRAS17020+45	18 29 09	74.4	250.1	1.4		53.9	3	3239	00 16 20
00 19 20	---	18 32 10	73.9	251.3	1.5		54.4	180	3262	00 16 21
00 19 40	J1707+4536	18 32 30	74.4	249.7	1.4		53.6	4	3262	00 19 40
00 21 20	=1705+456	18 34 10	74.2	250.4	1.4		53.9	100	3275	00 19 41
00 21 40	IRAS17020+45	18 34 30	73.6	252.1	1.5		54.8	3	3275	00 21 40
00 24 40	---	18 37 31	73.2	253.2	1.6		55.3	180	3298	00 21 41
00 25 00	J1707+4536	18 37 51	73.6	251.7	1.5		54.5	4	3298	00 25 00
00 26 40	=1705+456	18 39 31	73.4	252.3	1.5		54.8	100	3311	00 25 01
00 27 00	IRAS17020+45	18 39 51	72.8	253.9	1.6		55.6	4	3311	00 27 00
00 30 00	---	18 42 51	72.4	254.9	1.6		56.0	180	3334	00 27 01
00 30 20	J1707+4536	18 43 11	72.9	253.6	1.6		55.4	4	3334	00 30 20
00 32 00	=1705+456	18 44 52	72.6	254.1	1.6		55.6	100	3347	00 30 21



Schedule for TORUN (Code Tr )

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The subarcsec-scale radio emission in IRAS17020+4544

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 6 Jun 2021 Day 157 ---										
00 36 00	BLLAC	18 48 52	56.3	88.5	-3.2		-54.3	-106	3347	00 36 00
00 42 00	---	18 54 53	57.2	89.7	-3.1		-54.4	254	3393	00 36 01
00 47 00	J1707+4536	18 59 54	70.4	258.7	1.9		57.3	-54	3393	00 47 00
00 49 00	=1705+456	19 01 55	70.1	259.3	1.9		57.5	66	3409	00 47 01
00 49 20	IRAS17020+45	19 02 15	69.6	260.6	2.0		57.9	5	3409	00 49 20
00 52 20	---	19 05 15	69.1	261.4	2.0		58.1	180	3432	00 49 21
00 52 40	J1707+4536	19 05 35	69.6	260.3	2.0		57.7	5	3432	00 52 40
00 54 20	=1705+456	19 07 15	69.3	260.7	2.0		57.9	100	3445	00 52 41
00 54 40	IRAS17020+45	19 07 35	68.8	262.0	2.1		58.3	5	3445	00 54 40
00 57 40	---	19 10 36	68.3	262.7	2.1		58.4	180	3468	00 54 41
00 58 00	J1707+4536	19 10 56	68.8	261.7	2.0		58.1	6	3468	00 58 00
00 59 40	=1705+456	19 12 36	68.5	262.1	2.1		58.2	100	3481	00 58 01
01 00 00	IRAS17020+45	19 12 56	68.0	263.3	2.1		58.6	5	3481	01 00 00
01 03 00	---	19 15 57	67.5	264.0	2.2		58.7	180	3504	01 00 01
01 03 20	J1707+4536	19 16 17	68.0	263.0	2.1		58.4	6	3504	01 03 20
01 05 00	=1705+456	19 17 57	67.8	263.4	2.2		58.5	100	3517	01 03 21
01 05 20	IRAS17020+45	19 18 17	67.2	264.6	2.2		58.8	6	3517	01 05 20
01 08 20	---	19 21 18	66.7	265.3	2.3		58.9	180	3540	01 05 21
01 08 40	J1707+4536	19 21 38	67.2	264.3	2.2		58.6	6	3540	01 08 40
01 10 20	=1705+456	19 23 18	67.0	264.7	2.3		58.7	100	3553	01 08 41
01 10 40	IRAS17020+45	19 23 38	66.4	265.8	2.3		59.0	6	3553	01 10 40
01 13 40	---	19 26 39	65.9	266.5	2.4		59.0	180	3576	01 10 41
01 14 00	J1707+4536	19 26 59	66.4	265.6	2.3		58.8	6	3576	01 14 00
01 15 40	=1705+456	19 28 39	66.2	265.9	2.3		58.8	100	3589	01 14 01
01 16 00	IRAS17020+45	19 28 59	65.6	267.0	2.4		59.1	6	3589	01 16 00
01 19 00	---	19 31 59	65.1	267.6	2.5		59.1	180	3612	01 16 01
01 19 20	J1707+4536	19 32 20	65.6	266.7	2.4		58.9	6	3612	01 19 20
01 21 00	=1705+456	19 34 00	65.4	267.1	2.4		59.0	100	3625	01 19 21
01 21 20	IRAS17020+45	19 34 20	64.8	268.1	2.5		59.2	6	3625	01 21 20
01 24 20	---	19 37 20	64.3	268.8	2.6		59.2	180	3648	01 21 21

Schedule for TORUN (Code Tr ) Page 15

The subarcsec-scale radio emission in IRAS17020+4544

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop				Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA UP	ParA	Dwell	GBytes	SYNC
-----									
--- Sun 6 Jun 2021 Day 157 ---									
01 24 40	J1707+4536	19 37 40	64.8	267.9	2.5	59.0	6	3648	01 24 40
01 26 20	=1705+456	19 39 21	64.6	268.3	2.5	59.0	100	3661	01 24 41
01 26 40	IRAS17020+45	19 39 41	64.0	269.3	2.6	59.2	6	3661	01 26 40
01 29 40	---	19 42 41	63.5	269.9	2.6	59.2	180	3684	01 26 41
01 30 00	J1707+4536	19 43 01	64.0	269.0	2.6	59.1	7	3684	01 30 00
01 31 40	=1705+456	19 44 42	63.7	269.4	2.6	59.1	100	3697	01 30 01
01 32 00	IRAS17020+45	19 45 02	63.2	270.3	2.7	59.2	6	3697	01 32 00
01 35 00	---	19 48 02	62.7	270.9	2.7	59.2	180	3720	01 32 01
01 35 20	J1707+4536	19 48 22	63.2	270.1	2.7	59.1	7	3720	01 35 20
01 37 00	=1705+456	19 50 02	62.9	270.4	2.7	59.1	100	3733	01 35 21
01 37 20	IRAS17020+45	19 50 23	62.4	271.4	2.8	59.2	6	3733	01 37 20
01 40 20	---	19 53 23	61.9	271.9	2.8	59.2	180	3756	01 37 21
01 40 40	J1707+4536	19 53 43	62.4	271.1	2.8	59.1	7	3756	01 40 40
01 42 20	=1705+456	19 55 23	62.1	271.5	2.8	59.0	100	3769	01 40 41
01 42 40	IRAS17020+45	19 55 43	61.6	272.4	2.9	59.1	6	3769	01 42 40
01 45 40	---	19 58 44	61.1	273.0	2.9	59.1	180	3792	01 42 41
01 46 00	J1707+4536	19 59 04	61.6	272.2	2.9	59.0	7	3792	01 46 00
01 47 40	=1705+456	20 00 44	61.3	272.5	2.9	59.0	100	3805	01 46 01
01 48 00	IRAS17020+45	20 01 04	60.8	273.4	2.9	59.0	6	3805	01 48 00
01 51 00	---	20 04 05	60.3	273.9	3.0	59.0	180	3829	01 48 01
01 51 20	J1707+4536	20 04 25	60.8	273.2	2.9	58.9	7	3829	01 51 20
01 53 00	=1705+456	20 06 05	60.5	273.5	3.0	58.9	100	3841	01 51 21
01 53 20	IRAS17020+45	20 06 25	60.0	274.4	3.0	58.9	6	3841	01 53 20
01 56 20	---	20 09 26	59.5	274.9	3.1	58.9	180	3865	01 53 21
01 56 40	J1707+4536	20 09 46	60.0	274.2	3.0	58.8	7	3865	01 56 40
01 58 20	=1705+456	20 11 26	59.7	274.5	3.1	58.8	100	3877	01 56 41
01 58 40	IRAS17020+45	20 11 46	59.2	275.3	3.1	58.8	6	3877	01 58 40
02 01 40	---	20 14 47	58.7	275.8	3.2	58.7	180	3901	01 58 41
02 02 00	J1707+4536	20 15 07	59.2	275.1	3.1	58.7	7	3901	02 02 00
02 03 40	=1705+456	20 16 47	58.9	275.4	3.1	58.7	100	3914	02 02 01

Schedule for TORUN (Code Tr ) Page 16

The subarcsec-scale radio emission in IRAS17020+4544

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 6 Jun 2021 Day 157 ---										
02 04 00	IRAS17020+45	20 17 07	58.4	276.3	3.2		58.6	6	3914	02 04 00
02 07 00	---	20 20 07	57.9	276.8	3.3		58.5	180	3937	02 04 01
02 07 20	J1707+4536	20 20 27	58.4	276.1	3.2		58.5	7	3937	02 07 20
02 09 00	=1705+456	20 22 08	58.1	276.3	3.2		58.5	100	3950	02 07 21
02 09 20	IRAS17020+45	20 22 28	57.6	277.2	3.3		58.5	6	3950	02 09 20
02 12 20	---	20 25 28	57.1	277.7	3.4		58.4	180	3973	02 09 21
02 12 40	J1707+4536	20 25 48	57.6	277.0	3.3		58.4	7	3973	02 12 40
02 14 20	=1705+456	20 27 29	57.3	277.3	3.3		58.3	100	3986	02 12 41
02 18 20	BLLAC	20 31 29	71.3	115.7	-1.5		-47.1	-97	3986	02 18 20
02 24 20	---	20 37 30	72.1	118.1	-1.4		-45.8	263	4032	02 18 21
02 30 20	J1707+4536	20 43 31	55.0	279.9	3.6		57.7	22	4032	02 30 20
02 32 40	=1705+456	20 45 52	54.6	280.3	3.6		57.6	140	4050	02 30 21
02 33 00	IRAS17020+45	20 46 12	54.0	281.1	3.7		57.5	7	4050	02 33 00
02 36 00	---	20 49 12	53.6	281.6	3.8		57.3	180	4073	02 33 01
02 36 20	J1707+4536	20 49 32	54.1	280.9	3.7		57.4	7	4073	02 36 20
02 38 00	=1705+456	20 51 12	53.8	281.2	3.7		57.3	100	4086	02 36 21
02 38 20	IRAS17020+45	20 51 33	53.3	281.9	3.8		57.2	7	4086	02 38 20
02 41 35	---	20 54 48	52.8	282.4	3.8		57.0	195	4111	02 38 21
02 41 55	J1707+4536	20 55 08	53.2	281.8	3.8		57.1	7	4111	02 41 55
02 43 35	=1705+456	20 56 48	53.0	282.1	3.8		57.0	100	4124	02 41 56
02 43 55	IRAS17020+45	20 57 08	52.4	282.8	3.9		56.9	7	4124	02 43 55
02 46 55	---	21 00 09	52.0	283.3	3.9		56.7	180	4147	02 43 56
02 47 15	J1707+4536	21 00 29	52.5	282.6	3.9		56.8	7	4147	02 47 15
02 48 55	=1705+456	21 02 09	52.2	282.9	3.9		56.7	100	4160	02 47 16
02 49 15	IRAS17020+45	21 02 29	51.7	283.7	4.0		56.6	7	4160	02 49 15
02 52 30	---	21 05 45	51.2	284.2	4.0		56.4	195	4185	02 49 16
02 52 50	J1707+4536	21 06 05	51.6	283.5	4.0		56.5	7	4185	02 52 50
02 54 30	=1705+456	21 07 45	51.4	283.8	4.0		56.4	100	4198	02 52 51
02 54 50	IRAS17020+45	21 08 05	50.8	284.5	4.1		56.3	7	4198	02 54 50
02 57 50	---	21 11 06	50.4	285.0	4.1		56.1	180	4221	02 54 51

Schedule for TORUN (Code Tr )

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The subarcsec-scale radio emission in IRAS17020+4544

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop				Early	Disk	TPStart		
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 6 Jun 2021 Day 157 ---										
02 58 10	J1707+4536	21 11 26	50.9	284.3	4.1		56.2	7	4221	02 58 10
02 59 50	=1705+456	21 13 06	50.6	284.6	4.1		56.1	100	4234	02 58 11
03 00 10	IRAS17020+45	21 13 26	50.1	285.3	4.2		55.9	7	4234	03 00 10
03 03 25	---	21 16 42	49.6	285.8	4.2		55.7	195	4259	03 00 11
03 03 45	J1707+4536	21 17 02	50.1	285.2	4.2		55.9	7	4259	03 03 45
03 05 25	=1705+456	21 18 42	49.8	285.5	4.2		55.8	100	4272	03 03 46
03 05 45	IRAS17020+45	21 19 02	49.3	286.2	4.2		55.6	7	4272	03 05 45
03 08 45	---	21 22 03	48.8	286.6	4.3		55.4	180	4295	03 05 46
03 09 05	J1707+4536	21 22 23	49.3	286.0	4.2		55.5	7	4295	03 09 05
03 10 45	=1705+456	21 24 03	49.0	286.3	4.3		55.4	100	4308	03 09 06
03 11 05	IRAS17020+45	21 24 23	48.5	287.0	4.3		55.2	7	4308	03 11 05
03 14 20	---	21 27 38	48.0	287.5	4.4		55.0	195	4333	03 11 06
03 14 40	J1707+4536	21 27 58	48.5	286.9	4.3		55.2	7	4333	03 14 40
03 16 20	=1705+456	21 29 39	48.2	287.1	4.4		55.1	100	4346	03 14 41
03 16 40	IRAS17020+45	21 29 59	47.7	287.8	4.4		54.9	7	4346	03 16 40
03 19 40	---	21 32 59	47.3	288.3	4.5		54.7	180	4370	03 16 41
03 20 00	J1707+4536	21 33 19	47.7	287.7	4.4		54.8	7	4370	03 20 00
03 21 40	=1705+456	21 35 00	47.5	287.9	4.5		54.7	100	4382	03 20 01
03 22 00	IRAS17020+45	21 35 20	46.9	288.6	4.5		54.5	7	4382	03 22 00
03 25 15	---	21 38 35	46.5	289.1	4.6		54.3	195	4408	03 22 01
03 25 35	J1707+4536	21 38 55	46.9	288.5	4.5		54.4	7	4408	03 25 35
03 27 15	=1705+456	21 40 36	46.7	288.8	4.5		54.3	100	4420	03 25 36
03 27 35	IRAS17020+45	21 40 56	46.1	289.5	4.6		54.1	7	4420	03 27 35
03 30 35	---	21 43 56	45.7	289.9	4.7		53.9	180	4444	03 27 36
03 30 55	J1707+4536	21 44 16	46.1	289.3	4.6		54.1	7	4444	03 30 55
03 32 35	=1705+456	21 45 56	45.9	289.6	4.6		53.9	100	4456	03 30 56
03 32 55	IRAS17020+45	21 46 16	45.4	290.2	4.7		53.7	7	4456	03 32 55
03 36 10	---	21 49 32	44.9	290.7	4.8		53.5	195	4482	03 32 56
03 36 30	J1707+4536	21 49 52	45.4	290.1	4.7		53.7	7	4482	03 36 30
03 38 10	=1705+456	21 51 32	45.1	290.4	4.7		53.5	100	4495	03 36 31

Schedule for TORUN (Code Tr ) Page 18

The subarcsec-scale radio emission in IRAS17020+4544

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 6 Jun 2021 Day 157 ---										
03 38 30	IRAS17020+45	21 51 52	44.6	291.1	4.8		53.3	7	4495	03 38 30
03 41 30	---	21 54 53	44.2	291.5	4.8		53.1	180	4518	03 38 31
03 41 50	J1707+4536	21 55 13	44.6	290.9	4.8		53.3	7	4518	03 41 50
03 43 30	=1705+456	21 56 53	44.4	291.2	4.8		53.1	100	4531	03 41 51
03 43 50	IRAS17020+45	21 57 13	43.8	291.9	4.9		52.9	7	4531	03 43 50
03 47 05	---	22 00 29	43.4	292.3	4.9		52.6	195	4556	03 43 51
03 47 25	J1707+4536	22 00 49	43.8	291.7	4.9		52.8	7	4556	03 47 25
03 49 05	=1705+456	22 02 29	43.6	292.0	4.9		52.7	100	4569	03 47 26
03 49 25	IRAS17020+45	22 02 49	43.1	292.7	5.0		52.4	7	4569	03 49 25
03 52 25	---	22 05 50	42.6	293.1	5.0		52.2	180	4592	03 49 26
03 52 45	J1707+4536	22 06 10	43.1	292.5	5.0		52.4	7	4592	03 52 45
03 54 25	=1705+456	22 07 50	42.8	292.8	5.0		52.3	100	4605	03 52 46
03 54 45	IRAS17020+45	22 08 10	42.3	293.4	5.1		52.0	7	4605	03 54 45
03 58 00	---	22 11 26	41.9	293.9	5.1		51.7	195	4630	03 54 46
03 58 20	J1707+4536	22 11 46	42.3	293.3	5.1		52.0	7	4630	03 58 20
04 00 00	=1705+456	22 13 26	42.1	293.6	5.1		51.8	100	4643	03 58 21

SETUP FILE INFORMATION:

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

==== Setup file: sess221.L1024

Setup group: 10	Station: TORUN	Total bit rate: 1024
Format: VDIF	Bits per sample: 2	Sample rate: 64.000
Number of channels: 8	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
Net SB=	L	L	U	U	L	L	U	U
IF SB =	L	L	L	L	L	L	L	L
Pol. =	RCP	LCP	RCP	LCP	RCP	LCP	RCP	LCP
BBC =	1	9	1	9	2	10	2	10
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: 7 Setup file default. Used with PCAL = off  
 LO sum= 1626.49 1626.49 1626.49 1626.49 1690.49 1690.49 1690.49 1690.49  
 BBC fr= 673.51 673.51 673.51 673.51 609.51 609.51 609.51 609.51  
 Bandwd= 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00  
 Matching frequency sets: 7

Track assignments are:  
 track1= 1, 2, 3, 4, 5, 6, 7, 8  
 barrel=roll\_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* IRAS17020+45	17 02 02.959899	* 17 03 30.383000	17 04 09.220668	0.00
	45 44 54.66110	* 45 40 47.16700	45 39 00.42648	0.00
* OQ208	14 04 45.615156	* 14 07 00.394415	14 07 58.386087	0.24
J1407+2827	28 41 29.23515	* 28 27 14.69019	28 21 18.99713	0.35
1404+286	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
J1407+28	GSFC 2016a X/S astro solution, 68278 observations.			
* 3C345	16 41 17.606229	* 16 42 58.809967	16 43 43.282492	0.79
J1642+3948	39 54 10.81492	* 39 48 36.99399	39 46 15.13695	0.59
1641+399	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
J1642+39	GSFC 2016a X/S astro solution, 53724 observations.			
1705+456	17 05 50.417194	* 17 07 17.753409	17 07 56.547541	0.04
* J1707+4536	45 40 01.95822	* 45 36 10.55289	45 34 30.35699	0.03
J1707+45	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 1033 observations.			
VR422201	22 00 39.362504	* 22 02 43.291371	22 03 35.949768	0.01
J2202+4216	42 02 08.59075	* 42 16 39.97988	42 22 33.00495	0.00
* BLLAC	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
2200+420	GSFC 2016a X/S astro solution, 52189 observations.			
J2202+42				

es099atr

ES099A
PI: Shu, Xinwen

Address: Department of Physics

Observing mode: evn

Schedule for TORUN (Code Tr )

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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 LO sum (band edge).
SYNC: Time correlator is expected to sync up.

Table with columns: Start UT, Stop UT, Source, LST, EL, AZ, HA, UP, ParA, Early Dwell, Disk GBytes, TPStart SYNC. Includes scan frequencies and bandwidths at the top, and a detailed log of observations with timestamps and parameters.

Schedule for TORUN (Code Tr )

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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	
-----											
---	Sun 6 Jun 2021	Day 157					---				
17 34 50	J1553+5253	11 50 30	54.4	65.2	-4.1		-64.5	-19	242	No stop	
17 36 20	=CAL1	11 52 00	54.6	65.4	-4.0		-64.6	71	254	17 34 51	
17 36 20	J1554	11 52 00	54.5	65.2	-4.1		-64.6	-9	254	No stop	
17 39 50	---	11 55 31	55.0	65.6	-4.0		-65.0	201	281	17 36 21	
17 40 20	J1553+5253	11 56 01	55.2	65.8	-4.0		-65.1	21	281	17 40 20	
17 41 50	=CAL1	11 57 31	55.4	66.0	-3.9		-65.2	90	292	17 40 21	
17 41 50	J1554	11 57 31	55.3	65.8	-4.0		-65.2	-9	292	No stop	
17 45 20	---	12 01 02	55.8	66.2	-3.9		-65.5	201	319	17 41 51	
17 45 20	J1553+5253	12 01 02	55.9	66.4	-3.9		-65.6	-9	319	No stop	
17 46 50	=CAL1	12 02 32	56.1	66.6	-3.9		-65.8	81	331	17 45 21	
17 46 50	J1554	12 02 32	56.0	66.4	-3.9		-65.7	-9	331	No stop	
17 50 20	---	12 06 02	56.4	66.8	-3.8		-66.1	201	358	17 46 51	
17 50 50	J1553+5253	12 06 32	56.6	67.0	-3.8		-66.2	21	358	17 50 50	
17 52 20	=CAL1	12 08 03	56.8	67.2	-3.8		-66.3	90	370	17 50 51	
17 52 20	J1554	12 08 03	56.7	67.0	-3.8		-66.3	-9	370	No stop	
17 55 50	---	12 11 33	57.2	67.4	-3.7		-66.7	201	397	17 52 21	
17 55 50	J1553+5253	12 11 33	57.3	67.6	-3.7		-66.7	-9	397	No stop	
17 57 20	=CAL1	12 13 03	57.5	67.7	-3.7		-66.9	81	408	17 55 51	
17 57 50	J1545+5400	12 13 34	59.1	66.6	-3.5		-69.5	11	408	17 57 50	
17 59 50	=CAL2	12 15 34	59.4	66.8	-3.5		-69.7	120	424	17 57 51	
17 59 50	J1553+5253	12 15 34	57.9	68.0	-3.6		-67.1	-19	424	No stop	
18 01 20	=CAL1	12 17 04	58.1	68.2	-3.6		-67.3	71	435	17 59 51	
18 01 20	J1554	12 17 04	58.0	68.0	-3.6		-67.3	-9	435	No stop	
18 04 50	---	12 20 35	58.5	68.4	-3.6		-67.6	201	462	18 01 21	
18 05 20	J1553+5253	12 21 05	58.6	68.6	-3.6		-67.7	21	462	18 05 20	
18 06 50	=CAL1	12 22 35	58.9	68.8	-3.5		-67.9	90	474	18 05 21	
18 06 50	J1554	12 22 35	58.7	68.6	-3.5		-67.8	-9	474	No stop	
18 10 20	---	12 26 06	59.2	69.0	-3.5		-68.2	201	501	18 06 51	
18 10 20	J1553+5253	12 26 06	59.3	69.2	-3.5		-68.3	-9	501	No stop	
18 11 50	=CAL1	12 27 36	59.6	69.3	-3.4		-68.4	81	513	18 10 21	
18 11 50	J1554	12 27 36	59.4	69.2	-3.5		-68.4	-9	513	No stop	
18 15 20	---	12 31 06	59.9	69.5	-3.4		-68.7	201	540	18 11 51	



Schedule for TORUN (Code Tr )

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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
-----										
--- Sun 6 Jun 2021 Day 157 ---										
18 15 50	J1553+5253	12 31 37	60.1	69.8	-3.4		-68.8	21	540	18 15 50
18 17 20	=CAL1	12 33 07	60.3	69.9	-3.4		-69.0	90	551	18 15 51
18 17 20	J1554	12 33 07	60.2	69.8	-3.4		-68.9	-9	551	No stop
18 20 50	---	12 36 37	60.7	70.1	-3.3		-69.3	201	578	18 17 21
18 20 50	J1553+5253	12 36 37	60.8	70.3	-3.3		-69.4	-9	578	No stop
18 22 20	=CAL1	12 38 08	61.0	70.5	-3.3		-69.5	81	590	18 20 51
18 22 50	J1545+5400	12 38 38	62.6	69.1	-3.1		-72.4	11	590	18 22 50
18 24 50	=CAL2	12 40 38	62.9	69.3	-3.1		-72.6	120	605	18 22 51
18 24 50	J1553+5253	12 40 38	61.4	70.7	-3.2		-69.8	-19	605	No stop
18 26 20	=CAL1	12 42 08	61.6	70.9	-3.2		-69.9	71	617	18 24 51
18 26 20	J1554	12 42 08	61.5	70.7	-3.2		-69.9	-9	617	No stop
18 29 50	---	12 45 39	62.0	71.1	-3.2		-70.3	201	644	18 26 21
18 30 20	J1553+5253	12 46 09	62.2	71.3	-3.1		-70.3	21	644	18 30 20
18 31 50	=CAL1	12 47 39	62.4	71.5	-3.1		-70.5	90	656	18 30 21
18 31 50	J1554	12 47 39	62.3	71.3	-3.1		-70.5	-9	656	No stop
18 35 20	---	12 51 10	62.8	71.7	-3.1		-70.8	201	683	18 31 51
18 35 20	J1553+5253	12 51 10	62.9	71.9	-3.1		-70.9	-9	683	No stop
18 36 50	=CAL1	12 52 40	63.1	72.1	-3.0		-71.0	81	694	18 35 21
18 36 50	J1554	12 52 40	63.0	71.9	-3.0		-71.0	-9	694	No stop
18 40 20	---	12 56 11	63.5	72.3	-3.0		-71.3	201	721	18 36 51
18 40 50	J1553+5253	12 56 41	63.7	72.5	-3.0		-71.4	21	721	18 40 50
18 42 20	=CAL1	12 58 11	63.9	72.7	-2.9		-71.6	90	733	18 40 51
18 42 20	J1554	12 58 11	63.8	72.5	-3.0		-71.5	-9	733	No stop
18 45 50	---	13 01 41	64.3	72.9	-2.9		-71.9	201	760	18 42 21
18 45 50	J1553+5253	13 01 41	64.4	73.0	-2.9		-71.9	-9	760	No stop
18 47 20	=CAL1	13 03 12	64.6	73.2	-2.9		-72.1	81	772	18 45 51
18 47 50	J1545+5400	13 03 42	66.1	71.5	-2.7		-75.3	11	772	18 47 50
18 49 50	=CAL2	13 05 42	66.4	71.7	-2.7		-75.6	120	787	18 47 51
18 49 50	J1553+5253	13 05 42	65.0	73.5	-2.8		-72.3	-19	787	No stop
18 51 20	=CAL1	13 07 12	65.2	73.6	-2.8		-72.5	71	799	18 49 51

Schedule for TORUN (Code Tr )

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ES099A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 6 Jun 2021 Day 157 ---										
18 51 20	J1554	13 07 12	65.1	73.5	-2.8		-72.5	-9	799	No stop
18 54 50	---	13 10 43	65.6	73.8	-2.7		-72.8	201	826	18 51 21
18 55 20	J1553+5253	13 11 13	65.8	74.1	-2.7		-72.9	21	826	18 55 20
18 56 50	=CAL1	13 12 43	66.0	74.2	-2.7		-73.0	90	837	18 55 21
18 56 50	J1554	13 12 43	65.9	74.1	-2.7		-73.0	-9	837	No stop
19 00 20	---	13 16 14	66.4	74.4	-2.6		-73.4	201	864	18 56 51
19 00 20	J1553+5253	13 16 14	66.5	74.6	-2.6		-73.4	-9	864	No stop
19 01 50	=CAL1	13 17 44	66.7	74.8	-2.6		-73.5	81	876	19 00 21
19 01 50	J1554	13 17 44	66.6	74.6	-2.6		-73.5	-9	876	No stop
19 05 20	---	13 21 15	67.1	75.0	-2.6		-73.9	201	903	19 01 51
19 05 50	J1553+5253	13 21 45	67.3	75.2	-2.5		-73.9	21	903	19 05 50
19 07 20	=CAL1	13 23 15	67.5	75.4	-2.5		-74.1	90	915	19 05 51
19 07 20	J1554	13 23 15	67.4	75.2	-2.5		-74.1	-9	915	No stop
19 10 50	---	13 26 46	67.9	75.6	-2.5		-74.4	201	942	19 07 21
19 10 50	J1553+5253	13 26 46	68.0	75.7	-2.5		-74.4	-9	942	No stop
19 12 20	=CAL1	13 28 16	68.2	75.9	-2.4		-74.6	81	953	19 10 51
19 12 50	J1545+5400	13 28 46	69.7	73.7	-2.3		-78.3	11	953	19 12 50
19 14 50	=CAL2	13 30 46	70.0	73.9	-2.3		-78.6	120	969	19 12 51
19 14 50	J1553+5253	13 30 46	68.6	76.2	-2.4		-74.8	-19	969	No stop
19 16 20	=CAL1	13 32 16	68.8	76.3	-2.4		-75.0	71	980	19 14 51
19 16 20	J1554	13 32 16	68.7	76.2	-2.4		-75.0	-9	980	No stop
19 19 50	---	13 35 47	69.2	76.5	-2.3		-75.3	201	1007	19 16 21
19 20 20	J1553+5253	13 36 17	69.4	76.8	-2.3		-75.4	21	1007	19 20 20
19 21 50	=CAL1	13 37 47	69.6	76.9	-2.3		-75.5	90	1019	19 20 21
19 21 50	J1554	13 37 47	69.5	76.8	-2.3		-75.5	-9	1019	No stop
19 25 20	---	13 41 18	70.0	77.1	-2.2		-75.9	201	1046	19 21 51
19 25 20	J1553+5253	13 41 18	70.1	77.3	-2.2		-75.9	-9	1046	No stop
19 26 50	=CAL1	13 42 48	70.4	77.5	-2.2		-76.0	81	1058	19 25 21
19 26 50	J1554	13 42 48	70.2	77.3	-2.2		-76.0	-9	1058	No stop
19 30 20	---	13 46 19	70.8	77.7	-2.1		-76.3	201	1085	19 26 51

Schedule for TORUN (Code Tr )

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ES099A

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Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 6 Jun 2021 Day 157 ---										
19 30 50	J1553+5253	13 46 49	71.0	77.9	-2.1		-76.4	21	1085	19 30 50
19 32 20	=CAL1	13 48 19	71.2	78.1	-2.1		-76.5	90	1096	19 30 51
19 32 20	J1554	13 48 19	71.1	77.9	-2.1		-76.5	-9	1096	No stop
19 35 50	---	13 51 50	71.6	78.3	-2.1		-76.9	201	1123	19 32 21
19 35 50	J1553+5253	13 51 50	71.7	78.5	-2.0		-76.9	-9	1123	No stop
19 37 20	=CAL1	13 53 20	71.9	78.6	-2.0		-77.0	81	1135	19 35 51
19 37 50	J1545+5400	13 53 50	73.4	75.8	-1.9		-81.5	10	1135	19 37 50
19 39 50	=CAL2	13 55 50	73.7	75.9	-1.8		-81.7	120	1150	19 37 51
19 39 50	J1553+5253	13 55 50	72.3	78.9	-2.0		-77.3	-21	1150	No stop
19 41 20	=CAL1	13 57 21	72.5	79.1	-1.9		-77.4	69	1162	19 39 51
19 41 20	J1554	13 57 21	72.4	78.9	-2.0		-77.4	-9	1162	No stop
19 44 50	---	14 00 51	72.9	79.3	-1.9		-77.7	201	1189	19 41 21
19 45 20	J1553+5253	14 01 21	73.1	79.5	-1.9		-77.8	21	1189	19 45 20
19 46 50	=CAL1	14 02 51	73.3	79.7	-1.9		-77.9	90	1201	19 45 21
19 46 50	J1554	14 02 51	73.2	79.5	-1.9		-77.9	-9	1201	No stop
19 50 20	---	14 06 22	73.7	79.9	-1.8		-78.3	201	1228	19 46 51
19 50 20	J1553+5253	14 06 22	73.8	80.1	-1.8		-78.2	-9	1228	No stop
19 51 50	=CAL1	14 07 52	74.1	80.2	-1.8		-78.4	81	1239	19 50 21
19 51 50	J1554	14 07 52	73.9	80.0	-1.8		-78.4	-9	1239	No stop
19 55 20	---	14 11 23	74.5	80.4	-1.7		-78.7	201	1266	19 51 51
19 55 50	J1553+5253	14 11 53	74.7	80.7	-1.7		-78.8	21	1266	19 55 50
19 57 20	=CAL1	14 13 23	74.9	80.8	-1.7		-78.9	90	1278	19 55 51
19 57 20	J1554	14 13 23	74.8	80.6	-1.7		-78.9	-9	1278	No stop
20 00 50	---	14 16 54	75.3	81.0	-1.6		-79.2	201	1305	19 57 21
20 00 50	J1553+5253	14 16 54	75.4	81.2	-1.6		-79.2	-9	1305	No stop
20 02 20	=CAL1	14 18 24	75.6	81.4	-1.6		-79.3	81	1317	20 00 51
20 03 50	3C345	14 19 54	62.3	104.1	-2.4		-49.3	26	1317	20 03 50
20 07 50	---	14 23 55	62.9	105.2	-2.3		-48.9	240	1347	20 03 51
20 09 20	J1553+5253	14 25 25	76.7	82.2	-1.5		-80.0	25	1347	20 09 20
20 11 10	=CAL1	14 27 15	76.9	82.4	-1.5		-80.1	110	1362	20 09 21

Schedule for TORUN (Code Tr )

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ES099A

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 6 Jun 2021 Day 157 ---										
20 11 40	J1545+5400	14 27 46	78.3	77.9	-1.3		-86.2	6	1362	20 11 40
20 13 40	=CAL2	14 29 46	78.6	78.0	-1.3		-86.5	120	1377	20 11 41
20 13 40	J1553+5253	14 29 46	77.3	82.7	-1.4		-80.4	-24	1377	No stop
20 15 10	=CAL1	14 31 16	77.5	82.9	-1.4		-80.5	66	1389	20 13 41
20 15 10	J1554	14 31 16	77.4	82.6	-1.4		-80.5	-9	1389	No stop
20 18 40	---	14 34 47	77.9	83.0	-1.3		-80.9	201	1416	20 15 11
20 19 10	J1553+5253	14 35 17	78.1	83.3	-1.3		-80.8	20	1416	20 19 10
20 20 40	=CAL1	14 36 47	78.4	83.5	-1.3		-81.0	90	1427	20 19 11
20 20 40	J1554	14 36 47	78.2	83.3	-1.3		-81.0	-9	1427	No stop
20 24 10	---	14 40 18	78.8	83.7	-1.2		-81.3	201	1454	20 20 41
20 24 10	J1553+5253	14 40 18	78.9	83.9	-1.2		-81.2	-10	1454	No stop
20 25 40	=CAL1	14 41 48	79.1	84.1	-1.2		-81.4	80	1466	20 24 11
20 25 40	J1554	14 41 48	79.0	83.8	-1.2		-81.5	-10	1466	No stop
20 29 10	---	14 45 18	79.5	84.3	-1.2		-81.8	200	1493	20 25 41
20 29 40	J1553+5253	14 45 49	79.7	84.6	-1.1		-81.7	20	1493	20 29 40
20 31 10	=CAL1	14 47 19	79.9	84.8	-1.1		-81.8	90	1505	20 29 41
20 31 10	J1554	14 47 19	79.8	84.5	-1.1		-81.9	-10	1505	No stop
20 34 40	---	14 50 49	80.3	84.9	-1.1		-82.2	200	1532	20 31 11
20 34 40	J1553+5253	14 50 49	80.5	85.2	-1.1		-82.1	-10	1532	No stop
20 36 10	=CAL1	14 52 20	80.7	85.4	-1.0		-82.2	80	1543	20 34 41
20 36 40	J1545+5400	14 52 50	82.0	78.5	-0.9		-90.7	1	1543	20 36 40
20 38 40	=CAL2	14 54 50	82.3	78.5	-0.9		-91.1	120	1559	20 36 41
20 38 40	J1553+5253	14 54 50	81.1	85.7	-1.0		-82.4	-30	1559	No stop
20 40 10	=CAL1	14 56 20	81.3	85.9	-1.0		-82.5	60	1570	20 38 41
20 40 10	J1554	14 56 20	81.2	85.6	-1.0		-82.6	-10	1570	No stop
20 43 40	---	14 59 51	81.7	86.1	-0.9		-82.9	200	1597	20 40 11
20 44 10	J1553+5253	15 00 21	81.9	86.5	-0.9		-82.8	20	1597	20 44 10
20 45 40	=CAL1	15 01 51	82.1	86.7	-0.9		-82.9	90	1609	20 44 11
20 45 40	J1554	15 01 51	82.0	86.3	-0.9		-83.0	-10	1609	No stop
20 49 10	---	15 05 22	82.5	86.8	-0.8		-83.3	200	1636	20 45 41

Schedule for TORUN (Code Tr )

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ES099A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 6 Jun 2021 Day 157 ---										
20 49 10	J1553+5253	15 05 22	82.6	87.1	-0.8		-83.1	-11	1636	No stop
20 50 40	=CAL1	15 06 52	82.9	87.4	-0.8		-83.2	79	1648	20 49 11
20 50 40	J1554	15 06 52	82.7	87.0	-0.8		-83.3	-10	1648	No stop
20 54 10	---	15 10 23	83.3	87.5	-0.7		-83.6	200	1675	20 50 41
20 54 40	J1553+5253	15 10 53	83.5	88.0	-0.7		-83.4	19	1675	20 54 40
20 56 10	=CAL1	15 12 23	83.7	88.2	-0.7		-83.4	90	1686	20 54 41
20 56 10	J1554	15 12 23	83.6	87.8	-0.7		-83.7	-11	1686	No stop
20 59 40	---	15 15 53	84.1	88.3	-0.7		-83.8	199	1713	20 56 11
20 59 40	J1553+5253	15 15 53	84.2	88.8	-0.6		-83.6	-11	1713	No stop
21 01 10	=CAL1	15 17 24	84.4	89.0	-0.6		-83.6	79	1725	20 59 41
21 01 40	J1545+5400	15 17 54	85.7	75.7	-0.5		-98.5	-12	1725	21 01 40
21 03 40	=CAL2	15 19 54	86.0	75.1	-0.4		-99.6	108	1740	21 01 41
21 03 40	J1553+5253	15 19 54	84.8	89.5	-0.6		-83.7	-44	1740	No stop
21 05 10	=CAL1	15 21 24	85.0	89.8	-0.5		-83.7	46	1752	21 03 41
21 05 10	J1554	15 21 24	84.9	89.2	-0.6		-84.0	-11	1752	No stop
21 08 40	---	15 24 55	85.4	89.9	-0.5		-84.1	199	1779	21 05 11
21 09 10	J1553+5253	15 25 25	85.6	90.6	-0.5		-83.7	18	1779	21 09 10
21 10 40	=CAL1	15 26 55	85.9	90.9	-0.5		-83.6	90	1791	21 09 11
21 10 40	J1554	15 26 55	85.7	90.3	-0.5		-84.1	-12	1791	No stop
21 14 10	---	15 30 26	86.3	91.1	-0.4		-84.0	198	1818	21 10 41
21 14 10	J1553+5253	15 30 26	86.4	91.8	-0.4		-83.4	-13	1818	No stop
21 15 40	=CAL1	15 31 56	86.6	92.2	-0.4		-83.3	77	1829	21 14 11
21 15 40	J1554	15 31 56	86.5	91.5	-0.4		-83.9	-13	1829	No stop
21 19 10	---	15 35 27	87.0	92.5	-0.3		-83.6	197	1856	21 15 41
21 19 40	J1553+5253	15 35 57	87.2	93.6	-0.3		-82.7	16	1856	21 19 40
21 21 10	=CAL1	15 37 27	87.4	94.2	-0.3		-82.4	90	1868	21 19 41
21 21 10	J1554	15 37 27	87.3	93.2	-0.3		-83.3	-14	1868	No stop
21 24 40	---	15 40 58	87.8	94.7	-0.2		-82.4	196	1895	21 21 11
21 24 40	J1553+5253	15 40 58	88.0	96.1	-0.2		-81.2	-16	1895	No stop
21 26 10	=CAL1	15 42 28	88.2	97.2	-0.2		-80.4	74	1907	21 24 41

Schedule for TORUN (Code Tr )

Page 9

ES099A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 6 Jun 2021 Day 157 ---										
21 28 40	J1553+5253	15 44 58	88.6	99.7	-0.2		-78.5	141	1907	21 28 40
21 30 10	=CAL1	15 46 28	88.8	101.8	-0.1		-76.6	90	1918	21 28 41
21 30 10	J1554	15 46 28	88.7	99.1	-0.1		-79.1	-19	1918	No stop
21 33 40	---	15 49 59	89.2	105.9	-0.1		-73.0	191	1945	21 30 11
21 34 10	J1553+5253	15 50 29	89.4	114.2	-0.1		-65.0	-1	1945	21 34 10
21 35 40	=CAL1	15 51 59	89.6	126.8	-0.0		-52.8	89	1957	21 34 11
21 35 40	J1554	15 51 59	89.5	115.3	-0.1		-64.1	-29	1957	No stop
21 39 10	---	15 55 30	89.8	190.7	0.0		10.6	181	1984	21 35 41
21 40 40	J1554	15 57 00	89.6	229.5	0.0		49.2	-1	1984	21 40 40
21 44 10	---	16 00 31	89.2	254.3	0.1		73.3	209	2011	21 40 41
21 44 40	J1553+5253	16 01 01	89.0	256.0	0.1		74.7	16	2011	21 44 40
21 46 10	=CAL1	16 02 31	88.7	258.8	0.1		77.1	90	2022	21 44 41
21 46 10	J1554	16 02 31	88.9	258.8	0.1		77.4	-9	2022	No stop
21 49 40	---	16 06 02	88.4	263.0	0.2		80.8	201	2050	21 46 11
21 49 40	J1553+5253	16 06 02	88.2	262.7	0.2		80.3	-9	2050	No stop
21 51 10	=CAL1	16 07 32	88.0	263.8	0.2		81.1	81	2061	21 49 41
21 51 40	J1545+5400	16 08 02	86.7	287.0	0.4		102.6	-31	2061	21 51 40
21 53 40	=CAL2	16 10 02	86.4	286.0	0.4		101.2	89	2077	21 51 41
21 53 40	J1553+5253	16 10 02	87.6	265.2	0.3		82.1	-56	2077	No stop
21 55 10	=CAL1	16 11 33	87.4	265.9	0.3		82.5	34	2088	21 53 41
21 55 10	J1554	16 11 33	87.5	266.2	0.3		83.0	-10	2088	No stop
21 58 40	---	16 15 03	87.0	267.5	0.3		83.6	200	2115	21 55 11
21 59 10	J1553+5253	16 15 33	86.8	267.4	0.4		83.2	20	2115	21 59 10
22 00 40	=CAL1	16 17 03	86.6	267.9	0.4		83.3	90	2127	21 59 11
22 00 40	J1554	16 17 03	86.7	268.1	0.4		83.8	-10	2127	No stop
22 04 10	---	16 20 34	86.2	269.1	0.4		84.0	200	2154	22 00 41
22 04 10	J1553+5253	16 20 34	86.0	268.8	0.4		83.6	-9	2154	No stop
22 05 40	=CAL1	16 22 04	85.8	269.2	0.5		83.6	81	2165	22 04 11
22 05 40	J1554	16 22 04	86.0	269.4	0.4		84.0	-9	2165	No stop
22 09 10	---	16 25 35	85.4	270.1	0.5		84.1	201	2193	22 05 41

Schedule for TORUN (Code Tr )

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ES099A

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 6 Jun 2021 Day 157 ---										
22 09 40	J1553+5253	16 26 05	85.2	270.0	0.5		83.7	21	2193	22 09 40
22 11 10	=CAL1	16 27 35	85.0	270.3	0.6		83.7	90	2204	22 09 41
22 11 10	J1554	16 27 35	85.1	270.5	0.5		84.0	-9	2204	No stop
22 14 40	---	16 31 06	84.6	271.1	0.6		84.0	201	2231	22 11 11
22 14 40	J1553+5253	16 31 06	84.5	271.0	0.6		83.6	-9	2231	No stop
22 16 10	=CAL1	16 32 36	84.2	271.2	0.6		83.6	81	2243	22 14 41
22 16 40	J1545+5400	16 33 06	83.0	281.7	0.8		92.3	-6	2243	22 16 40
22 18 40	=CAL2	16 35 06	82.7	281.6	0.8		91.8	114	2258	22 16 41
22 18 40	J1553+5253	16 35 06	83.9	271.6	0.7		83.5	-35	2258	No stop
22 20 10	=CAL1	16 36 37	83.6	271.9	0.7		83.4	55	2270	22 18 41
22 20 10	J1554	16 36 37	83.8	272.0	0.7		83.7	-9	2270	No stop
22 23 40	---	16 40 07	83.2	272.5	0.7		83.6	201	2297	22 20 11
22 24 10	J1553+5253	16 40 37	83.0	272.5	0.8		83.2	21	2297	22 24 10
22 25 40	=CAL1	16 42 08	82.8	272.7	0.8		83.1	90	2308	22 24 11
22 25 40	J1554	16 42 08	82.9	272.8	0.8		83.4	-9	2308	No stop
22 29 10	---	16 45 38	82.4	273.3	0.8		83.2	201	2335	22 25 41
22 29 10	J1553+5253	16 45 38	82.3	273.2	0.9		82.9	-9	2335	No stop
22 30 40	=CAL1	16 47 08	82.1	273.4	0.9		82.8	81	2347	22 29 11
22 30 40	J1554	16 47 08	82.2	273.5	0.9		83.1	-9	2347	No stop
22 34 10	---	16 50 39	81.7	274.0	0.9		82.9	201	2374	22 30 41
22 34 40	J1553+5253	16 51 09	81.5	273.9	0.9		82.6	21	2374	22 34 40
22 36 10	=CAL1	16 52 39	81.2	274.1	1.0		82.5	90	2386	22 34 41
22 36 10	J1554	16 52 39	81.4	274.2	1.0		82.7	-9	2386	No stop
22 39 40	---	16 56 10	80.8	274.7	1.0		82.5	201	2413	22 36 11
22 39 40	J1553+5253	16 56 10	80.7	274.6	1.0		82.2	-9	2413	No stop
22 41 10	=CAL1	16 57 40	80.5	274.8	1.1		82.1	81	2424	22 39 41
22 41 40	J1545+5400	16 58 10	79.3	281.8	1.2		87.3	1	2424	22 41 40
22 43 40	=CAL2	17 00 11	79.0	281.8	1.2		87.0	120	2440	22 41 41
22 43 40	J1553+5253	17 00 11	80.1	275.1	1.1		81.9	-28	2440	No stop
22 45 10	=CAL1	17 01 41	79.9	275.3	1.1		81.8	62	2451	22 43 41

Schedule for TORUN (Code Tr )  
 ES099A

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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
-----										
--- Sun 6 Jun 2021 Day 157 ---										
22 45 10	J1554	17 01 41	80.0	275.3	1.1		82.0	-9	2451	No stop
22 48 40	---	17 05 11	79.5	275.8	1.2		81.7	201	2478	22 45 11
22 49 10	J1553+5253	17 05 41	79.3	275.7	1.2		81.5	21	2478	22 49 10
22 50 40	=CAL1	17 07 12	79.1	275.9	1.2		81.3	90	2490	22 49 11
22 50 40	J1554	17 07 12	79.2	276.0	1.2		81.6	-9	2490	No stop
22 54 10	---	17 10 42	78.7	276.4	1.3		81.3	201	2517	22 50 41
22 54 10	J1553+5253	17 10 42	78.5	276.3	1.3		81.1	-9	2517	No stop
22 55 40	=CAL1	17 12 13	78.3	276.5	1.3		80.9	81	2529	22 54 11
22 57 10	2007+777	17 13 43	60.9	377.0	-2.9		-122.9	-126	2529	22 57 10
23 01 10	---	17 17 43	61.1	376.8	-2.8		-124.1	114	2560	22 57 11

SETUP FILE INFORMATION:

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

==== Setup file: sess221.L1024

Setup group: 10	Station: TORUN	Total bit rate: 1024
Format: VDIF	Bits per sample: 2	Sample rate: 64.000
Number of channels: 8	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
Net SB=	L	L	U	U	L	L	U	U
IF SB =	L	L	L	L	L	L	L	L
Pol. =	RCP	LCP	RCP	LCP	RCP	LCP	RCP	LCP
BBC =	1	9	1	9	2	10	2	10
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: 9 Setup file default. Used with PCAL = off  
 LO sum= 1626.49 1626.49 1626.49 1626.49 1690.49 1690.49 1690.49 1690.49  
 BBC fr= 673.51 673.51 673.51 673.51 609.51 609.51 609.51 609.51  
 Bandwd= 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00  
 Matching frequency sets: 9

Track assignments are:  
 track1= 1, 2, 3, 4, 5, 6, 7, 8  
 barrel=roll\_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* J1554	15 53 19.045538	* 15 54 37.260000	15 55 12.513975	0.00
TAR	53 04 09.92639	* 52 55 26.40000	52 51 48.39231	0.00
	Target source			
* J1553+5253	15 52 24.944768	* 15 53 43.425700	15 54 18.788173	0.68
CAL1	53 02 20.82178	* 52 53 33.94700	52 49 54.58975	0.75
	Main calibrator, S~50 mJy, 0.14 deg			
* J1545+5400	15 44 26.761063	* 15 45 43.825865	15 46 18.637185	0.25
CAL2	54 09 58.98215	* 54 00 42.75889	53 56 51.64782	0.15
	Second calibrator, 100+ mJy, 1.7 deg			
* 3C286	13 28 49.657769	* 13 31 08.288061	13 32 07.717473	0.17
J1331+3030	30 45 58.64066	* 30 30 32.95930	30 24 08.97084	0.16
1328+307	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
J1331+30	GSFC 2016a X/S astro solution, 269 observations.			
* 3C345	16 41 17.606229	* 16 42 58.809967	16 43 43.284482	0.79
J1642+3948	39 54 10.81492	* 39 48 36.99399	39 46 15.47226	0.59
1641+399	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
J1642+39	GSFC 2016a X/S astro solution, 53724 observations.			
* 2007+777	20 07 20.430197	* 20 05 30.998526	20 04 47.568008	0.04
J2005+7752	77 43 58.12301	* 77 52 43.24754	77 56 06.33303	0.01
J2005+77	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 15674 observations.			

**n21c2tr**

NETWORK MONITORING EXPERIMENT  
PI: *Dhanya Nair*

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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 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 10 Jun 2021 Day 161 ---											
Next scan frequencies:		4830.49	4830.49	4830.49	4830.49	4830.49	4830.49	4894.49	4894.49	4894.49	4894.49
		4958.49	4958.49	4958.49	4958.49	4958.49	4958.49	5022.49	5022.49	5022.49	5022.49
Next BBC frequencies:		630.49	630.49	630.49	630.49	630.49	630.49	694.49	694.49	694.49	694.49
		758.49	758.49	758.49	758.49	758.49	758.49	822.49	822.49	822.49	822.49
Next scan bandwidths:		32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
		32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
12 00 00	J0854+2006	06 30 31	46.7	125.6	-2.4		-31.3	0	0	12 00 00	
12 12 00	=OJ287	06 42 33	48.2	129.2	-2.2		-29.7	720	185	12 00 01	
12 17 00	J0854+2006	06 47 34	48.7	130.8	-2.1		-28.9	293	185	12 17 00	
12 27 00	=OJ287	06 57 35	49.9	134.0	-2.0		-27.4	600	340	12 17 01	
12 32 00	J0854+2006	07 02 36	50.4	135.6	-1.9		-26.6	293	340	12 32 00	
12 42 00	=OJ287	07 12 38	51.4	139.0	-1.7		-24.8	600	495	12 32 01	
12 47 00	J0854+2006	07 17 39	51.9	140.7	-1.6		-23.9	293	495	12 47 00	
12 57 00	=OJ287	07 27 40	52.8	144.2	-1.5		-21.9	600	649	12 47 01	
13 02 00	J0854+2006	07 32 41	53.2	146.1	-1.4		-20.9	293	649	13 02 00	
13 12 00	=OJ287	07 42 43	54.0	149.8	-1.2		-18.8	600	804	13 02 01	
13 17 00	J0854+2006	07 47 44	54.4	151.7	-1.1		-17.6	292	804	13 17 00	
13 27 00	=OJ287	07 57 45	55.1	155.6	-1.0		-15.3	600	958	13 17 01	
13 32 00	J1058+0133	08 02 46	26.8	128.7	-2.9		-28.0	179	958	13 32 00	
13 42 00	=1055+018	08 12 48	27.9	131.2	-2.8		-26.9	600	1113	13 32 01	
13 47 00	J1058+0133	08 17 49	28.5	132.4	-2.7		-26.3	293	1113	13 47 00	
13 57 00	=1055+018	08 27 50	29.6	135.0	-2.5		-25.1	600	1268	13 47 01	
14 02 00	J1058+0133	08 32 51	30.1	136.3	-2.4		-24.5	293	1268	14 02 00	
14 12 00	=1055+018	08 42 53	31.1	139.0	-2.3		-23.2	600	1422	14 02 01	

14 17 00	J1058+0133	08 47 54	31.6	140.4	-2.2	-22.5	293	1422	14 17 00
14 27 00	=1055+018	08 57 55	32.5	143.1	-2.0	-21.1	600	1577	14 17 01
14 32 00	J1058+0133	09 02 56	33.0	144.5	-1.9	-20.4	293	1577	14 32 00
14 42 00	=1055+018	09 12 58	33.8	147.3	-1.8	-18.9	600	1731	14 32 01
14 47 00	J1058+0133	09 17 58	34.2	148.8	-1.7	-18.2	293	1731	14 47 00
15 00 00	=1055+018	09 31 01	35.2	152.5	-1.5	-16.1	780	1932	14 47 01

SETUP FILE INFORMATION:

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

=====  
 ===== Setup file: sess221.C2048

Setup group: 11	Station: TORUN	Total bit rate: 2048
Format: VDIF	Bits per sample: 2	Sample rate: 64.000
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	9	1	9	2	10	2	10	10
	3	11	3	11	4	12	4	12	12
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: 9 Setup file default. Used with PCAL = off
LO sum= 4830.49 4830.49 4830.49 4830.49 4894.49 4894.49 4894.49 4894.49
        4958.49 4958.49 4958.49 4958.49 5022.49 5022.49 5022.49 5022.49
BBC fr= 630.49 630.49 630.49 630.49 694.49 694.49 694.49 694.49
        758.49 758.49 758.49 758.49 822.49 822.49 822.49 822.49
Bandwd= 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00
        32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00
Matching frequency sets: 9

```

Track assignments are:

```

track1= 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16
barrel=roll_off

```

#### POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
OJ287	08 51 57.250615	* 08 54 48.874927	08 56 00.413968	0.00
* J0854+2006	20 17 58.41740	* 20 06 30.64085	20 01 43.51705	0.00
0851+202	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
J0854+20	GSFC 2016a X/S astro solution, 270807 observations.			
1055+018	10 55 55.313730	* 10 58 29.605208	10 59 34.590047	0.01
* J1058+0133	01 50 03.53722	* 01 33 58.82372	01 27 10.32628	0.01
J1058+01	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
	GSFC 2016a X/S astro solution, 8263 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)
J0854+2006	50.9
J1058+0133	85.6

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

THE SUBARCSEC-SCALE RADIO EMISSION IN IRAS17020+4544  
PI: *Salome*

Address: INAOE

Observing mode: Continuum

Schedule for TORUN (Code Tr ) Page 2

The subarcsec-scale radio emission in IRAS17020+4544

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 10 Jun 2021 Day 161 ---										
Next scan frequencies:		4958.49	4958.49	4958.49	4958.49	5022.49	5022.49	5022.49	5022.49	5022.49
Next BBC frequencies:		758.49	758.49	758.49	758.49	822.49	822.49	822.49	822.49	822.49
Next scan bandwidths:		32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
-----										
16 00 00	0Q208	10 31 10	43.5	100.0	-3.6		-42.2	0	0	16 00 00
16 05 00	---	10 36 11	44.3	101.2	-3.5		-42.0	300	39	16 00 01
16 07 00	3C345	10 38 12	30.0	62.6	-6.1		-43.9	28	39	16 07 00
16 12 00	---	10 43 12	30.7	63.4	-6.0		-44.3	300	77	16 07 01
16 13 00	J1707+4536	10 44 13	31.8	55.0	-6.4		-44.7	28	77	16 13 00
16 15 00	=1705+456	10 46 13	32.1	55.3	-6.4		-44.9	120	93	16 13 01
16 15 20	IRAS17020+45	10 46 33	32.7	55.9	-6.3		-45.3	7	93	16 15 20
16 18 20	---	10 49 33	33.0	56.3	-6.2		-45.6	180	116	16 15 21
16 18 40	J1707+4536	10 49 54	32.5	55.9	-6.3		-45.2	7	116	16 18 40
16 20 20	=1705+456	10 51 34	32.8	56.1	-6.3		-45.4	100	129	16 18 41
16 20 40	IRAS17020+45	10 51 54	33.3	56.7	-6.2		-45.9	6	129	16 20 40
16 23 40	---	10 54 54	33.7	57.1	-6.2		-46.2	180	152	16 20 41
16 24 00	J1707+4536	10 55 14	33.2	56.7	-6.2		-45.8	7	152	16 24 00
16 25 40	=1705+456	10 56 55	33.4	56.9	-6.2		-45.9	100	165	16 24 01
16 26 00	IRAS17020+45	10 57 15	34.0	57.4	-6.1		-46.4	6	165	16 26 00
16 29 00	---	11 00 15	34.4	57.9	-6.1		-46.7	180	188	16 26 01
16 29 20	J1707+4536	11 00 35	33.9	57.4	-6.1		-46.3	7	188	16 29 20
16 31 00	=1705+456	11 02 16	34.1	57.7	-6.1		-46.5	100	201	16 29 21
16 31 20	IRAS17020+45	11 02 36	34.7	58.2	-6.0		-46.9	6	201	16 31 20
16 34 20	---	11 05 36	35.1	58.6	-6.0		-47.2	180	224	16 31 21
16 34 40	J1707+4536	11 05 56	34.6	58.2	-6.0		-46.8	7	224	16 34 40
16 36 20	=1705+456	11 07 36	34.8	58.5	-6.0		-47.0	100	237	16 34 41
16 36 40	IRAS17020+45	11 07 56	35.4	59.0	-5.9		-47.4	6	237	16 36 40
16 39 40	---	11 10 57	35.8	59.4	-5.9		-47.7	180	260	16 36 41
16 40 00	J1707+4536	11 11 17	35.3	59.0	-5.9		-47.3	7	260	16 40 00
16 41 40	=1705+456	11 12 57	35.5	59.2	-5.9		-47.5	100	273	16 40 01

Schedule for TORUN (Code Tr ) Page 3

The subarcsec-scale radio emission in IRAS17020+4544

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 10 Jun 2021	Day161					---				
16 42 00	IRAS17020+45	11 13 17	36.1	59.8	-5.8		-47.9	6	273	16 42 00	
16 45 00	---	11 16 18	36.4	60.2	-5.8		-48.2	180	296	16 42 01	
16 45 20	J1707+4536	11 16 38	35.9	59.8	-5.9		-47.8	7	296	16 45 20	
16 47 00	=1705+456	11 18 18	36.2	60.0	-5.8		-48.0	100	309	16 45 21	
16 47 20	IRAS17020+45	11 18 38	36.7	60.5	-5.8		-48.4	6	309	16 47 20	
16 50 20	---	11 21 39	37.1	61.0	-5.7		-48.7	180	332	16 47 21	
16 50 40	J1707+4536	11 21 59	36.6	60.5	-5.8		-48.3	7	332	16 50 40	
16 52 20	=1705+456	11 23 39	36.9	60.8	-5.7		-48.5	100	345	16 50 41	
16 52 40	IRAS17020+45	11 23 59	37.5	61.3	-5.7		-48.9	6	345	16 52 40	
16 55 40	---	11 27 00	37.8	61.7	-5.6		-49.2	180	368	16 52 41	
16 56 00	J1707+4536	11 27 20	37.3	61.3	-5.7		-48.8	7	368	16 56 00	
16 57 40	=1705+456	11 29 00	37.6	61.6	-5.6		-49.0	100	381	16 56 01	
16 58 00	IRAS17020+45	11 29 20	38.2	62.1	-5.6		-49.4	6	381	16 58 00	
17 01 00	---	11 32 20	38.6	62.5	-5.5		-49.7	180	404	16 58 01	
17 01 20	J1707+4536	11 32 41	38.1	62.1	-5.6		-49.3	7	404	17 01 20	
17 03 00	=1705+456	11 34 21	38.3	62.3	-5.6		-49.4	100	417	17 01 21	
17 03 20	IRAS17020+45	11 34 41	38.9	62.9	-5.5		-49.9	6	417	17 03 20	
17 06 20	---	11 37 41	39.3	63.3	-5.4		-50.1	180	441	17 03 21	
17 06 40	J1707+4536	11 38 01	38.8	62.9	-5.5		-49.8	7	441	17 06 40	
17 08 20	=1705+456	11 39 42	39.0	63.1	-5.5		-49.9	100	453	17 06 41	
17 08 40	IRAS17020+45	11 40 02	39.6	63.6	-5.4		-50.3	6	453	17 08 40	
17 11 40	---	11 43 02	40.0	64.1	-5.4		-50.6	180	477	17 08 41	
17 12 00	J1707+4536	11 43 22	39.5	63.6	-5.4		-50.2	7	477	17 12 00	
17 13 40	=1705+456	11 45 03	39.7	63.9	-5.4		-50.4	100	490	17 12 01	
17 14 00	IRAS17020+45	11 45 23	40.3	64.4	-5.3		-50.8	6	490	17 14 00	
17 17 00	---	11 48 23	40.7	64.8	-5.3		-51.0	180	513	17 14 01	
17 17 20	J1707+4536	11 48 43	40.2	64.4	-5.3		-50.7	6	513	17 17 20	
17 19 00	=1705+456	11 50 23	40.4	64.7	-5.3		-50.8	100	526	17 17 21	
17 19 20	IRAS17020+45	11 50 43	41.0	65.2	-5.2		-51.2	6	526	17 19 20	
17 22 20	---	11 53 44	41.4	65.6	-5.2		-51.5	180	549	17 19 21	
17 22 40	J1707+4536	11 54 04	40.9	65.2	-5.2		-51.1	6	549	17 22 40	
17 24 20	=1705+456	11 55 44	41.2	65.4	-5.2		-51.3	100	562	17 22 41	

The subarcsec-scale radio emission in IRAS17020+4544

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 10 Jun 2021 Day 161 ---										
17 24 40	IRAS17020+45	11 56 04	41.8	66.0	-5.1		-51.7	6	562	17 24 40
17 27 40	---	11 59 05	42.2	66.4	-5.1		-51.9	180	585	17 24 41
17 28 00	J1707+4536	11 59 25	41.7	66.0	-5.1		-51.6	6	585	17 28 00
17 29 40	=1705+456	12 01 05	41.9	66.2	-5.1		-51.7	100	598	17 28 01
17 30 00	IRAS17020+45	12 01 25	42.5	66.7	-5.0		-52.1	6	598	17 30 00
17 33 00	---	12 04 26	42.9	67.2	-5.0		-52.4	180	621	17 30 01
17 33 20	J1707+4536	12 04 46	42.4	66.8	-5.1		-52.0	6	621	17 33 20
17 35 00	=1705+456	12 06 26	42.6	67.0	-5.0		-52.2	100	634	17 33 21
17 35 20	IRAS17020+45	12 06 46	43.2	67.5	-5.0		-52.5	6	634	17 35 20
17 38 20	---	12 09 47	43.7	68.0	-4.9		-52.8	180	657	17 35 21
17 38 40	J1707+4536	12 10 07	43.1	67.5	-5.0		-52.4	6	657	17 38 40
17 40 20	=1705+456	12 11 47	43.4	67.8	-4.9		-52.6	100	670	17 38 41
17 40 40	IRAS17020+45	12 12 07	44.0	68.3	-4.9		-53.0	6	670	17 40 40
17 43 40	---	12 15 07	44.4	68.7	-4.8		-53.2	180	693	17 40 41
17 44 00	J1707+4536	12 15 28	43.9	68.3	-4.9		-52.9	6	693	17 44 00
17 45 40	=1705+456	12 17 08	44.1	68.6	-4.8		-53.0	100	706	17 44 01
17 46 00	IRAS17020+45	12 17 28	44.7	69.1	-4.8		-53.4	6	706	17 46 00
17 49 00	---	12 20 28	45.2	69.5	-4.7		-53.6	180	729	17 46 01
17 49 20	J1707+4536	12 20 48	44.6	69.1	-4.8		-53.3	6	729	17 49 20
17 51 00	=1705+456	12 22 29	44.9	69.3	-4.8		-53.4	100	742	17 49 21
17 51 20	IRAS17020+45	12 22 49	45.5	69.9	-4.7		-53.8	6	742	17 51 20
17 54 20	---	12 25 49	45.9	70.3	-4.6		-54.0	180	765	17 51 21
17 54 40	J1707+4536	12 26 09	45.4	69.9	-4.7		-53.7	6	765	17 54 40
17 56 20	=1705+456	12 27 50	45.6	70.1	-4.7		-53.8	100	778	17 54 41
17 56 40	IRAS17020+45	12 28 10	46.2	70.7	-4.6		-54.1	6	778	17 56 40
17 59 40	---	12 31 10	46.7	71.1	-4.5		-54.4	180	801	17 56 41
18 00 00	J1707+4536	12 31 30	46.1	70.7	-4.6		-54.1	6	801	18 00 00
18 01 40	=1705+456	12 33 10	46.4	70.9	-4.6		-54.2	100	814	18 00 01
18 02 00	IRAS17020+45	12 33 30	47.0	71.5	-4.5		-54.5	6	814	18 02 00
18 05 00	---	12 36 31	47.4	71.9	-4.5		-54.7	180	837	18 02 01



Schedule for TORUN (Code Tr ) Page 5

The subarcsec-scale radio emission in IRAS17020+4544

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 10 Jun 2021 Day 161 ---										
18 05 20	J1707+4536	12 36 51	46.9	71.5	-4.5		-54.4	6	837	18 05 20
18 07 00	=1705+456	12 38 31	47.1	71.7	-4.5		-54.5	100	850	18 05 21
18 07 20	IRAS17020+45	12 38 51	47.8	72.2	-4.4		-54.9	6	850	18 07 20
18 10 20	---	12 41 52	48.2	72.7	-4.4		-55.1	180	873	18 07 21
18 10 40	J1707+4536	12 42 12	47.7	72.3	-4.4		-54.8	6	873	18 10 40
18 12 20	=1705+456	12 43 52	47.9	72.5	-4.4		-54.9	100	886	18 10 41
18 12 40	IRAS17020+45	12 44 12	48.5	73.1	-4.3		-55.3	6	886	18 12 40
18 15 40	---	12 47 13	49.0	73.5	-4.3		-55.5	180	909	18 12 41
18 16 00	J1707+4536	12 47 33	48.4	73.1	-4.3		-55.2	6	909	18 16 00
18 17 40	=1705+456	12 49 13	48.7	73.3	-4.3		-55.3	100	922	18 16 01
18 18 00	IRAS17020+45	12 49 33	49.3	73.9	-4.2		-55.6	6	922	18 18 00
18 21 00	---	12 52 34	49.7	74.3	-4.2		-55.8	180	946	18 18 01
18 21 20	J1707+4536	12 52 54	49.2	73.9	-4.3		-55.5	6	946	18 21 20
18 23 00	=1705+456	12 54 34	49.4	74.1	-4.2		-55.6	100	958	18 21 21
18 23 20	IRAS17020+45	12 54 54	50.1	74.7	-4.2		-55.9	6	958	18 23 20
18 26 20	---	12 57 54	50.5	75.1	-4.1		-56.1	180	982	18 23 21
18 26 40	J1707+4536	12 58 15	50.0	74.7	-4.2		-55.8	6	982	18 26 40
18 28 20	=1705+456	12 59 55	50.2	75.0	-4.1		-55.9	100	994	18 26 41
18 28 40	IRAS17020+45	13 00 15	50.8	75.5	-4.1		-56.3	6	994	18 28 40
18 31 40	---	13 03 15	51.3	76.0	-4.0		-56.4	180	1018	18 28 41
18 32 00	J1707+4536	13 03 35	50.7	75.5	-4.1		-56.2	6	1018	18 32 00
18 33 40	=1705+456	13 05 16	51.0	75.8	-4.0		-56.3	100	1031	18 32 01
18 34 00	IRAS17020+45	13 05 36	51.6	76.3	-4.0		-56.6	6	1031	18 34 00
18 37 00	---	13 08 36	52.1	76.8	-3.9		-56.7	180	1054	18 34 01
18 37 20	J1707+4536	13 08 56	51.5	76.3	-4.0		-56.5	6	1054	18 37 20
18 39 00	=1705+456	13 10 37	51.8	76.6	-4.0		-56.6	100	1067	18 37 21
18 39 20	IRAS17020+45	13 10 57	52.4	77.1	-3.9		-56.9	6	1067	18 39 20
18 42 20	---	13 13 57	52.8	77.6	-3.8		-57.0	180	1090	18 39 21
18 42 40	J1707+4536	13 14 17	52.3	77.2	-3.9		-56.8	6	1090	18 42 40
18 44 20	=1705+456	13 15 57	52.5	77.4	-3.9		-56.9	100	1103	18 42 41

Schedule for TORUN (Code Tr ) Page 6

The subarcsec-scale radio emission in IRAS17020+4544

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 10 Jun 2021 Day 161 ---										
18 44 40	IRAS17020+45	13 16 17	53.2	78.0	-3.8		-57.2	6	1103	18 44 40
18 47 40	---	13 19 18	53.6	78.5	-3.7		-57.3	180	1126	18 44 41
18 48 00	J1707+4536	13 19 38	53.1	78.0	-3.8		-57.1	6	1126	18 48 00
18 49 40	=1705+456	13 21 18	53.3	78.3	-3.8		-57.1	100	1139	18 48 01
18 50 00	IRAS17020+45	13 21 38	54.0	78.8	-3.7		-57.4	6	1139	18 50 00
18 53 00	---	13 24 39	54.4	79.3	-3.7		-57.6	180	1162	18 50 01
18 53 20	J1707+4536	13 24 59	53.9	78.9	-3.7		-57.3	6	1162	18 53 20
18 55 00	=1705+456	13 26 39	54.1	79.1	-3.7		-57.4	100	1175	18 53 21
18 55 20	IRAS17020+45	13 26 59	54.8	79.7	-3.6		-57.7	6	1175	18 55 20
18 58 20	---	13 30 00	55.2	80.2	-3.6		-57.8	180	1198	18 55 21
18 58 40	J1707+4536	13 30 20	54.7	79.7	-3.6		-57.6	6	1198	18 58 40
19 00 20	=1705+456	13 32 00	54.9	80.0	-3.6		-57.7	100	1211	18 58 41
19 00 40	IRAS17020+45	13 32 20	55.6	80.6	-3.5		-57.9	6	1211	19 00 40
19 03 40	---	13 35 21	56.0	81.1	-3.5		-58.1	180	1234	19 00 41
19 04 00	J1707+4536	13 35 41	55.5	80.6	-3.5		-57.8	6	1234	19 04 00
19 05 40	=1705+456	13 37 21	55.7	80.9	-3.5		-57.9	100	1247	19 04 01
19 06 00	IRAS17020+45	13 37 41	56.4	81.5	-3.4		-58.2	6	1247	19 06 00
19 09 00	---	13 40 41	56.8	82.0	-3.4		-58.3	180	1270	19 06 01
19 09 20	J1707+4536	13 41 02	56.2	81.5	-3.4		-58.0	6	1270	19 09 20
19 11 00	=1705+456	13 42 42	56.5	81.8	-3.4		-58.1	100	1283	19 09 21
19 11 20	IRAS17020+45	13 43 02	57.1	82.4	-3.4		-58.4	6	1283	19 11 20
19 14 20	---	13 46 02	57.6	82.9	-3.3		-58.5	180	1306	19 11 21
19 14 40	J1707+4536	13 46 22	57.0	82.4	-3.4		-58.2	6	1306	19 14 40
19 16 20	=1705+456	13 48 03	57.3	82.7	-3.3		-58.3	100	1319	19 14 41
19 16 40	IRAS17020+45	13 48 23	57.9	83.3	-3.3		-58.5	6	1319	19 16 40
19 19 40	---	13 51 23	58.4	83.8	-3.2		-58.6	180	1342	19 16 41
19 20 00	J1707+4536	13 51 43	57.8	83.3	-3.3		-58.4	6	1342	19 20 00
19 21 40	=1705+456	13 53 24	58.1	83.6	-3.2		-58.5	100	1355	19 20 01
19 22 00	IRAS17020+45	13 53 44	58.7	84.2	-3.2		-58.7	6	1355	19 22 00
19 25 00	---	13 56 44	59.2	84.7	-3.1		-58.8	180	1378	19 22 01

Schedule for TORUN (Code Tr )

Page 7

The subarcsec-scale radio emission in IRAS17020+4544

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 10 Jun 2021 Day 161 ---										
19 25 20	J1707+4536	13 57 04	58.6	84.2	-3.2		-58.6	6	1378	19 25 20
19 27 00	=1705+456	13 58 44	58.9	84.5	-3.2		-58.6	100	1391	19 25 21
19 27 20	IRAS17020+45	13 59 04	59.5	85.1	-3.1		-58.9	6	1391	19 27 20
19 30 20	---	14 02 05	60.0	85.7	-3.0		-58.9	180	1414	19 27 21
19 30 40	J1707+4536	14 02 25	59.4	85.2	-3.1		-58.7	6	1414	19 30 40
19 32 20	=1705+456	14 04 05	59.7	85.5	-3.1		-58.8	100	1427	19 30 41
19 32 40	IRAS17020+45	14 04 25	60.3	86.1	-3.0		-59.0	6	1427	19 32 40
19 35 40	---	14 07 26	60.8	86.6	-2.9		-59.0	180	1451	19 32 41
19 36 00	J1707+4536	14 07 46	60.2	86.1	-3.0		-58.9	6	1451	19 36 00
19 37 40	=1705+456	14 09 26	60.5	86.5	-3.0		-58.9	100	1463	19 36 01
19 38 00	IRAS17020+45	14 09 46	61.1	87.1	-2.9		-59.1	6	1463	19 38 00
19 41 00	---	14 12 47	61.6	87.6	-2.9		-59.1	180	1487	19 38 01
19 41 20	J1707+4536	14 13 07	61.0	87.1	-2.9		-59.0	6	1487	19 41 20
19 43 00	=1705+456	14 14 47	61.3	87.4	-2.9		-59.0	100	1499	19 41 21
19 43 20	IRAS17020+45	14 15 07	61.9	88.1	-2.8		-59.2	6	1499	19 43 20
19 46 20	---	14 18 08	62.4	88.7	-2.8		-59.2	180	1523	19 43 21
19 46 40	J1707+4536	14 18 28	61.8	88.1	-2.8		-59.0	6	1523	19 46 40
19 48 20	=1705+456	14 20 08	62.1	88.5	-2.8		-59.0	100	1536	19 46 41
19 48 40	IRAS17020+45	14 20 28	62.7	89.1	-2.7		-59.2	6	1536	19 48 40
19 51 40	---	14 23 28	63.2	89.7	-2.7		-59.2	180	1559	19 48 41
19 52 00	J1707+4536	14 23 49	62.6	89.2	-2.7		-59.1	6	1559	19 52 00
19 53 40	=1705+456	14 25 29	62.9	89.5	-2.7		-59.1	100	1572	19 52 01
19 54 00	IRAS17020+45	14 25 49	63.5	90.2	-2.6		-59.2	6	1572	19 54 00
19 57 00	---	14 28 49	64.0	90.8	-2.6		-59.2	180	1595	19 54 01
19 57 20	J1707+4536	14 29 09	63.4	90.2	-2.6		-59.1	6	1595	19 57 20
19 59 00	=1705+456	14 30 50	63.7	90.6	-2.6		-59.1	100	1608	19 57 21
19 59 20	IRAS17020+45	14 31 10	64.4	91.3	-2.5		-59.2	6	1608	19 59 20
20 02 20	---	14 34 10	64.8	91.9	-2.5		-59.2	180	1631	19 59 21
20 02 40	J1707+4536	14 34 30	64.2	91.3	-2.6		-59.1	6	1631	20 02 40
20 04 20	=1705+456	14 36 11	64.5	91.7	-2.5		-59.0	100	1644	20 02 41

Schedule for TORUN (Code Tr ) Page 8

The subarcsec-scale radio emission in IRAS17020+4544

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 10 Jun 2021 Day 161 ---										
20 04 40	IRAS17020+45	14 36 31	65.2	92.4	-2.5		-59.1	6	1644	20 04 40
20 07 40	---	14 39 31	65.6	93.0	-2.4		-59.1	180	1667	20 04 41
20 08 00	J1707+4536	14 39 51	65.0	92.4	-2.5		-59.0	6	1667	20 08 00
20 09 40	=1705+456	14 41 31	65.3	92.8	-2.4		-59.0	100	1680	20 08 01
20 12 40	OQ208	14 44 32	64.4	198.8	0.6		12.7	-48	1680	20 12 40
20 17 40	---	14 49 33	64.1	201.3	0.7		14.4	252	1718	20 12 41
20 22 40	BLLAC	14 54 34	24.0	50.6	-7.2		-38.9	-16	1718	20 22 40
20 27 40	---	14 59 34	24.6	51.4	-7.1		-39.4	284	1757	20 22 41
20 30 40	3C345	15 02 35	68.3	117.6	-1.7		-43.8	3	1757	20 30 40
20 35 40	---	15 07 36	68.9	119.5	-1.6		-42.8	300	1796	20 30 41
20 36 40	J1707+4536	15 08 36	69.3	99.2	-2.0		-57.9	4	1796	20 36 40
20 38 40	=1705+456	15 10 36	69.6	99.8	-2.0		-57.7	120	1811	20 36 41
20 39 00	IRAS17020+45	15 10 56	70.3	100.7	-1.9		-57.6	6	1811	20 39 00
20 42 00	---	15 13 57	70.7	101.6	-1.8		-57.3	180	1834	20 39 01
20 42 20	J1707+4536	15 14 17	70.2	100.8	-1.9		-57.4	6	1834	20 42 20
20 44 00	=1705+456	15 15 57	70.4	101.3	-1.9		-57.3	100	1847	20 42 21
20 44 20	IRAS17020+45	15 16 17	71.1	102.2	-1.8		-57.1	6	1847	20 44 20
20 47 20	---	15 19 18	71.5	103.1	-1.7		-56.8	180	1870	20 44 21
20 47 40	J1707+4536	15 19 38	71.0	102.3	-1.8		-56.9	6	1870	20 47 40
20 49 20	=1705+456	15 21 18	71.2	102.8	-1.8		-56.8	100	1883	20 47 41
20 49 40	IRAS17020+45	15 21 38	71.9	103.9	-1.7		-56.5	6	1883	20 49 40
20 52 40	---	15 24 39	72.3	104.8	-1.7		-56.2	180	1907	20 49 41
20 53 00	J1707+4536	15 24 59	71.7	103.9	-1.7		-56.4	6	1907	20 53 00
20 54 40	=1705+456	15 26 39	72.0	104.4	-1.7		-56.2	100	1919	20 53 01
20 55 00	IRAS17020+45	15 26 59	72.6	105.6	-1.6		-55.8	6	1919	20 55 00
20 58 00	---	15 29 59	73.1	106.6	-1.6		-55.4	180	1943	20 55 01
20 58 20	J1707+4536	15 30 19	72.5	105.6	-1.6		-55.7	6	1943	20 58 20
21 00 00	=1705+456	15 32 00	72.8	106.2	-1.6		-55.5	100	1955	20 58 21
21 00 20	IRAS17020+45	15 32 20	73.4	107.4	-1.5		-55.1	5	1955	21 00 20
21 03 20	---	15 35 20	73.8	108.4	-1.5		-54.6	180	1979	21 00 21

Schedule for TORUN (Code Tr ) Page 9

The subarcsec-scale radio emission in IRAS17020+4544

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 10 Jun 2021 Day 161 ---										
21 03 40	J1707+4536	15 35 40	73.3	107.4	-1.5		-54.9	6	1979	21 03 40
21 05 20	=1705+456	15 37 21	73.5	108.0	-1.5		-54.7	100	1992	21 03 41
21 05 40	IRAS17020+45	15 37 41	74.2	109.3	-1.4		-54.2	5	1992	21 05 40
21 08 40	---	15 40 41	74.6	110.5	-1.4		-53.6	180	2015	21 05 41
21 09 00	J1707+4536	15 41 01	74.1	109.4	-1.4		-54.0	5	2015	21 09 00
21 10 40	=1705+456	15 42 41	74.3	110.0	-1.4		-53.7	100	2028	21 09 01
21 11 00	IRAS17020+45	15 43 02	74.9	111.4	-1.4		-53.1	5	2028	21 11 00
21 14 00	---	15 46 02	75.3	112.6	-1.3		-52.5	180	2051	21 11 01
21 14 20	J1707+4536	15 46 22	74.8	111.4	-1.4		-53.0	5	2051	21 14 20
21 16 00	=1705+456	15 48 02	75.0	112.1	-1.3		-52.6	100	2064	21 14 21
21 16 20	IRAS17020+45	15 48 22	75.7	113.6	-1.3		-51.9	4	2064	21 16 20
21 19 20	---	15 51 23	76.1	115.0	-1.2		-51.1	180	2087	21 16 21
21 19 40	J1707+4536	15 51 43	75.5	113.7	-1.3		-51.8	5	2087	21 19 40
21 21 20	=1705+456	15 53 23	75.8	114.4	-1.2		-51.4	100	2100	21 19 41
21 21 40	IRAS17020+45	15 53 43	76.4	116.1	-1.2		-50.5	4	2100	21 21 40
21 24 40	---	15 56 44	76.8	117.5	-1.1		-49.6	180	2123	21 21 41
21 25 00	J1707+4536	15 57 04	76.3	116.1	-1.2		-50.4	4	2123	21 25 00
21 26 40	=1705+456	15 58 44	76.5	116.9	-1.2		-49.9	100	2136	21 25 01
21 27 00	IRAS17020+45	15 59 04	77.1	118.7	-1.1		-48.9	3	2136	21 27 00
21 30 00	---	16 02 05	77.5	120.3	-1.0		-47.9	180	2159	21 27 01
21 30 20	J1707+4536	16 02 25	77.0	118.7	-1.1		-48.8	4	2159	21 30 20
21 32 00	=1705+456	16 04 05	77.2	119.6	-1.1		-48.3	100	2172	21 30 21
21 32 20	IRAS17020+45	16 04 25	77.8	121.6	-1.0		-47.0	3	2172	21 32 20
21 35 20	---	16 07 26	78.2	123.3	-0.9		-45.9	180	2195	21 32 21
21 35 40	J1707+4536	16 07 46	77.7	121.6	-1.0		-47.0	3	2195	21 35 40
21 37 20	=1705+456	16 09 26	77.9	122.5	-1.0		-46.3	100	2208	21 35 41
21 37 40	IRAS17020+45	16 09 46	78.5	124.7	-0.9		-44.9	2	2208	21 37 40
21 40 40	---	16 12 46	78.8	126.6	-0.9		-43.6	180	2231	21 37 41
21 41 00	J1707+4536	16 13 06	78.4	124.7	-0.9		-44.8	2	2231	21 41 00
21 42 40	=1705+456	16 14 47	78.6	125.8	-0.9		-44.1	100	2244	21 41 01

Schedule for TORUN (Code Tr ) Page 10

The subarcsec-scale radio emission in IRAS17020+4544

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 10 Jun 2021 Day 161 ---										
21 43 00	IRAS17020+45	16 15 07	79.1	128.2	-0.8		-42.5	1	2244	21 43 00
21 46 00	---	16 18 07	79.5	130.3	-0.8		-40.9	180	2267	21 43 01
21 46 20	J1707+4536	16 18 27	79.0	128.2	-0.8		-42.4	2	2267	21 46 20
21 48 00	=1705+456	16 20 08	79.2	129.3	-0.8		-41.6	100	2280	21 46 21
21 48 20	IRAS17020+45	16 20 28	79.7	132.0	-0.7		-39.6	0	2280	21 48 20
21 51 20	---	16 23 28	80.1	134.4	-0.7		-37.9	180	2303	21 48 21
21 51 40	J1707+4536	16 23 48	79.6	132.0	-0.7		-39.6	1	2303	21 51 40
21 53 20	=1705+456	16 25 28	79.8	133.2	-0.7		-38.7	100	2316	21 51 41
21 53 40	IRAS17020+45	16 25 49	80.3	136.3	-0.6		-36.4	0	2316	21 53 40
21 56 40	---	16 28 49	80.6	138.9	-0.6		-34.4	180	2339	21 53 41
21 57 00	J1707+4536	16 29 09	80.2	136.2	-0.6		-36.4	0	2339	21 57 00
21 58 40	=1705+456	16 30 49	80.4	137.6	-0.6		-35.4	100	2352	21 57 01
21 59 00	IRAS17020+45	16 31 09	80.8	141.0	-0.5		-32.7	-1	2352	21 59 00
22 02 00	---	16 34 10	81.1	143.8	-0.5		-30.5	179	2375	21 59 01
22 02 20	J1707+4536	16 34 30	80.7	140.8	-0.6		-32.8	-1	2375	22 02 20
22 04 00	=1705+456	16 36 10	80.9	142.4	-0.5		-31.6	99	2388	22 02 21
22 04 20	IRAS17020+45	16 36 30	81.3	146.2	-0.5		-28.6	-2	2388	22 04 20
22 07 20	---	16 39 31	81.6	149.3	-0.4		-26.0	178	2411	22 04 21
22 07 40	J1707+4536	16 39 51	81.2	146.0	-0.5		-28.7	-2	2411	22 07 40
22 09 20	=1705+456	16 41 31	81.3	147.7	-0.4		-27.3	98	2424	22 07 41
22 09 40	IRAS17020+45	16 41 51	81.7	151.9	-0.4		-23.9	-3	2424	22 09 40
22 12 40	---	16 44 52	81.9	155.3	-0.3		-21.1	177	2448	22 09 41
22 13 00	J1707+4536	16 45 12	81.6	151.6	-0.4		-24.1	-2	2448	22 13 00
22 14 40	=1705+456	16 46 52	81.7	153.4	-0.4		-22.6	98	2460	22 13 01
22 15 00	IRAS17020+45	16 47 12	82.1	158.0	-0.3		-18.7	-4	2460	22 15 00
22 18 00	---	16 50 13	82.2	161.7	-0.2		-15.6	176	2484	22 15 01
22 18 20	J1707+4536	16 50 33	82.0	157.7	-0.3		-19.0	-3	2484	22 18 20
22 20 00	=1705+456	16 52 13	82.1	159.7	-0.3		-17.3	97	2497	22 18 21
22 20 20	IRAS17020+45	16 52 33	82.3	164.6	-0.2		-13.1	-5	2497	22 20 20
22 23 20	---	16 55 33	82.4	168.5	-0.1		-9.8	175	2520	22 20 21

Schedule for TORUN (Code Tr ) Page 11

The subarcsec-scale radio emission in IRAS17020+4544

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 10 Jun 2021 Day 161 ---										
22 23 40	J1707+4536	16 55 53	82.2	164.2	-0.2		-13.5	-4	2520	22 23 40
22 25 20	=1705+456	16 57 34	82.3	166.3	-0.2		-11.7	96	2533	22 23 41
22 25 40	IRAS17020+45	16 57 54	82.5	171.6	-0.1		-7.2	-6	2533	22 25 40
22 28 40	---	17 00 54	82.5	175.6	-0.1		-3.8	174	2556	22 25 41
22 29 00	J1707+4536	17 01 14	82.4	171.1	-0.1		-7.6	-4	2556	22 29 00
22 30 40	=1705+456	17 02 55	82.4	173.3	-0.1		-5.7	96	2569	22 29 01
22 31 00	IRAS17020+45	17 03 15	82.6	178.8	-0.0		-1.1	-6	2569	22 31 00
22 34 00	---	17 06 15	82.5	182.8	0.0		2.4	174	2592	22 31 01
22 34 20	J1707+4536	17 06 35	82.5	178.2	-0.0		-1.6	-4	2592	22 34 20
22 36 00	=1705+456	17 08 15	82.5	180.4	0.0		0.4	96	2605	22 34 21
22 36 20	IRAS17020+45	17 08 36	82.5	186.0	0.1		5.1	-6	2605	22 36 20
22 39 20	---	17 11 36	82.5	190.0	0.1		8.5	174	2628	22 36 21
22 39 40	J1707+4536	17 11 56	82.5	185.3	0.1		4.6	-4	2628	22 39 40
22 41 20	=1705+456	17 13 36	82.4	187.5	0.1		6.5	96	2641	22 39 41
22 41 40	IRAS17020+45	17 13 56	82.4	193.0	0.2		11.2	-6	2641	22 41 40
22 44 40	---	17 16 57	82.3	196.9	0.2		14.4	174	2664	22 41 41
22 45 00	J1707+4536	17 17 17	82.3	192.3	0.2		10.6	-4	2664	22 45 00
22 46 40	=1705+456	17 18 57	82.3	194.5	0.2		12.4	96	2677	22 45 01
22 48 40	3C345	17 20 58	75.2	209.2	0.6		22.4	77	2677	22 48 40
22 53 40	---	17 25 58	74.9	212.6	0.7		24.9	300	2716	22 48 41
22 56 40	BLLAC	17 28 59	44.5	74.6	-4.6		-51.6	-111	2716	22 56 40
23 01 40	---	17 34 00	45.2	75.4	-4.5		-51.9	189	2754	22 56 41
23 04 40	J1707+4536	17 37 00	81.1	215.0	0.5		29.5	-118	2754	23 04 40
23 06 40	=1705+456	17 39 01	80.9	217.0	0.5		31.0	2	2770	23 04 41
23 07 00	IRAS17020+45	17 39 21	80.6	221.0	0.6		34.3	-3	2770	23 07 00
23 10 00	---	17 42 21	80.3	223.6	0.6		36.3	177	2793	23 07 01
23 10 20	J1707+4536	17 42 41	80.6	220.3	0.6		33.7	-1	2793	23 10 20
23 12 00	=1705+456	17 44 21	80.4	221.8	0.6		34.9	99	2806	23 10 21
23 12 20	IRAS17020+45	17 44 41	80.1	225.5	0.7		37.8	-2	2806	23 12 20
23 15 20	---	17 47 42	79.7	227.8	0.7		39.6	178	2829	23 12 21

Schedule for TORUN (Code Tr ) Page 12

The subarcsec-scale radio emission in IRAS17020+4544

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 10 Jun 2021 Day 161 ---										
23 15 40	J1707+4536	17 48 02	80.1	224.9	0.7		37.3	-1	2829	23 15 40
23 17 20	=1705+456	17 49 42	79.9	226.2	0.7		38.3	99	2842	23 15 41
23 17 40	IRAS17020+45	17 50 02	79.5	229.6	0.8		40.8	-1	2842	23 17 40
23 20 40	---	17 53 03	79.1	231.7	0.8		42.4	179	2865	23 17 41
23 21 00	J1707+4536	17 53 23	79.5	229.0	0.8		40.3	0	2865	23 21 00
23 22 40	=1705+456	17 55 03	79.3	230.2	0.8		41.2	100	2878	23 21 01
23 23 00	IRAS17020+45	17 55 23	78.9	233.3	0.9		43.5	-1	2878	23 23 00
23 26 00	---	17 58 24	78.5	235.2	0.9		44.8	179	2901	23 23 01
23 26 20	J1707+4536	17 58 44	78.8	232.7	0.8		43.0	1	2901	23 26 20
23 28 00	=1705+456	18 00 24	78.6	233.8	0.9		43.8	100	2914	23 26 21
23 28 20	IRAS17020+45	18 00 44	78.2	236.6	0.9		45.8	0	2914	23 28 20
23 31 20	---	18 03 45	77.8	238.3	1.0		47.0	180	2937	23 28 21
23 31 40	J1707+4536	18 04 05	78.2	236.1	0.9		45.4	1	2937	23 31 40
23 33 20	=1705+456	18 05 45	78.0	237.1	1.0		46.1	100	2950	23 31 41
23 33 40	IRAS17020+45	18 06 05	77.5	239.6	1.0		47.8	1	2950	23 33 40
23 36 40	---	18 09 05	77.1	241.2	1.1		48.9	180	2973	23 33 41
23 37 00	J1707+4536	18 09 26	77.5	239.1	1.0		47.4	2	2973	23 37 00
23 38 40	=1705+456	18 11 06	77.3	240.0	1.1		48.0	100	2986	23 37 01
23 39 00	IRAS17020+45	18 11 26	76.8	242.4	1.1		49.6	1	2986	23 39 00
23 42 00	---	18 14 26	76.4	243.9	1.2		50.5	180	3009	23 39 01
23 42 20	J1707+4536	18 14 46	76.8	241.9	1.1		49.2	2	3009	23 42 20
23 44 00	=1705+456	18 16 27	76.6	242.8	1.1		49.7	100	3022	23 42 21
23 44 20	IRAS17020+45	18 16 47	76.1	245.0	1.2		51.1	2	3022	23 44 20
23 47 20	---	18 19 47	75.7	246.3	1.3		51.9	180	3045	23 44 21
23 47 40	J1707+4536	18 20 07	76.1	244.5	1.2		50.8	3	3045	23 47 40
23 49 20	=1705+456	18 21 48	75.9	245.3	1.2		51.2	100	3058	23 47 41
23 49 40	IRAS17020+45	18 22 08	75.4	247.3	1.3		52.4	2	3058	23 49 40
23 52 40	---	18 25 08	74.9	248.6	1.3		53.1	180	3081	23 49 41
23 53 00	J1707+4536	18 25 28	75.4	246.9	1.3		52.1	3	3081	23 53 00
23 54 40	=1705+456	18 27 08	75.1	247.6	1.3		52.5	100	3094	23 53 01



Schedule for TORUN (Code Tr ) Page 13

The subarcsec-scale radio emission in IRAS17020+4544

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 10 Jun 2021 Day 161 ---										
23 55 00	IRAS17020+45	18 27 28	74.6	249.5	1.4		53.6	3	3094	23 55 00
23 58 00	---	18 30 29	74.2	250.6	1.4		54.1	180	3117	23 55 01
23 58 20	J1707+4536	18 30 49	74.6	249.1	1.4		53.3	4	3117	23 58 20
23 59 59	=1705+456	18 32 29	74.4	249.7	1.4		53.6	99	3130	23 58 21
--- Fri 11 Jun 2021 Day 162 ---										
00 00 20	IRAS17020+45	18 32 49	73.9	251.5	1.5		54.6	3	3130	00 00 20
00 03 20	---	18 35 50	73.4	252.6	1.5		55.0	180	3153	00 00 21
00 03 40	J1707+4536	18 36 10	73.9	251.1	1.5		54.3	4	3153	00 03 40
00 05 20	=1705+456	18 37 50	73.6	251.7	1.5		54.5	100	3166	00 03 41
00 05 40	IRAS17020+45	18 38 10	73.1	253.4	1.6		55.4	4	3166	00 05 40
00 08 40	---	18 41 11	72.7	254.4	1.6		55.8	180	3190	00 05 41
00 09 00	J1707+4536	18 41 31	73.1	253.0	1.6		55.1	4	3190	00 09 00
00 10 40	=1705+456	18 43 11	72.9	253.6	1.6		55.4	100	3202	00 09 01
00 11 00	IRAS17020+45	18 43 31	72.3	255.2	1.7		56.1	4	3202	00 11 00
00 14 00	---	18 46 32	71.9	256.1	1.7		56.5	180	3226	00 11 01
00 14 20	J1707+4536	18 46 52	72.3	254.8	1.6		55.9	5	3226	00 14 20
00 16 00	=1705+456	18 48 32	72.1	255.3	1.7		56.1	100	3239	00 14 21
00 16 20	IRAS17020+45	18 48 52	71.5	256.8	1.7		56.8	4	3239	00 16 20
00 19 20	---	18 51 52	71.1	257.7	1.8		57.1	180	3262	00 16 21
00 19 40	J1707+4536	18 52 13	71.6	256.5	1.7		56.5	5	3262	00 19 40
00 21 20	=1705+456	18 53 53	71.3	257.0	1.8		56.7	100	3275	00 19 41
00 21 40	IRAS17020+45	18 54 13	70.8	258.4	1.8		57.3	5	3275	00 21 40
00 24 40	---	18 57 13	70.3	259.2	1.9		57.6	180	3298	00 21 41
00 25 00	J1707+4536	18 57 33	70.8	258.1	1.8		57.1	5	3298	00 25 00
00 26 40	=1705+456	18 59 14	70.5	258.5	1.9		57.2	100	3311	00 25 01
00 27 00	IRAS17020+45	18 59 34	70.0	259.9	1.9		57.7	5	3311	00 27 00
00 30 00	---	19 02 34	69.5	260.7	2.0		58.0	180	3334	00 27 01
00 30 20	J1707+4536	19 02 54	70.0	259.6	1.9		57.5	5	3334	00 30 20
00 32 00	=1705+456	19 04 35	69.7	260.0	1.9		57.7	100	3347	00 30 21

Schedule for TORUN (Code Tr ) Page 14

The subarcsec-scale radio emission in IRAS17020+4544

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 11 Jun 2021 Day 162 ---										
00 36 00	BLLAC	19 08 35	59.2	92.5	-2.9		-54.3	-109	3347	00 36 00
00 42 00	---	19 14 36	60.1	93.7	-2.8		-54.2	251	3393	00 36 01
00 47 00	J1707+4536	19 19 37	67.5	263.8	2.2		58.5	-56	3393	00 47 00
00 49 00	=1705+456	19 21 37	67.2	264.3	2.2		58.6	64	3409	00 47 01
00 49 20	IRAS17020+45	19 21 57	66.6	265.4	2.3		58.9	6	3409	00 49 20
00 52 20	---	19 24 58	66.2	266.1	2.3		59.0	180	3432	00 49 21
00 52 40	J1707+4536	19 25 18	66.7	265.2	2.3		58.7	6	3432	00 52 40
00 54 20	=1705+456	19 26 58	66.4	265.6	2.3		58.8	100	3445	00 52 41
00 54 40	IRAS17020+45	19 27 18	65.8	266.6	2.4		59.0	6	3445	00 54 40
00 57 40	---	19 30 19	65.4	267.3	2.4		59.1	180	3468	00 54 41
00 58 00	J1707+4536	19 30 39	65.9	266.4	2.4		58.9	6	3468	00 58 00
00 59 40	=1705+456	19 32 19	65.6	266.7	2.4		58.9	100	3481	00 58 01
01 00 00	IRAS17020+45	19 32 39	65.0	267.8	2.5		59.1	6	3481	01 00 00
01 03 00	---	19 35 40	64.6	268.4	2.5		59.2	180	3504	01 00 01
01 03 20	J1707+4536	19 36 00	65.1	267.5	2.5		59.0	6	3504	01 03 20
01 05 00	=1705+456	19 37 40	64.8	267.9	2.5		59.0	100	3517	01 03 21
01 05 20	IRAS17020+45	19 38 00	64.2	268.9	2.6		59.2	6	3517	01 05 20
01 08 20	---	19 41 01	63.8	269.5	2.6		59.2	180	3540	01 05 21
01 08 40	J1707+4536	19 41 21	64.3	268.7	2.6		59.1	7	3540	01 08 40
01 10 20	=1705+456	19 43 01	64.0	269.0	2.6		59.1	100	3553	01 08 41
01 10 40	IRAS17020+45	19 43 21	63.4	270.0	2.7		59.2	6	3553	01 10 40
01 13 40	---	19 46 21	63.0	270.6	2.7		59.2	180	3576	01 10 41
01 14 00	J1707+4536	19 46 41	63.4	269.8	2.6		59.1	7	3576	01 14 00
01 15 40	=1705+456	19 48 22	63.2	270.1	2.7		59.1	100	3589	01 14 01
01 16 00	IRAS17020+45	19 48 42	62.6	271.0	2.7		59.2	6	3589	01 16 00
01 19 00	---	19 51 42	62.2	271.6	2.8		59.2	180	3612	01 16 01
01 19 20	J1707+4536	19 52 02	62.6	270.8	2.7		59.1	7	3612	01 19 20
01 21 00	=1705+456	19 53 43	62.4	271.1	2.8		59.1	100	3625	01 19 21
01 21 20	IRAS17020+45	19 54 03	61.8	272.1	2.8		59.1	6	3625	01 21 20
01 24 20	---	19 57 03	61.4	272.6	2.9		59.1	180	3648	01 21 21

Schedule for TORUN (Code Tr ) Page 15

The subarcsec-scale radio emission in IRAS17020+4544

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 11 Jun 2021 Day 162 ---										
01 24 40	J1707+4536	19 57 23	61.8	271.9	2.8		59.0	7	3648	01 24 40
01 26 20	=1705+456	19 59 03	61.6	272.2	2.9		59.0	100	3661	01 24 41
01 26 40	IRAS17020+45	19 59 24	61.0	273.1	2.9		59.1	6	3661	01 26 40
01 29 40	---	20 02 24	60.6	273.6	3.0		59.0	180	3684	01 26 41
01 30 00	J1707+4536	20 02 44	61.0	272.9	2.9		59.0	7	3684	01 30 00
01 31 40	=1705+456	20 04 24	60.8	273.2	2.9		58.9	100	3697	01 30 01
01 32 00	IRAS17020+45	20 04 44	60.2	274.1	3.0		59.0	6	3697	01 32 00
01 35 00	---	20 07 45	59.8	274.6	3.1		58.9	180	3720	01 32 01
01 35 20	J1707+4536	20 08 05	60.2	273.8	3.0		58.9	7	3720	01 35 20
01 37 00	=1705+456	20 09 45	60.0	274.2	3.0		58.8	100	3733	01 35 21
01 37 20	IRAS17020+45	20 10 05	59.4	275.0	3.1		58.8	6	3733	01 37 20
01 40 20	---	20 13 06	59.0	275.5	3.1		58.8	180	3756	01 37 21
01 40 40	J1707+4536	20 13 26	59.4	274.8	3.1		58.7	7	3756	01 40 40
01 42 20	=1705+456	20 15 06	59.2	275.1	3.1		58.7	100	3769	01 40 41
01 42 40	IRAS17020+45	20 15 26	58.6	276.0	3.2		58.7	6	3769	01 42 40
01 45 40	---	20 18 27	58.2	276.5	3.2		58.6	180	3792	01 42 41
01 46 00	J1707+4536	20 18 47	58.6	275.8	3.2		58.6	7	3792	01 46 00
01 47 40	=1705+456	20 20 27	58.4	276.1	3.2		58.5	100	3805	01 46 01
01 48 00	IRAS17020+45	20 20 47	57.8	276.9	3.3		58.5	6	3805	01 48 00
01 51 00	---	20 23 48	57.4	277.4	3.3		58.4	180	3829	01 48 01
01 51 20	J1707+4536	20 24 08	57.8	276.7	3.3		58.4	7	3829	01 51 20
01 53 00	=1705+456	20 25 48	57.6	277.0	3.3		58.4	100	3841	01 51 21
01 53 20	IRAS17020+45	20 26 08	57.0	277.8	3.4		58.3	6	3841	01 53 20
01 56 20	---	20 29 08	56.6	278.3	3.4		58.2	180	3865	01 53 21
01 56 40	J1707+4536	20 29 28	57.0	277.6	3.4		58.2	7	3865	01 56 40
01 58 20	=1705+456	20 31 09	56.8	277.9	3.4		58.2	100	3877	01 56 41
01 58 40	IRAS17020+45	20 31 29	56.2	278.7	3.5		58.1	6	3877	01 58 40
02 01 40	---	20 34 29	55.8	279.2	3.5		58.0	180	3901	01 58 41
02 02 00	J1707+4536	20 34 49	56.3	278.5	3.4		58.0	7	3901	02 02 00
02 03 40	=1705+456	20 36 30	56.0	278.8	3.5		58.0	100	3914	02 02 01

Schedule for TORUN (Code Tr )

Page 16

The subarcsec-scale radio emission in IRAS17020+4544

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 11 Jun 2021 Day 162 ---										
02 04 00	IRAS17020+45	20 36 50	55.4	279.6	3.5		57.9	6	3914	02 04 00
02 07 00	---	20 39 50	55.0	280.1	3.6		57.8	180	3937	02 04 01
02 07 20	J1707+4536	20 40 10	55.5	279.4	3.5		57.8	7	3937	02 07 20
02 09 00	=1705+456	20 41 50	55.2	279.7	3.6		57.7	100	3950	02 07 21
02 09 20	IRAS17020+45	20 42 11	54.6	280.4	3.6		57.7	7	3950	02 09 20
02 12 20	---	20 45 11	54.2	280.9	3.7		57.5	180	3973	02 09 21
02 12 40	J1707+4536	20 45 31	54.7	280.3	3.6		57.6	7	3973	02 12 40
02 14 20	=1705+456	20 47 11	54.4	280.5	3.7		57.5	100	3986	02 12 41
02 18 20	BLLAC	20 51 12	73.9	124.3	-1.2		-42.2	-86	3986	02 18 20
02 24 20	---	20 57 13	74.6	127.4	-1.1		-40.2	274	4032	02 18 21
02 30 20	J1707+4536	21 03 14	52.1	283.1	3.9		56.7	34	4032	02 30 20
02 32 40	=1705+456	21 05 34	51.7	283.4	4.0		56.6	140	4050	02 30 21
02 33 00	IRAS17020+45	21 05 54	51.2	284.2	4.0		56.4	7	4050	02 33 00
02 36 00	---	21 08 55	50.7	284.6	4.1		56.2	180	4073	02 33 01
02 36 20	J1707+4536	21 09 15	51.2	284.0	4.0		56.3	7	4073	02 36 20
02 38 00	=1705+456	21 10 55	50.9	284.3	4.0		56.2	100	4086	02 36 21
02 38 20	IRAS17020+45	21 11 15	50.4	285.0	4.1		56.1	7	4086	02 38 20
02 41 35	---	21 14 31	49.9	285.5	4.2		55.9	195	4111	02 38 21
02 41 55	J1707+4536	21 14 51	50.4	284.9	4.1		56.0	7	4111	02 41 55
02 43 35	=1705+456	21 16 31	50.1	285.1	4.1		55.9	100	4124	02 41 56
02 43 55	IRAS17020+45	21 16 51	49.6	285.9	4.2		55.7	7	4124	02 43 55
02 46 55	---	21 19 52	49.1	286.3	4.3		55.5	180	4147	02 43 56
02 47 15	J1707+4536	21 20 12	49.6	285.7	4.2		55.7	7	4147	02 47 15
02 48 55	=1705+456	21 21 52	49.4	285.9	4.2		55.6	100	4160	02 47 16
02 49 15	IRAS17020+45	21 22 12	48.8	286.7	4.3		55.4	7	4160	02 49 15
02 52 30	---	21 25 28	48.3	287.2	4.4		55.2	195	4185	02 49 16
02 52 50	J1707+4536	21 25 48	48.8	286.5	4.3		55.3	7	4185	02 52 50
02 54 30	=1705+456	21 27 28	48.5	286.8	4.3		55.2	100	4198	02 52 51
02 54 50	IRAS17020+45	21 27 48	48.0	287.5	4.4		55.0	7	4198	02 54 50
02 57 50	---	21 30 49	47.6	288.0	4.4		54.8	180	4221	02 54 51

Schedule for TORUN (Code Tr ) Page 17

The subarcsec-scale radio emission in IRAS17020+4544

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 11 Jun 2021 Day 162 ---										
02 58 10	J1707+4536	21 31 09	48.0	287.3	4.4		55.0	7	4221	02 58 10
02 59 50	=1705+456	21 32 49	47.8	287.6	4.4		54.9	100	4234	02 58 11
03 00 10	IRAS17020+45	21 33 09	47.2	288.3	4.5		54.6	7	4234	03 00 10
03 03 25	---	21 36 24	46.8	288.8	4.5		54.4	195	4259	03 00 11
03 03 45	J1707+4536	21 36 44	47.2	288.2	4.5		54.6	7	4259	03 03 45
03 05 25	=1705+456	21 38 25	47.0	288.4	4.5		54.5	100	4272	03 03 46
03 05 45	IRAS17020+45	21 38 45	46.4	289.1	4.6		54.2	7	4272	03 05 45
03 08 45	---	21 41 45	46.0	289.6	4.6		54.0	180	4295	03 05 46
03 09 05	J1707+4536	21 42 05	46.5	289.0	4.6		54.2	7	4295	03 09 05
03 10 45	=1705+456	21 43 46	46.2	289.2	4.6		54.1	100	4308	03 09 06
03 11 05	IRAS17020+45	21 44 06	45.7	289.9	4.7		53.9	7	4308	03 11 05
03 14 20	---	21 47 21	45.2	290.4	4.7		53.6	195	4333	03 11 06
03 14 40	J1707+4536	21 47 41	45.7	289.8	4.7		53.8	7	4333	03 14 40
03 16 20	=1705+456	21 49 22	45.4	290.1	4.7		53.7	100	4346	03 14 41
03 16 40	IRAS17020+45	21 49 42	44.9	290.7	4.8		53.4	7	4346	03 16 40
03 19 40	---	21 52 42	44.5	291.2	4.8		53.2	180	4370	03 16 41
03 20 00	J1707+4536	21 53 02	44.9	290.6	4.8		53.4	7	4370	03 20 00
03 21 40	=1705+456	21 54 42	44.7	290.8	4.8		53.3	100	4382	03 20 01
03 22 00	IRAS17020+45	21 55 02	44.1	291.5	4.8		53.0	7	4382	03 22 00
03 25 15	---	21 58 18	43.7	292.0	4.9		52.8	195	4408	03 22 01
03 25 35	J1707+4536	21 58 38	44.1	291.4	4.8		53.0	7	4408	03 25 35
03 27 15	=1705+456	22 00 18	43.9	291.7	4.9		52.9	100	4420	03 25 36
03 27 35	IRAS17020+45	22 00 38	43.4	292.4	4.9		52.6	7	4420	03 27 35
03 30 35	---	22 03 39	42.9	292.8	5.0		52.4	180	4444	03 27 36
03 30 55	J1707+4536	22 03 59	43.4	292.2	4.9		52.6	7	4444	03 30 55
03 32 35	=1705+456	22 05 39	43.2	292.4	5.0		52.5	100	4456	03 30 56
03 32 55	IRAS17020+45	22 05 59	42.6	293.1	5.0		52.2	7	4456	03 32 55
03 36 10	---	22 09 15	42.2	293.6	5.1		51.9	195	4482	03 32 56
03 36 30	J1707+4536	22 09 35	42.6	293.0	5.0		52.1	7	4482	03 36 30
03 38 10	=1705+456	22 11 15	42.4	293.3	5.1		52.0	100	4495	03 36 31

Schedule for TORUN (Code Tr ) Page 18

The subarcsec-scale radio emission in IRAS17020+4544

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 11 Jun 2021 Day 162 ---										
03 38 30	IRAS17020+45	22 11 35	41.9	293.9	5.1		51.7	7	4495	03 38 30
03 41 30	---	22 14 36	41.4	294.4	5.2		51.5	180	4518	03 38 31
03 41 50	J1707+4536	22 14 56	41.9	293.8	5.1		51.7	7	4518	03 41 50
03 43 30	=1705+456	22 16 36	41.6	294.0	5.1		51.6	100	4531	03 41 51
03 43 50	IRAS17020+45	22 16 56	41.1	294.7	5.2		51.3	7	4531	03 43 50
03 47 05	---	22 20 12	40.7	295.2	5.3		51.0	195	4556	03 43 51
03 47 25	J1707+4536	22 20 32	41.1	294.6	5.2		51.3	7	4556	03 47 25
03 49 05	=1705+456	22 22 12	40.9	294.9	5.2		51.1	100	4569	03 47 26
03 49 25	IRAS17020+45	22 22 32	40.4	295.5	5.3		50.8	7	4569	03 49 25
03 52 25	---	22 25 32	40.0	296.0	5.4		50.6	180	4592	03 49 26
03 52 45	J1707+4536	22 25 53	40.4	295.4	5.3		50.8	7	4592	03 52 45
03 54 25	=1705+456	22 27 33	40.1	295.6	5.3		50.7	100	4605	03 52 46
03 54 45	IRAS17020+45	22 27 53	39.6	296.3	5.4		50.4	7	4605	03 54 45
03 58 00	---	22 31 08	39.2	296.8	5.4		50.1	195	4630	03 54 46
03 58 20	J1707+4536	22 31 28	39.6	296.2	5.4		50.3	7	4630	03 58 20
04 00 00	=1705+456	22 33 09	39.4	296.4	5.4		50.2	100	4643	03 58 21

SETUP FILE INFORMATION:

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

==== Setup file: sess221.C1024

Setup group: 11	Station: TORUN	Total bit rate: 1024
Format: VDIF	Bits per sample: 2	Sample rate: 64.000
Number of channels: 8	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
Net SB=	L	L	U	U	L	L	U	U
IF SB =	U	U	U	U	U	U	U	U
Pol. =	RCP	LCP	RCP	LCP	RCP	LCP	RCP	LCP
BBC =	1	9	1	9	2	10	2	10
BBC SB=	L	L	U	U	L	L	U	U
IF =	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= 4958.49 4958.49 4958.49 4958.49 5022.49 5022.49 5022.49 5022.49  
 BBC fr= 758.49 758.49 758.49 758.49 822.49 822.49 822.49 822.49  
 Bandwd= 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00  
 Matching frequency sets: 8

Track assignments are:  
 track1= 1, 2, 3, 4, 5, 6, 7, 8  
 barrel=roll\_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(Date)	Error (mas)
* IRAS17020+45	17 02 02.959899 * 17 03 30.383000 45 44 54.66110 * 45 40 47.16700	17 04 09.247086 45 39 02.11423	0.00 0.00
* OQ208	14 04 45.615156 * 14 07 00.394415	14 07 58.343355	0.24
J1407+2827	28 41 29.23515 * 28 27 14.69019	28 21 19.92156	0.35
1404+286	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc		
J1407+28	GSFC 2016a X/S astro solution, 68278 observations.		
* 3C345	16 41 17.606229 * 16 42 58.809967	16 43 43.301235	0.79
J1642+3948	39 54 10.81492 * 39 48 36.99399	39 46 16.71304	0.59
1641+399	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc		
J1642+39	GSFC 2016a X/S astro solution, 53724 observations.		
1705+456	17 05 50.417194 * 17 07 17.753409	17 07 56.576625	0.04
* J1707+4536	45 40 01.95822 * 45 36 10.55289	45 34 32.05014	0.03
J1707+45	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc		
	GSFC 2016a X/S astro solution, 1033 observations.		
VR422201	22 00 39.362504 * 22 02 43.291371	22 03 36.139938	0.01
J2202+4216	42 02 08.59075 * 42 16 39.97988	42 22 34.17232	0.00
* BLLAC	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc		
2200+420	GSFC 2016a X/S astro solution, 52189 observations.		
J2202+4			

**es098btr**

ES098B  
PI: *Shu, Xinwen*

Observing mode: evn

Schedule for TORUN (Code Tr )

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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 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 11 Jun 2021 Day 162 ---											
Next scan frequencies:		4830.49	4830.49	4830.49	4830.49	4830.49	4830.49	4894.49	4894.49	4894.49	4894.49
		4958.49	4958.49	4958.49	4958.49	4958.49	4958.49	5022.49	5022.49	5022.49	5022.49
Next BBC frequencies:		630.49	630.49	630.49	630.49	630.49	630.49	694.49	694.49	694.49	694.49
		758.49	758.49	758.49	758.49	758.49	758.49	822.49	822.49	822.49	822.49
Next scan bandwidths:		32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
		32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
-----											
16 00 00	3C286	10 35 07	50.9	107.5	-3.0		-41.6	0	0	16 00 00	
16 05 00	---	10 40 08	51.6	108.8	-2.9		-41.2	300	77	16 00 01	
16 06 00	J1547+2052	10 41 08	24.3	87.3	-5.1		-39.9	-56	77	16 06 00	
16 07 50	=1545+210	10 42 58	24.6	87.6	-5.1		-39.9	54	106	16 06 01	
16 08 20	J1545+2006	10 43 28	24.4	88.7	-5.1		-39.7	16	106	16 08 20	
16 10 20	=1543+202	10 45 29	24.7	89.1	-5.0		-39.7	120	137	16 08 21	
16 10 20	J1547+2052	10 45 29	24.9	88.1	-5.1		-39.9	-14	137	No stop	
16 11 50	=1545+210	10 46 59	25.2	88.4	-5.0		-40.0	76	160	16 10 21	
16 11 50	J1548	10 46 59	26.0	87.3	-5.0		-40.3	-16	160	No stop	
16 15 20	---	10 50 30	26.5	88.0	-5.0		-40.4	194	214	16 11 51	
16 16 00	J1547+2052	10 51 10	25.8	89.2	-5.0		-40.0	25	214	16 16 00	
16 17 20	=1545+210	10 52 30	26.0	89.5	-4.9		-40.0	80	234	16 16 01	
16 17 20	J1548	10 52 30	26.8	88.4	-5.0		-40.4	-16	234	No stop	
16 20 50	---	10 56 00	27.3	89.1	-4.9		-40.4	194	289	16 17 21	
16 20 50	J1547+2052	10 56 00	26.5	90.2	-4.9		-40.0	-15	289	No stop	
16 22 20	=1545+210	10 57 31	26.8	90.5	-4.9		-40.0	75	312	16 20 51	
16 22 20	J1548	10 57 31	27.6	89.4	-4.9		-40.4	-16	312	No stop	
16 25 50	---	11 01 01	28.1	90.1	-4.8		-40.4	194	366	16 22 21	
16 26 30	J1547+2052	11 01 41	27.4	91.3	-4.8		-40.0	25	366	16 26 30	
16 27 50	=1545+210	11 03 02	27.6	91.6	-4.8		-40.0	80	386	16 26 31	
16 27 50	J1548	11 03 02	28.4	90.5	-4.8		-40.4	-16	386	No stop	
16 31 20	---	11 06 32	28.9	91.2	-4.7		-40.4	194	441	16 27 51	
16 31 20	J1547+2052	11 06 32	28.1	92.3	-4.7		-39.9	-15	441	No stop	
16 32 50	=1545+210	11 08 02	28.3	92.6	-4.7		-39.9	75	464	16 31 21	



Schedule for TORUN (Code Tr )  
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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	
-----											
---	Fri 11 Jun 2021	Day 162					---				
16 33 20	J1545+2006	11 08 32	28.1	93.7	-4.6		-39.6	16	464	16 33 20	
16 35 20	=1543+202	11 10 33	28.4	94.1	-4.6		-39.6	120	495	16 33 21	
16 35 20	J1547+2052	11 10 33	28.7	93.1	-4.6		-39.9	-14	495	No stop	
16 36 50	=1545+210	11 12 03	28.9	93.4	-4.6		-39.9	76	518	16 35 21	
16 36 50	J1548	11 12 03	29.8	92.3	-4.6		-40.3	-16	518	No stop	
16 40 20	---	11 15 34	30.3	93.0	-4.6		-40.3	194	572	16 36 51	
16 41 00	J1547+2052	11 16 14	29.6	94.3	-4.5		-39.8	25	572	16 41 00	
16 42 20	=1545+210	11 17 34	29.8	94.6	-4.5		-39.8	80	593	16 41 01	
16 42 20	J1548	11 17 34	30.6	93.4	-4.5		-40.3	-16	593	No stop	
16 45 50	---	11 21 05	31.1	94.2	-4.5		-40.3	194	647	16 42 21	
16 45 50	J1547+2052	11 21 05	30.3	95.3	-4.5		-39.8	-15	647	No stop	
16 47 20	=1545+210	11 22 35	30.5	95.6	-4.4		-39.7	75	670	16 45 51	
16 47 20	J1548	11 22 35	31.3	94.5	-4.5		-40.2	-16	670	No stop	
16 50 50	---	11 26 05	31.9	95.2	-4.4		-40.2	194	724	16 47 21	
16 51 30	J1547+2052	11 26 45	31.1	96.5	-4.4		-39.7	25	724	16 51 30	
16 52 50	=1545+210	11 28 06	31.3	96.8	-4.3		-39.6	80	745	16 51 31	
16 52 50	J1548	11 28 06	32.2	95.6	-4.4		-40.2	-16	745	No stop	
16 56 20	---	11 31 36	32.7	96.4	-4.3		-40.1	194	799	16 52 51	
16 56 20	J1547+2052	11 31 36	31.9	97.5	-4.3		-39.6	-15	799	No stop	
16 57 50	=1545+210	11 33 06	32.1	97.8	-4.3		-39.5	75	822	16 56 21	
16 58 20	J1545+2006	11 33 37	31.9	99.0	-4.2		-39.2	16	822	16 58 20	
17 00 20	=1543+202	11 35 37	32.2	99.4	-4.2		-39.1	120	853	16 58 21	
17 00 20	J1547+2052	11 35 37	32.4	98.4	-4.2		-39.5	-14	853	No stop	
17 01 50	=1545+210	11 37 07	32.7	98.7	-4.2		-39.4	76	876	17 00 21	
17 01 50	J1548	11 37 07	33.5	97.5	-4.2		-40.0	-16	876	No stop	
17 05 20	---	11 40 38	34.0	98.3	-4.2		-39.9	194	930	17 01 51	
17 06 00	J1547+2052	11 41 18	33.3	99.6	-4.1		-39.3	25	930	17 06 00	
17 07 20	=1545+210	11 42 38	33.5	99.9	-4.1		-39.3	80	951	17 06 01	
17 07 20	J1548	11 42 38	34.3	98.7	-4.1		-39.8	-16	951	No stop	
17 10 50	---	11 46 09	34.8	99.5	-4.1		-39.7	194	1005	17 07 21	
17 10 50	J1547+2052	11 46 09	34.0	100.7	-4.0		-39.1	-15	1005	No stop	
17 12 20	=1545+210	11 47 39	34.2	101.0	-4.0		-39.1	75	1028	17 10 51	

Schedule for TORUN (Code Tr )  
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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
-----										
--- Fri 11 Jun 2021 Day 162 ---										
17 12 20	J1548	11 47 39	35.1	99.8	-4.0		-39.7	-16	1028	No stop
17 15 50	---	11 51 09	35.6	100.6	-4.0		-39.6	194	1082	17 12 21
17 16 30	J1547+2052	11 51 50	34.8	101.9	-3.9		-38.9	25	1082	17 16 30
17 17 50	=1545+210	11 53 10	35.0	102.2	-3.9		-38.9	80	1103	17 16 31
17 17 50	J1548	11 53 10	35.9	101.0	-3.9		-39.5	-16	1103	No stop
17 21 20	---	11 56 40	36.4	101.8	-3.9		-39.4	194	1157	17 17 51
17 21 20	J1547+2052	11 56 40	35.6	103.0	-3.9		-38.8	-15	1157	No stop
17 22 50	=1545+210	11 58 11	35.8	103.3	-3.8		-38.7	75	1180	17 21 21
17 23 20	J1545+2006	11 58 41	35.6	104.5	-3.8		-38.2	16	1180	17 23 20
17 25 20	=1543+202	12 00 41	35.9	105.0	-3.8		-38.1	120	1211	17 23 21
17 25 20	J1547+2052	12 00 41	36.1	103.9	-3.8		-38.6	-14	1211	No stop
17 26 50	=1545+210	12 02 11	36.4	104.2	-3.8		-38.5	76	1234	17 25 21
17 26 50	J1548	12 02 11	37.2	103.0	-3.8		-39.1	-16	1234	No stop
17 30 20	---	12 05 42	37.7	103.8	-3.7		-39.0	194	1288	17 26 51
17 31 00	J1547+2052	12 06 22	37.0	105.2	-3.7		-38.3	25	1288	17 31 00
17 32 20	=1545+210	12 07 42	37.2	105.5	-3.7		-38.2	80	1309	17 31 01
17 32 20	J1548	12 07 42	38.0	104.3	-3.7		-38.9	-16	1309	No stop
17 35 50	---	12 11 13	38.5	105.1	-3.6		-38.7	194	1363	17 32 21
17 35 50	J1547+2052	12 11 13	37.7	106.3	-3.6		-38.1	-15	1363	No stop
17 37 20	=1545+210	12 12 43	37.9	106.7	-3.6		-38.0	75	1386	17 35 51
17 37 20	J1548	12 12 43	38.7	105.4	-3.6		-38.7	-16	1386	No stop
17 40 50	---	12 16 14	39.2	106.2	-3.6		-38.5	194	1440	17 37 21
17 41 30	J1547+2052	12 16 54	38.5	107.6	-3.5		-37.7	24	1440	17 41 30
17 42 50	=1545+210	12 18 14	38.7	107.9	-3.5		-37.7	80	1461	17 41 31
17 42 50	J1548	12 18 14	39.5	106.7	-3.5		-38.4	-16	1461	No stop
17 46 20	---	12 21 44	40.0	107.5	-3.5		-38.2	194	1515	17 42 51
17 46 20	J1547+2052	12 21 44	39.2	108.8	-3.4		-37.5	-16	1515	No stop
17 47 50	=1545+210	12 23 15	39.4	109.1	-3.4		-37.4	74	1538	17 46 21
17 48 20	J1545+2006	12 23 45	39.2	110.4	-3.4		-36.8	15	1538	17 48 20
17 50 20	=1543+202	12 25 45	39.4	110.9	-3.3		-36.7	120	1569	17 48 21

Schedule for TORUN (Code Tr )  
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 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 11 Jun 2021 Day 162 ---										
17 50 20	J1547+2052	12 25 45	39.7	109.7	-3.4		-37.2	-14	1569	No stop
17 51 50	=1545+210	12 27 15	40.0	110.1	-3.4		-37.1	76	1592	17 50 21
17 51 50	J1548	12 27 15	40.8	108.9	-3.4		-37.8	-16	1592	No stop
17 55 20	---	12 30 46	41.3	109.7	-3.3		-37.6	194	1646	17 51 51
17 56 00	J1547+2052	12 31 26	40.5	111.1	-3.3		-36.8	24	1646	17 56 00
17 57 20	=1545+210	12 32 46	40.7	111.5	-3.3		-36.7	80	1667	17 56 01
17 57 20	J1548	12 32 46	41.6	110.2	-3.3		-37.5	-16	1667	No stop
18 00 50	---	12 36 17	42.1	111.1	-3.2		-37.2	194	1721	17 57 21
18 00 50	J1547+2052	12 36 17	41.2	112.3	-3.2		-36.5	-16	1721	No stop
18 02 20	=1545+210	12 37 47	41.4	112.7	-3.2		-36.3	74	1744	18 00 51
18 02 20	J1548	12 37 47	42.3	111.5	-3.2		-37.1	-16	1744	No stop
18 05 50	---	12 41 18	42.8	112.3	-3.1		-36.8	194	1798	18 02 21
18 06 30	J1547+2052	12 41 58	42.0	113.8	-3.1		-36.0	24	1798	18 06 30
18 07 50	=1545+210	12 43 18	42.2	114.1	-3.1		-35.9	80	1819	18 06 31
18 07 50	J1548	12 43 18	43.1	112.8	-3.1		-36.7	-16	1819	No stop
18 11 20	---	12 46 49	43.6	113.7	-3.0		-36.4	194	1873	18 07 51
18 11 20	J1547+2052	12 46 49	42.7	115.0	-3.0		-35.6	-16	1873	No stop
18 12 50	=1545+210	12 48 19	42.9	115.4	-3.0		-35.5	74	1896	18 11 21
18 13 20	J1545+2006	12 48 49	42.6	116.7	-3.0		-34.8	15	1896	18 13 20
18 15 20	=1543+202	12 50 49	42.9	117.2	-2.9		-34.6	120	1927	18 13 21
18 15 20	J1547+2052	12 50 49	43.2	116.1	-3.0		-35.2	-14	1927	No stop
18 16 50	=1545+210	12 52 19	43.4	116.5	-2.9		-35.1	76	1950	18 15 21
18 16 50	J1548	12 52 19	44.3	115.2	-3.0		-35.9	-16	1950	No stop
18 20 20	---	12 55 50	44.8	116.1	-2.9		-35.6	194	2004	18 16 51
18 21 00	J1547+2052	12 56 30	44.0	117.6	-2.9		-34.7	24	2004	18 21 00
18 22 20	=1545+210	12 57 50	44.1	117.9	-2.8		-34.6	80	2025	18 21 01
18 22 20	J1548	12 57 50	45.1	116.6	-2.9		-35.4	-16	2025	No stop
18 25 50	---	13 01 21	45.5	117.6	-2.8		-35.1	194	2079	18 22 21
18 25 50	J1547+2052	13 01 21	44.6	118.9	-2.8		-34.2	-16	2079	No stop
18 27 20	=1545+210	13 02 51	44.8	119.3	-2.8		-34.1	74	2102	18 25 51

Schedule for TORUN (Code Tr )  
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 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 11 Jun 2021 Day 162 ---										
18 27 20	J1548	13 02 51	45.7	118.0	-2.8		-34.9	-16	2102	No stop
18 30 50	---	13 06 22	46.2	118.9	-2.7		-34.5	194	2156	18 27 21
18 31 30	J1547+2052	13 07 02	45.4	120.4	-2.7		-33.6	24	2156	18 31 30
18 32 50	=1545+210	13 08 22	45.5	120.8	-2.7		-33.5	80	2177	18 31 31
18 32 50	J1548	13 08 22	46.4	119.5	-2.7		-34.3	-16	2177	No stop
18 36 20	---	13 11 53	46.9	120.5	-2.6		-33.9	194	2231	18 32 51
18 36 20	J1547+2052	13 11 53	46.0	121.8	-2.6		-33.1	-16	2231	No stop
18 37 50	=1545+210	13 13 23	46.2	122.2	-2.6		-32.9	74	2254	18 36 21
18 38 20	J1545+2006	13 13 53	45.9	123.5	-2.5		-32.2	15	2254	18 38 20
18 40 20	=1543+202	13 15 53	46.1	124.1	-2.5		-32.0	120	2285	18 38 21
18 40 20	J1547+2052	13 15 53	46.5	122.9	-2.5		-32.6	-15	2285	No stop
18 41 50	=1545+210	13 17 24	46.7	123.3	-2.5		-32.5	75	2308	18 40 21
18 41 50	J1548	13 17 24	47.6	122.1	-2.5		-33.3	-16	2308	No stop
18 45 20	---	13 20 54	48.1	123.1	-2.5		-32.9	194	2363	18 41 51
18 46 00	J1547+2052	13 21 34	47.2	124.6	-2.5		-31.9	24	2363	18 46 00
18 47 20	=1545+210	13 22 54	47.4	124.9	-2.4		-31.8	80	2383	18 46 01
18 47 20	J1548	13 22 54	48.3	123.7	-2.4		-32.6	-16	2383	No stop
18 50 50	---	13 26 25	48.7	124.7	-2.4		-32.2	194	2437	18 47 21
18 50 50	J1547+2052	13 26 25	47.8	126.0	-2.4		-31.3	-16	2437	No stop
18 52 20	=1545+210	13 27 55	48.0	126.4	-2.3		-31.1	74	2460	18 50 51
18 52 20	J1548	13 27 55	48.9	125.1	-2.4		-32.0	-16	2460	No stop
18 55 50	---	13 31 26	49.4	126.2	-2.3		-31.5	194	2515	18 52 21
18 56 30	J1547+2052	13 32 06	48.5	127.7	-2.3		-30.6	24	2515	18 56 30
18 57 50	=1545+210	13 33 26	48.6	128.1	-2.3		-30.4	80	2535	18 56 31
18 57 50	J1548	13 33 26	49.6	126.8	-2.3		-31.3	-17	2535	No stop
19 01 20	---	13 36 57	50.0	127.9	-2.2		-30.8	193	2589	18 57 51
19 01 20	J1547+2052	13 36 57	49.0	129.2	-2.2		-29.9	-16	2589	No stop
19 02 50	=1545+210	13 38 27	49.2	129.6	-2.2		-29.6	74	2612	19 01 21
19 10 50	3C345	13 46 28	57.3	95.9	-3.0		-51.0	395	2612	19 10 50
19 14 50	---	13 50 29	57.9	96.8	-2.9		-50.9	240	2674	19 10 51

Schedule for TORUN (Code Tr )  
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Page 7

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 11 Jun 2021 Day 162 ---										
19 16 20	J1547+2052	13 51 59	50.7	134.0	-1.9		-27.5	1	2674	19 16 20
19 18 10	=1545+210	13 53 50	50.9	134.6	-1.9		-27.2	110	2703	19 16 21
19 18 40	J1545+2006	13 54 20	50.5	136.0	-1.9		-26.4	15	2703	19 18 40
19 20 40	=1543+202	13 56 20	50.7	136.6	-1.8		-26.0	120	2734	19 18 41
19 20 40	J1547+2052	13 56 20	51.2	135.4	-1.9		-26.8	-15	2734	No stop
19 22 10	=1545+210	13 57 50	51.4	135.9	-1.8		-26.6	75	2757	19 20 41
19 22 10	J1548	13 57 50	52.4	134.6	-1.9		-27.5	-17	2757	No stop
19 25 40	---	14 01 21	52.7	135.8	-1.8		-26.8	193	2811	19 22 11
19 26 20	J1547+2052	14 02 01	51.8	137.3	-1.8		-25.8	23	2811	19 26 20
19 27 40	=1545+210	14 03 21	51.9	137.8	-1.8		-25.6	80	2831	19 26 21
19 27 40	J1548	14 03 21	53.0	136.5	-1.8		-26.5	-17	2831	No stop
19 31 10	---	14 06 52	53.3	137.7	-1.7		-25.8	193	2886	19 27 41
19 31 10	J1547+2052	14 06 52	52.3	139.0	-1.7		-24.9	-17	2886	No stop
19 32 40	=1545+210	14 08 22	52.4	139.5	-1.7		-24.7	73	2909	19 31 11
19 32 40	J1548	14 08 22	53.5	138.3	-1.7		-25.6	-17	2909	No stop
19 36 10	---	14 11 53	53.8	139.5	-1.6		-24.9	193	2963	19 32 41
19 36 50	J1547+2052	14 12 33	52.8	141.0	-1.6		-23.9	23	2963	19 36 50
19 38 10	=1545+210	14 13 53	52.9	141.4	-1.6		-23.6	80	2983	19 36 51
19 38 10	J1548	14 13 53	54.0	140.2	-1.6		-24.5	-17	2983	No stop
19 41 40	---	14 17 23	54.3	141.5	-1.5		-23.8	193	3038	19 38 11
19 41 40	J1547+2052	14 17 23	53.3	142.7	-1.5		-22.9	-17	3038	No stop
19 43 10	=1545+210	14 18 54	53.4	143.2	-1.5		-22.6	73	3061	19 41 41
19 43 40	J1545+2006	14 19 24	52.9	144.7	-1.5		-21.7	15	3061	19 43 40
19 45 40	=1543+202	14 21 24	53.1	145.4	-1.4		-21.3	120	3092	19 43 41
19 45 40	J1547+2052	14 21 24	53.6	144.1	-1.5		-22.1	-15	3092	No stop
19 47 10	=1545+210	14 22 54	53.8	144.7	-1.4		-21.8	75	3115	19 45 41
19 47 10	J1548	14 22 54	54.8	143.5	-1.4		-22.7	-17	3115	No stop
19 50 40	---	14 26 25	55.2	144.8	-1.4		-21.9	193	3169	19 47 11
19 51 20	J1547+2052	14 27 05	54.1	146.2	-1.4		-20.9	23	3169	19 51 20
19 52 40	=1545+210	14 28 25	54.2	146.7	-1.3		-20.6	80	3190	19 51 21

Schedule for TORUN (Code Tr )  
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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
-----										
--- Fri 11 Jun 2021 Day 162 ---										
19 52 40	J1548	14 28 25	55.3	145.6	-1.4		-21.5	-17	3190	No stop
19 56 10	---	14 31 56	55.6	146.9	-1.3		-20.7	193	3244	19 52 41
19 56 10	J1547+2052	14 31 56	54.5	148.1	-1.3		-19.9	-17	3244	No stop
19 57 40	=1545+210	14 33 26	54.6	148.6	-1.3		-19.5	73	3267	19 56 11
19 57 40	J1548	14 33 26	55.7	147.5	-1.3		-20.4	-17	3267	No stop
20 01 10	---	14 36 57	56.0	148.9	-1.2		-19.6	193	3321	19 57 41
20 01 50	J1547+2052	14 37 37	54.9	150.2	-1.2		-18.6	23	3321	20 01 50
20 03 10	=1545+210	14 38 57	55.0	150.7	-1.2		-18.3	80	3342	20 01 51
20 03 10	J1548	14 38 57	56.2	149.6	-1.2		-19.1	-17	3342	No stop
20 06 40	---	14 42 28	56.4	151.0	-1.1		-18.3	193	3396	20 03 11
20 06 40	J1547+2052	14 42 28	55.3	152.1	-1.1		-17.5	-17	3396	No stop
20 08 10	=1545+210	14 43 58	55.4	152.7	-1.1		-17.1	73	3419	20 06 41
20 08 40	J1545+2006	14 44 28	54.8	154.1	-1.0		-16.2	15	3419	20 08 40
20 10 40	=1543+202	14 46 28	55.0	154.9	-1.0		-15.7	120	3450	20 08 41
20 10 40	J1547+2052	14 46 28	55.6	153.7	-1.0		-16.5	-15	3450	No stop
20 12 10	=1545+210	14 47 58	55.7	154.3	-1.0		-16.2	75	3473	20 10 41
20 12 10	J1548	14 47 58	56.8	153.2	-1.0		-17.0	-17	3473	No stop
20 15 40	---	14 51 29	57.0	154.7	-1.0		-16.1	193	3527	20 12 11
20 16 20	J1547+2052	14 52 09	55.9	156.0	-0.9		-15.2	23	3527	20 16 20
20 17 40	=1545+210	14 53 29	56.0	156.5	-0.9		-14.8	80	3548	20 16 21
20 17 40	J1548	14 53 29	57.2	155.5	-0.9		-15.6	-18	3548	No stop
20 21 10	---	14 57 00	57.4	156.9	-0.9		-14.7	192	3602	20 17 41
20 21 10	J1547+2052	14 57 00	56.2	157.9	-0.9		-14.0	-17	3602	No stop
20 22 40	=1545+210	14 58 30	56.3	158.5	-0.8		-13.6	73	3625	20 21 11
20 22 40	J1548	14 58 30	57.5	157.6	-0.9		-14.3	-18	3625	No stop
20 26 10	---	15 02 01	57.7	159.0	-0.8		-13.4	192	3679	20 22 41
20 26 50	J1547+2052	15 02 41	56.5	160.3	-0.8		-12.5	23	3679	20 26 50
20 28 10	=1545+210	15 04 01	56.6	160.8	-0.7		-12.2	80	3700	20 26 51
20 28 10	J1548	15 04 01	57.8	159.9	-0.8		-12.9	-18	3700	No stop
20 31 40	---	15 07 32	58.0	161.4	-0.7		-11.9	192	3754	20 28 11

Schedule for TORUN (Code Tr )  
 ES098B

Page 9

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 11 Jun 2021 Day 162 ---										
20 31 40	J1547+2052	15 07 32	56.8	162.3	-0.7		-11.3	-18	3754	No stop
20 33 10	=1545+210	15 09 02	56.8	162.9	-0.7		-10.9	72	3777	20 31 41
20 33 40	J1545+2006	15 09 32	56.2	164.3	-0.6		-10.0	15	3777	20 33 40
20 35 40	=1543+202	15 11 32	56.3	165.1	-0.6		-9.5	120	3808	20 33 41
20 35 40	J1547+2052	15 11 32	56.9	164.0	-0.6		-10.2	-14	3808	No stop
20 37 10	=1545+210	15 13 03	57.0	164.6	-0.6		-9.8	76	3831	20 35 41
20 37 10	J1548	15 13 03	58.2	163.8	-0.6		-10.4	-18	3831	No stop
20 40 40	---	15 16 33	58.3	165.3	-0.6		-9.5	192	3885	20 37 11
20 41 20	J1547+2052	15 17 13	57.1	166.4	-0.5		-8.7	22	3885	20 41 20
20 42 40	=1545+210	15 18 33	57.2	166.9	-0.5		-8.4	80	3906	20 41 21
20 42 40	J1548	15 18 33	58.4	166.1	-0.5		-8.9	-18	3906	No stop
20 46 10	---	15 22 04	58.5	167.7	-0.5		-7.9	192	3960	20 42 41
20 46 10	J1547+2052	15 22 04	57.3	168.4	-0.4		-7.4	-18	3960	No stop
20 47 40	=1545+210	15 23 34	57.4	169.1	-0.4		-7.0	72	3983	20 46 11
20 47 40	J1548	15 23 34	58.6	168.3	-0.4		-7.5	-18	3983	No stop
20 51 10	---	15 27 05	58.7	169.9	-0.4		-6.5	192	4037	20 47 41
20 51 50	J1547+2052	15 27 45	57.5	170.9	-0.3		-5.8	22	4037	20 51 50
20 53 10	=1545+210	15 29 05	57.5	171.5	-0.3		-5.5	80	4058	20 51 51
20 53 10	J1548	15 29 05	58.7	170.8	-0.3		-6.0	-18	4058	No stop
20 56 40	---	15 32 36	58.8	172.4	-0.3		-4.9	192	4112	20 53 11
20 56 40	J1547+2052	15 32 36	57.6	173.0	-0.3		-4.5	-18	4112	No stop
20 58 10	=1545+210	15 34 06	57.6	173.6	-0.2		-4.1	72	4135	20 56 41
20 58 40	J1545+2006	15 34 36	56.9	174.9	-0.2		-3.3	15	4135	20 58 40
21 00 40	=1543+202	15 36 36	56.9	175.7	-0.2		-2.7	120	4166	20 58 41
21 00 40	J1547+2052	15 36 36	57.6	174.7	-0.2		-3.4	-15	4166	No stop
21 02 10	=1545+210	15 38 07	57.6	175.4	-0.2		-3.0	75	4189	21 00 41
21 02 10	J1548	15 38 07	58.9	174.8	-0.2		-3.4	-18	4189	No stop
21 05 40	---	15 41 37	58.9	176.4	-0.1		-2.3	192	4243	21 02 11
21 06 20	J1547+2052	15 42 17	57.7	177.2	-0.1		-1.8	22	4243	21 06 20
21 07 40	=1545+210	15 43 38	57.7	177.8	-0.1		-1.4	80	4264	21 06 21

Schedule for TORUN (Code Tr )  
 ES098B

Page 10

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.  
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 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 11 Jun 2021 Day 162 ---										
21 07 40	J1548	15 43 38	59.0	177.3	-0.1		-1.8	-18	4264	No stop
21 11 10	---	15 47 08	59.0	178.9	-0.0		-0.7	192	4318	21 07 41
21 11 10	J1547+2052	15 47 08	57.7	179.3	-0.0		-0.4	-18	4318	No stop
21 12 40	=1545+210	15 48 38	57.7	180.0	-0.0		-0.0	72	4341	21 11 11
21 12 40	J1548	15 48 38	59.0	179.5	-0.0		-0.3	-18	4341	No stop
21 16 10	---	15 52 09	59.0	181.1	0.0		0.7	192	4395	21 12 41
21 16 50	J1547+2052	15 52 49	57.7	181.8	0.1		1.2	22	4395	21 16 50
21 18 10	=1545+210	15 54 09	57.7	182.4	0.1		1.5	80	4416	21 16 51
21 18 10	J1548	15 54 09	59.0	182.0	0.1		1.3	-18	4416	No stop
21 21 40	---	15 57 40	58.9	183.6	0.1		2.3	192	4470	21 18 11
21 21 40	J1547+2052	15 57 40	57.7	183.9	0.1		2.5	-18	4470	No stop
21 23 10	=1545+210	15 59 10	57.6	184.6	0.2		2.9	72	4493	21 21 41
21 23 40	J1545+2006	15 59 40	56.9	185.6	0.2		3.6	15	4493	21 23 40
21 25 40	=1543+202	16 01 40	56.8	186.5	0.3		4.2	120	4524	21 23 41
21 25 40	J1547+2052	16 01 40	57.6	185.7	0.2		3.6	-15	4524	No stop
21 27 10	=1545+210	16 03 11	57.6	186.3	0.2		4.1	75	4547	21 25 41
21 27 10	J1548	16 03 11	58.9	186.1	0.2		3.9	-18	4547	No stop
21 30 40	---	16 06 41	58.8	187.6	0.3		4.9	192	4601	21 27 11
21 31 20	J1547+2052	16 07 21	57.5	188.1	0.3		5.2	22	4601	21 31 20
21 32 40	=1545+210	16 08 42	57.5	188.7	0.3		5.6	80	4622	21 31 21
21 32 40	J1548	16 08 42	58.8	188.5	0.3		5.5	-18	4622	No stop
21 36 10	---	16 12 12	58.7	190.1	0.4		6.5	192	4676	21 32 41
21 36 10	J1547+2052	16 12 12	57.4	190.2	0.4		6.6	-18	4676	No stop
21 37 40	=1545+210	16 13 42	57.4	190.9	0.4		7.0	72	4699	21 36 11
21 37 40	J1548	16 13 42	58.6	190.7	0.4		6.9	-18	4699	No stop
21 41 10	---	16 17 13	58.5	192.3	0.5		7.9	192	4753	21 37 41
21 41 50	J1547+2052	16 17 53	57.2	192.7	0.5		8.1	22	4753	21 41 50
21 43 10	=1545+210	16 19 13	57.2	193.2	0.5		8.5	80	4774	21 41 51
21 43 10	J1548	16 19 13	58.5	193.2	0.5		8.5	-18	4774	No stop
21 46 40	---	16 22 44	58.3	194.7	0.6		9.5	192	4828	21 43 11



Schedule for TORUN (Code Tr )  
 ES098B

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 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 11 Jun 2021 Day 162 ---										
21 46 40	J1547+2052	16 22 44	57.1	194.7	0.6		9.4	-18	4828	No stop
21 48 10	=1545+210	16 24 14	57.0	195.4	0.6		9.8	72	4851	21 46 41
21 48 10	J1545+2006	16 24 14	56.2	196.0	0.6		10.2	-16	4851	No stop
21 50 10	=1543+202	16 26 15	56.1	196.9	0.7		10.7	104	4882	21 48 11
21 50 40	J1547+2052	16 26 45	56.9	196.4	0.6		10.5	14	4882	21 50 40
21 52 10	=1545+210	16 28 15	56.8	197.1	0.7		10.9	90	4905	21 50 41
21 52 10	J1548	16 28 15	58.1	197.1	0.6		11.0	-18	4905	No stop
21 54 10	---	16 30 15	58.0	198.0	0.7		11.5	102	4936	21 52 11
21 54 10	J1547+2052	16 30 15	56.7	197.9	0.7		11.4	-18	4936	No stop
21 55 40	=1545+210	16 31 45	56.7	198.5	0.7		11.8	72	4960	21 54 11
21 57 10	3C345	16 33 16	76.6	171.3	-0.2		-6.8	2	4960	21 57 10
22 00 40	---	16 36 46	76.6	174.2	-0.1		-4.5	210	5014	21 57 11

SETUP FILE INFORMATION:

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

==== Setup file: sess221.C2048

Setup group: 11	Station: TORUN	Total bit rate: 2048
Format: VDIF	Bits per sample: 2	Sample rate: 64.000
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	9	1	9	2	10	2	10	10
	3	11	3	11	4	12	4	12	12
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: 9 Setup file default. Used with PCAL = off

LO sum=	4830.49	4830.49	4830.49	4830.49	4894.49	4894.49	4894.49	4894.49
	4958.49	4958.49	4958.49	4958.49	5022.49	5022.49	5022.49	5022.49
BBC fr=	630.49	630.49	630.49	630.49	694.49	694.49	694.49	694.49
	758.49	758.49	758.49	758.49	822.49	822.49	822.49	822.49
Bandwd=	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00

Matching frequency sets: 9

Track assignments are:

track1= 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16  
 barrel=roll\_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* J1548	15 46 32.133276	* 15 48 43.060000	15 49 39.708618	0.00
	22 17 19.73183	* 22 08 12.68000	22 04 23.74687	0.00
1545+210	15 45 31.120610	* 15 47 43.537755	15 48 40.801065	0.21
* J1547+2052	21 01 27.34370	* 20 52 16.61322	20 48 26.00428	0.43
	Main calibrator, Fs/x~50 mJy, 1.3 deg			
1543+202	15 43 20.954571	* 15 45 34.343114	15 46 32.004500	0.15
* J1545+2006	20 15 59.07342	* 20 06 40.47056	20 02 46.50380	0.20
	Phase checker, close to CAL1, 2.15deg from target			
* 3C286	13 28 49.657769	* 13 31 08.288061	13 32 07.669821	0.17
J1331+3030	30 45 58.64066	* 30 30 32.95930	30 24 09.68847	0.16
1328+307	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
J1331+30	GSFC 2016a X/S astro solution, 269 observations.			
* 3C345	16 41 17.606229	* 16 42 58.809967	16 43 43.307497	0.79
J1642+3948	39 54 10.81492	* 39 48 36.99399	39 46 16.99117	0.59
1641+399	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
J1642+39	GSFC 2016a X/S astro solution, 53724 observations.			

EVN 5 GHZ AND 22 GHZ STUDY OF 43 COMPACT RADIO SOURCES  
 PI: *Carolina Casadio*

Observing mode: Continuum

Schedule for TORUN (Code Tr ) Page 2

EVN 5 GHZ and 22 GHZ study of 43 compact radio sources

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

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 12 Jun 2021 Day 163 ---										
Next scan frequencies:		4830.49	4830.49	4830.49	4830.49	4830.49	4894.49	4894.49	4894.49	4894.49
		4958.49	4958.49	4958.49	4958.49	4958.49	5022.49	5022.49	5022.49	5022.49
Next BBC frequencies:		630.49	630.49	630.49	630.49	630.49	694.49	694.49	694.49	694.49
		758.49	758.49	758.49	758.49	758.49	822.49	822.49	822.49	822.49
Next scan bandwidths:		32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
		32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
-----										
04 00 00	J2253+1608	22 37 05	53.0	172.8	-0.3		-4.5	0	0	04 00 00
04 03 00	---	22 40 06	53.0	174.0	-0.2		-3.7	180	46	04 00 01
-----										
04 04 00	J2223+0838	22 41 06	45.5	185.9	0.3		3.6	18	46	04 04 00
04 05 30	---	22 42 36	45.5	186.4	0.3		3.9	90	70	04 04 01
-----										
04 05 30	J2225+0841	22 42 36	45.6	185.6	0.3		3.4	-13	70	No stop
04 09 00	---	22 46 07	45.5	186.8	0.3		4.1	197	124	04 05 31
-----										
04 09 30	J2223+0838	22 46 37	45.4	187.8	0.4		4.7	17	124	04 09 30
04 10 30	---	22 47 37	45.4	188.2	0.4		5.0	60	139	04 09 31
-----										
04 10 30	J2225+0841	22 47 37	45.5	187.4	0.3		4.5	-13	139	No stop
04 14 00	---	22 51 08	45.4	188.6	0.4		5.2	197	193	04 10 31
-----										
04 14 00	J2223+0838	22 51 08	45.3	189.4	0.4		5.7	-13	193	No stop
04 15 30	---	22 52 38	45.3	189.9	0.5		6.0	77	216	04 14 01
-----										
04 15 30	J2225+0841	22 52 38	45.4	189.1	0.4		5.5	-13	216	No stop
04 19 00	---	22 56 08	45.3	190.3	0.5		6.3	197	271	04 15 31
-----										
04 19 30	J2223+0838	22 56 38	45.2	191.3	0.5		6.9	17	271	04 19 30
04 20 30	---	22 57 39	45.2	191.7	0.6		7.1	60	286	04 19 31
-----										
04 20 30	J2225+0841	22 57 39	45.3	190.9	0.5		6.6	-13	286	No stop
04 24 00	---	23 01 09	45.2	192.1	0.6		7.3	197	340	04 20 31
-----										
04 24 00	J2223+0838	23 01 09	45.0	192.9	0.6		7.8	-13	340	No stop
04 25 30	---	23 02 39	45.0	193.4	0.6		8.1	77	363	04 24 01
-----										
04 25 30	J2225+0841	23 02 39	45.1	192.6	0.6		7.6	-13	363	No stop
04 29 00	---	23 06 10	45.0	193.8	0.7		8.3	197	417	04 25 31
-----										
04 29 30	J2223+0838	23 06 40	44.8	194.8	0.7		8.9	17	417	04 29 30
04 30 30	---	23 07 40	44.8	195.2	0.7		9.1	60	433	04 29 31

Schedule for TORUN (Code Tr ) Page 3

EVN 5 GHz and 22 GHz study of 43 compact radio sources

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart		
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC	
---	Sat 12 Jun 2021	Day 163					---				
04 30 30	J2225+0841	23 07 40	44.9	194.3	0.7		8.7	-13	433	No stop	
04 34 00	---	23 11 11	44.8	195.6	0.7		9.4	197	487	04 30 31	
04 34 00	J2223+0838	23 11 11	44.7	196.4	0.8		9.9	-13	487	No stop	
04 35 30	---	23 12 41	44.6	196.9	0.8		10.2	77	510	04 34 01	
04 38 00	J0226+0937	23 15 12	32.1	120.1	-3.2		-31.8	-18	510	04 38 00	
04 41 20	---	23 18 32	32.5	121.0	-3.1		-31.5	182	562	04 38 01	
04 41 20	J0222+0952	23 18 32	33.2	121.8	-3.1		-31.2	-15	562	No stop	
04 44 50	---	23 22 03	33.7	122.7	-3.0		-30.9	195	616	04 41 21	
04 45 20	J0226+0937	23 22 33	33.0	122.0	-3.1		-31.1	15	616	04 45 20	
04 46 20	---	23 23 33	33.1	122.2	-3.1		-31.0	60	631	04 45 21	
04 46 20	J0222+0952	23 23 33	33.8	123.1	-3.0		-30.7	-15	631	No stop	
04 49 50	---	23 27 03	34.3	124.0	-2.9		-30.4	195	685	04 46 21	
04 49 50	J0226+0937	23 27 03	33.6	123.1	-3.0		-30.7	-15	685	No stop	
04 51 20	---	23 28 34	33.8	123.5	-3.0		-30.5	75	709	04 49 51	
04 51 20	J0222+0952	23 28 34	34.5	124.4	-2.9		-30.2	-15	709	No stop	
04 54 50	---	23 32 04	34.9	125.3	-2.9		-29.9	195	763	04 51 21	
04 55 20	J0226+0937	23 32 34	34.3	124.5	-2.9		-30.1	15	763	04 55 20	
04 56 20	---	23 33 35	34.4	124.8	-2.9		-30.0	60	778	04 55 21	
04 56 20	J0222+0952	23 33 35	35.1	125.7	-2.8		-29.7	-15	778	No stop	
04 59 50	---	23 37 05	35.5	126.6	-2.8		-29.3	195	832	04 56 21	
04 59 50	J0226+0937	23 37 05	34.8	125.7	-2.8		-29.7	-15	832	No stop	
05 01 20	---	23 38 35	35.0	126.1	-2.8		-29.5	75	855	04 59 51	
05 01 20	J0222+0952	23 38 35	35.7	127.0	-2.7		-29.1	-15	855	No stop	
05 04 50	---	23 42 06	36.1	127.9	-2.7		-28.7	195	909	05 01 21	
05 05 20	J0226+0937	23 42 36	35.5	127.2	-2.7		-29.1	16	909	05 05 20	
05 06 20	---	23 43 36	35.6	127.4	-2.7		-28.9	60	925	05 05 21	
05 06 20	J0222+0952	23 43 36	36.3	128.3	-2.7		-28.6	-15	925	No stop	
05 09 50	---	23 47 07	36.7	129.3	-2.6		-28.2	195	979	05 06 21	
05 09 50	J0226+0937	23 47 07	36.0	128.4	-2.7		-28.5	-14	979	No stop	
05 11 20	---	23 48 37	36.2	128.8	-2.6		-28.4	76	1002	05 09 51	
05 15 50	J2255+4202	23 53 08	75.5	226.5	0.9		36.0	61	1002	05 15 50	
05 18 50	---	23 56 08	75.2	228.3	1.0		37.2	180	1049	05 15 51	

Schedule for TORUN (Code Tr ) Page 4

EVN 5 GHz and 22 GHz study of 43 compact radio sources

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 12 Jun 2021 Day 163 ---										
05 18 50	J2259+4037	23 56 08	74.4	223.1	0.9		32.8	-25	1049	No stop
05 22 40	---	23 59 59	74.0	225.4	1.0		34.3	205	1108	05 18 51
05 23 20	J2255+4202	00 00 39	74.7	230.8	1.1		38.9	14	1108	05 23 20
05 24 20	---	00 01 39	74.6	231.4	1.1		39.2	60	1123	05 23 21
05 24 20	J2259+4037	00 01 39	73.8	226.3	1.0		35.0	-25	1123	No stop
05 28 10	---	00 05 30	73.4	228.4	1.1		36.4	205	1183	05 24 21
05 28 10	J2255+4202	00 05 30	74.1	233.4	1.1		40.6	-25	1183	No stop
05 30 00	---	00 07 20	73.9	234.3	1.2		41.1	85	1211	05 28 11
05 30 00	J2259+4037	00 07 20	73.2	229.4	1.1		37.0	-25	1211	No stop
05 33 50	---	00 11 11	72.8	231.4	1.2		38.2	205	1270	05 30 01
05 34 30	J2255+4202	00 11 51	73.3	236.5	1.3		42.5	15	1270	05 34 30
05 35 30	---	00 12 51	73.2	237.0	1.3		42.8	60	1286	05 34 31
05 35 30	J2259+4037	00 12 51	72.6	232.2	1.2		38.8	-24	1286	No stop
05 39 20	---	00 16 42	72.1	234.0	1.3		39.9	206	1345	05 35 31
05 39 20	J2255+4202	00 16 42	72.7	238.8	1.3		43.8	-25	1345	No stop
05 41 10	---	00 18 32	72.5	239.6	1.4		44.3	85	1373	05 39 21
05 41 10	J2259+4037	00 18 32	71.9	234.9	1.3		40.4	-24	1373	No stop
05 45 00	---	00 22 23	71.4	236.6	1.4		41.5	206	1432	05 41 11
05 45 40	J2255+4202	00 23 03	71.9	241.5	1.4		45.4	16	1432	05 45 40
05 46 40	---	00 24 03	71.8	242.0	1.5		45.6	60	1448	05 45 41
05 46 40	J2259+4037	00 24 03	71.2	237.4	1.4		41.9	-24	1448	No stop
05 50 30	---	00 27 53	70.7	239.0	1.5		42.8	206	1507	05 46 41
05 50 30	J2255+4202	00 27 53	71.3	243.5	1.5		46.5	-24	1507	No stop
05 52 20	---	00 29 44	71.0	244.2	1.6		46.8	86	1536	05 50 31
05 55 50	J2327-0041	00 33 14	34.6	199.9	1.1		11.8	60	1536	05 55 50
05 58 50	---	00 36 15	34.5	200.8	1.1		12.3	180	1582	05 55 51
05 58 50	J2324-0058	00 36 15	34.0	201.6	1.2		12.8	-13	1582	No stop
06 02 20	---	00 39 45	33.8	202.6	1.2		13.4	197	1636	05 58 51
06 02 50	J2327-0041	00 40 15	34.3	202.0	1.2		13.0	17	1636	06 02 50
06 03 50	---	00 41 16	34.2	202.2	1.2		13.1	60	1651	06 02 51

Schedule for TORUN (Code Tr ) Page 5

EVN 5 GHz and 22 GHz study of 43 compact radio sources

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 12 Jun 2021 Day 163 ---										
06 03 50	J2324-0058	00 41 16	33.7	203.1	1.3		13.6	-13	1651	No stop
06 07 20	---	00 44 46	33.5	204.1	1.3		14.2	197	1706	06 03 51
06 07 20	J2327-0041	00 44 46	34.0	203.3	1.3		13.7	-13	1706	No stop
06 08 50	---	00 46 16	33.9	203.7	1.3		14.0	77	1729	06 07 21
06 08 50	J2324-0058	00 46 16	33.4	204.5	1.4		14.4	-13	1729	No stop
06 12 20	---	00 49 47	33.2	205.6	1.4		15.0	197	1783	06 08 51
06 12 50	J2327-0041	00 50 17	33.7	204.9	1.4		14.6	17	1783	06 12 50
06 13 50	---	00 51 17	33.6	205.2	1.4		14.8	60	1798	06 12 51
06 13 50	J2324-0058	00 51 17	33.1	206.0	1.4		15.3	-13	1798	No stop
06 17 20	---	00 54 48	32.9	207.0	1.5		15.8	197	1852	06 13 51
06 17 20	J2327-0041	00 54 48	33.4	206.2	1.4		15.4	-13	1852	No stop
06 18 50	---	00 56 18	33.3	206.6	1.5		15.6	77	1876	06 17 21
06 18 50	J2324-0058	00 56 18	32.8	207.4	1.5		16.1	-13	1876	No stop
06 22 20	---	00 59 49	32.5	208.4	1.6		16.6	197	1930	06 18 51
06 22 20	J2327-0041	00 59 49	33.0	207.6	1.5		16.2	-13	1930	No stop
06 23 50	---	01 01 19	32.9	208.1	1.6		16.4	77	1953	06 22 21
06 24 20	J2328-0634	01 01 49	27.3	205.9	1.5		15.3	-5	1953	06 24 20
06 26 20	---	01 03 49	27.2	206.5	1.6		15.6	115	1984	06 24 21
06 26 20	J2337-0622	01 03 49	28.0	204.1	1.4		14.3	-18	1984	No stop
06 30 00	---	01 07 30	27.7	205.1	1.5		14.9	202	2040	06 26 21
06 30 40	J2328-0634	01 08 10	26.9	207.6	1.6		16.3	21	2040	06 30 40
06 31 40	---	01 09 10	26.8	207.9	1.7		16.4	60	2056	06 30 41
06 31 40	J2337-0622	01 09 10	27.6	205.6	1.5		15.1	-18	2056	No stop
06 35 20	---	01 12 51	27.4	206.6	1.6		15.7	202	2113	06 31 41
06 35 20	J2328-0634	01 12 51	26.6	208.9	1.7		17.0	-19	2113	No stop
06 37 00	---	01 14 31	26.5	209.3	1.7		17.2	81	2138	06 35 21
06 37 00	J2337-0622	01 14 31	27.3	207.0	1.6		15.9	-18	2138	No stop
06 40 40	---	01 18 12	27.0	208.0	1.7		16.5	202	2195	06 37 01
06 41 20	J2328-0634	01 18 52	26.1	210.5	1.8		17.9	21	2195	06 41 20
06 42 20	---	01 19 52	26.1	210.7	1.8		18.0	60	2211	06 41 21

Schedule for TORUN (Code Tr ) Page 6

EVN 5 GHz and 22 GHz study of 43 compact radio sources

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

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

--- Sat 12 Jun 2021 Day 163 ---

06 42 20	J2337-0622	01 19 52	26.9	208.5	1.7	16.7	-18	2211	No stop
06 46 00	---	01 23 33	26.6	209.5	1.7	17.3	202	2267	06 42 21
06 46 00	J2328-0634	01 23 33	25.8	211.7	1.9	18.5	-19	2267	No stop
06 47 40	---	01 25 13	25.6	212.1	1.9	18.8	81	2293	06 46 01
06 47 40	J2337-0622	01 25 13	26.5	209.9	1.8	17.5	-18	2293	No stop
06 51 20	---	01 28 53	26.2	210.9	1.8	18.1	202	2350	06 47 41
06 51 20	J2328-0634	01 28 53	25.3	213.1	2.0	19.3	-19	2350	No stop
06 53 00	---	01 30 34	25.2	213.5	2.0	19.5	81	2375	06 51 21
06 57 00	J0237+2848	01 34 34	63.0	147.5	-1.1	-21.6	85	2375	06 57 00
07 00 00	---	01 37 35	63.3	148.9	-1.0	-20.7	180	2422	06 57 01

SETUP FILE INFORMATION:

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

==== Setup file: sess221.C2048

Setup group: 11	Station: TORUN	Total bit rate: 2048
Format: VDIF	Bits per sample: 2	Sample rate: 64.000
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	
	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	9	1	9	2	10	2	10	
	3	11	3	11	4	12	4	12	
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: 8 Setup file default. Used with PCAL = off

LO sum=	4830.49	4830.49	4830.49	4830.49	4894.49	4894.49	4894.49	4894.49
	4958.49	4958.49	4958.49	4958.49	5022.49	5022.49	5022.49	5022.49
BBC fr=	630.49	630.49	630.49	630.49	694.49	694.49	694.49	694.49
	758.49	758.49	758.49	758.49	822.49	822.49	822.49	822.49
Bandwd=	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00

Matching frequency sets: 8

Track assignments are:

track1= 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16

barrel=roll\_off

#### POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* J2225+0841	22 23 13.778443	* 22 25 43.480208	22 26 47.019656	0.00
	08 26 40.84989	* 08 41 57.17632	08 48 20.29212	0.00
* J2259+4037	22 56 45.590776	* 22 59 04.102658	23 00 02.785465	0.00
	40 21 41.93952	* 40 37 47.34798	40 44 21.30491	0.00
* J0222+0952	02 19 35.220659	* 02 22 15.608416	02 23 22.455089	0.00
	09 38 59.26872	* 09 52 37.82044	09 58 19.23842	0.00
* J2324-0058	23 21 30.636145	* 23 24 04.620465	23 25 09.642079	0.00
	-01 15 23.15620	*-00 58 54.16633	-00 51 57.28300	0.00
* J2337-0622	23 34 54.666101	* 23 37 29.228401	23 38 34.415617	0.00
	-06 38 48.97876	*-06 22 12.18085	-06 15 10.16671	0.00
* J2223+0838	22 20 51.382478	* 22 23 21.014100	22 24 24.536602	0.00
	08 23 42.06425	* 08 38 54.14000	08 45 15.49226	0.00
* J2255+4202	22 53 19.843648	* 22 55 36.707800	22 56 34.721219	0.00
	41 46 51.26638	* 42 02 52.53300	42 09 24.41493	0.00
* J0226+0937	02 23 33.344806	* 02 26 13.715400	02 27 20.539005	0.00
	09 23 58.33726	* 09 37 26.75800	09 43 03.98608	0.00



* J2327-0041	23 24 36.781294	* 23 27 10.699100	23 28 15.676106	0.00
	-00 58 28.80393	*-00 41 57.71400	-00 35 00.05406	0.00
* J2328-0634	23 26 04.324762	* 23 28 39.213700	23 29 44.586611	0.00
	-06 51 00.11643	*-06 34 28.06300	-06 27 27.94420	0.00
* J2253+1608	22 51 29.519701	* 22 53 57.747900	22 55 00.521557	0.00
	15 52 54.34817	* 16 08 53.56100	16 15 32.13948	0.00
* J0237+2848	02 34 55.589613	* 02 37 52.405700	02 39 06.044156	0.00
	28 35 11.40775	* 28 48 08.99000	28 53 28.99756	0.00

ec077atr

NEW UCD -6CM
PI: Juan B. Climent

Address: Dpto. Astronomia, Univ. Valencia

Observing mode: Phase-referencing at 6cm (2048 Mb/s)

Schedule for TORUN (Code Tr ) Page 2
new UCD -6cm

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.

Table with columns: Start UT, Stop UT, Source, LST, EL, AZ, HA, UP, ParA, Early Dwell, Disk GBytes, TPStart SYNC. Includes scan frequencies, BBC frequencies, and bandwidths for various sources like J1125+2610 and EQJ1122+2550.

Schedule for TORUN (Code Tr )  
new UCD -6cm

Page 3

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

Start UT	Source	Start / Stop					Early	Disk	TPStart		
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC	
-----											
---	Sat 12 Jun 2021	Day 163					---				
13 11 00	EQJ1122+2550	07 49 36	41.9	102.9	-3.6		-40.5	-14	572	No stop	
13 15 00	---	07 53 36	42.5	103.9	-3.5		-40.3	226	634	13 11 01	
13 15 30	J1125+2610	07 54 07	42.4	103.0	-3.5		-40.6	16	634	13 15 30	
13 17 30	=1123+264	07 56 07	42.7	103.5	-3.5		-40.5	120	665	13 15 31	
13 17 30	EQJ1122+2550	07 56 07	42.9	104.5	-3.5		-40.2	-14	665	No stop	
13 21 30	---	08 00 08	43.4	105.4	-3.4		-40.0	226	727	13 17 31	
13 21 30	J1125+2610	08 00 08	43.3	104.4	-3.4		-40.3	-14	727	No stop	
13 23 30	=1123+264	08 02 08	43.6	104.9	-3.4		-40.2	106	757	13 21 31	
13 23 30	EQJ1122+2550	08 02 08	43.7	105.9	-3.4		-39.9	-14	757	No stop	
13 27 30	---	08 06 08	44.3	106.9	-3.3		-39.6	226	819	13 23 31	
13 28 00	J1125+2610	08 06 39	44.2	106.0	-3.3		-40.0	16	819	13 28 00	
13 30 00	=1123+264	08 08 39	44.5	106.4	-3.3		-39.9	120	850	13 28 01	
13 30 00	EQJ1122+2550	08 08 39	44.7	107.5	-3.3		-39.5	-14	850	No stop	
13 34 00	---	08 12 40	45.2	108.5	-3.2		-39.2	226	912	13 30 01	
13 34 00	J1125+2610	08 12 40	45.1	107.4	-3.2		-39.6	-14	912	No stop	
13 36 00	=1123+264	08 14 40	45.4	107.9	-3.2		-39.5	106	943	13 34 01	
13 36 00	EQJ1122+2550	08 14 40	45.5	109.0	-3.2		-39.1	-14	943	No stop	
13 40 00	---	08 18 41	46.1	110.0	-3.1		-38.8	226	1005	13 36 01	
13 40 30	J1125+2610	08 19 11	46.0	109.0	-3.1		-39.2	16	1005	13 40 30	
13 42 30	=1123+264	08 21 11	46.3	109.5	-3.1		-39.0	120	1036	13 40 31	
13 42 30	EQJ1122+2550	08 21 11	46.5	110.6	-3.0		-38.6	-14	1036	No stop	
13 46 30	---	08 25 12	47.0	111.6	-3.0		-38.3	226	1098	13 42 31	
13 46 30	J1125+2610	08 25 12	46.9	110.6	-3.0		-38.7	-14	1098	No stop	
13 48 30	=1123+264	08 27 12	47.1	111.1	-3.0		-38.6	106	1128	13 46 31	
13 48 30	EQJ1122+2550	08 27 12	47.3	112.2	-2.9		-38.1	-14	1128	No stop	
13 52 30	---	08 31 13	47.9	113.2	-2.9		-37.8	226	1190	13 48 31	
13 53 00	J1125+2610	08 31 43	47.8	112.2	-2.9		-38.2	16	1190	13 53 00	
13 55 00	=1123+264	08 33 43	48.0	112.8	-2.9		-38.0	120	1221	13 53 01	
13 55 00	EQJ1122+2550	08 33 43	48.2	113.9	-2.8		-37.6	-15	1221	No stop	
13 59 00	---	08 37 44	48.7	115.0	-2.8		-37.2	225	1283	13 55 01	
13 59 00	J1125+2610	08 37 44	48.6	113.8	-2.8		-37.7	-14	1283	No stop	
14 01 00	=1123+264	08 39 44	48.9	114.4	-2.8		-37.5	106	1314	13 59 01	

Schedule for TORUN (Code Tr )  
new UCD -6cm

Page 4

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

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 12 Jun 2021 Day 163 ---										
14 01 00	EQJ1122+2550	08 39 44	49.0	115.5	-2.7		-37.0	-15	1314	No stop
14 05 00	---	08 43 45	49.6	116.6	-2.7		-36.6	225	1376	14 01 01
14 05 30	J1125+2610	08 44 15	49.5	115.6	-2.7		-37.1	16	1376	14 05 30
14 07 30	=1123+264	08 46 15	49.8	116.2	-2.7		-36.9	120	1407	14 05 31
14 07 30	EQJ1122+2550	08 46 15	49.9	117.3	-2.6		-36.3	-15	1407	No stop
14 11 30	---	08 50 16	50.4	118.5	-2.6		-35.9	225	1469	14 07 31
14 11 30	J1125+2610	08 50 16	50.3	117.3	-2.6		-36.4	-14	1469	No stop
14 13 30	=1123+264	08 52 16	50.6	117.9	-2.6		-36.2	106	1499	14 11 31
14 13 30	EQJ1122+2550	08 52 16	50.7	119.0	-2.5		-35.6	-15	1499	No stop
14 17 30	---	08 56 17	51.2	120.2	-2.5		-35.2	225	1561	14 13 31
14 18 00	J1125+2610	08 56 47	51.2	119.2	-2.5		-35.7	15	1561	14 18 00
14 20 00	=1123+264	08 58 47	51.4	119.8	-2.5		-35.5	120	1592	14 18 01
14 20 00	EQJ1122+2550	08 58 47	51.5	120.9	-2.4		-34.9	-15	1592	No stop
14 24 00	---	09 02 48	52.0	122.1	-2.4		-34.4	225	1654	14 20 01
14 24 00	J1125+2610	09 02 48	51.9	120.9	-2.4		-35.0	-15	1654	No stop
14 26 00	=1123+264	09 04 48	52.2	121.5	-2.4		-34.7	105	1685	14 24 01
14 26 00	EQJ1122+2550	09 04 48	52.3	122.8	-2.3		-34.1	-15	1685	No stop
14 30 00	---	09 08 49	52.8	124.0	-2.3		-33.5	225	1747	14 26 01
14 30 30	J1125+2610	09 09 19	52.8	122.9	-2.3		-34.1	15	1747	14 30 30
14 32 30	=1123+264	09 11 19	53.0	123.5	-2.3		-33.9	120	1778	14 30 31
14 32 30	EQJ1122+2550	09 11 19	53.1	124.8	-2.2		-33.2	-15	1778	No stop
14 36 30	---	09 15 20	53.6	126.0	-2.1		-32.6	225	1840	14 32 31
14 36 30	J1125+2610	09 15 20	53.5	124.8	-2.2		-33.3	-15	1840	No stop
14 38 30	=1123+264	09 17 20	53.8	125.4	-2.2		-33.0	105	1870	14 36 31
14 38 30	EQJ1122+2550	09 17 20	53.9	126.7	-2.1		-32.3	-15	1870	No stop
14 42 30	---	09 21 21	54.3	128.0	-2.0		-31.7	225	1932	14 38 31
14 43 00	J1125+2610	09 21 51	54.3	126.9	-2.1		-32.3	15	1932	14 43 00
14 45 00	=1123+264	09 23 51	54.6	127.5	-2.1		-32.0	120	1963	14 43 01
14 45 00	EQJ1122+2550	09 23 51	54.6	128.8	-2.0		-31.3	-15	1963	No stop
14 49 00	---	09 27 52	55.1	130.2	-1.9		-30.6	225	2025	14 45 01

Schedule for TORUN (Code Tr )  
new UCD -6cm

Page 5

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

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Sat 12 Jun 2021 Day 163 ---										
14 49 00	J1125+2610	09 27 52	55.0	128.9	-2.0		-31.4	-15	2025	No stop
14 51 00	=1123+264	09 29 52	55.3	129.5	-2.0		-31.0	105	2056	14 49 01
14 51 00	EQJ1122+2550	09 29 52	55.3	130.9	-1.9		-30.3	-15	2056	No stop
14 55 00	---	09 33 53	55.8	132.2	-1.8		-29.6	225	2118	14 51 01
14 55 30	J1125+2610	09 34 23	55.8	131.1	-1.9		-30.3	15	2118	14 55 30
14 57 30	=1123+264	09 36 23	56.0	131.8	-1.8		-29.9	120	2149	14 55 31
14 57 30	EQJ1122+2550	09 36 23	56.0	133.1	-1.8		-29.1	-16	2149	No stop
15 01 30	---	09 40 24	56.5	134.5	-1.7		-28.4	224	2211	14 57 31
15 01 30	J1125+2610	09 40 24	56.4	133.2	-1.8		-29.2	-15	2211	No stop
15 03 30	=1123+264	09 42 24	56.7	133.9	-1.7		-28.8	105	2241	15 01 31
15 03 30	EQJ1122+2550	09 42 24	56.7	135.3	-1.7		-28.0	-16	2241	No stop
15 07 30	---	09 46 25	57.1	136.7	-1.6		-27.2	224	2303	15 03 31
15 08 00	J1125+2610	09 46 55	57.1	135.5	-1.7		-27.9	15	2303	15 08 00
15 10 00	=1123+264	09 48 55	57.4	136.3	-1.6		-27.5	120	2334	15 08 01
15 10 00	EQJ1122+2550	09 48 55	57.4	137.7	-1.6		-26.7	-16	2334	No stop
15 14 00	---	09 52 56	57.8	139.2	-1.5		-25.8	224	2396	15 10 01
15 14 00	J1125+2610	09 52 56	57.8	137.8	-1.6		-26.7	-15	2396	No stop
15 16 00	=1123+264	09 54 56	58.0	138.5	-1.5		-26.3	105	2427	15 14 01
15 16 00	EQJ1122+2550	09 54 56	58.0	139.9	-1.5		-25.4	-16	2427	No stop
15 20 00	---	09 58 57	58.3	141.5	-1.4		-24.5	224	2489	15 16 01
15 20 30	J1125+2610	09 59 27	58.4	140.3	-1.5		-25.3	15	2489	15 20 30
15 22 30	=1123+264	10 01 27	58.6	141.0	-1.4		-24.9	120	2520	15 20 31
15 22 30	EQJ1122+2550	10 01 27	58.6	142.5	-1.4		-24.0	-16	2520	No stop
15 26 30	---	10 05 28	58.9	144.1	-1.3		-23.0	224	2582	15 22 31
15 26 30	J1125+2610	10 05 28	59.0	142.6	-1.4		-23.9	-15	2582	No stop
15 28 30	=1123+264	10 07 28	59.2	143.4	-1.3		-23.5	105	2612	15 26 31
15 28 30	EQJ1122+2550	10 07 28	59.1	144.9	-1.3		-22.6	-16	2612	No stop
15 32 30	---	10 11 29	59.4	146.5	-1.2		-21.6	224	2674	15 28 31
15 33 00	J1125+2610	10 11 59	59.5	145.3	-1.3		-22.4	14	2674	15 33 00
15 35 00	=1123+264	10 13 59	59.7	146.1	-1.2		-21.9	120	2705	15 33 01

Schedule for TORUN (Code Tr )  
new UCD -6cm

Page 6

UP: D => Below limits; H => Below horizon mask; W => still slewing at end; blank => Up.  
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TPStart: Recording start time. Frequencies are L0 sum (band edge).  
SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 12 Jun 2021 Day 163 ---										
15 35 00	EQJ1122+2550	10 13 59	59.7	147.6	-1.2		-21.0	-16	2705	No stop
15 39 00	---	10 18 00	60.0	149.2	-1.1		-19.9	224	2767	15 35 01
15 39 00	J1125+2610	10 18 00	60.0	147.7	-1.2		-20.9	-16	2767	No stop
15 41 00	=1123+264	10 20 00	60.2	148.6	-1.1		-20.4	104	2798	15 39 01
15 41 00	EQJ1122+2550	10 20 00	60.1	150.1	-1.1		-19.4	-16	2798	No stop
15 45 00	---	10 24 01	60.4	151.8	-1.0		-18.4	224	2860	15 41 01
15 45 30	J1125+2610	10 24 31	60.5	150.5	-1.0		-19.2	14	2860	15 45 30
15 47 30	=1123+264	10 26 31	60.7	151.4	-1.0		-18.7	120	2891	15 45 31
15 47 30	EQJ1122+2550	10 26 31	60.6	152.9	-1.0		-17.7	-16	2891	No stop
15 51 30	---	10 30 32	60.9	154.7	-0.9		-16.6	224	2953	15 47 31
15 51 30	J1125+2610	10 30 32	61.0	153.1	-0.9		-17.6	-16	2953	No stop
15 53 30	=1123+264	10 32 32	61.1	154.0	-0.9		-17.0	104	2983	15 51 31
15 53 30	EQJ1122+2550	10 32 32	61.0	155.6	-0.9		-16.0	-16	2983	No stop
15 57 30	---	10 36 33	61.2	157.4	-0.8		-14.9	224	3045	15 53 31
15 58 00	J1125+2610	10 37 03	61.4	156.1	-0.8		-15.7	14	3045	15 58 00
16 00 00	=1123+264	10 39 04	61.5	157.0	-0.8		-15.2	120	3076	15 58 01
16 00 00	EQJ1122+2550	10 39 04	61.4	158.5	-0.7		-14.1	-16	3076	No stop
16 04 00	---	10 43 04	61.6	160.3	-0.7		-13.0	224	3138	16 00 01
16 04 00	J1125+2610	10 43 04	61.7	158.8	-0.7		-14.0	-16	3138	No stop
16 06 00	=1123+264	10 45 05	61.8	159.7	-0.7		-13.4	104	3169	16 04 01
16 06 00	EQJ1122+2550	10 45 05	61.7	161.3	-0.6		-12.4	-16	3169	No stop
16 10 00	---	10 49 05	61.9	163.1	-0.6		-11.1	224	3231	16 06 01
16 10 30	J1125+2610	10 49 35	62.1	161.8	-0.6		-12.0	14	3231	16 10 30
16 12 30	=1123+264	10 51 36	62.2	162.8	-0.6		-11.4	120	3262	16 10 31
16 12 30	EQJ1122+2550	10 51 36	62.0	164.3	-0.5		-10.4	-16	3262	No stop
16 16 30	---	10 55 36	62.1	166.2	-0.5		-9.1	224	3324	16 12 31
16 16 30	J1125+2610	10 55 36	62.3	164.7	-0.5		-10.2	-16	3324	No stop
16 18 30	=1123+264	10 57 37	62.4	165.6	-0.5		-9.5	104	3354	16 16 31
16 18 30	EQJ1122+2550	10 57 37	62.2	167.2	-0.4		-8.5	-16	3354	No stop
16 22 30	---	11 01 37	62.3	169.1	-0.4		-7.2	224	3416	16 18 31

Schedule for TORUN (Code Tr )  
new UCD -6cm

Page 7

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 12 Jun 2021 Day 163 ---										
16 23 00	J1125+2610	11 02 07	62.6	167.8	-0.4		-8.1	14	3416	16 23 00
16 25 00	=1123+264	11 04 08	62.6	168.8	-0.4		-7.5	120	3447	16 23 01
16 25 00	EQJ1122+2550	11 04 08	62.4	170.3	-0.3		-6.4	-16	3447	No stop
16 29 00	---	11 08 08	62.5	172.2	-0.3		-5.2	224	3509	16 25 01
16 29 00	J1125+2610	11 08 08	62.7	170.7	-0.3		-6.2	-16	3509	No stop
16 31 00	=1123+264	11 10 09	62.8	171.7	-0.3		-5.5	104	3540	16 29 01
16 31 00	EQJ1122+2550	11 10 09	62.5	173.2	-0.2		-4.5	-16	3540	No stop
16 35 00	---	11 14 09	62.6	175.2	-0.2		-3.2	224	3602	16 31 01
16 35 30	J1125+2610	11 14 39	62.9	173.9	-0.2		-4.1	14	3602	16 35 30
16 37 30	=1123+264	11 16 40	62.9	174.9	-0.2		-3.4	120	3633	16 35 31
16 37 30	EQJ1122+2550	11 16 40	62.6	176.4	-0.1		-2.4	-16	3633	No stop
16 41 30	---	11 20 40	62.6	178.4	-0.1		-1.1	224	3695	16 37 31
16 41 30	J1125+2610	11 20 40	62.9	176.9	-0.1		-2.1	-16	3695	No stop
16 43 30	=1123+264	11 22 41	63.0	177.9	-0.1		-1.4	104	3725	16 41 31
16 43 30	EQJ1122+2550	11 22 41	62.6	179.3	-0.0		-0.4	-16	3725	No stop
16 47 30	---	11 26 41	62.6	181.3	0.0		0.9	224	3787	16 43 31
16 48 00	J1125+2610	11 27 11	63.0	180.1	0.0		0.1	14	3787	16 48 00
16 50 00	=1123+264	11 29 12	63.0	181.1	0.0		0.7	120	3818	16 48 01
16 50 00	EQJ1122+2550	11 29 12	62.6	182.5	0.1		1.7	-16	3818	No stop
16 54 00	---	11 33 12	62.6	184.5	0.2		3.0	224	3880	16 50 01
16 54 00	J1125+2610	11 33 12	62.9	183.1	0.1		2.0	-15	3880	No stop
16 56 00	=1123+264	11 35 13	62.9	184.0	0.1		2.7	105	3911	16 54 01
16 56 00	EQJ1122+2550	11 35 13	62.5	185.5	0.2		3.6	-16	3911	No stop
17 00 00	---	11 39 13	62.5	187.4	0.3		4.9	224	3973	16 56 01
17 00 30	J1125+2610	11 39 43	62.9	186.3	0.2		4.2	15	3973	17 00 30
17 02 30	=1123+264	11 41 44	62.8	187.3	0.2		4.8	120	4004	17 00 31
17 02 30	EQJ1122+2550	11 41 44	62.4	188.6	0.3		5.7	-16	4004	No stop
17 06 30	---	11 45 44	62.3	190.6	0.4		7.0	224	4066	17 02 31
17 06 30	J1125+2610	11 45 44	62.7	189.2	0.3		6.1	-15	4066	No stop
17 08 30	=1123+264	11 47 45	62.7	190.2	0.3		6.8	105	4096	17 06 31

Schedule for TORUN (Code Tr )  
new UCD -6cm

Page 8

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

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 12 Jun 2021 Day 163 ---										
17 08 30	EQJ1122+2550	11 47 45	62.3	191.5	0.4		7.7	-16	4096	No stop
17 12 30	---	11 51 45	62.1	193.5	0.5		8.9	224	4158	17 08 31
17 13 00	J1125+2610	11 52 16	62.6	192.4	0.4		8.2	15	4158	17 13 00
17 15 00	=1123+264	11 54 16	62.5	193.3	0.5		8.9	120	4189	17 13 01
17 15 00	EQJ1122+2550	11 54 16	62.0	194.6	0.5		9.7	-16	4189	No stop
17 19 00	---	11 58 17	61.9	196.5	0.6		10.9	224	4251	17 15 01
17 19 00	J1125+2610	11 58 17	62.3	195.3	0.5		10.1	-15	4251	No stop
17 21 00	=1123+264	12 00 17	62.3	196.2	0.6		10.8	105	4282	17 19 01
17 21 00	EQJ1122+2550	12 00 17	61.8	197.5	0.6		11.5	-15	4282	No stop
17 25 00	---	12 04 18	61.6	199.3	0.7		12.8	225	4344	17 21 01
17 25 30	J1125+2610	12 04 48	62.1	198.3	0.6		12.1	15	4344	17 25 30
17 27 30	=1123+264	12 06 48	62.0	199.3	0.7		12.7	120	4375	17 25 31
17 27 30	EQJ1122+2550	12 06 48	61.5	200.5	0.7		13.5	-15	4375	No stop
17 31 30	---	12 10 49	61.3	202.3	0.8		14.7	225	4437	17 27 31
17 31 30	J1125+2610	12 10 49	61.7	201.1	0.7		13.9	-14	4437	No stop
17 33 30	=1123+264	12 12 49	61.6	202.1	0.8		14.5	106	4467	17 31 31
17 33 30	EQJ1122+2550	12 12 49	61.1	203.2	0.8		15.2	-15	4467	No stop
17 37 30	---	12 16 50	60.9	205.0	0.9		16.4	225	4529	17 33 31
17 38 00	J1125+2610	12 17 20	61.4	204.1	0.8		15.8	16	4529	17 38 00
17 40 00	=1123+264	12 19 20	61.2	205.0	0.9		16.4	120	4560	17 38 01
17 40 00	EQJ1122+2550	12 19 20	60.7	206.1	0.9		17.1	-15	4560	No stop
17 44 00	---	12 23 21	60.5	207.9	1.0		18.2	225	4622	17 40 01
17 44 00	J1125+2610	12 23 21	61.0	206.8	0.9		17.5	-14	4622	No stop
17 46 00	=1123+264	12 25 21	60.8	207.7	1.0		18.1	106	4653	17 44 01
17 46 00	EQJ1122+2550	12 25 21	60.3	208.8	1.0		18.7	-15	4653	No stop
17 50 00	---	12 29 22	60.0	210.5	1.1		19.8	225	4715	17 46 01
17 50 30	J1125+2610	12 29 52	60.5	209.6	1.0		19.3	16	4715	17 50 30
17 52 30	=1123+264	12 31 52	60.4	210.5	1.1		19.8	120	4746	17 50 31
17 52 30	EQJ1122+2550	12 31 52	59.8	211.5	1.1		20.4	-14	4746	No stop
17 56 30	---	12 35 53	59.5	213.2	1.2		21.4	226	4808	17 52 31



Schedule for TORUN (Code Tr )  
new UCD -6cm

Page 9

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 12 Jun 2021 Day 163 ---										
17 56 30	J1125+2610	12 35 53	60.1	212.2	1.1		20.9	-14	4808	No stop
17 58 30	=1123+264	12 37 53	59.9	213.0	1.2		21.4	106	4838	17 56 31
17 58 30	EQJ1122+2550	12 37 53	59.3	214.0	1.2		21.9	-14	4838	No stop
18 02 30	---	12 41 54	59.0	215.7	1.3		22.9	226	4900	17 58 31
18 03 00	J1125+2610	12 42 24	59.5	214.9	1.3		22.5	16	4900	18 03 00
18 05 00	=1123+264	12 44 24	59.3	215.7	1.3		23.0	120	4931	18 03 01
18 05 00	EQJ1122+2550	12 44 24	58.8	216.7	1.3		23.4	-14	4931	No stop
18 09 00	---	12 48 25	58.4	218.2	1.4		24.4	226	4993	18 05 01
18 09 00	J1125+2610	12 48 25	59.0	217.3	1.4		23.9	-14	4993	No stop
18 11 00	=1123+264	12 50 25	58.8	218.1	1.4		24.4	106	5024	18 09 01
18 11 00	EQJ1122+2550	12 50 25	58.2	219.0	1.4		24.8	-14	5024	No stop
18 15 00	---	12 54 26	57.8	220.6	1.5		25.7	226	5086	18 11 01
18 15 30	J1125+2610	12 54 56	58.4	219.9	1.5		25.4	16	5086	18 15 30
18 17 30	=1123+264	12 56 56	58.2	220.7	1.5		25.8	120	5117	18 15 31
18 17 30	EQJ1122+2550	12 56 56	57.6	221.5	1.5		26.2	-14	5117	No stop
18 21 30	---	13 00 57	57.2	223.0	1.6		27.0	226	5179	18 17 31
18 21 30	J1125+2610	13 00 57	57.8	222.2	1.6		26.7	-14	5179	No stop
18 23 30	=1123+264	13 02 57	57.6	222.9	1.6		27.1	106	5209	18 21 31
18 23 30	EQJ1122+2550	13 02 57	57.0	223.8	1.6		27.4	-14	5209	No stop
18 27 30	---	13 06 58	56.6	225.2	1.7		28.2	226	5271	18 23 31
18 28 00	J1125+2610	13 07 28	57.1	224.6	1.7		28.0	16	5271	18 28 00
18 30 00	=1123+264	13 09 28	56.9	225.3	1.7		28.4	120	5302	18 28 01
18 30 00	EQJ1122+2550	13 09 28	56.3	226.1	1.8		28.7	-14	5302	No stop
18 34 00	---	13 13 29	55.8	227.5	1.8		29.4	226	5364	18 30 01
18 34 00	J1125+2610	13 13 29	56.5	226.8	1.8		29.1	-14	5364	No stop
18 36 00	=1123+264	13 15 29	56.2	227.5	1.8		29.5	106	5395	18 34 01
18 36 00	EQJ1122+2550	13 15 29	55.6	228.2	1.9		29.8	-14	5395	No stop
18 40 00	---	13 19 30	55.2	229.6	1.9		30.5	226	5457	18 36 01
18 40 30	J1125+2610	13 20 00	55.7	229.0	1.9		30.3	16	5457	18 40 30
18 42 30	=1123+264	13 22 00	55.5	229.7	1.9		30.7	120	5488	18 40 31

Schedule for TORUN (Code Tr )  
new UCD -6cm

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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
-----										
--- Sat 12 Jun 2021 Day 163 ---										
18 42 30	EQJ1122+2550	13 22 00	54.9	230.4	2.0		30.9	-14	5488	No stop
18 46 30	---	13 26 01	54.4	231.8	2.0		31.6	226	5550	18 42 31
18 46 30	J1125+2610	13 26 01	55.0	231.1	2.0		31.3	-14	5550	No stop
18 48 30	=1123+264	13 28 01	54.8	231.8	2.0		31.7	106	5580	18 46 31
18 48 30	EQJ1122+2550	13 28 01	54.2	232.4	2.1		31.9	-14	5580	No stop
18 52 30	---	13 32 02	53.7	233.7	2.1		32.5	226	5642	18 48 31
18 53 00	J1125+2610	13 32 32	54.3	233.2	2.1		32.4	16	5642	18 53 00
18 55 00	=1123+264	13 34 32	54.0	233.9	2.1		32.7	120	5673	18 53 01
18 55 00	EQJ1122+2550	13 34 32	53.4	234.5	2.2		32.9	-14	5673	No stop
18 59 00	---	13 38 33	52.9	235.8	2.2		33.5	226	5735	18 55 01
18 59 00	J1125+2610	13 38 33	53.5	235.2	2.2		33.3	-14	5735	No stop
19 01 00	=1123+264	13 40 33	53.3	235.8	2.2		33.6	106	5766	18 59 01
19 01 00	EQJ1122+2550	13 40 33	52.6	236.4	2.3		33.7	-14	5766	No stop
19 05 00	---	13 44 34	52.1	237.6	2.3		34.3	226	5828	19 01 01
19 05 30	J1125+2610	13 45 04	52.7	237.2	2.3		34.2	16	5828	19 05 30
19 07 30	=1123+264	13 47 04	52.5	237.8	2.3		34.4	120	5859	19 05 31
19 07 30	EQJ1122+2550	13 47 04	51.8	238.4	2.4		34.6	-14	5859	No stop
19 11 30	---	13 51 05	51.3	239.6	2.5		35.1	226	5921	19 07 31
19 11 30	J1125+2610	13 51 05	52.0	239.0	2.4		35.0	-14	5921	No stop
19 13 30	=1123+264	13 53 05	51.7	239.6	2.4		35.2	106	5951	19 11 31
19 13 30	EQJ1122+2550	13 53 05	51.0	240.2	2.5		35.3	-15	5951	No stop
19 17 30	---	13 57 06	50.5	241.3	2.6		35.8	225	6013	19 13 31
19 18 00	J1125+2610	13 57 36	51.1	240.9	2.5		35.7	16	6013	19 18 00
19 20 00	=1123+264	13 59 36	50.8	241.5	2.5		36.0	120	6044	19 18 01
19 20 00	EQJ1122+2550	13 59 36	50.2	242.1	2.6		36.1	-15	6044	No stop
19 24 00	---	14 03 37	49.7	243.2	2.7		36.5	225	6106	19 20 01
19 24 00	J1125+2610	14 03 37	50.3	242.7	2.6		36.4	-14	6106	No stop
19 26 00	=1123+264	14 05 37	50.0	243.2	2.6		36.6	106	6137	19 24 01
19 26 00	EQJ1122+2550	14 05 37	49.4	243.7	2.7		36.7	-15	6137	No stop
19 30 00	---	14 09 38	48.8	244.9	2.8		37.1	225	6199	19 26 01

Schedule for TORUN (Code Tr )  
new UCD -6cm

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

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Sat 12 Jun 2021 Day 163 ---										
19 30 30	J1125+2610	14 10 08	49.4	244.5	2.7		37.1	16	6199	19 30 30
19 32 30	=1123+264	14 12 08	49.2	245.0	2.8		37.3	120	6230	19 30 31
19 32 30	EQJ1122+2550	14 12 08	48.5	245.5	2.8		37.3	-15	6230	No stop
19 36 30	---	14 16 09	47.9	246.6	2.9		37.7	225	6292	19 32 31
19 36 30	J1125+2610	14 16 09	48.6	246.1	2.8		37.7	-14	6292	No stop
19 38 30	=1123+264	14 18 09	48.3	246.7	2.9		37.9	106	6322	19 36 31
19 38 30	EQJ1122+2550	14 18 09	47.7	247.1	2.9		37.9	-15	6322	No stop
19 42 30	---	14 22 10	47.1	248.2	3.0		38.2	225	6384	19 38 31
19 43 00	J1125+2610	14 22 40	47.7	247.8	2.9		38.2	16	6384	19 43 00
19 45 00	=1123+264	14 24 41	47.4	248.4	3.0		38.4	120	6415	19 43 01
19 45 00	EQJ1122+2550	14 24 41	46.8	248.8	3.0		38.4	-15	6415	No stop
19 49 00	---	14 28 41	46.2	249.9	3.1		38.7	225	6477	19 45 01
19 49 00	J1125+2610	14 28 41	46.9	249.4	3.0		38.7	-14	6477	No stop
19 51 00	=1123+264	14 30 41	46.6	249.9	3.1		38.9	106	6508	19 49 01
19 51 00	EQJ1122+2550	14 30 41	45.9	250.4	3.1		38.9	-15	6508	No stop
19 55 00	---	14 34 42	45.3	251.4	3.2		39.2	225	6570	19 51 01
19 55 30	J1125+2610	14 35 12	46.0	251.1	3.1		39.2	16	6570	19 55 30
19 57 30	=1123+264	14 37 13	45.7	251.6	3.2		39.4	120	6601	19 55 31
19 57 30	EQJ1122+2550	14 37 13	45.0	252.0	3.2		39.3	-15	6601	No stop
20 01 30	---	14 41 13	44.4	253.0	3.3		39.6	225	6663	19 57 31
20 01 30	J1125+2610	14 41 13	45.1	252.5	3.2		39.6	-14	6663	No stop
20 03 30	=1123+264	14 43 14	44.8	253.0	3.3		39.7	106	6693	20 01 31
20 03 30	EQJ1122+2550	14 43 14	44.1	253.5	3.3		39.7	-15	6693	No stop
20 07 30	---	14 47 14	43.5	254.4	3.4		39.9	225	6755	20 03 31
20 08 00	J1125+2610	14 47 44	44.2	254.1	3.3		40.0	16	6755	20 08 00
20 10 00	=1123+264	14 49 45	43.9	254.6	3.4		40.1	120	6786	20 08 01
20 10 00	EQJ1122+2550	14 49 45	43.2	255.0	3.4		40.1	-15	6786	No stop
20 14 00	---	14 53 45	42.6	256.0	3.5		40.3	225	6848	20 10 01
20 14 00	J1125+2610	14 53 45	43.3	255.6	3.4		40.3	-14	6848	No stop
20 16 00	=1123+264	14 55 46	43.0	256.0	3.5		40.4	106	6879	20 14 01

Schedule for TORUN (Code Tr )  
new UCD -6cm

Page 12

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Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sat 12 Jun 2021 Day 163 ---										
20 16 00	EQJ1122+2550	14 55 46	42.3	256.4	3.5		40.4	-15	6879	No stop
20 20 00	---	14 59 46	41.7	257.4	3.6		40.6	225	6941	20 16 01
20 20 30	J1125+2610	15 00 16	42.3	257.1	3.6		40.7	16	6941	20 20 30
20 22 30	=1123+264	15 02 17	42.0	257.5	3.6		40.7	120	6972	20 20 31
20 22 30	EQJ1122+2550	15 02 17	41.4	257.9	3.6		40.7	-15	6972	No stop
20 26 30	---	15 06 17	40.8	258.8	3.7		40.8	225	7034	20 22 31
20 26 30	J1125+2610	15 06 17	41.5	258.4	3.7		40.9	-14	7034	No stop
20 28 30	=1123+264	15 08 18	41.2	258.9	3.7		41.0	106	7064	20 26 31
20 28 30	EQJ1122+2550	15 08 18	40.5	259.3	3.7		40.9	-15	7064	No stop
20 32 30	---	15 12 18	39.9	260.2	3.8		41.1	225	7126	20 28 31
20 33 00	J1125+2610	15 12 48	40.5	259.9	3.8		41.2	16	7126	20 33 00
20 35 00	=1123+264	15 14 49	40.2	260.4	3.8		41.2	120	7157	20 33 01
20 35 00	EQJ1122+2550	15 14 49	39.5	260.7	3.8		41.1	-15	7157	No stop
20 39 00	---	15 18 49	38.9	261.6	3.9		41.3	225	7219	20 35 01
20 39 00	J1125+2610	15 18 49	39.6	261.2	3.9		41.3	-14	7219	No stop
20 41 00	=1123+264	15 20 50	39.3	261.7	3.9		41.4	106	7250	20 39 01
20 41 00	EQJ1122+2550	15 20 50	38.6	262.0	3.9		41.3	-15	7250	No stop
20 45 00	---	15 24 50	38.0	262.9	4.0		41.4	225	7312	20 41 01
20 45 30	J1125+2610	15 25 20	38.6	262.7	4.0		41.5	16	7312	20 45 30
20 47 30	=1123+264	15 27 21	38.3	263.1	4.0		41.6	120	7343	20 45 31
20 47 30	EQJ1122+2550	15 27 21	37.6	263.4	4.1		41.5	-15	7343	No stop
20 51 30	---	15 31 21	37.0	264.3	4.1		41.5	225	7405	20 47 31
20 51 30	J1125+2610	15 31 21	37.7	263.9	4.1		41.7	-14	7405	No stop
20 53 30	=1123+264	15 33 22	37.4	264.4	4.1		41.7	106	7435	20 51 31
20 53 30	EQJ1122+2550	15 33 22	36.7	264.7	4.2		41.6	-15	7435	No stop
20 57 30	---	15 37 22	36.1	265.6	4.2		41.6	225	7497	20 53 31
20 58 00	J1125+2610	15 37 53	36.8	265.3	4.2		41.8	16	7497	20 58 00
21 00 00	=1123+264	15 39 53	36.5	265.7	4.2		41.8	120	7528	20 58 01
21 00 00	EQJ1122+2550	15 39 53	35.8	266.1	4.3		41.7	-15	7528	No stop
21 04 00	---	15 43 53	35.2	266.9	4.3		41.7	225	7590	21 00 01

Schedule for TORUN (Code Tr )  
new UCD -6cm

Page 13

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Disk: GBytes recorded to this point.  
TPStart: Recording start time. Frequencies are L0 sum (band edge).  
SYNC: Time correlator is expected to sync up.

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

--- Sat 12 Jun 2021 Day 163 ---

21 04 00	J1125+2610	15 43 53	35.9	266.6	4.3	41.9	-14	7590	No stop
21 06 00	=1123+264	15 45 54	35.6	267.0	4.3	41.9	106	7621	21 04 01
21 06 00	EQJ1122+2550	15 45 54	34.9	267.3	4.4	41.7	-15	7621	No stop
21 10 00	---	15 49 54	34.3	268.1	4.4	41.8	225	7683	21 06 01
21 10 30	J1125+2610	15 50 25	34.9	267.9	4.4	41.9	16	7683	21 10 30
21 12 30	=1123+264	15 52 25	34.6	268.3	4.4	41.9	120	7714	21 10 31
21 12 30	EQJ1122+2550	15 52 25	33.9	268.6	4.5	41.8	-15	7714	No stop
21 16 30	---	15 56 26	33.3	269.4	4.5	41.8	225	7776	21 12 31
21 16 30	J1125+2610	15 56 26	34.0	269.1	4.5	41.9	-14	7776	No stop
21 18 30	=1123+264	15 58 26	33.7	269.5	4.5	41.9	106	7806	21 16 31
21 18 30	EQJ1122+2550	15 58 26	33.0	269.8	4.6	41.8	-15	7806	No stop
21 22 30	---	16 02 27	32.4	270.6	4.6	41.8	225	7868	21 18 31
21 23 00	J1125+2610	16 02 57	33.0	270.4	4.6	41.9	16	7868	21 23 00
21 25 00	=1123+264	16 04 57	32.7	270.8	4.6	41.9	120	7899	21 23 01
21 25 30	1123+264	16 05 27	32.6	270.9	4.6	41.9	24	7899	21 25 30
21 30 00	---	16 09 58	32.0	271.8	4.7	41.9	270	7969	21 25 31

## SETUP FILE INFORMATION:

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

==== Setup file: sess221.C2048

Setup group: 11	Station: TORUN	Total bit rate: 2048
Format: VDIF	Bits per sample: 2	Sample rate: 64.000
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	9	1	9	2	10	2	10	10
	3	11	3	11	4	12	4	12	12
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: 9 Setup file default. Used with PCAL = off

LO sum=	4830.49	4830.49	4830.49	4830.49	4894.49	4894.49	4894.49	4894.49
	4958.49	4958.49	4958.49	4958.49	5022.49	5022.49	5022.49	5022.49
BBC fr=	630.49	630.49	630.49	630.49	694.49	694.49	694.49	694.49
	758.49	758.49	758.49	758.49	822.49	822.49	822.49	822.49
Bandwd=	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00

Matching frequency sets: 9

Track assignments are:

track1= 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16

barrel=roll\_off

#### POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec)		(Date)	Error
	(B1950)	(J2000)		(mas)
* EQJ1122+2550	11 20 15.543304	* 11 22 54.730001	11 24 01.889038	0.00
	26 06 49.42045	* 25 50 21.50002	25 43 31.63516	0.00
* J1125+2610	11 23 14.869303	* 11 25 53.711923	11 27 00.745970	0.11
* 1123+264	26 26 49.99097	* 26 10 19.97857	26 03 29.35229	0.10
J1125+26	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.vlba.2012jul			
	rfc_2012b Petrov, 2012, unpublished 2729 observations			

ec077btr

NEW UCD -6CM
PI: Juan B. Climent

Address: Dpto. Astronomia, Univ. Valencia

Observing mode: Phase-referencing at 6cm (2048 Mb/s)

Schedule for TORUN (Code Tr ) Page 2
new UCD -6cm

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

Table with columns: Start UT, Stop UT, Source, LST, EL, AZ, HA, UP, ParA, Early Dwell, Disk GBytes, TPStart SYNC. Includes scan frequencies, BBC frequencies, and bandwidths for various sources like 0017+200, J0037+2141, and LP349-25.

Schedule for TORUN (Code Tr )  
new UCD -6cm

Page 3

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

Start UT	Source	Start / Stop					Early	Disk	TPStart		
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC	
-----											
---	Sun 13 Jun 2021	Day 164					---				
02 11 00	LP349-25	20 51 44	39.0	105.0	-3.6		-38.9	-21	543	No stop	
02 15 00	---	20 55 45	39.6	106.0	-3.6		-38.7	219	604	02 11 01	
02 15 30	J0037+2141	20 56 15	37.8	104.4	-3.7		-38.8	9	604	02 15 30	
02 17 30	---	20 58 15	38.1	104.9	-3.7		-38.7	120	635	02 15 31	
02 18 08	LP349-25	20 58 53	40.0	106.7	-3.5		-38.5	17	635	02 18 08	
02 21 30	---	21 02 16	40.5	107.5	-3.4		-38.3	202	687	02 18 09	
02 21 30	J0037+2141	21 02 16	38.6	105.8	-3.6		-38.5	-21	687	No stop	
02 23 30	---	21 04 16	38.9	106.3	-3.6		-38.4	99	718	02 21 31	
02 23 30	LP349-25	21 04 16	40.8	108.0	-3.4		-38.2	-21	718	No stop	
02 27 30	---	21 08 17	41.3	109.0	-3.3		-37.9	219	780	02 23 31	
02 28 00	J0037+2141	21 08 47	39.6	107.3	-3.5		-38.1	9	780	02 28 00	
02 30 00	---	21 10 47	39.9	107.8	-3.5		-38.0	120	811	02 28 01	
02 30 38	LP349-25	21 11 25	41.8	109.7	-3.3		-37.7	17	811	02 30 38	
02 34 00	---	21 14 48	42.3	110.6	-3.2		-37.5	202	863	02 30 39	
02 34 00	J0037+2141	21 14 48	40.4	108.8	-3.4		-37.8	-20	863	No stop	
02 36 00	---	21 16 48	40.7	109.2	-3.4		-37.6	100	894	02 34 01	
02 36 00	LP349-25	21 16 48	42.5	111.1	-3.2		-37.3	-21	894	No stop	
02 40 00	---	21 20 49	43.1	112.1	-3.1		-37.0	219	956	02 36 01	
02 40 30	J0037+2141	21 21 19	41.4	110.3	-3.3		-37.3	10	956	02 40 30	
02 42 30	---	21 23 19	41.6	110.8	-3.3		-37.2	120	987	02 40 31	
02 43 08	LP349-25	21 23 57	43.5	112.9	-3.1		-36.8	17	987	02 43 08	
02 46 30	---	21 27 20	44.0	113.7	-3.0		-36.5	202	1039	02 43 09	
02 46 30	J0037+2141	21 27 20	42.2	111.8	-3.2		-36.9	-20	1039	No stop	
02 48 30	---	21 29 20	42.5	112.3	-3.2		-36.7	100	1070	02 46 31	
02 48 30	LP349-25	21 29 20	44.3	114.3	-3.0		-36.3	-21	1070	No stop	
02 52 30	---	21 33 21	44.8	115.3	-2.9		-36.0	219	1132	02 48 31	
02 53 00	J0037+2141	21 33 51	43.1	113.5	-3.1		-36.4	10	1132	02 53 00	
02 55 00	---	21 35 51	43.4	114.0	-3.0		-36.2	120	1162	02 53 01	
02 55 38	LP349-25	21 36 29	45.3	116.1	-2.9		-35.7	17	1162	02 55 38	
02 59 00	---	21 39 52	45.7	117.0	-2.8		-35.4	202	1215	02 55 39	
02 59 00	J0037+2141	21 39 52	43.9	115.0	-3.0		-35.9	-20	1215	No stop	
03 01 00	---	21 41 52	44.2	115.6	-2.9		-35.7	100	1245	02 59 01	



Schedule for TORUN (Code Tr )  
new UCD -6cm

Page 4

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

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Sun 13 Jun 2021 Day 164 ---										
03 01 00	LP349-25	21 41 52	46.0	117.6	-2.8		-35.2	-21	1245	No stop
03 05 00	---	21 45 53	46.5	118.7	-2.7		-34.7	219	1307	03 01 01
03 05 30	J0037+2141	21 46 23	44.8	116.8	-2.9		-35.3	10	1307	03 05 30
03 07 30	---	21 48 23	45.1	117.3	-2.8		-35.1	120	1338	03 05 31
03 08 08	LP349-25	21 49 01	46.9	119.6	-2.7		-34.4	18	1338	03 08 08
03 11 30	---	21 52 24	47.4	120.5	-2.6		-34.0	202	1390	03 08 09
03 11 30	J0037+2141	21 52 24	45.6	118.4	-2.8		-34.7	-20	1390	No stop
03 13 30	---	21 54 24	45.9	118.9	-2.7		-34.5	100	1421	03 11 31
03 13 30	LP349-25	21 54 24	47.6	121.1	-2.6		-33.8	-20	1421	No stop
03 17 30	---	21 58 25	48.1	122.2	-2.5		-33.3	220	1483	03 13 31
03 18 00	J0037+2141	21 58 55	46.5	120.2	-2.7		-34.0	10	1483	03 18 00
03 20 00	---	22 00 55	46.7	120.8	-2.6		-33.8	120	1514	03 18 01
03 20 38	LP349-25	22 01 33	48.5	123.1	-2.5		-33.0	18	1514	03 20 38
03 24 00	---	22 04 56	48.9	124.1	-2.4		-32.5	202	1566	03 20 39
03 24 00	J0037+2141	22 04 56	47.2	121.9	-2.6		-33.3	-20	1566	No stop
03 26 00	---	22 06 56	47.5	122.5	-2.5		-33.1	100	1597	03 24 01
03 26 00	LP349-25	22 06 56	49.2	124.7	-2.4		-32.3	-20	1597	No stop
03 30 00	---	22 10 57	49.7	125.9	-2.3		-31.7	220	1659	03 26 01
03 30 30	J0037+2141	22 11 27	48.1	123.8	-2.5		-32.5	10	1659	03 30 30
03 32 30	---	22 13 27	48.3	124.4	-2.4		-32.3	120	1690	03 30 31
03 33 08	LP349-25	22 14 05	50.1	126.9	-2.2		-31.3	18	1690	03 33 08
03 36 30	---	22 17 28	50.5	127.9	-2.2		-30.8	202	1742	03 33 09
03 36 30	J0037+2141	22 17 28	48.8	125.6	-2.4		-31.7	-20	1742	No stop
03 38 30	---	22 19 28	49.0	126.2	-2.3		-31.5	100	1773	03 36 31
03 38 30	LP349-25	22 19 28	50.7	128.6	-2.2		-30.5	-20	1773	No stop
03 42 30	---	22 23 29	51.2	129.8	-2.1		-29.9	220	1834	03 38 31
03 43 00	J0037+2141	22 23 59	49.6	127.5	-2.2		-30.9	10	1834	03 43 00
03 45 00	---	22 25 59	49.8	128.2	-2.2		-30.6	120	1865	03 43 01
03 45 38	LP349-25	22 26 37	51.5	130.9	-2.0		-29.4	18	1865	03 45 38
03 49 00	---	22 30 00	51.9	132.0	-2.0		-28.9	202	1917	03 45 39

Schedule for TORUN (Code Tr )  
new UCD -6cm

Page 5

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

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Sun 13 Jun 2021 Day 164 ---										
03 49 00	J0037+2141	22 30 00	50.3	129.4	-2.1		-30.0	-20	1917	No stop
03 51 00	---	22 32 00	50.5	130.0	-2.1		-29.7	100	1948	03 49 01
03 51 00	LP349-25	22 32 00	52.1	132.6	-2.0		-28.6	-20	1948	No stop
03 55 00	---	22 36 01	52.6	134.0	-1.9		-27.9	220	2010	03 51 01
03 55 30	J0037+2141	22 36 31	51.0	131.5	-2.0		-29.0	11	2010	03 55 30
03 57 30	---	22 38 31	51.3	132.1	-2.0		-28.7	120	2041	03 55 31
03 58 08	LP349-25	22 39 10	52.9	135.0	-1.8		-27.3	18	2041	03 58 08
04 01 30	---	22 42 32	53.3	136.2	-1.8		-26.7	202	2093	03 58 09
04 01 30	J0037+2141	22 42 32	51.7	133.4	-1.9		-28.0	-20	2093	No stop
04 03 30	---	22 44 32	51.9	134.1	-1.9		-27.7	100	2124	04 01 31
04 03 30	LP349-25	22 44 32	53.5	136.9	-1.7		-26.4	-20	2124	No stop
04 07 30	---	22 48 33	53.9	138.3	-1.7		-25.6	220	2186	04 03 31
04 08 00	J0037+2141	22 49 03	52.4	135.6	-1.8		-26.9	10	2186	04 08 00
04 10 00	---	22 51 03	52.6	136.3	-1.8		-26.5	120	2217	04 08 01
04 10 38	LP349-25	22 51 42	54.2	139.4	-1.6		-25.0	18	2217	04 10 38
04 14 00	---	22 55 04	54.5	140.6	-1.6		-24.4	202	2269	04 10 39
04 14 00	J0037+2141	22 55 04	53.0	137.7	-1.7		-25.8	-20	2269	No stop
04 16 00	---	22 57 04	53.2	138.4	-1.7		-25.4	100	2300	04 14 01
04 16 00	LP349-25	22 57 04	54.7	141.3	-1.5		-23.9	-21	2300	No stop
04 20 00	---	23 01 05	55.1	142.8	-1.5		-23.1	219	2362	04 16 01
04 20 30	J0037+2141	23 01 35	53.7	140.0	-1.6		-24.6	10	2362	04 20 30
04 22 30	---	23 03 36	53.9	140.7	-1.6		-24.2	120	2392	04 20 31
04 23 08	LP349-25	23 04 14	55.4	144.0	-1.4		-22.5	17	2392	04 23 08
04 26 30	---	23 07 36	55.6	145.3	-1.4		-21.7	202	2444	04 23 09
04 26 30	J0037+2141	23 07 36	54.2	142.2	-1.5		-23.4	-21	2444	No stop
04 28 30	---	23 09 37	54.4	142.9	-1.5		-23.0	99	2475	04 26 31
04 28 30	LP349-25	23 09 37	55.8	146.0	-1.3		-21.3	-21	2475	No stop
04 32 30	---	23 13 37	56.1	147.6	-1.3		-20.4	219	2537	04 28 31
04 33 00	J0037+2141	23 14 07	54.8	144.6	-1.4		-22.0	9	2537	04 33 00
04 35 00	---	23 16 08	55.0	145.3	-1.4		-21.6	120	2568	04 33 01

Schedule for TORUN (Code Tr )  
new UCD -6cm

Page 6

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

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Sun 13 Jun 2021 Day 164 ---										
04 35 38	LP349-25	23 16 46	56.4	148.8	-1.2		-19.7	17	2568	04 35 38
04 39 00	---	23 20 08	56.7	150.1	-1.1		-18.9	202	2620	04 35 39
04 39 00	J0037+2141	23 20 08	55.3	146.8	-1.3		-20.7	-21	2620	No stop
04 41 00	---	23 22 09	55.5	147.6	-1.3		-20.3	99	2651	04 39 01
04 41 00	LP349-25	23 22 09	56.8	150.9	-1.1		-18.4	-22	2651	No stop
04 45 00	---	23 26 09	57.1	152.6	-1.0		-17.4	218	2713	04 41 01
04 45 30	J0037+2141	23 26 39	55.8	149.3	-1.2		-19.3	9	2713	04 45 30
04 47 30	---	23 28 40	56.0	150.1	-1.2		-18.8	120	2744	04 45 31
04 48 08	LP349-25	23 29 18	57.3	153.8	-1.0		-16.6	16	2744	04 48 08
04 51 30	---	23 32 40	57.5	155.2	-0.9		-15.8	202	2796	04 48 09
04 51 30	J0037+2141	23 32 40	56.3	151.7	-1.1		-17.8	-21	2796	No stop
04 53 30	---	23 34 41	56.4	152.5	-1.1		-17.4	99	2827	04 51 31
04 53 30	LP349-25	23 34 41	57.6	156.1	-0.9		-15.3	-22	2827	No stop
04 57 30	---	23 38 41	57.9	157.7	-0.8		-14.2	218	2889	04 53 31
04 58 00	J0037+2141	23 39 11	56.7	154.3	-1.0		-16.3	8	2889	04 58 00
05 00 00	---	23 41 12	56.9	155.2	-1.0		-15.8	120	2920	04 58 01
05 00 38	LP349-25	23 41 50	58.1	159.1	-0.8		-13.4	16	2920	05 00 38
05 04 00	---	23 45 12	58.2	160.5	-0.7		-12.5	202	2972	05 00 39
05 04 00	J0037+2141	23 45 12	57.1	156.8	-0.9		-14.8	-22	2972	No stop
05 06 00	---	23 47 13	57.2	157.6	-0.9		-14.2	98	3003	05 04 01
05 06 00	LP349-25	23 47 13	58.3	161.4	-0.7		-12.0	-23	3003	No stop
05 10 00	---	23 51 13	58.5	163.1	-0.6		-10.9	217	3064	05 06 01
05 10 30	J0037+2141	23 51 43	57.5	159.5	-0.8		-13.1	8	3064	05 10 30
05 12 30	---	23 53 44	57.6	160.4	-0.7		-12.6	120	3095	05 10 31
05 13 08	LP349-25	23 54 22	58.6	164.5	-0.6		-10.0	15	3095	05 13 08
05 16 30	---	23 57 44	58.8	166.0	-0.5		-9.1	202	3147	05 13 09
05 16 30	J0037+2141	23 57 44	57.8	162.1	-0.7		-11.5	-22	3147	No stop
05 18 30	---	23 59 45	57.8	162.9	-0.6		-10.9	98	3178	05 16 31
05 18 30	LP349-25	23 59 45	58.8	166.8	-0.5		-8.5	-23	3178	No stop
05 22 30	---	00 03 45	59.0	168.6	-0.4		-7.4	217	3240	05 18 31

Schedule for TORUN (Code Tr )  
new UCD -6cm

Page 7

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

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

--- Sun 13 Jun 2021 Day 164 ---

05 23 00	J0037+2141	00 04 15	58.0	164.9	-0.6	-9.7	7	3240	05 23 00
05 25 00	---	00 06 16	58.1	165.7	-0.5	-9.2	120	3271	05 23 01
05 25 38	LP349-25	00 06 54	59.1	170.0	-0.4	-6.5	15	3271	05 25 38
05 29 00	---	00 10 16	59.1	171.5	-0.3	-5.5	202	3323	05 25 39
05 29 00	J0037+2141	00 10 16	58.3	167.5	-0.5	-8.1	-23	3323	No stop
05 31 00	---	00 12 17	58.3	168.4	-0.4	-7.5	97	3354	05 29 01
05 31 00	LP349-25	00 12 17	59.2	172.4	-0.3	-4.9	-23	3354	No stop
05 35 00	---	00 16 17	59.2	174.2	-0.2	-3.7	217	3416	05 31 01
05 35 30	J0037+2141	00 16 48	58.4	170.3	-0.4	-6.2	7	3416	05 35 30
05 37 30	---	00 18 48	58.5	171.2	-0.3	-5.7	120	3447	05 35 31
05 38 08	LP349-25	00 19 26	59.3	175.7	-0.2	-2.8	14	3447	05 38 08
05 41 30	---	00 22 49	59.3	177.2	-0.1	-1.8	202	3499	05 38 09
05 41 30	J0037+2141	00 22 49	58.6	173.0	-0.3	-4.5	-23	3499	No stop
05 43 30	---	00 24 49	58.6	173.9	-0.2	-3.9	97	3530	05 41 31
05 43 30	LP349-25	00 24 49	59.3	178.1	-0.1	-1.2	-24	3530	No stop
05 47 30	---	00 28 49	59.3	179.9	-0.0	-0.1	216	3591	05 43 31
05 48 00	J0037+2141	00 29 20	58.7	175.9	-0.2	-2.6	7	3591	05 48 00
05 50 00	---	00 31 20	58.7	176.8	-0.1	-2.1	120	3622	05 48 01
05 50 38	LP349-25	00 31 58	59.3	181.3	0.0	0.9	14	3622	05 50 38
05 54 00	---	00 35 21	59.3	182.9	0.1	1.9	202	3674	05 50 39
05 54 00	J0037+2141	00 35 21	58.7	178.6	-0.1	-0.9	-23	3674	No stop
05 56 00	---	00 37 21	58.7	179.5	-0.0	-0.3	97	3705	05 54 01
05 56 00	LP349-25	00 37 21	59.3	183.8	0.1	2.4	-24	3705	No stop
06 00 00	---	00 41 22	59.3	185.6	0.2	3.6	216	3767	05 56 01
06 00 30	J0037+2141	00 41 52	58.7	181.5	0.1	1.0	7	3767	06 00 30
06 02 30	---	00 43 52	58.7	182.4	0.1	1.6	120	3798	06 00 31
06 03 08	LP349-25	00 44 30	59.2	187.0	0.3	4.5	14	3798	06 03 08
06 06 30	---	00 47 53	59.1	188.5	0.3	5.5	202	3850	06 03 09
06 06 30	J0037+2141	00 47 53	58.7	184.2	0.2	2.7	-23	3850	No stop
06 08 30	---	00 49 53	58.6	185.1	0.2	3.3	97	3881	06 06 31

Schedule for TORUN (Code Tr )  
new UCD -6cm

Page 8

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

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Sun 13 Jun 2021 Day 164 ---										
06 08 30	LP349-25	00 49 53	59.1	189.4	0.3		6.1	-24	3881	No stop
06 12 30	---	00 53 54	59.0	191.2	0.4		7.2	216	3943	06 08 31
06 13 00	J0037+2141	00 54 24	58.6	187.1	0.3		4.6	7	3943	06 13 00
06 15 00	---	00 56 24	58.5	188.0	0.3		5.1	120	3974	06 13 01
06 15 38	LP349-25	00 57 02	58.9	192.6	0.5		8.1	14	3974	06 15 38
06 19 00	---	01 00 25	58.8	194.1	0.5		9.1	202	4026	06 15 39
06 19 00	J0037+2141	01 00 25	58.4	189.7	0.4		6.3	-23	4026	No stop
06 21 00	---	01 02 25	58.4	190.6	0.4		6.9	97	4057	06 19 01
06 21 00	LP349-25	01 02 25	58.7	195.0	0.6		9.7	-24	4057	No stop
06 25 00	---	01 06 26	58.5	196.7	0.6		10.8	216	4119	06 21 01
06 25 30	J0037+2141	01 06 56	58.2	192.6	0.5		8.1	7	4119	06 25 30
06 27 30	---	01 08 56	58.2	193.5	0.5		8.7	120	4150	06 25 31
06 28 08	LP349-25	01 09 34	58.4	198.1	0.7		11.6	14	4150	06 28 08
06 31 30	---	01 12 57	58.2	199.5	0.7		12.5	202	4202	06 28 09
06 31 30	J0037+2141	01 12 57	58.0	195.2	0.6		9.8	-23	4202	No stop
06 33 30	---	01 14 57	57.9	196.1	0.6		10.3	97	4232	06 31 31
06 33 30	LP349-25	01 14 57	58.1	200.4	0.8		13.1	-24	4232	No stop
06 37 30	---	01 18 58	57.9	202.1	0.8		14.1	216	4294	06 33 31
06 38 00	J0037+2141	01 19 28	57.7	198.0	0.7		11.5	7	4294	06 38 00
06 40 00	---	01 21 28	57.7	198.9	0.7		12.1	120	4325	06 38 01
06 40 38	LP349-25	01 22 06	57.7	203.4	0.9		15.0	14	4325	06 40 38
06 44 00	---	01 25 29	57.5	204.8	0.9		15.8	202	4377	06 40 39
06 44 00	J0037+2141	01 25 29	57.5	200.6	0.8		13.1	-23	4377	No stop
06 46 00	---	01 27 29	57.3	201.4	0.8		13.7	97	4408	06 44 01
06 46 00	LP349-25	01 27 29	57.4	205.6	1.0		16.3	-24	4408	No stop
06 50 00	---	01 31 30	57.1	207.3	1.0		17.3	216	4470	06 46 01
06 50 30	J0037+2141	01 32 00	57.1	203.3	0.9		14.8	7	4470	06 50 30
06 52 30	---	01 34 00	57.0	204.1	0.9		15.3	120	4501	06 50 31
06 53 08	LP349-25	01 34 38	56.9	208.5	1.1		18.1	14	4501	06 53 08
06 56 30	---	01 38 01	56.6	209.9	1.1		18.9	202	4553	06 53 09

Schedule for TORUN (Code Tr )  
new UCD -6cm

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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
-----
```

--- Sun 13 Jun 2021 Day 164 ---

06 56 30	J0037+2141	01 38 01	56.7	205.7	1.0	16.3	-23	4553	No stop
06 58 30	---	01 40 01	56.6	206.6	1.0	16.8	97	4584	06 56 31
06 58 30	LP349-25	01 40 01	56.5	210.7	1.2	19.4	-23	4584	No stop
07 02 30	---	01 44 02	56.2	212.3	1.2	20.3	217	4646	06 58 31
07 03 00	J0037+2141	01 44 32	56.3	208.4	1.1	17.9	7	4646	07 03 00
07 05 00	---	01 46 32	56.1	209.2	1.1	18.4	120	4677	07 03 01
07 05 38	LP349-25	01 47 10	55.9	213.5	1.3	21.0	15	4677	07 05 38
07 09 00	---	01 50 33	55.6	214.8	1.4	21.7	202	4729	07 05 39
07 09 00	J0037+2141	01 50 33	55.8	210.7	1.2	19.3	-23	4729	No stop
07 11 00	---	01 52 33	55.7	211.5	1.2	19.8	97	4760	07 09 01
07 11 00	LP349-25	01 52 33	55.5	215.5	1.4	22.2	-23	4760	No stop
07 15 00	---	01 56 34	55.1	217.0	1.5	23.0	217	4821	07 11 01
07 15 30	J0037+2141	01 57 04	55.3	213.2	1.3	20.8	7	4821	07 15 30
07 17 30	---	01 59 04	55.1	214.0	1.3	21.2	120	4852	07 15 31
07 18 08	LP349-25	01 59 42	54.8	218.2	1.5	23.7	15	4852	07 18 08
07 21 30	---	02 03 05	54.5	219.4	1.6	24.4	202	4904	07 18 09
07 21 30	J0037+2141	02 03 05	54.8	215.5	1.4	22.1	-22	4904	No stop
07 23 30	---	02 05 05	54.6	216.3	1.4	22.5	98	4935	07 21 31
07 23 30	LP349-25	02 05 05	54.3	220.1	1.6	24.8	-23	4935	No stop
07 27 30	---	02 09 06	53.9	221.6	1.7	25.5	217	4997	07 23 31
07 28 00	J0037+2141	02 09 36	54.2	217.9	1.5	23.4	8	4997	07 28 00
07 30 00	---	02 11 36	54.0	218.6	1.6	23.8	120	5028	07 28 01
07 30 38	LP349-25	02 12 14	53.6	222.7	1.7	26.1	15	5028	07 30 38
07 34 00	---	02 15 37	53.3	223.9	1.8	26.8	202	5080	07 30 39
07 34 00	J0037+2141	02 15 37	53.6	220.1	1.6	24.6	-22	5080	No stop
07 36 00	---	02 17 37	53.4	220.8	1.7	25.0	98	5111	07 34 01
07 36 00	LP349-25	02 17 37	53.0	224.5	1.8	27.1	-23	5111	No stop
07 40 00	---	02 21 38	52.6	225.9	1.9	27.8	217	5173	07 36 01
07 40 30	J0037+2141	02 22 08	53.0	222.4	1.7	25.8	8	5173	07 40 30
07 42 30	---	02 24 08	52.8	223.1	1.8	26.2	120	5204	07 40 31

Schedule for TORUN (Code Tr )  
new UCD -6cm

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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
-----
```

--- Sun 13 Jun 2021 Day 164 ---

07 43 08	LP349-25	02 24 46	52.3	227.0	1.9	28.3	16	5204	07 43 08
07 46 30	---	02 28 09	51.9	228.1	2.0	28.9	202	5256	07 43 09
07 46 30	J0037+2141	02 28 09	52.4	224.4	1.8	26.9	-22	5256	No stop
07 48 30	---	02 30 09	52.2	225.1	1.9	27.3	98	5287	07 46 31
07 48 30	LP349-25	02 30 09	51.7	228.7	2.0	29.2	-22	5287	No stop
07 52 30	---	02 34 10	51.2	230.0	2.1	29.9	218	5349	07 48 31
07 53 00	J0037+2141	02 34 40	51.7	226.6	1.9	28.0	8	5349	07 53 00
07 55 00	---	02 36 40	51.5	227.3	2.0	28.4	120	5379	07 53 01
07 55 38	LP349-25	02 37 19	50.9	231.0	2.1	30.3	16	5379	07 55 38
07 59 00	---	02 40 41	50.5	232.1	2.2	30.8	202	5432	07 55 39
07 59 00	J0037+2141	02 40 41	51.0	228.6	2.0	29.0	-22	5432	No stop
08 01 00	---	02 42 41	50.8	229.2	2.1	29.3	98	5462	07 59 01
08 01 00	LP349-25	02 42 41	50.2	232.7	2.2	31.1	-22	5462	No stop
08 05 00	---	02 46 42	49.7	233.9	2.3	31.7	218	5524	08 01 01
08 05 30	J0037+2141	02 47 12	50.3	230.7	2.1	30.0	9	5524	08 05 30
08 07 30	---	02 49 12	50.0	231.3	2.2	30.3	120	5555	08 05 31
08 08 08	LP349-25	02 49 51	49.4	234.9	2.3	32.1	16	5555	08 08 08
08 11 30	---	02 53 13	48.9	235.9	2.4	32.5	202	5607	08 08 09
08 11 30	J0037+2141	02 53 13	49.6	232.5	2.2	30.9	-21	5607	No stop
08 13 30	---	02 55 13	49.3	233.1	2.3	31.2	99	5638	08 11 31
08 13 30	LP349-25	02 55 13	48.7	236.5	2.4	32.8	-22	5638	No stop
08 17 30	---	02 59 14	48.2	237.7	2.5	33.3	218	5700	08 13 31
08 18 00	J0037+2141	02 59 44	48.8	234.5	2.4	31.8	9	5700	08 18 00
08 20 00	---	03 01 45	48.5	235.1	2.4	32.0	120	5731	08 18 01
08 20 38	LP349-25	03 02 23	47.8	238.6	2.6	33.7	17	5731	08 20 38
08 24 00	---	03 05 45	47.3	239.5	2.6	34.0	202	5783	08 20 39
08 24 00	J0037+2141	03 05 45	48.0	236.3	2.5	32.5	-21	5783	No stop
08 26 00	---	03 07 46	47.8	236.9	2.5	32.8	99	5814	08 24 01
08 26 00	LP349-25	03 07 46	47.1	240.1	2.6	34.3	-21	5814	No stop
08 30 00	---	03 11 46	46.6	241.2	2.7	34.7	219	5876	08 26 01

Schedule for TORUN (Code Tr )  
new UCD -6cm

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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
-----										
--- Sun 13 Jun 2021 Day 164 ---										
08 30 30	J0037+2141	03 12 16	47.2	238.2	2.6		33.3	9	5876	08 30 30
08 32 30	---	03 14 17	46.9	238.7	2.6		33.6	120	5907	08 30 31
08 33 08	LP349-25	03 14 55	46.1	242.1	2.8		35.0	17	5907	08 33 08
08 36 30	---	03 18 17	45.7	243.0	2.8		35.4	202	5959	08 33 09
08 36 30	J0037+2141	03 18 17	46.4	239.9	2.7		34.0	-21	5959	No stop
08 38 30	---	03 20 18	46.2	240.4	2.7		34.2	99	5990	08 36 31
08 38 30	LP349-25	03 20 18	45.4	243.5	2.9		35.6	-21	5990	No stop
08 42 30	---	03 24 18	44.9	244.6	2.9		35.9	219	6051	08 38 31
08 43 00	J0037+2141	03 24 48	45.6	241.7	2.8		34.7	10	6051	08 43 00
08 45 00	---	03 26 49	45.3	242.2	2.8		34.9	120	6082	08 43 01
08 45 38	LP349-25	03 27 27	44.5	245.4	3.0		36.2	17	6082	08 45 38
08 49 00	---	03 30 49	44.0	246.3	3.0		36.5	202	6134	08 45 39
08 49 00	J0037+2141	03 30 49	44.8	243.3	2.9		35.3	-20	6134	No stop
08 51 00	---	03 32 50	44.5	243.8	2.9		35.5	100	6165	08 49 01
08 51 00	LP349-25	03 32 50	43.7	246.8	3.1		36.7	-21	6165	No stop
08 55 00	---	03 36 50	43.2	247.8	3.1		37.0	219	6227	08 51 01
08 55 30	J0037+2141	03 37 20	43.9	245.0	3.0		35.9	10	6227	08 55 30
08 57 30	---	03 39 21	43.6	245.5	3.0		36.1	120	6258	08 55 31
08 58 08	LP349-25	03 39 59	42.7	248.6	3.2		37.2	18	6258	08 58 08
09 01 30	---	03 43 21	42.3	249.5	3.2		37.5	202	6310	08 58 09
09 01 30	J0037+2141	03 43 21	43.1	246.6	3.1		36.4	-20	6310	No stop
09 03 30	---	03 45 22	42.8	247.1	3.1		36.6	100	6341	09 01 31
09 03 30	LP349-25	03 45 22	42.0	250.0	3.3		37.6	-20	6341	No stop
09 07 30	---	03 49 22	41.4	250.9	3.3		37.9	220	6403	09 03 31
09 08 00	J0037+2141	03 49 52	42.2	248.2	3.2		36.9	10	6403	09 08 00
09 10 00	---	03 51 53	41.9	248.7	3.2		37.1	120	6434	09 08 01
09 10 38	LP349-25	03 52 31	41.0	251.7	3.4		38.1	18	6434	09 10 38
09 14 00	---	03 55 53	40.5	252.5	3.4		38.3	202	6486	09 10 39
09 14 00	J0037+2141	03 55 53	41.3	249.7	3.3		37.3	-20	6486	No stop
09 16 00	---	03 57 54	41.0	250.2	3.3		37.5	100	6517	09 14 01



Schedule for TORUN (Code Tr )  
new UCD -6cm

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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
--- Sun 13 Jun 2021 Day 164 ---										
09 16 00	LP349-25	03 57 54	40.2	253.0	3.5		38.4	-20	6517	No stop
09 20 00	---	04 01 54	39.6	253.9	3.5		38.6	220	6579	09 16 01
09 20 30	J0037+2141	04 02 24	40.4	251.3	3.4		37.8	10	6579	09 20 30
09 22 30	---	04 04 25	40.1	251.8	3.4		37.9	120	6609	09 20 31
09 23 08	LP349-25	04 05 03	39.2	254.7	3.6		38.8	18	6609	09 23 08
09 26 30	---	04 08 25	38.7	255.4	3.7		39.0	202	6661	09 23 09
09 26 30	J0037+2141	04 08 25	39.5	252.7	3.5		38.1	-20	6661	No stop
09 28 30	---	04 10 26	39.3	253.2	3.5		38.3	100	6692	09 26 31
09 28 30	LP349-25	04 10 26	38.4	255.9	3.7		39.1	-20	6692	No stop
09 32 30	---	04 14 26	37.8	256.8	3.8		39.2	220	6754	09 28 31
09 33 00	J0037+2141	04 14 57	38.6	254.3	3.6		38.5	11	6754	09 33 00
09 35 00	---	04 16 57	38.3	254.7	3.6		38.6	120	6785	09 33 01
09 35 38	LP349-25	04 17 35	37.3	257.5	3.8		39.4	18	6785	09 35 38
09 39 00	---	04 20 58	36.8	258.3	3.9		39.5	202	6837	09 35 39
09 39 00	J0037+2141	04 20 58	37.7	255.6	3.7		38.8	-19	6837	No stop
09 41 00	---	04 22 58	37.4	256.1	3.7		38.9	101	6868	09 39 01
09 41 00	LP349-25	04 22 58	36.5	258.7	3.9		39.6	-20	6868	No stop
09 45 00	---	04 26 59	35.9	259.6	4.0		39.7	220	6930	09 41 01
09 45 30	J0037+2141	04 27 29	36.8	257.1	3.8		39.1	11	6930	09 45 30
09 47 30	---	04 29 29	36.5	257.6	3.8		39.2	120	6961	09 45 31
09 48 08	LP349-25	04 30 07	35.5	260.3	4.0		39.8	18	6961	09 48 08
09 51 30	---	04 33 30	35.0	261.0	4.1		39.9	202	7013	09 48 09
09 51 30	J0037+2141	04 33 30	35.9	258.5	3.9		39.3	-19	7013	No stop
09 53 30	---	04 35 30	35.6	258.9	4.0		39.4	101	7044	09 51 31
09 53 30	LP349-25	04 35 30	34.7	261.5	4.1		40.0	-19	7044	No stop
09 57 30	---	04 39 31	34.1	262.3	4.2		40.1	221	7106	09 53 31
09 58 00	J0037+2141	04 40 01	34.9	259.9	4.0		39.6	11	7106	09 58 00
10 00 00	---	04 42 01	34.6	260.3	4.1		39.6	120	7137	09 58 01
10 00 38	LP349-25	04 42 39	33.6	263.0	4.2		40.2	19	7137	10 00 38
10 04 00	---	04 46 02	33.1	263.7	4.3		40.2	202	7189	10 00 39

Schedule for TORUN (Code Tr )  
new UCD -6cm

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SYNC: Time correlator 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 13 Jun 2021 Day 164 ---

10 04 00	J0037+2141	04 46 02	34.0	261.2	4.1	39.7	-19	7189	No stop
10 06 00	---	04 48 02	33.7	261.6	4.2	39.8	101	7220	10 04 01
10 06 00	LP349-25	04 48 02	32.8	264.1	4.3	40.3	-19	7220	No stop
10 10 00	---	04 52 03	32.2	265.0	4.4	40.3	221	7281	10 06 01
10 10 30	J0037+2141	04 52 33	33.1	262.6	4.2	39.9	11	7281	10 10 30
10 12 30	---	04 54 33	32.8	263.0	4.3	39.9	120	7312	10 10 31
10 13 08	LP349-25	04 55 11	31.7	265.6	4.4	40.4	19	7312	10 13 08
10 16 30	---	04 58 34	31.2	266.3	4.5	40.4	202	7364	10 13 09
10 16 30	J0037+2141	04 58 34	32.2	263.9	4.3	40.0	-19	7364	No stop
10 18 30	---	05 00 34	31.9	264.3	4.4	40.1	101	7395	10 16 31
10 18 30	LP349-25	05 00 34	30.9	266.7	4.5	40.4	-19	7395	No stop
10 22 30	---	05 04 35	30.3	267.5	4.6	40.5	221	7457	10 18 31
10 23 00	J0037+2141	05 05 05	31.2	265.2	4.4	40.1	11	7457	10 23 00
10 25 00	---	05 07 05	30.9	265.6	4.5	40.2	120	7488	10 23 01
10 25 45	0017+200	05 07 50	27.1	268.4	4.8	39.8	17	7488	10 25 45
10 30 00	---	05 12 06	26.5	269.3	4.9	39.9	255	7554	10 25 46

## SETUP FILE INFORMATION:

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

==== Setup file: sess221.C2048

Setup group: 11	Station: TORUN	Total bit rate: 2048
Format: VDIF	Bits per sample: 2	Sample rate: 64.000
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	9	1	9	2	10	2	10	10
	3	11	3	11	4	12	4	12	12
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: 9 Setup file default. Used with PCAL = off

LO sum=	4830.49	4830.49	4830.49	4830.49	4894.49	4894.49	4894.49	4894.49
	4958.49	4958.49	4958.49	4958.49	5022.49	5022.49	5022.49	5022.49
BBC fr=	630.49	630.49	630.49	630.49	694.49	694.49	694.49	694.49
	758.49	758.49	758.49	758.49	822.49	822.49	822.49	822.49
Bandwd=	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00

Matching frequency sets: 9

Track assignments are:

track1= 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16

barrel=roll\_off

#### POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	Source position (RA/Dec) (J2000)	(Date)	Error (mas)
* LP349-25	00 25 19.000426	* 00 27 55.926000	00 29 01.881553	0.00
	22 02 57.56469	* 22 19 32.84000	22 26 24.74949	0.00
* J0037+2141	00 34 45.636140	* 00 37 23.540800	00 38 29.858577	0.00
	21 25 23.48404	* 21 41 53.12700	21 48 42.89324	0.00
J0019+2021	00 17 02.119551	* 00 19 37.854494	00 20 43.354962	0.12
* 0017+200	20 05 06.80757	* 20 21 45.64453	20 28 39.63518	0.12
J0019+20	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.vlba.2012jul rfc_2012b Petrov, 2012, unpublished 492 observations			

**es099btr**

ES099B  
PI: *Shu, Xinwen*

Address: Department of Physics

Observing mode: evn

Schedule for TORUN (Code Tr )

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ES099B

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 13 Jun 2021 Day 164 ---										
Next scan frequencies: 4830.49 4830.49 4830.49 4830.49 4894.49 4894.49 4894.49 4894.49										
4958.49 4958.49 4958.49 4958.49 5022.49 5022.49 5022.49 5022.49										
Next BBC frequencies: 630.49 630.49 630.49 630.49 694.49 694.49 694.49 694.49										
758.49 758.49 758.49 758.49 822.49 822.49 822.49 822.49										
Next scan bandwidths: 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00										
32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00										
-----										
15 30 00	3C286	10 12 55	47.6	102.1	-3.3		-42.9	0	0	15 30 00
15 35 00	---	10 17 56	48.4	103.3	-3.2		-42.7	300	77	15 30 01
15 36 00	J1553+5253	10 18 56	42.5	54.6	-5.6		-54.1	-52	77	15 36 00
15 37 50	=CAL1	10 20 46	42.8	54.8	-5.6		-54.3	58	106	15 36 01
15 38 20	J1545+5400	10 21 17	44.4	54.6	-5.4		-56.2	10	106	15 38 20
15 40 20	=CAL2	10 23 17	44.7	54.8	-5.4		-56.5	120	137	15 38 21
15 40 20	J1553+5253	10 23 17	43.1	55.1	-5.5		-54.6	-20	137	No stop
15 41 50	=CAL1	10 24 47	43.3	55.3	-5.5		-54.8	70	160	15 40 21
15 41 50	J1554	10 24 47	43.2	55.2	-5.5		-54.7	-8	160	No stop
15 45 20	---	10 28 18	43.6	55.6	-5.4		-55.1	202	214	15 41 51
15 45 50	J1553+5253	10 28 48	43.8	55.8	-5.4		-55.3	21	214	15 45 50
15 47 20	=CAL1	10 30 18	43.9	56.0	-5.4		-55.5	90	237	15 45 51
15 47 20	J1554	10 30 18	43.8	55.8	-5.4		-55.4	-8	237	No stop
15 50 50	---	10 33 49	44.3	56.2	-5.4		-55.8	202	291	15 47 21
15 50 50	J1553+5253	10 33 49	44.4	56.4	-5.3		-55.9	-9	291	No stop
15 52 20	=CAL1	10 35 19	44.6	56.6	-5.3		-56.0	81	314	15 50 51
15 52 20	J1554	10 35 19	44.5	56.4	-5.3		-56.0	-8	314	No stop
15 55 50	---	10 38 49	44.9	56.8	-5.3		-56.4	202	368	15 52 21
15 56 20	J1553+5253	10 39 20	45.1	57.0	-5.2		-56.5	21	368	15 56 20
15 57 50	=CAL1	10 40 50	45.3	57.2	-5.2		-56.7	90	392	15 56 21
15 57 50	J1554	10 40 50	45.2	57.1	-5.2		-56.6	-8	392	No stop
16 01 20	---	10 44 20	45.6	57.5	-5.2		-57.0	202	446	15 57 51
16 01 20	J1553+5253	10 44 20	45.7	57.6	-5.2		-57.1	-9	446	No stop
16 02 50	=CAL1	10 45 51	45.9	57.8	-5.1		-57.3	81	469	16 01 21

Schedule for TORUN (Code Tr )  
 ES099B

Page 3

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

Start UT	Source	Start / Stop					Early	Disk	TPStart		
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC	
-----											
---	Sun 13 Jun 2021	Day 164					---				
16 03 20	J1545+5400	10 46 21	47.6	57.4	-5.0		-59.3	10	469	16 03 20	
16 05 20	=CAL2	10 48 21	47.8	57.6	-5.0		-59.5	120	500	16 03 21	
16 05 20	J1553+5253	10 48 21	46.2	58.1	-5.1		-57.5	-19	500	No stop	
16 06 50	=CAL1	10 49 51	46.4	58.3	-5.1		-57.7	71	523	16 05 21	
16 06 50	J1554	10 49 51	46.3	58.1	-5.1		-57.6	-8	523	No stop	
16 10 20	---	10 53 22	46.8	58.5	-5.0		-58.0	202	577	16 06 51	
16 10 50	J1553+5253	10 53 52	46.9	58.7	-5.0		-58.2	21	577	16 10 50	
16 12 20	=CAL1	10 55 22	47.1	58.9	-5.0		-58.3	90	600	16 10 51	
16 12 20	J1554	10 55 22	47.0	58.8	-5.0		-58.3	-8	600	No stop	
16 15 50	---	10 58 53	47.5	59.2	-4.9		-58.7	202	654	16 12 21	
16 15 50	J1553+5253	10 58 53	47.6	59.3	-4.9		-58.7	-9	654	No stop	
16 17 20	=CAL1	11 00 23	47.8	59.5	-4.9		-58.9	81	678	16 15 51	
16 17 20	J1554	11 00 23	47.7	59.4	-4.9		-58.8	-8	678	No stop	
16 20 50	---	11 03 54	48.1	59.8	-4.9		-59.2	202	732	16 17 21	
16 21 20	J1553+5253	11 04 24	48.3	60.0	-4.8		-59.4	21	732	16 21 20	
16 22 50	=CAL1	11 05 54	48.5	60.1	-4.8		-59.5	90	755	16 21 21	
16 22 50	J1554	11 05 54	48.4	60.0	-4.8		-59.5	-9	755	No stop	
16 26 20	---	11 09 24	48.8	60.4	-4.8		-59.9	201	809	16 22 51	
16 26 20	J1553+5253	11 09 24	48.9	60.5	-4.7		-59.9	-9	809	No stop	
16 27 50	=CAL1	11 10 55	49.1	60.7	-4.7		-60.1	81	832	16 26 21	
16 28 20	J1545+5400	11 11 25	50.8	60.1	-4.6		-62.2	10	832	16 28 20	
16 30 20	=CAL2	11 13 25	51.0	60.4	-4.5		-62.5	120	863	16 28 21	
16 30 20	J1553+5253	11 13 25	49.5	61.0	-4.7		-60.4	-19	863	No stop	
16 31 50	=CAL1	11 14 55	49.7	61.2	-4.7		-60.6	71	886	16 30 21	
16 31 50	J1554	11 14 55	49.6	61.0	-4.7		-60.5	-9	886	No stop	
16 35 20	---	11 18 26	50.0	61.4	-4.6		-60.9	201	940	16 31 51	
16 35 50	J1553+5253	11 18 56	50.2	61.6	-4.6		-61.0	21	940	16 35 50	
16 37 20	=CAL1	11 20 26	50.4	61.8	-4.6		-61.2	90	964	16 35 51	
16 37 20	J1554	11 20 26	50.3	61.7	-4.6		-61.1	-9	964	No stop	
16 40 50	---	11 23 57	50.7	62.1	-4.5		-61.5	201	1018	16 37 21	
16 40 50	J1553+5253	11 23 57	50.9	62.2	-4.5		-61.6	-9	1018	No stop	
16 42 20	=CAL1	11 25 27	51.1	62.4	-4.5		-61.7	81	1041	16 40 51	

Schedule for TORUN (Code Tr )  
 ES099B

Page 4

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

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Sun 13 Jun 2021 Day 164 ---										
16 42 20	J1554	11 25 27	50.9	62.2	-4.5		-61.7	-9	1041	No stop
16 45 50	---	11 28 58	51.4	62.6	-4.4		-62.0	201	1095	16 42 21
16 46 20	J1553+5253	11 29 28	51.6	62.8	-4.4		-62.2	21	1095	16 46 20
16 47 50	=CAL1	11 30 58	51.8	63.0	-4.4		-62.3	90	1118	16 46 21
16 47 50	J1554	11 30 58	51.7	62.9	-4.4		-62.3	-9	1118	No stop
16 51 20	---	11 34 29	52.2	63.3	-4.3		-62.7	201	1172	16 47 51
16 51 20	J1553+5253	11 34 29	52.3	63.4	-4.3		-62.7	-9	1172	No stop
16 52 50	=CAL1	11 35 59	52.5	63.6	-4.3		-62.9	81	1195	16 51 21
16 53 20	J1545+5400	11 36 29	54.1	62.8	-4.2		-65.2	10	1195	16 53 20
16 55 20	=CAL2	11 38 29	54.4	63.0	-4.1		-65.4	120	1226	16 53 21
16 55 20	J1553+5253	11 38 29	52.8	63.9	-4.3		-63.2	-19	1226	No stop
16 56 50	=CAL1	11 39 59	53.0	64.0	-4.2		-63.3	71	1250	16 55 21
16 56 50	J1554	11 39 59	52.9	63.9	-4.3		-63.3	-9	1250	No stop
17 00 20	---	11 43 30	53.4	64.3	-4.2		-63.6	201	1304	16 56 51
17 00 50	J1553+5253	11 44 00	53.5	64.5	-4.2		-63.8	21	1304	17 00 50
17 02 20	=CAL1	11 45 30	53.7	64.6	-4.1		-63.9	90	1327	17 00 51
17 02 20	J1554	11 45 30	53.6	64.5	-4.2		-63.9	-9	1327	No stop
17 05 50	---	11 49 01	54.1	64.9	-4.1		-64.2	201	1381	17 02 21
17 05 50	J1553+5253	11 49 01	54.2	65.0	-4.1		-64.3	-9	1381	No stop
17 07 20	=CAL1	11 50 31	54.4	65.2	-4.1		-64.5	81	1404	17 05 51
17 07 20	J1554	11 50 31	54.3	65.1	-4.1		-64.4	-9	1404	No stop
17 10 50	---	11 54 02	54.8	65.5	-4.0		-64.8	201	1458	17 07 21
17 11 20	J1553+5253	11 54 32	55.0	65.7	-4.0		-64.9	21	1458	17 11 20
17 12 50	=CAL1	11 56 02	55.2	65.8	-4.0		-65.1	90	1481	17 11 21
17 12 50	J1554	11 56 02	55.1	65.7	-4.0		-65.0	-9	1481	No stop
17 16 20	---	11 59 33	55.6	66.1	-3.9		-65.4	201	1536	17 12 51
17 16 20	J1553+5253	11 59 33	55.7	66.2	-3.9		-65.4	-9	1536	No stop
17 17 50	=CAL1	12 01 03	55.9	66.4	-3.9		-65.6	81	1559	17 16 21
17 18 20	J1545+5400	12 01 33	57.5	65.4	-3.7		-68.1	11	1559	17 18 20
17 20 20	=CAL2	12 03 33	57.7	65.6	-3.7		-68.3	120	1590	17 18 21

Schedule for TORUN (Code Tr )  
 ES099B

Page 5

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

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Sun 13 Jun 2021 Day 164 ---										
17 20 20	J1553+5253	12 03 33	56.2	66.7	-3.8		-65.9	-19	1590	No stop
17 21 50	=CAL1	12 05 04	56.4	66.8	-3.8		-66.0	71	1613	17 20 21
17 21 50	J1554	12 05 04	56.3	66.7	-3.8		-66.0	-9	1613	No stop
17 25 20	---	12 08 34	56.8	67.1	-3.8		-66.4	201	1667	17 21 51
17 25 50	J1553+5253	12 09 04	57.0	67.3	-3.8		-66.5	21	1667	17 25 50
17 27 20	=CAL1	12 10 34	57.2	67.4	-3.7		-66.6	90	1690	17 25 51
17 27 20	J1554	12 10 34	57.1	67.3	-3.7		-66.6	-9	1690	No stop
17 30 50	---	12 14 05	57.6	67.7	-3.7		-66.9	201	1744	17 27 21
17 30 50	J1553+5253	12 14 05	57.7	67.8	-3.7		-67.0	-9	1744	No stop
17 32 20	=CAL1	12 15 35	57.9	68.0	-3.6		-67.2	81	1767	17 30 51
17 32 20	J1554	12 15 35	57.8	67.8	-3.7		-67.1	-9	1767	No stop
17 35 50	---	12 19 06	58.3	68.2	-3.6		-67.5	201	1822	17 32 21
17 36 20	J1553+5253	12 19 36	58.4	68.4	-3.6		-67.6	21	1822	17 36 20
17 37 50	=CAL1	12 21 06	58.6	68.6	-3.6		-67.7	90	1845	17 36 21
17 37 50	J1554	12 21 06	58.5	68.4	-3.6		-67.7	-9	1845	No stop
17 41 20	---	12 24 37	59.0	68.8	-3.5		-68.1	201	1899	17 37 51
17 41 20	J1553+5253	12 24 37	59.1	69.0	-3.5		-68.1	-9	1899	No stop
17 42 50	=CAL1	12 26 07	59.4	69.2	-3.5		-68.3	81	1922	17 41 21
17 43 20	J1545+5400	12 26 37	60.9	67.9	-3.3		-71.0	11	1922	17 43 20
17 45 20	=CAL2	12 28 37	61.2	68.1	-3.3		-71.3	120	1953	17 43 21
17 45 20	J1553+5253	12 28 37	59.7	69.4	-3.4		-68.5	-19	1953	No stop
17 46 50	=CAL1	12 30 08	59.9	69.6	-3.4		-68.7	71	1976	17 45 21
17 46 50	J1554	12 30 08	59.8	69.4	-3.4		-68.6	-9	1976	No stop
17 50 20	---	12 33 38	60.3	69.8	-3.4		-69.0	201	2030	17 46 51
17 50 50	J1553+5253	12 34 08	60.5	70.0	-3.3		-69.1	21	2030	17 50 50
17 52 20	=CAL1	12 35 39	60.7	70.2	-3.3		-69.3	90	2053	17 50 51
17 52 20	J1554	12 35 39	60.6	70.0	-3.3		-69.2	-9	2053	No stop
17 55 50	---	12 39 09	61.1	70.4	-3.3		-69.6	201	2107	17 52 21
17 55 50	J1553+5253	12 39 09	61.2	70.6	-3.3		-69.6	-9	2107	No stop
17 57 20	=CAL1	12 40 39	61.4	70.7	-3.2		-69.8	81	2131	17 55 51

Schedule for TORUN (Code Tr )

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ES099B

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

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

Disk: GBytes recorded to this point.

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

SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 13 Jun 2021 Day 164 ---										
17 57 20	J1554	12 40 39	61.3	70.6	-3.2		-69.7	-9	2131	No stop
18 00 50	---	12 44 10	61.8	71.0	-3.2		-70.1	201	2185	17 57 21
18 01 20	J1553+5253	12 44 40	62.0	71.2	-3.2		-70.2	21	2185	18 01 20
18 02 50	=CAL1	12 46 10	62.2	71.3	-3.1		-70.3	90	2208	18 01 21
18 02 50	J1554	12 46 10	62.1	71.2	-3.2		-70.3	-9	2208	No stop
18 06 20	---	12 49 41	62.6	71.6	-3.1		-70.7	201	2262	18 02 51
18 06 20	J1553+5253	12 49 41	62.7	71.7	-3.1		-70.7	-9	2262	No stop
18 07 50	=CAL1	12 51 11	62.9	71.9	-3.1		-70.9	81	2285	18 06 21
18 08 20	J1545+5400	12 51 41	64.4	70.4	-2.9		-73.9	11	2285	18 08 20
18 10 20	=CAL2	12 53 42	64.7	70.5	-2.9		-74.2	120	2316	18 08 21
18 10 20	J1553+5253	12 53 42	63.3	72.2	-3.0		-71.1	-19	2316	No stop
18 11 50	=CAL1	12 55 12	63.5	72.3	-3.0		-71.3	71	2339	18 10 21
18 11 50	J1554	12 55 12	63.4	72.2	-3.0		-71.2	-9	2339	No stop
18 15 20	---	12 58 42	63.9	72.5	-2.9		-71.6	201	2393	18 11 51
18 15 50	J1553+5253	12 59 12	64.0	72.8	-2.9		-71.7	21	2393	18 15 50
18 17 20	=CAL1	13 00 43	64.3	72.9	-2.9		-71.8	90	2417	18 15 51
18 17 20	J1554	13 00 43	64.1	72.8	-2.9		-71.8	-9	2417	No stop
18 20 50	---	13 04 13	64.6	73.1	-2.8		-72.2	201	2471	18 17 21
18 20 50	J1553+5253	13 04 13	64.8	73.3	-2.8		-72.2	-9	2471	No stop
18 22 20	=CAL1	13 05 43	65.0	73.5	-2.8		-72.3	81	2494	18 20 51
18 22 20	J1554	13 05 43	64.9	73.3	-2.8		-72.3	-9	2494	No stop
18 25 50	---	13 09 14	65.4	73.7	-2.8		-72.7	201	2548	18 22 21
18 26 20	J1553+5253	13 09 44	65.6	73.9	-2.7		-72.7	21	2548	18 26 20
18 27 50	=CAL1	13 11 14	65.8	74.1	-2.7		-72.9	90	2571	18 26 21
18 27 50	J1554	13 11 14	65.7	73.9	-2.7		-72.9	-9	2571	No stop
18 31 20	---	13 14 45	66.2	74.3	-2.7		-73.2	201	2625	18 27 51
18 31 20	J1553+5253	13 14 45	66.3	74.4	-2.7		-73.2	-9	2625	No stop
18 32 50	=CAL1	13 16 15	66.5	74.6	-2.6		-73.4	81	2649	18 31 21
18 33 20	J1545+5400	13 16 45	68.0	72.7	-2.5		-76.9	11	2649	18 33 20
18 35 20	=CAL2	13 18 46	68.3	72.8	-2.5		-77.1	120	2679	18 33 21



Schedule for TORUN (Code Tr )  
 ES099B

Page 7

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

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 13 Jun 2021 Day 164 ---										
18 35 20	J1553+5253	13 18 46	66.9	74.9	-2.6		-73.6	-19	2679	No stop
18 36 50	=CAL1	13 20 16	67.1	75.0	-2.6		-73.8	71	2703	18 35 21
18 36 50	J1554	13 20 16	67.0	74.9	-2.6		-73.8	-9	2703	No stop
18 40 20	---	13 23 46	67.5	75.2	-2.5		-74.1	201	2757	18 36 51
18 40 50	J1553+5253	13 24 17	67.7	75.5	-2.5		-74.2	21	2757	18 40 50
18 42 20	=CAL1	13 25 47	67.9	75.6	-2.5		-74.3	90	2780	18 40 51
18 42 20	J1554	13 25 47	67.8	75.5	-2.5		-74.3	-9	2780	No stop
18 45 50	---	13 29 17	68.3	75.8	-2.4		-74.7	201	2834	18 42 21
18 45 50	J1553+5253	13 29 17	68.4	76.0	-2.4		-74.7	-9	2834	No stop
18 47 20	=CAL1	13 30 48	68.6	76.2	-2.4		-74.8	81	2857	18 45 51
18 47 20	J1554	13 30 48	68.5	76.0	-2.4		-74.8	-9	2857	No stop
18 50 50	---	13 34 18	69.0	76.4	-2.3		-75.2	201	2911	18 47 21
18 51 20	J1553+5253	13 34 48	69.2	76.6	-2.3		-75.2	21	2911	18 51 20
18 52 50	=CAL1	13 36 18	69.4	76.8	-2.3		-75.4	90	2935	18 51 21
18 52 50	J1554	13 36 18	69.3	76.6	-2.3		-75.4	-9	2935	No stop
18 56 20	---	13 39 49	69.8	77.0	-2.3		-75.7	201	2989	18 52 51
18 56 20	J1553+5253	13 39 49	69.9	77.2	-2.2		-75.7	-9	2989	No stop
18 57 50	=CAL1	13 41 19	70.2	77.3	-2.2		-75.9	81	3012	18 56 21
19 05 50	3C345	13 49 21	57.8	96.6	-2.9		-50.9	416	3012	19 05 50
19 09 50	---	13 53 21	58.4	97.5	-2.8		-50.8	240	3074	19 05 51
19 11 20	J1553+5253	13 54 52	72.1	78.8	-2.0		-77.2	25	3074	19 11 20
19 13 10	=CAL1	13 56 42	72.4	79.0	-2.0		-77.3	110	3102	19 11 21
19 13 40	J1545+5400	13 57 12	73.9	76.0	-1.8		-81.9	9	3102	19 13 40
19 15 40	=CAL2	13 59 12	74.2	76.2	-1.8		-82.2	120	3133	19 13 41
19 15 40	J1553+5253	13 59 12	72.8	79.3	-1.9		-77.6	-21	3133	No stop
19 17 10	=CAL1	14 00 42	73.0	79.4	-1.9		-77.7	69	3156	19 15 41
19 17 10	J1554	14 00 42	72.9	79.2	-1.9		-77.7	-9	3156	No stop
19 20 40	---	14 04 13	73.4	79.6	-1.8		-78.1	201	3210	19 17 11
19 21 10	J1553+5253	14 04 43	73.6	79.9	-1.8		-78.1	21	3210	19 21 10
19 22 40	=CAL1	14 06 13	73.8	80.1	-1.8		-78.2	90	3233	19 21 11

Schedule for TORUN (Code Tr )  
 ES099B

Page 8

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

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
--- Sun 13 Jun 2021 Day 164 ---										
19 22 40	J1554	14 06 13	73.7	79.8	-1.8		-78.3	-9	3233	No stop
19 26 10	---	14 09 44	74.2	80.2	-1.8		-78.6	201	3287	19 22 41
19 26 10	J1553+5253	14 09 44	74.3	80.4	-1.7		-78.6	-9	3287	No stop
19 27 40	=CAL1	14 11 14	74.6	80.6	-1.7		-78.7	81	3311	19 26 11
19 27 40	J1554	14 11 14	74.4	80.4	-1.7		-78.7	-9	3311	No stop
19 31 10	---	14 14 45	75.0	80.8	-1.7		-79.1	201	3365	19 27 41
19 31 40	J1553+5253	14 15 15	75.2	81.1	-1.7		-79.1	21	3365	19 31 40
19 33 10	=CAL1	14 16 45	75.4	81.2	-1.6		-79.2	90	3388	19 31 41
19 33 10	J1554	14 16 45	75.3	81.0	-1.6		-79.2	-9	3388	No stop
19 36 40	---	14 20 16	75.8	81.4	-1.6		-79.6	201	3442	19 33 11
19 36 40	J1553+5253	14 20 16	75.9	81.6	-1.6		-79.5	-9	3442	No stop
19 38 10	=CAL1	14 21 46	76.1	81.8	-1.5		-79.7	81	3465	19 36 41
19 38 40	J1545+5400	14 22 16	77.5	77.7	-1.4		-85.4	7	3465	19 38 40
19 40 40	=CAL2	14 24 16	77.8	77.8	-1.4		-85.7	120	3496	19 38 41
19 40 40	J1553+5253	14 24 16	76.5	82.1	-1.5		-79.9	-24	3496	No stop
19 42 10	=CAL1	14 25 47	76.7	82.2	-1.5		-80.0	66	3519	19 40 41
19 42 10	J1554	14 25 47	76.6	82.0	-1.5		-80.1	-9	3519	No stop
19 45 40	---	14 29 17	77.1	82.4	-1.4		-80.4	201	3573	19 42 11
19 46 10	J1553+5253	14 29 47	77.3	82.7	-1.4		-80.4	21	3573	19 46 10
19 47 40	=CAL1	14 31 18	77.5	82.9	-1.4		-80.5	90	3597	19 46 11
19 47 40	J1554	14 31 18	77.4	82.6	-1.4		-80.6	-9	3597	No stop
19 51 10	---	14 34 48	77.9	83.0	-1.3		-80.9	201	3651	19 47 41
19 51 10	J1553+5253	14 34 48	78.1	83.3	-1.3		-80.8	-10	3651	No stop
19 52 40	=CAL1	14 36 18	78.3	83.5	-1.3		-80.9	80	3674	19 51 11
19 52 40	J1554	14 36 18	78.2	83.2	-1.3		-81.0	-9	3674	No stop
19 56 10	---	14 39 49	78.7	83.6	-1.3		-81.3	201	3728	19 52 41
19 56 40	J1553+5253	14 40 19	78.9	83.9	-1.2		-81.3	20	3728	19 56 40
19 58 10	=CAL1	14 41 49	79.1	84.1	-1.2		-81.4	90	3751	19 56 41
19 58 10	J1554	14 41 49	79.0	83.8	-1.2		-81.5	-10	3751	No stop
20 01 40	---	14 45 20	79.5	84.3	-1.2		-81.8	200	3805	19 58 11

Schedule for TORUN (Code Tr )  
 ES099B

Page 9

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

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 13 Jun 2021 Day 164 ---										
20 01 40	J1553+5253	14 45 20	79.6	84.5	-1.1		-81.7	-10	3805	No stop
20 03 10	=CAL1	14 46 50	79.9	84.7	-1.1		-81.8	80	3829	20 01 41
20 03 40	J1545+5400	14 47 20	81.2	78.5	-1.0		-89.6	3	3829	20 03 40
20 05 40	=CAL2	14 49 20	81.5	78.5	-0.9		-90.0	120	3859	20 03 41
20 05 40	J1553+5253	14 49 20	80.2	85.0	-1.1		-82.0	-28	3859	No stop
20 07 10	=CAL1	14 50 51	80.5	85.2	-1.1		-82.1	62	3883	20 05 41
20 07 10	J1554	14 50 51	80.3	84.9	-1.1		-82.2	-10	3883	No stop
20 10 40	---	14 54 21	80.9	85.4	-1.0		-82.5	200	3937	20 07 11
20 11 10	J1553+5253	14 54 51	81.1	85.7	-1.0		-82.4	20	3937	20 11 10
20 12 40	=CAL1	14 56 22	81.3	85.9	-1.0		-82.5	90	3960	20 11 11
20 12 40	J1554	14 56 22	81.2	85.6	-1.0		-82.6	-10	3960	No stop
20 16 10	---	14 59 52	81.7	86.1	-0.9		-82.9	200	4014	20 12 41
20 16 10	J1553+5253	14 59 52	81.8	86.4	-0.9		-82.7	-10	4014	No stop
20 17 40	=CAL1	15 01 22	82.0	86.6	-0.9		-82.8	80	4037	20 16 11
20 17 40	J1554	15 01 22	81.9	86.2	-0.9		-83.0	-10	4037	No stop
20 21 10	---	15 04 53	82.4	86.7	-0.8		-83.2	200	4091	20 17 41
20 21 40	J1553+5253	15 05 23	82.6	87.1	-0.8		-83.1	20	4091	20 21 40
20 23 10	=CAL1	15 06 53	82.9	87.4	-0.8		-83.2	90	4114	20 21 41
20 23 10	J1554	15 06 53	82.7	87.0	-0.8		-83.4	-10	4114	No stop
20 26 40	---	15 10 24	83.3	87.5	-0.7		-83.6	200	4169	20 23 11
20 26 40	J1553+5253	15 10 24	83.4	87.9	-0.7		-83.3	-11	4169	No stop
20 28 10	=CAL1	15 11 54	83.6	88.1	-0.7		-83.4	79	4192	20 26 41
20 28 40	J1545+5400	15 12 24	84.9	77.0	-0.6		-96.2	-7	4192	20 28 40
20 30 40	=CAL2	15 14 25	85.2	76.6	-0.5		-97.0	113	4223	20 28 41
20 30 40	J1553+5253	15 14 25	84.0	88.5	-0.7		-83.5	-39	4223	No stop
20 32 10	=CAL1	15 15 55	84.2	88.8	-0.6		-83.6	51	4246	20 30 41
20 32 10	J1554	15 15 55	84.1	88.3	-0.7		-83.8	-11	4246	No stop
20 35 40	---	15 19 25	84.6	88.9	-0.6		-84.0	199	4300	20 32 11
20 36 10	J1553+5253	15 19 55	84.8	89.5	-0.6		-83.7	19	4300	20 36 10
20 37 40	=CAL1	15 21 26	85.0	89.8	-0.5		-83.7	90	4323	20 36 11

Schedule for TORUN (Code Tr )  
 ES099B

Page 10

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

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 13 Jun 2021 Day 164 ---										
20 37 40	J1554	15 21 26	84.9	89.2	-0.6		-84.0	-11	4323	No stop
20 41 10	---	15 24 56	85.4	89.9	-0.5		-84.1	199	4377	20 37 41
20 41 10	J1553+5253	15 24 56	85.6	90.5	-0.5		-83.7	-12	4377	No stop
20 42 40	=CAL1	15 26 27	85.8	90.8	-0.5		-83.6	78	4400	20 41 11
20 42 40	J1554	15 26 27	85.7	90.2	-0.5		-84.1	-12	4400	No stop
20 46 10	---	15 29 57	86.2	91.0	-0.4		-84.0	198	4455	20 42 41
20 46 40	J1553+5253	15 30 27	86.4	91.8	-0.4		-83.4	17	4455	20 46 40
20 48 10	=CAL1	15 31 57	86.6	92.2	-0.4		-83.3	90	4478	20 46 41
20 48 10	J1554	15 31 57	86.5	91.5	-0.4		-83.9	-13	4478	No stop
20 51 40	---	15 35 28	87.0	92.5	-0.3		-83.6	197	4532	20 48 11
20 51 40	J1553+5253	15 35 28	87.2	93.4	-0.3		-82.8	-14	4532	No stop
20 53 10	=CAL1	15 36 58	87.4	94.0	-0.3		-82.5	76	4555	20 51 41
20 53 40	J1545+5400	15 37 28	88.4	56.1	-0.1		-122.1	-67	4555	20 53 40
20 55 40	=CAL2	15 39 29	88.7	49.3	-0.1		-129.3	53	4586	20 53 41
20 57 10	J1554	15 40 59	87.8	94.7	-0.2		-82.4	-16	4586	20 57 10
21 00 40	---	15 44 29	88.4	97.1	-0.2		-80.8	194	4640	20 57 11
21 01 10	J1553+5253	15 45 00	88.6	99.7	-0.2		-78.5	11	4640	21 01 10
21 02 40	=CAL1	15 46 30	88.8	101.8	-0.1		-76.6	90	4663	21 01 11
21 02 40	J1554	15 46 30	88.7	99.1	-0.1		-79.1	-19	4663	No stop
21 06 10	---	15 50 00	89.2	106.0	-0.1		-73.0	191	4717	21 02 41
21 06 10	J1553+5253	15 50 00	89.3	111.7	-0.1		-67.5	-30	4717	No stop
21 07 40	=CAL1	15 51 31	89.5	121.7	-0.0		-57.8	60	4741	21 06 11
21 07 40	J1554	15 51 31	89.4	112.2	-0.1		-67.0	-28	4741	No stop
21 11 10	---	15 55 01	89.8	173.0	-0.0		-6.9	182	4795	21 07 41
21 13 10	J1554	15 57 02	89.6	230.0	0.0		49.6	-11	4795	21 13 10
21 16 40	---	16 00 32	89.2	254.4	0.1		73.4	199	4849	21 13 11
21 16 40	J1553+5253	16 00 32	89.0	254.9	0.1		73.7	-13	4849	No stop
21 18 10	=CAL1	16 02 02	88.8	258.0	0.1		76.5	77	4872	21 16 41
21 18 40	J1545+5400	16 02 32	87.4	291.1	0.3		107.8	-50	4872	21 18 40
21 20 40	=CAL2	16 04 33	87.2	289.3	0.3		105.6	70	4903	21 18 41

Schedule for TORUN (Code Tr )  
 ES099B

Page 11

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 Disk: GBytes recorded to this point.  
 TPStart: Recording start time. Frequencies are L0 sum (band edge).  
 SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 13 Jun 2021 Day 164 ---										
21 20 40	J1553+5253	16 04 33	88.4	261.3	0.2		79.3	-69	4903	No stop
21 22 10	=CAL1	16 06 03	88.2	262.7	0.2		80.4	21	4926	21 20 41
21 22 10	J1554	16 06 03	88.4	263.0	0.2		80.8	-10	4926	No stop
21 25 40	---	16 09 34	87.8	265.3	0.2		82.5	200	4980	21 22 11
21 26 10	J1553+5253	16 10 04	87.6	265.2	0.3		82.1	20	4980	21 26 10
21 27 40	=CAL1	16 11 34	87.4	265.9	0.3		82.5	90	5003	21 26 11
21 27 40	J1554	16 11 34	87.5	266.3	0.3		83.0	-10	5003	No stop
21 31 10	---	16 15 05	87.0	267.6	0.3		83.6	200	5057	21 27 41
21 31 10	J1553+5253	16 15 05	86.9	267.3	0.3		83.1	-10	5057	No stop
21 32 40	=CAL1	16 16 35	86.6	267.7	0.4		83.3	80	5081	21 31 11
21 32 40	J1554	16 16 35	86.8	268.0	0.4		83.8	-10	5081	No stop
21 36 10	---	16 20 05	86.2	269.0	0.4		84.0	200	5135	21 32 41
21 36 40	J1553+5253	16 20 35	86.0	268.8	0.4		83.6	21	5135	21 36 40
21 38 10	=CAL1	16 22 06	85.8	269.2	0.5		83.6	90	5158	21 36 41
21 38 10	J1554	16 22 06	85.9	269.4	0.4		84.0	-9	5158	No stop
21 41 40	---	16 25 36	85.4	270.1	0.5		84.1	201	5212	21 38 11
21 41 40	J1553+5253	16 25 36	85.3	269.9	0.5		83.7	-9	5212	No stop
21 43 10	=CAL1	16 27 06	85.1	270.2	0.5		83.7	81	5235	21 41 41
21 43 40	J1545+5400	16 27 37	83.8	282.0	0.7		93.7	-9	5235	21 43 40
21 45 40	=CAL2	16 29 37	83.5	281.9	0.7		93.2	111	5266	21 43 41
21 45 40	J1553+5253	16 29 37	84.7	270.7	0.6		83.6	-37	5266	No stop
21 47 10	=CAL1	16 31 07	84.5	271.0	0.6		83.6	53	5289	21 45 41
21 47 10	J1554	16 31 07	84.6	271.1	0.6		84.0	-9	5289	No stop
21 50 40	---	16 34 38	84.1	271.7	0.7		83.8	201	5343	21 47 11
21 51 10	J1553+5253	16 35 08	83.9	271.6	0.7		83.5	21	5343	21 51 10
21 52 40	=CAL1	16 36 38	83.6	271.9	0.7		83.4	90	5367	21 51 11
21 52 40	J1554	16 36 38	83.8	272.0	0.7		83.7	-9	5367	No stop
21 56 10	---	16 40 09	83.2	272.5	0.7		83.6	201	5421	21 52 41
21 56 10	J1553+5253	16 40 09	83.1	272.4	0.8		83.2	-9	5421	No stop
21 57 40	=CAL1	16 41 39	82.9	272.6	0.8		83.2	81	5444	21 56 11

Schedule for TORUN (Code Tr )  
 ES099B

Page 12

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 Disk: GBytes recorded to this point.  
 TPStart: Recording start time. Frequencies are L0 sum (band edge).  
 SYNC: Time correlator is expected to sync up.

Start UT	Source	Start / Stop					Early	Disk	TPStart	
Stop UT		LST	EL	AZ	HA	UP	ParA	Dwell	GBytes	SYNC
-----										
--- Sun 13 Jun 2021 Day 164 ---										
21 57 40	J1554	16 41 39	83.0	272.8	0.8		83.5	-9	5444	No stop
22 01 10	---	16 45 09	82.5	273.2	0.8		83.3	201	5498	21 57 41
22 01 40	J1553+5253	16 45 40	82.3	273.2	0.9		82.9	21	5498	22 01 40
22 03 10	=CAL1	16 47 10	82.0	273.4	0.9		82.8	90	5521	22 01 41
22 03 10	J1554	16 47 10	82.2	273.5	0.9		83.1	-9	5521	No stop
22 06 40	---	16 50 40	81.7	274.0	0.9		82.9	201	5575	22 03 11
22 06 40	J1553+5253	16 50 40	81.5	273.9	0.9		82.6	-9	5575	No stop
22 08 10	=CAL1	16 52 11	81.3	274.1	1.0		82.5	81	5598	22 06 41
22 08 10	J1545+5400	16 52 11	80.2	281.6	1.1		88.3	-30	5598	No stop
22 10 30	=CAL2	16 54 31	79.9	281.6	1.1		87.9	110	5635	22 08 11
22 11 00	J1553+5253	16 55 01	80.9	274.4	1.0		82.3	1	5635	22 11 00
22 12 30	=CAL1	16 56 31	80.6	274.6	1.0		82.2	90	5658	22 11 01
22 12 30	J1554	16 56 31	80.8	274.7	1.0		82.4	-9	5658	No stop
22 16 00	---	17 00 02	80.3	275.1	1.1		82.2	201	5712	22 12 31
22 16 25	J1553+5253	17 00 27	80.1	275.1	1.1		81.9	16	5712	22 16 25
22 17 30	=CAL1	17 01 32	79.9	275.2	1.1		81.8	65	5729	22 16 26
22 17 30	J1554	17 01 32	80.0	275.3	1.1		82.0	-9	5729	No stop
22 21 00	---	17 05 03	79.5	275.7	1.2		81.8	201	5783	22 17 31
22 21 00	J1553+5253	17 05 03	79.4	275.7	1.2		81.5	-9	5783	No stop
22 22 30	=CAL1	17 06 33	79.1	275.9	1.2		81.4	81	5806	22 21 01
22 24 00	2007+777	17 08 03	60.7	377.3	-2.9		-121.2	-128	5806	22 24 00
22 30 00	---	17 14 04	61.0	377.0	-2.8		-123.0	232	5899	22 24 01

SETUP FILE INFORMATION:

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

==== Setup file: sess221.C2048

Setup group: 10	Station: TORUN	Total bit rate: 2048
Format: VDIF	Bits per sample: 2	Sample rate: 64.000
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	9	1	9	2	10	2	10	10
	3	11	3	11	4	12	4	12	12
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: 9 Setup file default. Used with PCAL = off

LO sum=	4830.49	4830.49	4830.49	4830.49	4894.49	4894.49	4894.49	4894.49
	4958.49	4958.49	4958.49	4958.49	5022.49	5022.49	5022.49	5022.49
BBC fr=	630.49	630.49	630.49	630.49	694.49	694.49	694.49	694.49
	758.49	758.49	758.49	758.49	822.49	822.49	822.49	822.49
Bandwd=	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00

Matching frequency sets: 9

Track assignments are:

track1= 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16  
 barrel=roll\_off

POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* J1554	15 53 19.045538	* 15 54 37.260000	15 55 12.474717	0.00
TAR	53 04 09.92639	* 52 55 26.40000	52 51 50.38253	0.00
	Target source			
* J1553+5253	15 52 24.944768	* 15 53 43.425700	15 54 18.748219	0.68
CAL1	53 02 20.82178	* 52 53 33.94700	52 49 56.57508	0.75
	Main calibrator, S~50 mJy, 0.14 deg			
* J1545+5400	15 44 26.761063	* 15 45 43.825865	15 46 18.585536	0.25
CAL2	54 09 58.98215	* 54 00 42.75889	53 56 53.60002	0.15
	Second calibrator, 100+ mJy, 1.7 deg			
* 3C286	13 28 49.657769	* 13 31 08.288061	13 32 07.658368	0.17
J1331+3030	30 45 58.64066	* 30 30 32.95930	30 24 09.88333	0.16
1328+307	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
J1331+30	GSFC 2016a X/S astro solution, 269 observations.			
* 3C345	16 41 17.606229	* 16 42 58.809967	16 43 43.319106	0.79
J1642+3948	39 54 10.81492	* 39 48 36.99399	39 46 17.48954	0.59
1641+399	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
J1642+39	GSFC 2016a X/S astro solution, 53724 observations.			
* 2007+777	20 07 20.430197	* 20 05 30.998526	20 04 47.991142	0.04
J2005+7752	77 43 58.12301	* 77 52 43.24754	77 56 08.52454	0.01

J2005+77

/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc  
GSFC 2016a X/S astro solution, 15674 observations.



J2102+6015: A POWERFUL HIGH-REDSHIFT QUASAR  
 PI: *Sandor Frey*

Observing mode: 6 cm 2 Gb/s

Schedule for TORUN (Code Tr ) Page 2

J2102+6015: a powerful high-redshift quasar

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 14 Jun 2021 Day 165 ---										
Next scan frequencies:		4830.49	4830.49	4830.49	4830.49	4830.49	4894.49	4894.49	4894.49	4894.49
		4958.49	4958.49	4958.49	4958.49	4958.49	5022.49	5022.49	5022.49	5022.49
Next BBC frequencies:		630.49	630.49	630.49	630.49	630.49	694.49	694.49	694.49	694.49
		758.49	758.49	758.49	758.49	758.49	822.49	822.49	822.49	822.49
Next scan bandwidths:		32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
		32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
-----										
18 30 00	J1407+2827	13 17 21	63.6	154.3	-0.8		-17.2	0	0	18 30 00
18 40 00	=1404+286	13 27 23	64.2	159.2	-0.7		-14.0	600	155	18 30 01
18 44 00	J2022+6136	13 31 24	39.9	37.1	-6.9		-49.7	-19	155	18 44 00
18 54 00	=2021+614	13 41 25	40.8	38.1	-6.7		-51.3	581	309	18 44 01
18 54 40	J2055+6122	13 42 05	37.7	34.9	-7.2		-46.0	14	309	18 54 40
18 55 40	=2054+611	13 43 06	37.8	35.0	-7.2		-46.2	60	325	18 54 41
18 55 40	J2102+6015	13 43 06	36.4	35.3	-7.3		-44.5	-19	325	No stop
18 59 10	=2101+600	13 46 36	36.7	35.7	-7.3		-45.0	191	379	18 55 41
18 59 10	J2055+6122	13 46 36	38.1	35.4	-7.2		-46.7	-19	379	No stop
19 00 40	=2054+611	13 48 06	38.2	35.6	-7.1		-46.9	71	402	18 59 11
19 00 40	J2102+6015	13 48 06	36.8	35.8	-7.3		-45.2	-19	402	No stop
19 04 10	=2101+600	13 51 37	37.1	36.2	-7.2		-45.8	191	456	19 00 41
19 04 10	J2055+6122	13 51 37	38.5	35.9	-7.1		-47.5	-19	456	No stop
19 05 40	=2054+611	13 53 07	38.6	36.1	-7.1		-47.7	71	479	19 04 11
19 06 10	J2102+6015	13 53 37	37.3	36.4	-7.2		-46.1	11	479	19 06 10
19 20 40	=2101+600	14 08 10	38.6	38.0	-6.9		-48.3	870	703	19 06 11
19 21 10	J2102+6015	14 08 40	38.7	38.0	-6.9		-48.4	24	703	19 21 10
19 35 40	=2101+600	14 23 12	40.0	39.5	-6.7		-50.6	870	927	19 21 11
19 36 10	J2102+6015	14 23 42	40.1	39.6	-6.7		-50.6	24	927	19 36 10
19 50 40	=2101+600	14 38 15	41.5	41.1	-6.4		-52.8	870	1152	19 36 11
19 51 10	J2102+6015	14 38 45	41.5	41.1	-6.4		-52.9	24	1152	19 51 10
20 05 40	=2101+600	14 53 17	43.0	42.5	-6.2		-55.1	870	1376	19 51 11
20 06 10	J2102+6015	14 53 47	43.0	42.6	-6.2		-55.2	24	1376	20 06 10
20 20 40	=2101+600	15 08 19	44.5	44.0	-5.9		-57.4	870	1600	20 06 11

Schedule for TORUN (Code Tr )

Page 3

J2102+6015: a powerful high-redshift quasar

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 14 Jun 2021	Day 165					---				
20 21 10	J2102+6015	15 08 50	44.6	44.0	-5.9		-57.5	24	1600	20 21 10	
20 35 40	=2101+600	15 23 22	46.1	45.4	-5.7		-59.7	870	1824	20 21 11	
20 36 10	J2102+6015	15 23 52	46.2	45.4	-5.7		-59.7	24	1824	20 36 10	
20 50 40	=2101+600	15 38 24	47.8	46.7	-5.4		-62.0	870	2048	20 36 11	
20 51 10	J2102+6015	15 38 54	47.8	46.7	-5.4		-62.0	24	2048	20 51 10	
21 05 40	=2101+600	15 53 27	49.4	48.0	-5.2		-64.3	870	2272	20 51 11	
21 06 10	J2102+6015	15 53 57	49.5	48.0	-5.2		-64.4	24	2272	21 06 10	
21 20 40	=2101+600	16 08 29	51.1	49.2	-4.9		-66.6	870	2497	21 06 11	
21 21 10	J2055+6122	16 08 59	52.4	48.1	-4.8		-69.1	12	2497	21 21 10	
21 22 10	=2054+611	16 10 00	52.5	48.1	-4.8		-69.3	60	2512	21 21 11	
21 22 10	J2102+6015	16 10 00	51.3	49.3	-4.9		-66.9	-18	2512	No stop	
21 25 40	=2101+600	16 13 30	51.7	49.6	-4.8		-67.4	192	2566	21 22 11	
21 25 40	J2055+6122	16 13 30	52.9	48.4	-4.7		-69.9	-18	2566	No stop	
21 27 10	=2054+611	16 15 00	53.1	48.5	-4.7		-70.1	72	2589	21 25 41	
21 27 10	J2102+6015	16 15 00	51.9	49.7	-4.8		-67.6	-18	2589	No stop	
21 30 40	=2101+600	16 18 31	52.3	49.9	-4.7		-68.2	192	2643	21 27 11	
21 30 40	J2055+6122	16 18 31	53.4	48.7	-4.6		-70.7	-18	2643	No stop	
21 32 10	=2054+611	16 20 01	53.6	48.8	-4.6		-71.0	72	2667	21 30 41	
21 32 40	J2102+6015	16 20 31	52.5	50.1	-4.7		-68.5	13	2667	21 32 40	
21 47 10	=2101+600	16 35 04	54.2	51.1	-4.5		-70.8	870	2891	21 32 41	
21 47 40	J2102+6015	16 35 34	54.2	51.2	-4.5		-70.9	24	2891	21 47 40	
22 02 10	=2101+600	16 50 06	55.9	52.1	-4.2		-73.3	870	3115	21 47 41	
22 02 40	J2102+6015	16 50 36	56.0	52.2	-4.2		-73.4	24	3115	22 02 40	
22 17 10	=2101+600	17 05 09	57.7	53.0	-4.0		-75.8	870	3339	22 02 41	
22 17 40	J2102+6015	17 05 39	57.8	53.1	-4.0		-75.9	24	3339	22 17 40	
22 32 10	=2101+600	17 20 11	59.6	53.8	-3.7		-78.4	870	3563	22 17 41	
22 40 10	J2102+6015	17 28 12	60.5	54.2	-3.6		-79.8	473	3563	22 40 10	
22 47 10	=2101+600	17 35 14	61.4	54.5	-3.5		-81.0	420	3671	22 40 11	
22 47 40	J2102+6015	17 35 44	61.4	54.5	-3.5		-81.1	24	3671	22 47 40	
23 02 10	=2101+600	17 50 16	63.2	55.0	-3.2		-83.9	870	3895	22 47 41	
23 02 40	J2102+6015	17 50 46	63.3	55.1	-3.2		-83.9	24	3895	23 02 40	
23 17 10	=2101+600	18 05 18	65.1	55.4	-3.0		-86.8	870	4120	23 02 41	

Schedule for TORUN (Code Tr )

Page 4

J2102+6015: a powerful high-redshift quasar

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 14 Jun 2021 Day 165 ---										
23 17 40	J2102+6015	18 05 49	65.1	55.4	-3.0		-86.9	24	4120	23 17 40
23 32 10	=2101+600	18 20 21	66.9	55.5	-2.7		-90.0	870	4344	23 17 41
23 32 40	J2055+6122	18 20 51	67.8	52.5	-2.6		-94.4	10	4344	23 32 40
23 33 40	=2054+611	18 21 51	67.9	52.5	-2.6		-94.6	60	4359	23 32 41
23 33 40	J2102+6015	18 21 51	67.1	55.5	-2.7		-90.3	-20	4359	No stop
23 37 10	=2101+600	18 25 22	67.6	55.5	-2.6		-91.1	190	4413	23 33 41
23 37 10	J2055+6122	18 25 22	68.4	52.4	-2.5		-95.5	-21	4413	No stop
23 38 40	=2054+611	18 26 52	68.5	52.4	-2.5		-95.8	69	4437	23 37 11
23 38 40	J2102+6015	18 26 52	67.7	55.5	-2.6		-91.4	-21	4437	No stop
23 42 10	=2101+600	18 30 23	68.2	55.5	-2.5		-92.2	189	4491	23 38 41
23 42 10	J2055+6122	18 30 23	69.0	52.2	-2.4		-96.7	-21	4491	No stop
23 43 40	=2054+611	18 31 53	69.1	52.2	-2.4		-97.1	69	4514	23 42 11
23 44 10	J2102+6015	18 32 23	68.4	55.4	-2.5		-92.7	9	4514	23 44 10
23 58 40	=2101+600	18 46 55	70.2	55.0	-2.3		-96.2	870	4738	23 44 11
--- Start: Mon 14 Jun 2021 Day 165 -- Stop: Tue 15 Jun 2021 Day 166 ---										
23 59 10	J2102+6015	18 47 25	70.3	55.0	-2.3		-96.3	24	4738	23 59 10
00 13 40	=2101+600	19 01 58	72.1	54.2	-2.0		-100.2	870	4962	23 59 11
00 14 10	J2102+6015	19 02 28	72.1	54.2	-2.0		-100.4	24	4962	00 14 10
00 28 40	=2101+600	19 17 00	73.9	52.8	-1.8		-104.8	870	5186	00 14 11
00 29 10	J2102+6015	19 17 30	73.9	52.8	-1.8		-105.0	24	5186	00 29 10
00 43 40	=2101+600	19 32 03	75.7	50.7	-1.5		-110.1	870	5410	00 29 11
00 44 10	J2102+6015	19 32 33	75.7	50.6	-1.5		-110.3	24	5410	00 44 10
00 58 40	=2101+600	19 47 05	77.4	47.6	-1.3		-116.5	870	5635	00 44 11
00 59 10	J2102+6015	19 47 35	77.4	47.4	-1.3		-116.7	24	5635	00 59 10
01 13 40	=2101+600	20 02 08	79.0	43.0	-1.0		-124.2	870	5859	00 59 11
01 14 10	J2055+6122	20 02 38	79.0	35.4	-0.9		-133.3	0	5859	01 14 10
01 15 10	=2054+611	20 03 38	79.1	35.0	-0.9		-133.9	60	5874	01 14 11
01 15 10	J2102+6015	20 03 38	79.1	42.4	-1.0		-125.1	-30	5874	No stop
01 18 40	=2101+600	20 07 08	79.5	41.0	-0.9		-127.2	180	5928	01 15 11

Schedule for TORUN (Code Tr )

Page 5

J2102+6015: a powerful high-redshift quasar

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 15 Jun 2021  Day 166 ---

01 18 40  J2055+6122  20 07 08  79.4 33.4 -0.8  -136.3  -31  5928  No stop
01 20 10  =2054+611   20 08 39  79.5 32.7 -0.8  -137.3   59  5951  01 18 41

01 20 10  J2102+6015  20 08 39  79.6 40.4 -0.9  -128.2  -30  5951  No stop
01 23 40  =2101+600   20 12 09  80.0 38.8 -0.9  -130.4  180  6006  01 20 11

01 23 40  J2055+6122  20 12 09  79.8 30.9 -0.7  -139.8  -31  6006  No stop
01 25 10  =2054+611   20 13 40  79.9 30.1 -0.7  -140.9   59  6029  01 23 41

01 25 40  J2102+6015  20 14 10  80.1 37.9 -0.8  -131.8   -1  6029  01 25 40
01 40 10  =2101+600   20 28 42  81.4 29.6 -0.6  -143.1  869  6253  01 25 41

01 40 40  J2102+6015  20 29 12  81.4 29.3 -0.6  -143.6   23  6253  01 40 40
01 55 10  =2101+600   20 43 44  82.3 18.2 -0.3  -157.7  870  6477  01 40 41

01 55 40  J2102+6015  20 44 15  82.3 17.8 -0.3  -158.2   22  6477  01 55 40
02 10 10  =2101+600   20 58 47  82.7  4.3 -0.1  -174.7  870  6701  01 55 41

02 10 40  J2102+6015  20 59 17  82.7  3.8 -0.1  -175.3   22  6701  02 10 40
02 16 10  =2101+600   21 04 48  82.8 -1.6  0.0   178.1  330  6786  02 10 41

02 20 00  J0319+4130  21 08 39  30.4 60.0 -6.2  -44.0   20  6786  02 20 00
02 30 00  =0316+413   21 18 40  31.7 61.6 -6.0  -44.9   600  6941  02 20 01

```

## SETUP FILE INFORMATION:

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

==== Setup file: sess221.C2048

```

Setup group: 10          Station: TORUN          Total bit rate: 2048
Format: VDIF           Bits per sample: 2      Sample rate: 64.000
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	9	1	9	2	10	2	10	10
	3	11	3	11	4	12	4	12	12
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: 9 Setup file default. Used with PCAL = off

LO sum=	4830.49	4830.49	4830.49	4830.49	4894.49	4894.49	4894.49	4894.49
	4958.49	4958.49	4958.49	4958.49	5022.49	5022.49	5022.49	5022.49
BBC fr=	630.49	630.49	630.49	630.49	694.49	694.49	694.49	694.49
	758.49	758.49	758.49	758.49	822.49	822.49	822.49	822.49
Bandwd=	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00

Matching frequency sets: 9

Track assignments are:

track1= 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16

barrel=roll\_off

#### POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec)		Error
	(B1950)	(J2000)	(mas)
0316+413	03 16 29.567283	* 03 19 48.160114	03 21 10.748342 0.14
* J0319+4130	41 19 51.91856	* 41 30 42.10568	41 35 07.50128 0.11
	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.rfc		
	rfc_2018a Petrov and Kovalev, in preparation 15726 observations		
1404+286	14 04 45.615157	* 14 07 00.394415	14 07 58.326191 0.11
* J1407+2827	28 41 29.23512	* 28 27 14.69015	28 21 20.42493 0.10
	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.rfc		
	rfc_2018a Petrov and Kovalev, in preparation 72228 observations		
2021+614	20 21 13.300234	* 20 22 06.681752	20 22 31.031457 0.21
* J2022+6136	61 27 18.15582	* 61 36 58.80483	61 40 50.88027 0.10
	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.rfc		
	rfc_2018a Petrov and Kovalev, in preparation 3597 observations		
2054+611	20 54 33.038660	* 20 55 38.838295	20 56 08.122312 0.36
* J2055+6122	61 10 27.48076	* 61 22 00.63796	61 26 38.81834 0.16
	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.rfc		
	rfc_2018a Petrov and Kovalev, in preparation 278 observations		
2101+600	21 01 28.001902	* 21 02 40.219102	21 03 12.116510 0.89
* J2102+6015	60 03 15.00381	* 60 15 09.83639	60 19 57.09239 0.34
	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.rfc		
	rfc_2018a Petrov and Kovalev, in preparation 102 observations		

**ec077ctr**

NEW UCD -6CM  
PI: *Juan B. Climent*

Address: Dpto. Astronomia, Univ. Valencia

Observing mode: Phase-referencing at 6cm (2048 Mb/s)

Schedule for TORUN (Code Tr ) Page 2  
new UCD -6cm

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 15 Jun 2021 Day 166 ---										
Next scan frequencies:		4830.49	4830.49	4830.49	4830.49	4830.49	4894.49	4894.49	4894.49	4894.49
		4958.49	4958.49	4958.49	4958.49	4958.49	5022.49	5022.49	5022.49	5022.49
Next BBC frequencies:		630.49	630.49	630.49	630.49	630.49	694.49	694.49	694.49	694.49
		758.49	758.49	758.49	758.49	758.49	822.49	822.49	822.49	822.49
Next scan bandwidths:		32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
		32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
-----										
03 30 00	0017+200	22 18 50	49.9	132.5	-2.0		-28.2	0	0	03 30 00
03 35 00	---	22 23 51	50.4	134.1	-1.9		-27.4	300	77	03 30 01
03 38 00	J0038+1856	22 26 51	47.4	130.2	-2.2		-29.0	154	77	03 38 00
03 40 00	---	22 28 52	47.6	130.8	-2.2		-28.8	120	108	03 38 01
03 40 40	LSPMJ0036+18	22 29 32	47.4	132.1	-2.1		-28.0	25	108	03 40 40
03 44 10	---	22 33 02	47.8	133.2	-2.1		-27.5	210	162	03 40 41
03 44 10	J0038+1856	22 33 02	48.1	132.1	-2.1		-28.1	-14	162	No stop
03 46 10	---	22 35 03	48.3	132.7	-2.1		-27.8	106	193	03 44 11
03 46 10	LSPMJ0036+18	22 35 03	48.0	133.8	-2.0		-27.2	-15	193	No stop
03 50 20	---	22 39 13	48.5	135.1	-2.0		-26.5	235	258	03 46 11
03 50 50	J0038+1856	22 39 43	48.8	134.2	-2.0		-27.1	16	258	03 50 50
03 52 50	---	22 41 44	49.0	134.8	-2.0		-26.8	120	289	03 50 51
03 53 30	LSPMJ0036+18	22 42 24	48.8	136.1	-1.9		-26.0	25	289	03 53 30
03 57 00	---	22 45 54	49.2	137.3	-1.9		-25.4	210	343	03 53 31
03 57 00	J0038+1856	22 45 54	49.5	136.2	-1.9		-26.1	-14	343	No stop
03 59 00	---	22 47 55	49.7	136.8	-1.9		-25.8	106	374	03 57 01
03 59 00	LSPMJ0036+18	22 47 55	49.4	138.0	-1.8		-25.1	-15	374	No stop
04 03 10	---	22 52 05	49.8	139.3	-1.8		-24.4	235	438	03 59 01
04 03 40	J0038+1856	22 52 36	50.2	138.4	-1.8		-25.0	16	438	04 03 40
04 05 40	---	22 54 36	50.4	139.1	-1.7		-24.6	120	469	04 03 41
04 06 20	LSPMJ0036+18	22 55 16	50.1	140.4	-1.7		-23.8	25	469	04 06 20
04 09 50	---	22 58 47	50.4	141.6	-1.6		-23.2	210	523	04 06 21
04 09 50	J0038+1856	22 58 47	50.8	140.5	-1.7		-23.8	-14	523	No stop
04 11 50	---	23 00 47	51.0	141.2	-1.6		-23.5	106	554	04 09 51

Schedule for TORUN (Code Tr )  
new UCD -6cm

Page 3

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 15 Jun 2021 Day 166 ---										
04 11 50	LSPMJ0036+18	23 00 47	50.6	142.3	-1.6		-22.8	-15	554	No stop
04 16 00	---	23 04 58	51.0	143.7	-1.5		-22.0	235	618	04 11 51
04 16 30	J0038+1856	23 05 28	51.4	142.8	-1.6		-22.6	16	618	04 16 30
04 18 30	---	23 07 28	51.6	143.5	-1.5		-22.2	120	649	04 16 31
04 19 10	LSPMJ0036+18	23 08 08	51.3	144.9	-1.5		-21.4	25	649	04 19 10
04 22 40	---	23 11 39	51.6	146.1	-1.4		-20.7	210	703	04 19 11
04 22 40	J0038+1856	23 11 39	51.9	145.0	-1.5		-21.4	-14	703	No stop
04 24 40	---	23 13 39	52.1	145.7	-1.4		-21.0	106	734	04 22 41
04 24 40	LSPMJ0036+18	23 13 39	51.7	146.8	-1.4		-20.3	-15	734	No stop
04 28 50	---	23 17 50	52.1	148.3	-1.3		-19.4	235	799	04 24 41
04 29 20	J0038+1856	23 18 20	52.5	147.4	-1.4		-20.0	16	799	04 29 20
04 31 20	---	23 20 20	52.7	148.1	-1.3		-19.6	120	830	04 29 21
04 32 00	LSPMJ0036+18	23 21 00	52.3	149.5	-1.3		-18.7	25	830	04 32 00
04 35 30	---	23 24 31	52.6	150.8	-1.2		-18.0	210	884	04 32 01
04 35 30	J0038+1856	23 24 31	53.0	149.7	-1.3		-18.7	-14	884	No stop
04 37 30	---	23 26 31	53.1	150.4	-1.2		-18.3	106	915	04 35 31
04 37 30	LSPMJ0036+18	23 26 31	52.7	151.5	-1.2		-17.6	-15	915	No stop
04 41 40	---	23 30 42	53.0	153.1	-1.1		-16.6	235	979	04 37 31
04 42 10	J0038+1856	23 31 12	53.5	152.2	-1.1		-17.3	16	979	04 42 10
04 44 10	---	23 33 12	53.6	152.9	-1.1		-16.8	120	1010	04 42 11
04 44 50	LSPMJ0036+18	23 33 52	53.2	154.3	-1.1		-15.9	25	1010	04 44 50
04 48 20	---	23 37 23	53.5	155.7	-1.0		-15.1	210	1064	04 44 51
04 48 20	J0038+1856	23 37 23	53.9	154.5	-1.0		-15.9	-14	1064	No stop
04 50 20	---	23 39 23	54.0	155.3	-1.0		-15.4	106	1095	04 48 21
04 50 20	LSPMJ0036+18	23 39 23	53.6	156.4	-1.0		-14.7	-15	1095	No stop
04 54 30	---	23 43 34	53.8	158.0	-0.9		-13.7	235	1159	04 50 21
04 55 00	J0038+1856	23 44 04	54.3	157.1	-0.9		-14.3	16	1159	04 55 00
04 57 00	---	23 46 04	54.4	157.9	-0.9		-13.8	120	1190	04 55 01
04 57 40	LSPMJ0036+18	23 46 44	54.0	159.3	-0.8		-12.9	25	1190	04 57 40
05 01 10	---	23 50 15	54.2	160.7	-0.8		-12.1	210	1244	04 57 41
05 01 10	J0038+1856	23 50 15	54.6	159.6	-0.8		-12.8	-14	1244	No stop
05 03 10	---	23 52 15	54.7	160.4	-0.8		-12.3	106	1275	05 01 11

Schedule for TORUN (Code Tr )  
new UCD -6cm

Page 4

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 15 Jun 2021 Day 166 ---

05 03 10	LSPMJ0036+18	23 52 15	54.3	161.5	-0.8	-11.6	-15	1275	No stop
05 07 20	---	23 56 26	54.5	163.1	-0.7	-10.6	235	1340	05 03 11
05 07 50	J0038+1856	23 56 56	55.0	162.3	-0.7	-11.2	16	1340	05 07 50
05 09 50	---	23 58 56	55.1	163.1	-0.7	-10.7	120	1371	05 07 51
05 10 30	LSPMJ0036+18	23 59 37	54.6	164.4	-0.6	-9.8	25	1371	05 10 30
05 14 00	---	00 03 07	54.7	165.8	-0.6	-8.9	210	1425	05 10 31
05 14 00	J0038+1856	00 03 07	55.2	164.8	-0.6	-9.6	-14	1425	No stop
05 16 00	---	00 05 07	55.3	165.6	-0.6	-9.1	106	1456	05 14 01
05 16 00	LSPMJ0036+18	00 05 07	54.8	166.7	-0.5	-8.4	-14	1456	No stop
05 20 10	---	00 09 18	54.9	168.4	-0.5	-7.3	236	1520	05 16 01
05 20 40	J0038+1856	00 09 48	55.5	167.5	-0.5	-7.9	16	1520	05 20 40
05 22 40	---	00 11 49	55.5	168.4	-0.5	-7.4	120	1551	05 20 41
05 23 20	LSPMJ0036+18	00 12 29	55.0	169.7	-0.4	-6.5	26	1551	05 23 20
05 26 50	---	00 15 59	55.1	171.1	-0.4	-5.6	210	1605	05 23 21
05 26 50	J0038+1856	00 15 59	55.7	170.1	-0.4	-6.3	-14	1605	No stop
05 28 50	---	00 18 00	55.7	170.9	-0.4	-5.8	106	1636	05 26 51
05 28 50	LSPMJ0036+18	00 18 00	55.2	171.9	-0.3	-5.1	-14	1636	No stop
05 33 00	---	00 22 10	55.2	173.7	-0.3	-4.0	236	1700	05 28 51
05 33 30	J0038+1856	00 22 40	55.8	172.9	-0.3	-4.5	16	1700	05 33 30
05 35 30	---	00 24 41	55.8	173.7	-0.2	-4.0	120	1731	05 33 31
05 36 10	LSPMJ0036+18	00 25 21	55.3	175.0	-0.2	-3.2	26	1731	05 36 10
05 39 40	---	00 28 51	55.3	176.4	-0.1	-2.2	210	1785	05 36 11
05 39 40	J0038+1856	00 28 51	55.9	175.5	-0.2	-2.9	-14	1785	No stop
05 41 40	---	00 30 52	55.9	176.3	-0.1	-2.3	106	1816	05 39 41
05 41 40	LSPMJ0036+18	00 30 52	55.3	177.3	-0.1	-1.7	-14	1816	No stop
05 45 50	---	00 35 02	55.4	179.0	-0.0	-0.6	236	1881	05 41 41
05 46 20	J0038+1856	00 35 32	55.9	178.3	-0.1	-1.1	16	1881	05 46 20
05 48 20	---	00 37 33	56.0	179.1	-0.0	-0.5	120	1912	05 46 21
05 49 00	LSPMJ0036+18	00 38 13	55.4	180.4	0.0	0.2	26	1912	05 49 00
05 52 30	---	00 41 43	55.4	181.8	0.1	1.1	210	1966	05 49 01



Schedule for TORUN (Code Tr )  
new UCD -6cm

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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
-----
```

--- Tue 15 Jun 2021 Day 166 ---

05 52 30	J0038+1856	00 41 43	56.0	180.9	0.0	0.6	-14	1966	No stop
05 54 30	---	00 43 44	55.9	181.7	0.1	1.1	106	1997	05 52 31
05 54 30	LSPMJ0036+18	00 43 44	55.3	182.7	0.1	1.7	-14	1997	No stop
05 58 40	---	00 47 54	55.3	184.4	0.2	2.8	236	2061	05 54 31
05 59 10	J0038+1856	00 48 25	55.9	183.7	0.1	2.4	16	2061	05 59 10
06 01 10	---	00 50 25	55.9	184.6	0.2	2.9	120	2092	05 59 11
06 01 50	LSPMJ0036+18	00 51 05	55.3	185.7	0.2	3.6	26	2092	06 01 50
06 05 20	---	00 54 36	55.2	187.2	0.3	4.5	210	2146	06 01 51
06 05 20	J0038+1856	00 54 36	55.8	186.3	0.3	4.0	-14	2146	No stop
06 07 20	---	00 56 36	55.8	187.2	0.3	4.5	106	2177	06 05 21
06 07 20	LSPMJ0036+18	00 56 36	55.2	188.0	0.3	5.1	-14	2177	No stop
06 11 30	---	01 00 47	55.1	189.7	0.4	6.1	236	2241	06 07 21
06 12 00	J0038+1856	01 01 17	55.7	189.1	0.4	5.8	16	2241	06 12 00
06 14 00	---	01 03 17	55.6	190.0	0.4	6.3	120	2272	06 12 01
06 14 40	LSPMJ0036+18	01 03 57	55.0	191.0	0.4	7.0	26	2272	06 14 40
06 18 10	---	01 07 28	54.9	192.5	0.5	7.9	210	2326	06 14 41
06 18 10	J0038+1856	01 07 28	55.5	191.7	0.5	7.4	-14	2326	No stop
06 20 10	---	01 09 28	55.5	192.5	0.5	7.9	106	2357	06 18 11
06 20 10	LSPMJ0036+18	01 09 28	54.8	193.3	0.5	8.4	-14	2357	No stop
06 24 20	---	01 13 39	54.7	195.0	0.6	9.4	236	2422	06 20 11
06 24 50	J0038+1856	01 14 09	55.3	194.4	0.6	9.1	16	2422	06 24 50
06 26 50	---	01 16 09	55.2	195.3	0.6	9.6	120	2453	06 24 51
06 27 30	LSPMJ0036+18	01 16 49	54.5	196.3	0.7	10.2	26	2453	06 27 30
06 31 00	---	01 20 20	54.4	197.7	0.7	11.1	210	2507	06 27 31
06 31 00	J0038+1856	01 20 20	55.1	197.0	0.7	10.7	-14	2507	No stop
06 33 00	---	01 22 20	55.0	197.8	0.7	11.2	106	2538	06 31 01
06 33 00	LSPMJ0036+18	01 22 20	54.3	198.5	0.7	11.6	-15	2538	No stop
06 37 10	---	01 26 31	54.1	200.1	0.8	12.6	235	2602	06 33 01
06 37 40	J0038+1856	01 27 01	54.7	199.7	0.8	12.3	16	2602	06 37 40
06 39 40	---	01 29 01	54.6	200.5	0.8	12.8	120	2633	06 37 41

Schedule for TORUN (Code Tr )  
new UCD -6cm

Page 6

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 15 Jun 2021 Day 166 ---										
06 40 20	LSPMJ0036+18	01 29 41	53.9	201.4	0.9		13.3	25	2633	06 40 20
06 43 50	---	01 33 12	53.7	202.7	0.9		14.2	210	2687	06 40 21
06 43 50	J0038+1856	01 33 12	54.4	202.1	0.9		13.8	-15	2687	No stop
06 45 50	---	01 35 12	54.3	202.9	0.9		14.3	105	2718	06 43 51
06 45 50	LSPMJ0036+18	01 35 12	53.6	203.5	1.0		14.6	-15	2718	No stop
06 50 00	---	01 39 23	53.3	205.1	1.0		15.6	235	2782	06 45 51
06 50 30	J0038+1856	01 39 53	54.0	204.7	1.0		15.4	15	2782	06 50 30
06 52 30	---	01 41 53	53.9	205.5	1.0		15.9	120	2813	06 50 31
06 53 10	LSPMJ0036+18	01 42 33	53.1	206.3	1.1		16.3	25	2813	06 53 10
06 56 40	---	01 46 04	52.9	207.7	1.1		17.1	210	2868	06 53 11
06 56 40	J0038+1856	01 46 04	53.6	207.1	1.1		16.8	-15	2868	No stop
06 58 40	---	01 48 04	53.5	207.9	1.1		17.3	105	2898	06 56 41
06 58 40	LSPMJ0036+18	01 48 04	52.7	208.4	1.2		17.5	-15	2898	No stop
07 02 50	---	01 52 15	52.4	210.0	1.2		18.4	235	2963	06 58 41
07 03 20	J0038+1856	01 52 45	53.1	209.6	1.2		18.3	15	2963	07 03 20
07 05 20	---	01 54 45	53.0	210.4	1.3		18.7	120	2994	07 03 21
07 06 00	LSPMJ0036+18	01 55 25	52.2	211.1	1.3		19.1	25	2994	07 06 00
07 09 30	---	01 58 56	51.9	212.4	1.4		19.8	210	3048	07 06 01
07 09 30	J0038+1856	01 58 56	52.6	211.9	1.3		19.6	-15	3048	No stop
07 11 30	---	02 00 56	52.5	212.7	1.4		20.0	105	3079	07 09 31
07 11 30	LSPMJ0036+18	02 00 56	51.8	213.1	1.4		20.2	-15	3079	No stop
07 15 40	---	02 05 07	51.4	214.6	1.5		21.1	235	3143	07 11 31
07 16 10	J0038+1856	02 05 37	52.1	214.3	1.4		21.0	15	3143	07 16 10
07 18 10	---	02 07 37	51.9	215.1	1.5		21.4	120	3174	07 16 11
07 18 50	LSPMJ0036+18	02 08 18	51.1	215.7	1.5		21.7	25	3174	07 18 50
07 22 20	---	02 11 48	50.8	217.0	1.6		22.4	210	3228	07 18 51
07 22 20	J0038+1856	02 11 48	51.6	216.5	1.5		22.2	-15	3228	No stop
07 24 20	---	02 13 49	51.4	217.2	1.6		22.6	105	3259	07 22 21
07 24 20	LSPMJ0036+18	02 13 49	50.6	217.7	1.6		22.8	-15	3259	No stop
07 28 30	---	02 17 59	50.3	219.1	1.7		23.5	235	3324	07 24 21

Schedule for TORUN (Code Tr )  
new UCD -6cm

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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
-----										
--- Tue 15 Jun 2021 Day 166 ---										
07 29 00	J0038+1856	02 18 29	50.9	218.9	1.6		23.5	15	3324	07 29 00
07 31 00	---	02 20 30	50.8	219.6	1.7		23.9	120	3354	07 29 01
07 31 40	LSPMJ0036+18	02 21 10	49.9	220.2	1.7		24.1	25	3354	07 31 40
07 35 10	---	02 24 40	49.6	221.3	1.8		24.7	210	3409	07 31 41
07 35 10	J0038+1856	02 24 40	50.4	221.0	1.8		24.6	-15	3409	No stop
07 37 10	---	02 26 41	50.2	221.6	1.8		25.0	105	3439	07 35 11
07 37 10	LSPMJ0036+18	02 26 41	49.4	222.0	1.8		25.1	-15	3439	No stop
07 41 20	---	02 30 51	49.0	223.4	1.9		25.8	235	3504	07 37 11
07 41 50	J0038+1856	02 31 21	49.7	223.2	1.9		25.8	15	3504	07 41 50
07 43 50	---	02 33 22	49.5	223.9	1.9		26.1	120	3535	07 41 51
07 44 30	LSPMJ0036+18	02 34 02	48.6	224.4	1.9		26.3	25	3535	07 44 30
07 48 00	---	02 37 32	48.3	225.5	2.0		26.9	210	3589	07 44 31
07 48 00	J0038+1856	02 37 32	49.0	225.2	2.0		26.8	-15	3589	No stop
07 50 00	---	02 39 33	48.8	225.9	2.0		27.1	105	3620	07 48 01
07 50 00	LSPMJ0036+18	02 39 33	48.1	226.2	2.0		27.2	-15	3620	No stop
07 54 10	---	02 43 43	47.6	227.5	2.1		27.8	235	3684	07 50 01
07 54 40	J0038+1856	02 44 13	48.3	227.3	2.1		27.8	15	3684	07 54 40
07 56 40	---	02 46 14	48.1	228.0	2.1		28.2	120	3715	07 54 41
07 57 20	LSPMJ0036+18	02 46 54	47.2	228.4	2.2		28.3	25	3715	07 57 20
08 00 50	---	02 50 25	46.8	229.5	2.2		28.8	210	3769	07 57 21
08 00 50	J0038+1856	02 50 25	47.6	229.3	2.2		28.8	-15	3769	No stop
08 02 50	---	02 52 25	47.4	229.9	2.2		29.1	105	3800	08 00 51
08 02 50	LSPMJ0036+18	02 52 25	46.6	230.1	2.3		29.1	-15	3800	No stop
08 07 00	---	02 56 36	46.1	231.4	2.3		29.6	235	3865	08 02 51
08 07 30	J0038+1856	02 57 06	46.8	231.3	2.3		29.7	15	3865	08 07 30
08 09 30	---	02 59 06	46.6	231.9	2.3		30.0	120	3895	08 07 31
08 10 10	LSPMJ0036+18	02 59 46	45.8	232.3	2.4		30.1	25	3895	08 10 10
08 13 40	---	03 03 17	45.3	233.3	2.4		30.5	210	3950	08 10 11
08 13 40	J0038+1856	03 03 17	46.1	233.1	2.4		30.5	-15	3950	No stop
08 15 40	---	03 05 17	45.9	233.7	2.4		30.8	105	3981	08 13 41

Schedule for TORUN (Code Tr )  
new UCD -6cm

Page 8

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 15 Jun 2021 Day 166 ---

08 15 40	LSPMJ0036+18	03 05 17	45.1	233.9	2.5	30.8	-15	3981	No stop
08 19 50	---	03 09 28	44.6	235.1	2.5	31.3	235	4045	08 15 41
08 20 20	J0038+1856	03 09 58	45.3	235.1	2.5	31.4	15	4045	08 20 20
08 22 20	---	03 11 58	45.0	235.6	2.5	31.6	120	4076	08 20 21
08 23 00	LSPMJ0036+18	03 12 38	44.2	236.0	2.6	31.7	25	4076	08 23 00
08 26 30	---	03 16 09	43.8	237.0	2.6	32.1	210	4130	08 23 01
08 26 30	J0038+1856	03 16 09	44.5	236.8	2.6	32.1	-15	4130	No stop
08 28 30	---	03 18 09	44.3	237.4	2.6	32.3	105	4161	08 26 31
08 28 30	LSPMJ0036+18	03 18 09	43.5	237.6	2.7	32.3	-15	4161	No stop
08 32 40	---	03 22 20	43.0	238.7	2.7	32.7	235	4225	08 28 31
08 33 10	J0038+1856	03 22 50	43.7	238.7	2.7	32.9	15	4225	08 33 10
08 35 10	---	03 24 50	43.4	239.2	2.8	33.1	120	4256	08 33 11
08 35 50	LSPMJ0036+18	03 25 30	42.6	239.6	2.8	33.1	25	4256	08 35 50
08 39 20	---	03 29 01	42.1	240.5	2.9	33.4	210	4310	08 35 51
08 39 20	J0038+1856	03 29 01	42.9	240.4	2.8	33.5	-15	4310	No stop
08 41 20	---	03 31 01	42.6	240.9	2.9	33.7	105	4341	08 39 21
08 41 20	LSPMJ0036+18	03 31 01	41.8	241.0	2.9	33.6	-15	4341	No stop
08 45 30	---	03 35 12	41.3	242.1	3.0	34.0	235	4406	08 41 21
08 46 00	J0038+1856	03 35 42	42.0	242.1	2.9	34.2	15	4406	08 46 00
08 48 00	---	03 37 42	41.7	242.7	3.0	34.4	120	4437	08 46 01
08 48 40	LSPMJ0036+18	03 38 22	40.9	243.0	3.0	34.3	25	4437	08 48 40
08 52 10	---	03 41 53	40.4	243.9	3.1	34.6	210	4491	08 48 41
08 52 10	J0038+1856	03 41 53	41.2	243.7	3.0	34.7	-15	4491	No stop
08 54 10	---	03 43 53	40.9	244.3	3.1	34.9	105	4522	08 52 11
08 54 10	LSPMJ0036+18	03 43 53	40.1	244.4	3.1	34.8	-15	4522	No stop
08 58 20	---	03 48 04	39.6	245.4	3.2	35.2	235	4586	08 54 11
08 58 50	J0038+1856	03 48 34	40.3	245.4	3.1	35.3	15	4586	08 58 50
09 00 50	---	03 50 34	40.0	246.0	3.2	35.5	120	4617	08 58 51
09 01 30	LSPMJ0036+18	03 51 14	39.1	246.2	3.2	35.4	25	4617	09 01 30
09 05 00	---	03 54 45	38.6	247.1	3.3	35.7	210	4671	09 01 31

Schedule for TORUN (Code Tr )  
new UCD -6cm

Page 9

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 15 Jun 2021 Day 166 ---

09 05 00	J0038+1856	03 54 45	39.4	247.0	3.3	35.8	-15	4671	No stop
09 07 00	---	03 56 45	39.1	247.5	3.3	35.9	105	4702	09 05 01
09 07 00	LSPMJ0036+18	03 56 45	38.4	247.6	3.3	35.8	-15	4702	No stop
09 11 10	---	04 00 56	37.8	248.6	3.4	36.1	235	4766	09 07 01
09 11 40	J0038+1856	04 01 26	38.5	248.6	3.4	36.3	15	4766	09 11 40
09 13 40	---	04 03 26	38.2	249.1	3.4	36.4	120	4797	09 11 41
09 14 20	LSPMJ0036+18	04 04 07	37.3	249.4	3.4	36.3	25	4797	09 14 20
09 17 50	---	04 07 37	36.8	250.2	3.5	36.6	210	4851	09 14 21
09 17 50	J0038+1856	04 07 37	37.6	250.1	3.5	36.7	-15	4851	No stop
09 19 50	---	04 09 37	37.3	250.6	3.5	36.8	105	4882	09 17 51
09 19 50	LSPMJ0036+18	04 09 37	36.6	250.7	3.5	36.7	-15	4882	No stop
09 24 00	---	04 13 48	36.0	251.7	3.6	36.9	235	4947	09 19 51
09 24 30	J0038+1856	04 14 18	36.7	251.7	3.6	37.1	15	4947	09 24 30
09 26 30	---	04 16 19	36.4	252.2	3.6	37.2	120	4978	09 24 31
09 27 23	0017+200	04 17 12	34.6	257.8	3.9	38.8	27	4978	09 27 23
09 30 00	---	04 19 49	34.3	258.3	4.0	38.9	157	5018	09 27 24

## SETUP FILE INFORMATION:

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

==== Setup file: sess221.C2048

Setup group: 11	Station: TORUN	Total bit rate: 2048
Format: VDIF	Bits per sample: 2	Sample rate: 64.000
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	9	1	9	2	10	2	10	10
	3	11	3	11	4	12	4	12	12
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: 9 Setup file default. Used with PCAL = off

LO sum=	4830.49	4830.49	4830.49	4830.49	4894.49	4894.49	4894.49	4894.49
	4958.49	4958.49	4958.49	4958.49	5022.49	5022.49	5022.49	5022.49
BBC fr=	630.49	630.49	630.49	630.49	694.49	694.49	694.49	694.49
	758.49	758.49	758.49	758.49	822.49	822.49	822.49	822.49
Bandwd=	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00

Matching frequency sets: 9

Track assignments are:

track1= 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16  
barrel=roll\_off

#### POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* LSPMJ0036+18	00 33 39.004842	* 00 36 16.111913	00 37 22.174487	0.00
	18 04 39.87570	* 18 21 10.29200	18 28 01.81449	0.00
* J0038+1856	00 35 51.452939	* 00 38 28.891800	00 39 35.082031	0.00
	18 39 48.73267	* 18 56 17.63100	19 03 08.33543	0.00
J0019+2021	00 17 02.119551	* 00 19 37.854494	00 20 43.427583	0.12
* 0017+200	20 05 06.80757	* 20 21 45.64453	20 28 40.04441	0.12
J0019+20	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.vlba.2012jul rfc_2012b Petrov, 2012, unpublished 492 observations			

**ec077dtr**

NEW UCD -6CM  
PI: *Juan B. Climent*

Address: Dpto. Astronomia, Univ. Valencia

Observing mode: Phase-referencing at 6cm (2048 Mb/s)

Schedule for TORUN (Code Tr )  
new UCD -6cm

Page 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 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 15 Jun 2021 Day 166 ---										
Next scan frequencies: 4830.49 4830.49 4830.49 4830.49 4894.49 4894.49 4894.49 4894.49										
4958.49 4958.49 4958.49 4958.49 5022.49 5022.49 5022.49 5022.49										
Next BBC frequencies: 630.49 630.49 630.49 630.49 694.49 694.49 694.49 694.49										
758.49 758.49 758.49 758.49 822.49 822.49 822.49 822.49										
Next scan bandwidths: 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00										
32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00										
-----										
20 00 00	1830+285	14 51 33	42.9	98.7	-3.7		-42.5	0	0	20 00 00
20 05 00	---	14 56 33	43.7	99.8	-3.6		-42.4	300	77	20 00 01
20 08 00	J1848+3219	14 59 34	44.5	93.4	-3.8		-45.2	151	77	20 08 00
20 10 00	=1846+322	15 01 34	44.8	93.9	-3.8		-45.2	120	108	20 08 01
20 10 50	LSRJ1835+325	15 02 24	47.3	96.1	-3.6		-45.4	27	108	20 10 50
20 14 10	---	15 05 45	47.8	96.8	-3.5		-45.3	200	160	20 10 51
20 14 10	J1848+3219	15 05 45	45.4	94.7	-3.7		-45.1	-23	160	No stop
20 16 10	=1846+322	15 07 45	45.7	95.2	-3.7		-45.1	97	191	20 14 11
20 16 10	LSRJ1835+325	15 07 45	48.1	97.2	-3.5		-45.3	-23	191	No stop
20 20 20	---	15 11 56	48.7	98.2	-3.4		-45.1	227	255	20 16 11
20 20 50	J1848+3219	15 12 26	46.4	96.2	-3.6		-45.0	7	255	20 20 50
20 22 50	=1846+322	15 14 26	46.7	96.6	-3.6		-44.9	120	286	20 20 51
20 23 40	LSRJ1835+325	15 15 17	49.2	98.9	-3.4		-45.0	27	286	20 23 40
20 27 00	---	15 18 37	49.7	99.7	-3.3		-44.9	200	338	20 23 41
20 27 00	J1848+3219	15 18 37	47.4	97.5	-3.5		-44.8	-23	338	No stop
20 29 00	=1846+322	15 20 37	47.7	98.0	-3.5		-44.7	97	368	20 27 01
20 29 00	LSRJ1835+325	15 20 37	50.0	100.1	-3.3		-44.8	-23	368	No stop
20 33 10	---	15 24 48	50.6	101.1	-3.2		-44.6	227	433	20 29 01
20 33 40	J1848+3219	15 25 18	48.4	99.0	-3.4		-44.6	7	433	20 33 40
20 35 40	=1846+322	15 27 19	48.6	99.5	-3.4		-44.5	120	464	20 33 41
20 36 30	LSRJ1835+325	15 28 09	51.1	101.9	-3.1		-44.5	27	464	20 36 30
20 39 50	---	15 31 29	51.6	102.7	-3.1		-44.3	200	515	20 36 31
20 39 50	J1848+3219	15 31 29	49.3	100.4	-3.3		-44.3	-23	515	No stop
20 41 50	=1846+322	15 33 30	49.6	100.9	-3.3		-44.3	97	546	20 39 51

Schedule for TORUN (Code Tr )  
new UCD -6cm

Page 3

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 15 Jun 2021	Day 166					---				
20 41 50	LSRJ1835+325	15 33 30	51.9	103.2	-3.0		-44.2	-23	546	No stop	
20 46 00	---	15 37 40	52.5	104.2	-3.0		-44.0	227	611	20 41 51	
20 46 30	J1848+3219	15 38 10	50.3	102.0	-3.2		-44.0	7	611	20 46 30	
20 48 30	=1846+322	15 40 11	50.5	102.5	-3.2		-43.9	120	642	20 46 31	
20 49 20	LSRJ1835+325	15 41 01	53.0	105.1	-2.9		-43.8	27	642	20 49 20	
20 52 40	---	15 44 21	53.5	105.9	-2.9		-43.5	200	693	20 49 21	
20 52 40	J1848+3219	15 44 21	51.2	103.5	-3.1		-43.7	-22	693	No stop	
20 54 40	=1846+322	15 46 22	51.4	104.0	-3.0		-43.6	98	724	20 52 41	
20 54 40	LSRJ1835+325	15 46 22	53.8	106.4	-2.8		-43.4	-23	724	No stop	
20 58 50	---	15 50 32	54.4	107.5	-2.8		-43.1	227	788	20 54 41	
20 59 20	J1848+3219	15 51 02	52.1	105.1	-3.0		-43.3	8	788	20 59 20	
21 01 20	=1846+322	15 53 03	52.4	105.6	-2.9		-43.2	120	819	20 59 21	
21 02 10	LSRJ1835+325	15 53 53	54.9	108.4	-2.7		-42.8	27	819	21 02 10	
21 05 30	---	15 57 13	55.3	109.3	-2.7		-42.5	200	871	21 02 11	
21 05 30	J1848+3219	15 57 13	53.0	106.7	-2.9		-42.9	-22	871	No stop	
21 07 30	=1846+322	15 59 14	53.3	107.2	-2.8		-42.8	98	902	21 05 31	
21 07 30	LSRJ1835+325	15 59 14	55.6	109.8	-2.6		-42.3	-23	902	No stop	
21 11 40	---	16 03 24	56.2	111.0	-2.6		-42.0	227	966	21 07 31	
21 12 10	J1848+3219	16 03 54	54.0	108.5	-2.8		-42.4	8	966	21 12 10	
21 14 10	=1846+322	16 05 55	54.3	109.0	-2.7		-42.2	120	997	21 12 11	
21 15 00	LSRJ1835+325	16 06 45	56.7	111.9	-2.5		-41.6	27	997	21 15 00	
21 18 20	---	16 10 06	57.1	112.9	-2.4		-41.3	200	1049	21 15 01	
21 18 20	J1848+3219	16 10 06	54.9	110.1	-2.7		-41.9	-22	1049	No stop	
21 20 20	=1846+322	16 12 06	55.1	110.7	-2.6		-41.7	98	1080	21 18 21	
21 20 20	LSRJ1835+325	16 12 06	57.4	113.5	-2.4		-41.1	-23	1080	No stop	
21 24 30	---	16 16 17	58.0	114.7	-2.3		-40.6	227	1144	21 20 21	
21 25 00	J1848+3219	16 16 47	55.8	112.0	-2.5		-41.2	8	1144	21 25 00	
21 27 00	=1846+322	16 18 47	56.1	112.5	-2.5		-41.0	120	1175	21 25 01	
21 27 50	LSRJ1835+325	16 19 37	58.4	115.7	-2.3		-40.2	27	1175	21 27 50	
21 31 10	---	16 22 58	58.9	116.8	-2.2		-39.7	200	1226	21 27 51	
21 31 10	J1848+3219	16 22 58	56.6	113.8	-2.4		-40.6	-22	1226	No stop	
21 33 10	=1846+322	16 24 58	56.9	114.3	-2.4		-40.4	98	1257	21 31 11	



Schedule for TORUN (Code Tr )  
new UCD -6cm

Page 4

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 15 Jun 2021 Day 166 ---										
21 33 10	LSRJ1835+325	16 24 58	59.2	117.4	-2.2		-39.5	-22	1257	No stop
21 37 20	---	16 29 09	59.7	118.7	-2.1		-38.9	228	1322	21 33 11
21 37 50	J1848+3219	16 29 39	57.6	115.7	-2.3		-39.8	8	1322	21 37 50
21 39 50	=1846+322	16 31 39	57.8	116.3	-2.3		-39.6	120	1353	21 37 51
21 40 40	LSRJ1835+325	16 32 29	60.2	119.8	-2.1		-38.4	28	1353	21 40 40
21 44 00	---	16 35 50	60.6	121.0	-2.0		-37.9	200	1404	21 40 41
21 44 00	J1848+3219	16 35 50	58.4	117.6	-2.2		-39.0	-22	1404	No stop
21 46 00	=1846+322	16 37 50	58.7	118.3	-2.2		-38.8	98	1435	21 44 01
21 46 00	LSRJ1835+325	16 37 50	60.8	121.6	-2.0		-37.6	-22	1435	No stop
21 50 10	---	16 42 01	61.4	123.1	-1.9		-36.9	228	1499	21 46 01
21 50 40	J1848+3219	16 42 31	59.3	119.8	-2.1		-38.1	8	1499	21 50 40
21 52 40	=1846+322	16 44 31	59.5	120.4	-2.1		-37.8	120	1530	21 50 41
21 53 30	LSRJ1835+325	16 45 21	61.8	124.3	-1.9		-36.3	28	1530	21 53 30
21 56 50	---	16 48 42	62.2	125.5	-1.8		-35.7	200	1582	21 53 31
21 56 50	J1848+3219	16 48 42	60.1	121.8	-2.0		-37.1	-22	1582	No stop
21 58 50	=1846+322	16 50 42	60.3	122.5	-2.0		-36.8	98	1613	21 56 51
21 58 50	LSRJ1835+325	16 50 42	62.4	126.2	-1.8		-35.3	-22	1613	No stop
22 03 00	---	16 54 53	62.9	127.8	-1.7		-34.5	228	1677	21 58 51
22 03 30	J1848+3219	16 55 23	60.9	124.1	-1.9		-36.0	8	1677	22 03 30
22 05 30	=1846+322	16 57 23	61.2	124.8	-1.9		-35.7	120	1708	22 03 31
22 06 20	LSRJ1835+325	16 58 13	63.3	129.1	-1.6		-33.8	27	1708	22 06 20
22 09 40	---	17 01 34	63.7	130.4	-1.6		-33.1	200	1760	22 06 21
22 09 40	J1848+3219	17 01 34	61.7	126.3	-1.8		-34.9	-23	1760	No stop
22 11 40	=1846+322	17 03 34	61.9	127.1	-1.8		-34.5	97	1791	22 09 41
22 11 40	LSRJ1835+325	17 03 34	64.0	131.2	-1.5		-32.6	-23	1791	No stop
22 15 50	---	17 07 45	64.4	132.9	-1.5		-31.7	227	1855	22 11 41
22 16 20	J1848+3219	17 08 15	62.5	128.8	-1.7		-33.6	7	1855	22 16 20
22 18 20	=1846+322	17 10 15	62.7	129.6	-1.6		-33.2	120	1886	22 16 21
22 19 10	LSRJ1835+325	17 11 06	64.8	134.3	-1.4		-30.9	26	1886	22 19 10
22 22 30	---	17 14 26	65.1	135.7	-1.4		-30.0	200	1937	22 19 11

Schedule for TORUN (Code Tr )  
new UCD -6cm

Page 5

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 15 Jun 2021 Day 166 ---										
22 22 30	J1848+3219	17 14 26	63.2	131.2	-1.6		-32.3	-24	1937	No stop
22 24 30	=1846+322	17 16 26	63.4	132.0	-1.5		-31.9	96	1968	22 22 31
22 24 30	LSRJ1835+325	17 16 26	65.3	136.6	-1.3		-29.5	-24	1968	No stop
22 28 40	---	17 20 37	65.8	138.4	-1.3		-28.4	226	2033	22 24 31
22 29 10	J1848+3219	17 21 07	63.9	133.9	-1.5		-30.8	6	2033	22 29 10
22 31 10	=1846+322	17 23 07	64.1	134.8	-1.4		-30.3	120	2064	22 29 11
22 32 00	LSRJ1835+325	17 23 58	66.1	139.9	-1.2		-27.4	25	2064	22 32 00
22 35 20	---	17 27 18	66.4	141.5	-1.2		-26.5	200	2115	22 32 01
22 35 20	J1848+3219	17 27 18	64.6	136.5	-1.4		-29.3	-25	2115	No stop
22 37 20	=1846+322	17 29 18	64.8	137.4	-1.3		-28.8	95	2146	22 35 21
22 37 20	LSRJ1835+325	17 29 18	66.6	142.4	-1.1		-25.9	-25	2146	No stop
22 41 30	---	17 33 29	67.0	144.4	-1.0		-24.6	225	2211	22 37 21
22 42 00	J1848+3219	17 33 59	65.2	139.5	-1.3		-27.5	5	2211	22 42 00
22 44 00	=1846+322	17 36 00	65.4	140.4	-1.2		-27.0	120	2241	22 42 01
22 44 50	LSRJ1835+325	17 36 50	67.3	146.1	-1.0		-23.5	24	2241	22 44 50
22 48 10	---	17 40 10	67.5	147.8	-0.9		-22.5	200	2293	22 44 51
22 48 10	J1848+3219	17 40 10	65.8	142.3	-1.2		-25.8	-26	2293	No stop
22 50 10	=1846+322	17 42 11	66.0	143.2	-1.1		-25.2	94	2324	22 48 11
22 50 10	LSRJ1835+325	17 42 11	67.7	148.8	-0.9		-21.8	-27	2324	No stop
22 54 20	---	17 46 21	68.0	151.0	-0.8		-20.3	223	2388	22 50 11
22 54 50	J1848+3219	17 46 51	66.4	145.4	-1.0		-23.8	4	2388	22 54 50
22 56 50	=1846+322	17 48 52	66.6	146.4	-1.0		-23.1	120	2419	22 54 51
22 57 40	LSRJ1835+325	17 49 42	68.2	152.7	-0.8		-19.2	23	2419	22 57 40
23 01 00	---	17 53 02	68.5	154.5	-0.7		-17.9	200	2471	22 57 41
23 01 00	J1848+3219	17 53 02	66.9	148.5	-0.9		-21.8	-27	2471	No stop
23 03 00	=1846+322	17 55 03	67.1	149.5	-0.9		-21.1	93	2502	23 01 01
23 03 00	LSRJ1835+325	17 55 03	68.6	155.6	-0.7		-17.2	-28	2502	No stop
23 07 10	---	17 59 13	68.8	157.9	-0.6		-15.6	222	2566	23 03 01
23 07 40	J1848+3219	17 59 43	67.4	151.9	-0.8		-19.6	3	2566	23 07 40
23 09 40	=1846+322	18 01 44	67.6	152.9	-0.8		-18.9	120	2597	23 07 41

Schedule for TORUN (Code Tr )  
new UCD -6cm

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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
-----										
--- Tue 15 Jun 2021 Day 166 ---										
23 10 30	LSRJ1835+325	18 02 34	69.0	159.8	-0.6		-14.3	22	2597	23 10 30
23 13 50	---	18 05 54	69.2	161.7	-0.5		-13.0	200	2649	23 10 31
23 13 50	J1848+3219	18 05 54	67.8	155.1	-0.7		-17.4	-28	2649	No stop
23 15 50	=1846+322	18 07 55	68.0	156.2	-0.7		-16.7	92	2679	23 13 51
23 15 50	LSRJ1835+325	18 07 55	69.3	162.9	-0.5		-12.2	-29	2679	No stop
23 20 00	---	18 12 05	69.5	165.3	-0.4		-10.5	221	2744	23 15 51
23 20 30	J1848+3219	18 12 36	68.2	158.8	-0.6		-14.9	2	2744	23 20 30
23 22 30	=1846+322	18 14 36	68.3	159.9	-0.6		-14.2	120	2775	23 20 31
23 23 20	LSRJ1835+325	18 15 26	69.6	167.3	-0.4		-9.1	21	2775	23 23 20
23 26 40	---	18 18 47	69.7	169.3	-0.3		-7.6	200	2826	23 23 21
23 26 40	J1848+3219	18 18 47	68.5	162.2	-0.5		-12.5	-29	2826	No stop
23 28 40	=1846+322	18 20 47	68.6	163.3	-0.5		-11.8	91	2857	23 26 41
23 28 40	LSRJ1835+325	18 20 47	69.7	170.5	-0.3		-6.8	-30	2857	No stop
23 32 50	---	18 24 58	69.8	173.0	-0.2		-5.0	220	2922	23 28 41
23 33 20	J1848+3219	18 25 28	68.8	166.0	-0.4		-9.9	1	2922	23 33 20
23 35 20	=1846+322	18 27 28	68.9	167.2	-0.4		-9.1	120	2953	23 33 21
23 36 10	LSRJ1835+325	18 28 18	69.9	175.0	-0.1		-3.5	20	2953	23 36 10
23 39 30	---	18 31 39	69.9	177.1	-0.1		-2.1	200	3004	23 36 11
23 39 30	J1848+3219	18 31 39	69.0	169.6	-0.3		-7.4	-29	3004	No stop
23 41 30	=1846+322	18 33 39	69.1	170.8	-0.3		-6.5	91	3035	23 39 31
23 41 30	LSRJ1835+325	18 33 39	69.9	178.3	-0.0		-1.2	-31	3035	No stop
23 45 40	---	18 37 50	69.9	180.8	0.0		0.6	219	3099	23 41 31
23 46 10	J1848+3219	18 38 20	69.2	173.5	-0.2		-4.6	0	3099	23 46 10
23 48 10	=1846+322	18 40 20	69.2	174.7	-0.1		-3.7	120	3130	23 46 11
23 49 00	LSRJ1835+325	18 41 10	69.9	182.9	0.1		2.1	19	3130	23 49 00
23 52 20	---	18 44 31	69.9	184.9	0.1		3.5	200	3182	23 49 01
23 52 20	J1848+3219	18 44 31	69.2	177.2	-0.1		-2.0	-30	3182	No stop
23 54 20	=1846+322	18 46 31	69.2	178.4	-0.0		-1.1	90	3213	23 52 21
23 54 20	LSRJ1835+325	18 46 31	69.8	186.1	0.2		4.4	-31	3213	No stop
23 58 30	---	18 50 42	69.8	188.7	0.2		6.2	219	3277	23 54 21

Schedule for TORUN (Code Tr )  
new UCD -6cm

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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
--- Start: Tue 15 Jun 2021 Day 166 -- Stop: Wed 16 Jun 2021 Day 167 ---										
23 59 00	J1848+3219	18 51 12	69.2	181.2	0.0		0.9	0	3277	23 59 00
00 01 00	=1846+322	18 53 12	69.2	182.4	0.1		1.7	120	3308	23 59 01
00 01 50	LSRJ1835+325	18 54 02	69.7	190.7	0.3		7.6	19	3308	00 01 50
00 05 10	---	18 57 23	69.6	192.7	0.3		9.0	200	3360	00 01 51
00 05 10	J1848+3219	18 57 23	69.2	184.9	0.1		3.5	-30	3360	No stop
00 07 10	=1846+322	18 59 23	69.2	186.1	0.2		4.3	90	3391	00 05 11
00 07 10	LSRJ1835+325	18 59 23	69.5	193.9	0.4		9.9	-31	3391	No stop
00 11 20	---	19 03 34	69.3	196.3	0.5		11.6	219	3455	00 07 11
00 11 50	J1848+3219	19 04 04	69.1	188.8	0.2		6.3	0	3455	00 11 50
00 13 50	=1846+322	19 06 04	69.0	190.0	0.3		7.1	120	3486	00 11 51
00 14 40	LSRJ1835+325	19 06 54	69.2	198.2	0.5		12.9	19	3486	00 14 40
00 18 00	---	19 10 15	69.0	200.1	0.6		14.3	200	3537	00 14 41
00 18 00	J1848+3219	19 10 15	68.9	192.4	0.4		8.8	-30	3537	No stop
00 20 00	=1846+322	19 12 15	68.8	193.6	0.4		9.6	90	3568	00 18 01
00 20 00	LSRJ1835+325	19 12 15	68.9	201.3	0.6		15.1	-31	3568	No stop
00 24 10	---	19 16 26	68.7	203.6	0.7		16.7	219	3633	00 20 01
00 24 40	J1848+3219	19 16 56	68.7	196.3	0.5		11.5	0	3633	00 24 40
00 26 40	=1846+322	19 18 56	68.6	197.4	0.5		12.3	120	3664	00 24 41
00 27 30	LSRJ1835+325	19 19 47	68.5	205.4	0.7		17.9	19	3664	00 27 30
00 30 50	---	19 23 07	68.2	207.2	0.8		19.1	200	3715	00 27 31
00 30 50	J1848+3219	19 23 07	68.4	199.8	0.6		13.9	-29	3715	No stop
00 32 50	=1846+322	19 25 07	68.3	200.9	0.6		14.7	91	3746	00 30 51
00 32 50	LSRJ1835+325	19 25 07	68.1	208.3	0.8		19.9	-30	3746	No stop
00 37 00	---	19 29 18	67.8	210.5	0.9		21.3	220	3810	00 32 51
00 37 30	J1848+3219	19 29 48	68.0	203.4	0.7		16.4	1	3810	00 37 30
00 39 30	=1846+322	19 31 49	67.9	204.5	0.7		17.1	120	3841	00 37 31
00 40 20	LSRJ1835+325	19 32 39	67.5	212.2	0.9		22.4	20	3841	00 40 20
00 43 40	---	19 35 59	67.3	213.9	1.0		23.5	200	3893	00 40 21
00 43 40	J1848+3219	19 35 59	67.6	206.7	0.8		18.6	-29	3893	No stop
00 45 40	=1846+322	19 38 00	67.5	207.8	0.8		19.3	91	3924	00 43 41

Schedule for TORUN (Code Tr )  
new UCD -6cm

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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 16 Jun 2021 Day 167 ---										
00 45 40	LSRJ1835+325	19 38 00	67.1	214.9	1.0		24.2	-30	3924	No stop
00 49 50	---	19 42 10	66.7	216.9	1.1		25.5	220	3988	00 45 41
00 50 20	J1848+3219	19 42 40	67.1	210.2	0.9		20.9	1	3988	00 50 20
00 52 20	=1846+322	19 44 41	67.0	211.2	0.9		21.6	120	4019	00 50 21
00 53 10	LSRJ1835+325	19 45 31	66.4	218.5	1.2		26.5	21	4019	00 53 10
00 56 30	---	19 48 51	66.1	220.0	1.2		27.4	200	4071	00 53 11
00 56 30	J1848+3219	19 48 51	66.6	213.3	1.0		22.9	-28	4071	No stop
00 58 30	=1846+322	19 50 52	66.5	214.2	1.0		23.6	92	4102	00 56 31
00 58 30	LSRJ1835+325	19 50 52	65.9	221.0	1.2		28.0	-29	4102	No stop
01 02 40	---	19 55 02	65.5	222.8	1.3		29.1	221	4166	00 58 31
01 03 10	J1848+3219	19 55 32	66.1	216.5	1.1		25.0	2	4166	01 03 10
01 05 10	=1846+322	19 57 33	65.9	217.4	1.1		25.6	120	4197	01 03 11
01 06 00	LSRJ1835+325	19 58 23	65.1	224.3	1.4		30.0	22	4197	01 06 00
01 09 20	---	20 01 43	64.8	225.7	1.4		30.8	200	4248	01 06 01
01 09 20	J1848+3219	20 01 43	65.5	219.3	1.2		26.8	-27	4248	No stop
01 11 20	=1846+322	20 03 44	65.3	220.2	1.2		27.3	93	4279	01 09 21
01 11 20	LSRJ1835+325	20 03 44	64.6	226.5	1.5		31.3	-28	4279	No stop
01 15 30	---	20 07 54	64.1	228.3	1.5		32.3	222	4344	01 11 21
01 16 00	J1848+3219	20 08 25	64.8	222.3	1.3		28.6	3	4344	01 16 00
01 18 00	=1846+322	20 10 25	64.6	223.2	1.4		29.1	120	4375	01 16 01
01 18 50	LSRJ1835+325	20 11 15	63.7	229.6	1.6		33.1	23	4375	01 18 50
01 22 10	---	20 14 36	63.3	230.9	1.6		33.8	200	4426	01 18 51
01 22 10	J1848+3219	20 14 36	64.2	225.0	1.4		30.1	-27	4426	No stop
01 24 10	=1846+322	20 16 36	64.0	225.8	1.5		30.6	93	4457	01 22 11
01 24 10	LSRJ1835+325	20 16 36	63.1	231.7	1.7		34.2	-27	4457	No stop
01 28 20	---	20 20 47	62.6	233.3	1.7		35.0	223	4522	01 24 11
01 28 50	J1848+3219	20 21 17	63.5	227.7	1.5		31.7	4	4522	01 28 50
01 30 50	=1846+322	20 23 17	63.2	228.5	1.6		32.2	120	4552	01 28 51
01 31 40	LSRJ1835+325	20 24 07	62.2	234.5	1.8		35.7	23	4552	01 31 40
01 35 00	---	20 27 28	61.8	235.7	1.9		36.3	200	4604	01 31 41

Schedule for TORUN (Code Tr )  
new UCD -6cm

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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 16 Jun 2021 Day 167 ---

01 35 00	J1848+3219	20 27 28	62.8	230.2	1.6	33.1	-26	4604	No stop
01 37 00	=1846+322	20 29 28	62.5	230.9	1.7	33.5	94	4635	01 35 01
01 37 00	LSRJ1835+325	20 29 28	61.5	236.4	1.9	36.6	-26	4635	No stop
01 41 10	---	20 33 39	61.0	237.9	2.0	37.3	224	4699	01 37 01
01 41 40	J1848+3219	20 34 09	62.0	232.7	1.7	34.4	4	4699	01 41 40
01 43 40	=1846+322	20 36 09	61.7	233.4	1.8	34.8	120	4730	01 41 41
01 44 30	LSRJ1835+325	20 36 59	60.6	239.0	2.0	37.9	24	4730	01 44 30
01 47 50	---	20 40 20	60.2	240.1	2.1	38.4	200	4782	01 44 31
01 47 50	J1848+3219	20 40 20	61.2	234.9	1.9	35.6	-25	4782	No stop
01 49 50	=1846+322	20 42 20	61.0	235.6	1.9	35.9	95	4813	01 47 51
01 49 50	LSRJ1835+325	20 42 20	59.9	240.8	2.1	38.7	-26	4813	No stop
01 54 00	---	20 46 31	59.3	242.1	2.2	39.3	224	4877	01 49 51
01 54 30	J1848+3219	20 47 01	60.4	237.3	2.0	36.7	5	4877	01 54 30
01 56 30	=1846+322	20 49 01	60.1	238.0	2.0	37.0	120	4908	01 54 31
01 57 20	1830+285	20 49 51	55.0	239.1	2.3	35.9	17	4908	01 57 20
02 00 00	---	20 52 32	54.7	239.9	2.3	36.3	160	4949	01 57 21

## SETUP FILE INFORMATION:

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

==== Setup file: sess221.C2048

Setup group: 11	Station: TORUN	Total bit rate: 2048
Format: VDIF	Bits per sample: 2	Sample rate: 64.000
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	9	1	9	2	10	2	10	10
	3	11	3	11	4	12	4	12	12
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:	9	Setup file default. Used with PCAL = off						
LO sum=	4830.49	4830.49	4830.49	4830.49	4894.49	4894.49	4894.49	4894.49
	4958.49	4958.49	4958.49	4958.49	5022.49	5022.49	5022.49	5022.49
BBC fr=	630.49	630.49	630.49	630.49	694.49	694.49	694.49	694.49
	758.49	758.49	758.49	758.49	822.49	822.49	822.49	822.49
Bandwd=	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
Matching frequency sets:	9							

Track assignments are:

track1= 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16

barrel=roll\_off

#### POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	Source position (RA/Dec) (J2000)	(Date)	Error (mas)
* LSRJ1835+325	18 33 46.940176	* 18 35 37.880357	18 36 26.287650	0.00
	32 57 22.09729	* 32 59 53.31134	33 00 53.69533	0.00
J1832+2833	18 30 52.379791	* 18 32 50.185622	18 33 41.433994	0.12
* 1830+285	28 31 17.07907	* 28 33 35.95518	28 34 31.67995	0.11
J1832+28	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.vlba.2012jul rfc_2012b Petrov, 2012, unpublished 1548 observations			
* J1848+3219	18 46 29.612036	* 18 48 22.088579	18 49 11.102829	0.12
1846+322	32 15 36.66028	* 32 19 02.60368	32 20 25.62650	0.10
	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.vlba.2012jul rfc_2012b Petrov, 2012, unpublished 6645 observations			

PROBING THE RADIO JETS IN GRS1915+105 IN A NEW PUZZLING ACCRETION S  
 PI: S.E.Motta

Address: INAF - Osservatorio Astronomico di Brera

Observing mode: EVN, 6 GHz continuum

Schedule for TORUN (Code Tr )

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Probing the radio jets in GRS1915+105 in a new puzzling accretion state

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 16 Jun 2021 Day 167 ---										
Next scan frequencies: 4830.49 4830.49 4830.49 4830.49 4894.49 4894.49 4894.49 4894.49										
4958.49 4958.49 4958.49 4958.49 5022.49 5022.49 5022.49 5022.49										
Next BBC frequencies: 630.49 630.49 630.49 630.49 694.49 694.49 694.49 694.49										
758.49 758.49 758.49 758.49 822.49 822.49 822.49 822.49										
Next scan bandwidths: 32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00										
32.00 32.00 32.00 32.00 32.00 32.00 32.00 32.00										
-----										
21 30 00	J1800+3848	16 25 44	68.3	121.6	-1.6		-41.0	0	0	21 30 00
21 35 00	=1758+388	16 30 45	68.9	123.6	-1.5		-39.9	300	77	21 30 01
21 37 00	J1905+0952	16 32 45	36.9	129.9	-2.6		-27.9	-14	77	21 37 00
21 39 30	=1903+097	16 35 16	37.2	130.6	-2.5		-27.6	136	116	21 37 01
21 39 30	GRS1915	16 35 16	37.0	127.4	-2.7		-29.1	-21	116	No stop
21 43 00	---	16 38 46	37.5	128.3	-2.6		-28.7	189	170	21 39 31
21 43 40	J1905+0952	16 39 26	37.7	131.8	-2.5		-27.0	19	170	21 43 40
21 45 30	=1903+097	16 41 17	37.9	132.3	-2.4		-26.8	110	198	21 43 41
21 45 30	GRS1915	16 41 17	37.7	129.0	-2.6		-28.4	-21	198	No stop
21 49 00	---	16 44 47	38.2	130.0	-2.5		-27.9	189	252	21 45 31
21 49 00	J1905+0952	16 44 47	38.3	133.3	-2.4		-26.3	-21	252	No stop
21 51 30	=1903+097	16 47 18	38.5	134.0	-2.3		-26.0	129	291	21 49 01
21 51 30	GRS1915	16 47 18	38.4	130.7	-2.5		-27.6	-21	291	No stop
21 55 00	---	16 50 48	38.8	131.7	-2.4		-27.2	189	345	21 51 31
21 55 40	J1905+0952	16 51 28	39.0	135.2	-2.3		-25.5	19	345	21 55 40
21 57 30	=1903+097	16 53 18	39.2	135.7	-2.2		-25.2	110	374	21 55 41
21 57 30	GRS1915	16 53 18	39.1	132.4	-2.4		-26.9	-21	374	No stop
22 01 00	---	16 56 49	39.5	133.4	-2.3		-26.4	189	428	21 57 31
22 01 00	J1905+0952	16 56 49	39.5	136.7	-2.2		-24.7	-22	428	No stop
22 03 30	=1903+097	16 59 19	39.8	137.4	-2.1		-24.3	128	466	22 01 01
22 03 30	GRS1915	16 59 19	39.8	134.1	-2.3		-26.1	-21	466	No stop
22 07 00	---	17 02 50	40.1	135.1	-2.2		-25.6	189	520	22 03 31
22 07 40	J1905+0952	17 03 30	40.2	138.7	-2.1		-23.7	18	520	22 07 40
22 09 30	=1903+097	17 05 20	40.4	139.2	-2.0		-23.5	110	549	22 07 41



Schedule for TORUN (Code Tr )

Page 3

Probing the radio jets in GRS1915+105 in a new puzzling accretion state

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 16 Jun 2021	Day 167					---				
22 09 30	GRS1915	17 05 20	40.4	135.8	-2.2		-25.2	-21	549	No stop	
22 13 00	---	17 08 51	40.8	136.9	-2.1		-24.7	189	603	22 09 31	
22 13 00	J1905+0952	17 08 51	40.7	140.3	-2.0		-22.9	-22	603	No stop	
22 15 30	=1903+097	17 11 21	41.0	141.0	-1.9		-22.6	128	642	22 13 01	
22 15 30	GRS1915	17 11 21	41.0	137.6	-2.1		-24.4	-21	642	No stop	
22 19 00	---	17 14 52	41.4	138.6	-2.0		-23.8	189	696	22 15 31	
22 19 40	J1905+0952	17 15 32	41.4	142.3	-1.9		-21.9	18	696	22 19 40	
22 21 30	=1903+097	17 17 22	41.5	142.8	-1.8		-21.6	110	724	22 19 41	
22 21 30	GRS1915	17 17 22	41.6	139.4	-2.0		-23.5	-21	724	No stop	
22 25 00	---	17 20 53	42.0	140.5	-1.9		-22.9	189	778	22 21 31	
22 25 00	J1905+0952	17 20 53	41.8	143.9	-1.8		-21.0	-22	778	No stop	
22 27 30	=1903+097	17 23 23	42.1	144.7	-1.7		-20.6	128	817	22 25 01	
22 27 30	GRS1915	17 23 23	42.2	141.2	-1.9		-22.5	-21	817	No stop	
22 31 00	---	17 26 54	42.5	142.3	-1.8		-22.0	189	871	22 27 31	
22 31 40	J1905+0952	17 27 34	42.4	146.0	-1.7		-19.9	18	871	22 31 40	
22 33 30	=1903+097	17 29 24	42.6	146.6	-1.6		-19.6	110	899	22 31 41	
22 33 30	J1913+0932	17 29 24	41.6	144.3	-1.8		-20.8	-18	899	No stop	
22 37 00	---	17 32 55	41.9	145.4	-1.7		-20.2	192	953	22 33 31	
22 38 00	J1905+0952	17 33 55	42.9	148.0	-1.5		-18.8	41	953	22 38 00	
22 40 30	=1903+097	17 36 26	43.1	148.8	-1.5		-18.4	150	992	22 38 01	
22 40 30	GRS1915	17 36 26	43.4	145.3	-1.7		-20.4	-22	992	No stop	
22 44 00	---	17 39 56	43.7	146.4	-1.6		-19.8	188	1046	22 40 31	
22 44 00	J1905+0952	17 39 56	43.4	149.9	-1.4		-17.8	-22	1046	No stop	
22 46 30	=1903+097	17 42 27	43.6	150.7	-1.4		-17.3	128	1085	22 44 01	
22 46 30	GRS1915	17 42 27	43.9	147.2	-1.6		-19.4	-22	1085	No stop	
22 50 00	---	17 45 57	44.2	148.3	-1.5		-18.7	188	1139	22 46 31	
22 50 40	J1905+0952	17 46 37	43.9	152.1	-1.3		-16.6	18	1139	22 50 40	
22 52 30	=1903+097	17 48 28	44.0	152.7	-1.3		-16.2	110	1167	22 50 41	
22 52 30	GRS1915	17 48 28	44.4	149.1	-1.5		-18.3	-22	1167	No stop	
22 56 00	---	17 51 58	44.6	150.3	-1.4		-17.6	188	1221	22 52 31	
22 56 00	J1905+0952	17 51 58	44.3	153.9	-1.2		-15.6	-22	1221	No stop	
22 58 30	=1903+097	17 54 29	44.4	154.7	-1.2		-15.1	128	1260	22 56 01	

Schedule for TORUN (Code Tr )

Page 4

Probing the radio jets in GRS1915+105 in a new puzzling accretion state

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 16 Jun 2021 Day 167 ---										
22 58 30	GRS1915	17 54 29	44.8	151.1	-1.4		-17.2	-22	1260	No stop
23 02 00	---	17 57 59	45.1	152.3	-1.3		-16.5	188	1314	22 58 31
23 02 40	J1905+0952	17 58 39	44.7	156.1	-1.1		-14.3	18	1314	23 02 40
23 04 30	=1903+097	18 00 30	44.8	156.7	-1.1		-13.9	110	1342	23 02 41
23 04 30	GRS1915	18 00 30	45.2	153.1	-1.3		-16.1	-22	1342	No stop
23 08 00	---	18 04 00	45.5	154.3	-1.2		-15.4	188	1396	23 04 31
23 08 00	J1905+0952	18 04 00	45.0	157.9	-1.0		-13.3	-22	1396	No stop
23 10 30	=1903+097	18 06 30	45.1	158.7	-1.0		-12.8	128	1435	23 08 01
23 10 30	GRS1915	18 06 30	45.6	155.1	-1.2		-14.9	-22	1435	No stop
23 14 00	---	18 10 01	45.8	156.3	-1.1		-14.2	188	1489	23 10 31
23 14 40	J1905+0952	18 10 41	45.4	160.2	-0.9		-11.9	18	1489	23 14 40
23 16 30	=1903+097	18 12 31	45.4	160.8	-0.9		-11.6	110	1517	23 14 41
23 16 30	GRS1915	18 12 31	46.0	157.2	-1.1		-13.7	-22	1517	No stop
23 20 00	---	18 16 02	46.2	158.4	-1.0		-13.0	188	1572	23 16 31
23 20 00	J1905+0952	18 16 02	45.6	162.0	-0.8		-10.8	-22	1572	No stop
23 22 30	=1903+097	18 18 32	45.7	162.9	-0.8		-10.3	128	1610	23 20 01
23 22 30	GRS1915	18 18 32	46.3	159.3	-1.0		-12.5	-22	1610	No stop
23 26 00	---	18 22 03	46.5	160.5	-0.9		-11.8	188	1664	23 22 31
23 26 40	J1905+0952	18 22 43	45.9	164.3	-0.7		-9.5	18	1664	23 26 40
23 28 30	=1903+097	18 24 33	46.0	165.0	-0.7		-9.1	110	1693	23 26 41
23 28 30	GRS1915	18 24 33	46.6	161.4	-0.9		-11.3	-22	1693	No stop
23 32 00	---	18 28 04	46.8	162.6	-0.8		-10.5	188	1747	23 28 31
23 32 00	J1905+0952	18 28 04	46.1	166.2	-0.6		-8.4	-22	1747	No stop
23 34 30	=1903+097	18 30 34	46.2	167.1	-0.6		-7.8	128	1785	23 32 01
23 34 30	J1913+0932	18 30 34	45.6	164.5	-0.7		-9.4	-19	1785	No stop
23 38 00	---	18 34 05	45.7	165.7	-0.7		-8.7	191	1840	23 34 31
23 39 00	J1905+0952	18 35 05	46.3	168.7	-0.5		-6.9	40	1840	23 39 00
23 41 30	=1903+097	18 37 36	46.4	169.6	-0.5		-6.3	150	1878	23 39 01
23 41 30	GRS1915	18 37 36	47.2	166.0	-0.6		-8.5	-22	1878	No stop
23 45 00	---	18 41 06	47.3	167.2	-0.6		-7.8	188	1932	23 41 31

Schedule for TORUN (Code Tr )

Page 5

Probing the radio jets in GRS1915+105 in a new puzzling accretion state

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 16 Jun 2021 Day 167 ---										
23 45 00	J1905+0952	18 41 06	46.5	170.8	-0.4		-5.6	-22	1932	No stop
23 47 30	=1903+097	18 43 37	46.6	171.7	-0.4		-5.0	128	1971	23 45 01
23 47 30	GRS1915	18 43 37	47.4	168.1	-0.5		-7.2	-22	1971	No stop
23 51 00	---	18 47 07	47.5	169.4	-0.5		-6.5	188	2025	23 47 31
23 51 40	J1905+0952	18 47 47	46.6	173.2	-0.3		-4.1	18	2025	23 51 40
23 53 30	=1903+097	18 49 38	46.7	173.9	-0.3		-3.7	110	2053	23 51 41
23 53 30	GRS1915	18 49 38	47.5	170.3	-0.4		-5.9	-22	2053	No stop
23 57 00	---	18 53 08	47.6	171.6	-0.4		-5.1	188	2107	23 53 31
23 57 00	J1905+0952	18 53 08	46.7	175.1	-0.2		-3.0	-22	2107	No stop
23 59 30	=1903+097	18 55 39	46.7	176.0	-0.2		-2.4	128	2146	23 57 01
--- Start: Wed 16 Jun 2021 Day 167 -- Stop: Thu 17 Jun 2021 Day 168 ---										
23 59 30	GRS1915	18 55 39	47.7	172.5	-0.3		-4.6	-22	2146	No stop
00 03 00	---	18 59 09	47.7	173.8	-0.3		-3.8	188	2200	23 59 31
00 03 40	J1905+0952	18 59 49	46.8	177.5	-0.1		-1.5	18	2200	00 03 40
00 05 30	=1903+097	19 01 40	46.8	178.2	-0.1		-1.1	110	2229	00 03 41
00 05 30	GRS1915	19 01 40	47.8	174.7	-0.2		-3.3	-22	2229	No stop
00 09 00	---	19 05 10	47.8	176.0	-0.2		-2.5	188	2283	00 05 31
00 09 00	J1905+0952	19 05 10	46.8	179.5	-0.0		-0.3	-22	2283	No stop
00 11 30	=1903+097	19 07 41	46.8	180.4	0.0		0.2	128	2321	00 09 01
00 11 30	GRS1915	19 07 41	47.9	176.9	-0.1		-1.9	-21	2321	No stop
00 15 00	---	19 11 11	47.9	178.2	-0.1		-1.1	189	2375	00 11 31
00 15 40	J1905+0952	19 11 51	46.8	181.9	0.1		1.1	18	2375	00 15 40
00 17 30	=1903+097	19 13 41	46.8	182.5	0.1		1.5	110	2404	00 15 41
00 17 30	GRS1915	19 13 41	47.9	179.1	-0.0		-0.6	-21	2404	No stop
00 21 00	---	19 17 12	47.9	180.4	0.0		0.2	189	2458	00 17 31
00 21 00	J1905+0952	19 17 12	46.8	183.8	0.2		2.3	-22	2458	No stop
00 23 30	=1903+097	19 19 42	46.7	184.7	0.2		2.9	128	2497	00 21 01
00 23 30	GRS1915	19 19 42	47.9	181.3	0.1		0.8	-21	2497	No stop
00 27 00	---	19 23 13	47.9	182.6	0.1		1.6	189	2551	00 23 31

Schedule for TORUN (Code Tr )

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Probing the radio jets in GRS1915+105 in a new puzzling accretion state

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 17 Jun 2021 Day 168 ---										
00 27 40	J1905+0952	19 23 53	46.7	186.2	0.3		3.8	18	2551	00 27 40
00 29 30	=1903+097	19 25 43	46.6	186.8	0.3		4.2	110	2579	00 27 41
00 29 30	GRS1915	19 25 43	47.8	183.5	0.2		2.1	-21	2579	No stop
00 33 00	---	19 29 14	47.8	184.8	0.2		2.9	189	2633	00 29 31
00 33 00	J1905+0952	19 29 14	46.6	188.1	0.4		4.9	-22	2633	No stop
00 35 30	=1903+097	19 31 44	46.5	189.0	0.4		5.5	128	2672	00 33 01
00 35 30	J1913+0932	19 31 44	46.3	186.2	0.3		3.8	-20	2672	No stop
00 39 00	---	19 35 15	46.3	187.4	0.3		4.5	190	2726	00 35 31
00 40 00	J1905+0952	19 36 15	46.4	190.6	0.5		6.4	40	2726	00 40 00
00 42 30	=1903+097	19 38 46	46.3	191.5	0.5		7.0	150	2764	00 40 01
00 42 30	GRS1915	19 38 46	47.6	188.2	0.4		5.0	-21	2764	No stop
00 46 00	---	19 42 16	47.6	189.5	0.4		5.8	189	2819	00 42 31
00 46 00	J1905+0952	19 42 16	46.2	192.7	0.6		7.7	-21	2819	No stop
00 48 30	=1903+097	19 44 47	46.1	193.6	0.6		8.2	129	2857	00 46 01
00 48 30	GRS1915	19 44 47	47.5	190.4	0.5		6.3	-21	2857	No stop
00 52 00	---	19 48 17	47.4	191.7	0.5		7.1	189	2911	00 48 31
00 52 40	J1905+0952	19 48 57	46.0	195.1	0.7		9.1	19	2911	00 52 40
00 54 30	=1903+097	19 50 48	45.9	195.7	0.7		9.5	110	2940	00 52 41
00 54 30	GRS1915	19 50 48	47.3	192.6	0.6		7.7	-21	2940	No stop
00 58 00	---	19 54 18	47.2	193.8	0.6		8.4	189	2994	00 54 31
00 58 00	J1905+0952	19 54 18	45.8	196.9	0.8		10.2	-21	2994	No stop
01 00 30	=1903+097	19 56 49	45.6	197.8	0.8		10.7	129	3032	00 58 01
01 00 30	GRS1915	19 56 49	47.1	194.7	0.7		8.9	-20	3032	No stop
01 04 00	---	20 00 19	47.0	196.0	0.7		9.7	190	3087	01 00 31
01 04 40	J1905+0952	20 00 59	45.4	199.2	0.9		11.6	19	3087	01 04 40
01 06 30	=1903+097	20 02 50	45.3	199.9	0.9		12.0	110	3115	01 04 41
01 06 30	GRS1915	20 02 50	46.9	196.9	0.8		10.2	-20	3115	No stop
01 10 00	---	20 06 20	46.7	198.1	0.8		11.0	190	3169	01 06 31
01 10 00	J1905+0952	20 06 20	45.2	201.1	1.0		12.7	-21	3169	No stop
01 12 30	=1903+097	20 08 51	45.0	201.9	1.0		13.2	129	3208	01 10 01

Schedule for TORUN (Code Tr )

Page 7

Probing the radio jets in GRS1915+105 in a new puzzling accretion state

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 17 Jun 2021 Day 168 ---										
01 12 30	GRS1915	20 08 51	46.6	199.0	0.9		11.5	-20	3208	No stop
01 16 00	---	20 12 21	46.4	200.2	0.9		12.2	190	3262	01 12 31
01 16 40	J1905+0952	20 13 01	44.8	203.3	1.1		14.0	20	3262	01 16 40
01 18 30	=1903+097	20 14 52	44.7	204.0	1.1		14.3	110	3290	01 16 41
01 18 30	GRS1915	20 14 52	46.3	201.1	1.0		12.7	-20	3290	No stop
01 22 00	---	20 18 22	46.1	202.3	1.0		13.4	190	3344	01 18 31
01 22 00	J1905+0952	20 18 22	44.5	205.1	1.2		15.0	-20	3344	No stop
01 24 30	=1903+097	20 20 53	44.3	206.0	1.2		15.5	130	3383	01 22 01
01 24 30	GRS1915	20 20 53	45.9	203.1	1.1		13.9	-20	3383	No stop
01 28 00	---	20 24 23	45.7	204.3	1.1		14.6	190	3437	01 24 31
01 28 40	J1905+0952	20 25 03	44.0	207.3	1.3		16.3	20	3437	01 28 40
01 30 30	=1903+097	20 26 53	43.9	207.9	1.3		16.6	110	3465	01 28 41
01 30 30	GRS1915	20 26 53	45.6	205.2	1.2		15.1	-20	3465	No stop
01 34 00	---	20 30 24	45.3	206.4	1.2		15.8	190	3519	01 30 31
01 34 40	J1905+0952	20 31 04	43.6	209.3	1.4		17.4	20	3519	01 34 40
01 36 30	=1903+097	20 32 54	43.4	209.9	1.4		17.7	110	3548	01 34 41
01 36 30	J1913+0932	20 32 54	43.7	207.3	1.3		16.2	-19	3548	No stop
01 39 00	---	20 35 25	43.5	208.1	1.3		16.7	131	3586	01 36 31
01 39 00	J1905+0952	20 35 25	43.3	210.7	1.5		18.1	-20	3586	No stop
01 41 30	=1903+097	20 37 55	43.1	211.5	1.5		18.6	130	3625	01 39 01
01 42 00	J1800+3848	20 38 25	59.7	257.9	2.6		48.9	-78	3625	01 42 00
01 47 00	=1758+388	20 43 26	58.9	259.2	2.7		49.2	222	3702	01 42 01
01 49 00	J1905+0952	20 45 27	42.5	213.9	1.6		19.9	14	3702	01 49 00
01 51 30	=1903+097	20 47 57	42.2	214.7	1.7		20.3	150	3741	01 49 01
01 51 30	GRS1915	20 47 57	44.0	212.2	1.5		19.0	-20	3741	No stop
01 55 00	---	20 51 28	43.8	213.3	1.6		19.6	190	3795	01 51 31
01 55 00	J1905+0952	20 51 28	41.9	215.8	1.7		20.9	-21	3795	No stop
01 57 30	=1903+097	20 53 58	41.7	216.5	1.8		21.3	129	3834	01 55 01
01 57 30	GRS1915	20 53 58	43.6	214.1	1.6		20.0	-21	3834	No stop
02 01 00	---	20 57 28	43.3	215.2	1.7		20.6	189	3888	01 57 31

Schedule for TORUN (Code Tr )

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Probing the radio jets in GRS1915+105 in a new puzzling accretion state

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 17 Jun 2021 Day 168 ---										
02 01 40	J1905+0952	20 58 09	41.3	217.8	1.9		21.9	19	3888	02 01 40
02 03 30	=1903+097	20 59 59	41.2	218.4	1.9		22.2	110	3916	02 01 41
02 03 30	GRS1915	20 59 59	43.0	216.0	1.7		21.1	-21	3916	No stop
02 07 00	---	21 03 29	42.7	217.1	1.8		21.6	189	3970	02 03 31
02 07 00	J1905+0952	21 03 29	40.8	219.4	1.9		22.8	-21	3970	No stop
02 09 30	=1903+097	21 06 00	40.6	220.2	2.0		23.2	129	4009	02 07 01
02 09 30	GRS1915	21 06 00	42.5	217.9	1.8		22.0	-21	4009	No stop
02 13 00	---	21 09 30	42.2	218.9	1.9		22.6	189	4063	02 09 31
02 13 40	J1905+0952	21 10 11	40.2	221.4	2.1		23.8	19	4063	02 13 40
02 15 30	=1903+097	21 12 01	40.0	222.0	2.1		24.1	110	4091	02 13 41
02 15 30	GRS1915	21 12 01	41.9	219.7	1.9		23.0	-21	4091	No stop
02 19 00	---	21 15 31	41.6	220.8	2.0		23.5	189	4145	02 15 31
02 19 00	J1905+0952	21 15 31	39.6	223.0	2.1		24.6	-21	4145	No stop
02 21 30	=1903+097	21 18 02	39.4	223.7	2.2		24.9	129	4184	02 19 01
02 21 30	GRS1915	21 18 02	41.3	221.5	2.0		23.9	-21	4184	No stop
02 25 00	---	21 21 32	41.0	222.6	2.1		24.4	189	4238	02 21 31
02 25 40	J1905+0952	21 22 13	38.9	224.9	2.3		25.5	19	4238	02 25 40
02 27 30	=1903+097	21 24 03	38.8	225.4	2.3		25.7	110	4266	02 25 41
02 27 30	GRS1915	21 24 03	40.7	223.3	2.1		24.8	-21	4266	No stop
02 31 00	---	21 27 33	40.4	224.3	2.2		25.3	189	4321	02 27 31
02 31 00	J1905+0952	21 27 33	38.4	226.4	2.3		26.2	-21	4321	No stop
02 33 30	=1903+097	21 30 04	38.1	227.1	2.4		26.5	129	4359	02 31 01
02 33 30	GRS1915	21 30 04	40.1	225.0	2.2		25.6	-21	4359	No stop
02 37 00	---	21 33 34	39.7	226.1	2.3		26.1	189	4413	02 33 31
02 37 40	J1905+0952	21 34 15	37.6	228.3	2.5		27.1	18	4413	02 37 40
02 39 30	=1903+097	21 36 05	37.4	228.8	2.5		27.3	110	4442	02 37 41
02 39 30	GRS1915	21 36 05	39.5	226.8	2.3		26.5	-21	4442	No stop
02 43 00	---	21 39 35	39.1	227.8	2.4		26.9	189	4496	02 39 31
02 43 00	J1905+0952	21 39 35	37.0	229.8	2.5		27.7	-22	4496	No stop
02 45 30	=1903+097	21 42 06	36.7	230.5	2.6		28.0	128	4534	02 43 01

Schedule for TORUN (Code Tr )

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Probing the radio jets in GRS1915+105 in a new puzzling accretion state

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 17 Jun 2021 Day 168 ---										
02 45 30	J1913+0932	21 42 06	37.3	228.2	2.5		27.0	-18	4534	No stop
02 49 00	---	21 45 36	36.9	229.1	2.5		27.4	192	4589	02 45 31
02 50 00	J1905+0952	21 46 37	36.2	231.7	2.7		28.6	41	4589	02 50 00
02 52 30	=1903+097	21 49 07	35.9	232.3	2.7		28.9	150	4627	02 50 01
02 52 30	GRS1915	21 49 07	38.0	230.4	2.5		28.1	-21	4627	No stop
02 56 00	---	21 52 38	37.6	231.4	2.6		28.5	189	4681	02 52 31
02 56 00	J1905+0952	21 52 38	35.5	233.3	2.8		29.2	-22	4681	No stop
02 58 30	=1903+097	21 55 08	35.2	233.9	2.8		29.5	128	4720	02 56 01
02 58 30	GRS1915	21 55 08	37.3	232.1	2.6		28.8	-22	4720	No stop
03 02 00	---	21 58 39	36.9	233.0	2.7		29.2	188	4774	02 58 31
03 02 40	J1905+0952	21 59 19	34.7	235.0	2.9		30.0	18	4774	03 02 40
03 04 30	=1903+097	22 01 09	34.5	235.5	2.9		30.2	110	4802	03 02 41
03 04 30	GRS1915	22 01 09	36.6	233.7	2.7		29.5	-22	4802	No stop
03 08 00	---	22 04 40	36.1	234.6	2.8		29.9	188	4856	03 04 31
03 08 00	J1905+0952	22 04 40	34.0	236.4	3.0		30.5	-22	4856	No stop
03 10 30	=1903+097	22 07 10	33.7	237.0	3.0		30.8	128	4895	03 08 01
03 10 30	GRS1915	22 07 10	35.8	235.3	2.8		30.2	-22	4895	No stop
03 14 00	---	22 10 40	35.4	236.2	2.9		30.5	188	4949	03 10 31
03 14 40	J1905+0952	22 11 21	33.2	238.1	3.1		31.2	18	4949	03 14 40
03 16 30	=1903+097	22 13 11	32.9	238.6	3.1		31.3	110	4978	03 14 41
03 16 30	GRS1915	22 13 11	35.1	236.8	2.9		30.8	-22	4978	No stop
03 20 00	---	22 16 41	34.6	237.7	3.0		31.1	188	5032	03 16 31
03 20 00	J1905+0952	22 16 41	32.5	239.4	3.2		31.7	-22	5032	No stop
03 22 30	=1903+097	22 19 12	32.2	240.1	3.2		31.9	128	5070	03 20 01
03 22 30	GRS1915	22 19 12	34.3	238.4	3.0		31.4	-22	5070	No stop
03 26 00	---	22 22 42	33.9	239.2	3.1		31.7	188	5124	03 22 31
03 26 40	J1905+0952	22 23 23	31.6	241.1	3.3		32.2	18	5124	03 26 40
03 28 30	=1903+097	22 25 13	31.4	241.5	3.3		32.4	110	5153	03 26 41
03 28 30	GRS1915	22 25 13	33.5	239.9	3.2		31.9	-22	5153	No stop
03 32 00	---	22 28 43	33.1	240.7	3.2		32.3	188	5207	03 28 31

Schedule for TORUN (Code Tr )

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Probing the radio jets in GRS1915+105 in a new puzzling accretion state

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 17 Jun 2021 Day 168 ---										
03 32 00	J1905+0952	22 28 43	30.9	242.4	3.4		32.7	-22	5207	No stop
03 34 30	=1903+097	22 31 14	30.6	243.0	3.4		32.9	128	5246	03 32 01
03 34 30	GRS1915	22 31 14	32.7	241.4	3.3		32.5	-22	5246	No stop
03 38 00	---	22 34 44	32.3	242.2	3.3		32.8	188	5300	03 34 31
03 38 40	J1905+0952	22 35 25	30.0	244.0	3.5		33.2	18	5300	03 38 40
03 40 30	=1903+097	22 37 15	29.8	244.4	3.5		33.4	110	5328	03 38 41
03 40 30	GRS1915	22 37 15	32.0	242.8	3.4		33.0	-22	5328	No stop
03 44 00	---	22 40 45	31.5	243.7	3.4		33.2	188	5382	03 40 31
03 44 00	J1905+0952	22 40 45	29.3	245.3	3.6		33.6	-22	5382	No stop
03 46 30	=1903+097	22 43 16	28.9	245.8	3.6		33.8	128	5421	03 44 01
03 46 30	J1913+0932	22 43 16	29.7	243.8	3.5		33.1	-18	5421	No stop
03 50 00	---	22 46 46	29.3	244.6	3.5		33.4	192	5475	03 46 31
03 51 00	J1905+0952	22 47 47	28.3	246.9	3.7		34.1	42	5475	03 51 00
03 53 30	=1903+097	22 50 17	28.0	247.5	3.7		34.3	150	5513	03 51 01
03 53 30	GRS1915	22 50 17	30.2	245.9	3.6		34.0	-22	5513	No stop
03 57 00	---	22 53 48	29.7	246.8	3.6		34.2	188	5568	03 53 31
03 57 00	J1905+0952	22 53 48	27.5	248.3	3.8		34.5	-22	5568	No stop
03 59 30	=1903+097	22 56 18	27.1	248.8	3.8		34.6	128	5606	03 57 01
03 59 30	GRS1915	22 56 18	29.4	247.4	3.7		34.4	-22	5606	No stop
04 03 00	---	22 59 49	28.9	248.2	3.7		34.6	188	5660	03 59 31
04 03 40	J1905+0952	23 00 29	26.6	249.8	3.9		34.9	18	5660	04 03 40
04 05 30	=1903+097	23 02 19	26.3	250.2	3.9		35.0	110	5689	04 03 41
04 05 30	GRS1915	23 02 19	28.5	248.7	3.8		34.8	-22	5689	No stop
04 09 00	---	23 05 50	28.0	249.5	3.8		35.0	188	5743	04 05 31
04 09 00	J1905+0952	23 05 50	25.8	251.0	4.0		35.2	-22	5743	No stop
04 11 30	=1903+097	23 08 20	25.4	251.6	4.0		35.3	128	5781	04 09 01
04 11 30	GRS1915	23 08 20	27.7	250.1	3.9		35.1	-22	5781	No stop
04 15 00	---	23 11 51	27.2	250.9	3.9		35.3	188	5836	04 11 31
04 15 40	J1905+0952	23 12 31	24.8	252.5	4.1		35.5	18	5836	04 15 40
04 17 30	=1903+097	23 14 21	24.6	252.9	4.1		35.6	110	5864	04 15 41



Schedule for TORUN (Code Tr )

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Probing the radio jets in GRS1915+105 in a new puzzling accretion state

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 17 Jun 2021 Day 168 ---										
04 17 30	GRS1915	23 14 21	26.8	251.5	4.0		35.4	-22	5864	No stop
04 21 00	---	23 17 51	26.3	252.3	4.0		35.6	188	5918	04 17 31
04 21 00	J1905+0952	23 17 51	24.1	253.7	4.2		35.8	-22	5918	No stop
04 23 30	=1903+097	23 20 22	23.7	254.2	4.2		35.9	128	5957	04 21 01
04 23 30	GRS1915	23 20 22	26.0	252.8	4.1		35.8	-22	5957	No stop
04 27 00	---	23 23 52	25.5	253.6	4.1		35.9	188	6011	04 23 31
04 27 40	J1905+0952	23 24 33	23.1	255.1	4.3		36.1	18	6011	04 27 40
04 29 30	=1903+097	23 26 23	22.8	255.5	4.3		36.2	110	6039	04 27 41
04 29 30	GRS1915	23 26 23	25.1	254.1	4.2		36.0	-22	6039	No stop
04 33 00	---	23 29 53	24.6	254.9	4.2		36.2	188	6093	04 29 31
04 33 00	J1905+0952	23 29 53	22.3	256.3	4.4		36.3	-23	6093	No stop
04 35 30	=1903+097	23 32 24	22.0	256.8	4.4		36.4	127	6132	04 33 01
04 35 30	GRS1915	23 32 24	24.2	255.4	4.3		36.3	-22	6132	No stop
04 39 00	---	23 35 54	23.7	256.2	4.3		36.4	188	6186	04 35 31
04 39 40	J1905+0952	23 36 35	21.4	257.7	4.5		36.6	17	6186	04 39 40
04 41 30	=1903+097	23 38 25	21.1	258.1	4.5		36.6	110	6214	04 39 41
04 41 30	GRS1915	23 38 25	23.3	256.7	4.4		36.5	-22	6214	No stop
04 45 00	---	23 41 55	22.8	257.5	4.4		36.7	188	6268	04 41 31
04 45 00	J1905+0952	23 41 55	20.6	258.8	4.6		36.7	-23	6268	No stop
04 47 30	=1903+097	23 44 26	20.2	259.3	4.6		36.8	127	6307	04 45 01
04 47 30	J1913+0932	23 44 26	21.1	257.5	4.5		36.5	-17	6307	No stop
04 51 00	---	23 47 56	20.6	258.3	4.6		36.6	193	6361	04 47 31
04 52 00	J1905+0952	23 48 57	19.5	260.3	4.7		36.9	43	6361	04 52 00
04 54 30	=1903+097	23 51 27	19.2	260.8	4.7		37.0	150	6400	04 52 01
04 54 30	GRS1915	23 51 27	21.4	259.5	4.6		37.0	-22	6400	No stop
04 58 00	---	23 54 58	20.9	260.3	4.6		37.1	188	6454	04 54 31
04 58 00	J1905+0952	23 54 58	18.6	261.5	4.8		37.1	-23	6454	No stop
05 00 30	=1903+097	23 57 28	18.3	262.1	4.8		37.1	127	6492	04 58 01
05 00 30	GRS1915	23 57 28	20.5	260.8	4.7		37.1	-22	6492	No stop
05 04 00	---	00 00 59	20.0	261.5	4.7		37.2	188	6547	05 00 31

Schedule for TORUN (Code Tr )

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Probing the radio jets in GRS1915+105 in a new puzzling accretion state

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 17 Jun 2021  Day 168 ---

05 04 40  J1905+0952  00 01 39  17.6 262.9  4.9      37.2   17   6547  05 04 40
05 06 30  =1903+097   00 03 29  17.4 263.3  4.9      37.3  110   6575  05 04 41

05 06 30  GRS1915     00 03 29  19.7 262.0  4.8      37.3  -22   6575  No stop
05 10 00  ---         00 07 00  19.1 262.8  4.8      37.4  188   6629  05 06 31

05 10 00  J1905+0952  00 07 00  16.8 264.0  5.0      37.3  -23   6629  No stop
05 12 30  =1903+097   00 09 30  16.5 264.5  5.0      37.4  127   6668  05 10 01

05 12 30  GRS1915     00 09 30  18.8 263.3  4.9      37.4  -22   6668  No stop
05 16 00  ---         00 13 01  18.2 264.0  4.9      37.5  188   6722  05 12 31

05 16 40  J1905+0952  00 13 41  15.8 265.4  5.1      37.4   17   6722  05 16 40
05 18 30  =1903+097   00 15 31  15.6 265.8  5.1      37.4  110   6750  05 16 41

05 18 30  J1913+0932  00 15 31  16.5 264.0  5.0      37.3  -17   6750  No stop
05 21 00  ---         00 18 01  16.1 264.5  5.1      37.3  133   6789  05 18 31

05 21 00  J1905+0952  00 18 01  15.2 266.3  5.2      37.5  -17   6789  No stop
05 23 30  =1903+097   00 20 32  14.8 266.8  5.2      37.5  133   6827  05 21 01

05 23 30  J2253+1608  00 20 32  49.5 212.6  1.4      19.7 -143   6827  No stop
05 30 00  =3C454.3    00 27 03  49.0 214.9  1.5      21.0  247   6928  05 23 31

```

## SETUP FILE INFORMATION:

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

==== Setup file: sess221.C2048

```

Setup group:   11          Station: TORUN          Total bit rate: 2048
Format: VDIF           Bits per sample: 2      Sample rate: 64.000
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	9	1	9	2	10	2	10	10
	3	11	3	11	4	12	4	12	12
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:	9	Setup file default. Used with PCAL = off						
LO sum=	4830.49	4830.49	4830.49	4830.49	4894.49	4894.49	4894.49	4894.49
	4958.49	4958.49	4958.49	4958.49	5022.49	5022.49	5022.49	5022.49
BBC fr=	630.49	630.49	630.49	630.49	694.49	694.49	694.49	694.49
	758.49	758.49	758.49	758.49	822.49	822.49	822.49	822.49
Bandwd=	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
Matching frequency sets:	9							

Track assignments are:

track1= 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16

barrel=roll\_off

#### POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec) (B1950)	(J2000)	(Date)	Error (mas)
* GRS1915	19 12 49.958613	* 19 15 11.544821	19 16 12.613599	0.00
GRS1915+105	10 51 26.57111	* 10 56 44.62477	10 58 57.34646	0.00
* J1913+0932	19 11 00.869981	* 19 13 24.025348	19 14 25.756814	0.00
	09 27 34.81592	* 09 32 45.37648	09 34 55.17469	0.00
1758+388	17 58 44.703954	* 18 00 24.765363	18 01 08.766849	0.01
* J1800+3848	38 48 32.47350	* 38 48 30.69748	38 48 27.99045	0.01
J1800+38	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc GSFC 2016a X/S astro solution, 5095 observations.			
1903+097	19 03 17.231910	* 19 05 39.898972	19 06 41.444755	0.13
* J1905+0952	09 47 30.15815	* 09 52 08.40750	09 54 04.60661	0.22
	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc GSFC 2016a X/S astro solution, 104 observations.			
3C454.3	22 51 29.519739	* 22 53 57.747939	22 55 00.676644	0.65
* J2253+1608	15 52 54.34808	* 16 08 53.56091	16 15 33.13978	0.73
2251+158	/home/guest/rmc/SCHED/sched11.6/catalogs/sources.gsfc			
J2253+16	GSFC 2016a X/S astro solution, 41272 observations.			

EVN 5 GHZ AND 22 GHZ STUDY OF 43 COMPACT RADIO SOURCES  
 PI: *Carolina Casadio*

Address: FORTH - Institute of Astrophysics

Observing mode: Continuum

Schedule for TORUN (Code Tr ) Page 2

EVN 5 GHZ and 22 GHZ study of 43 compact radio sources

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 17 Jun 2021 Day 168 ---										
Next scan frequencies:		4830.49	4830.49	4830.49	4830.49	4830.49	4894.49	4894.49	4894.49	4894.49
		4958.49	4958.49	4958.49	4958.49	4958.49	5022.49	5022.49	5022.49	5022.49
Next BBC frequencies:		630.49	630.49	630.49	630.49	630.49	694.49	694.49	694.49	694.49
		758.49	758.49	758.49	758.49	758.49	822.49	822.49	822.49	822.49
Next scan bandwidths:		32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
		32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
-----										
18 30 00	J1229+0203	13 29 11	37.4	198.7	1.0		11.1	0	0	18 30 00
18 32 50	---	13 32 01	37.3	199.6	1.0		11.6	170	44	18 30 01
18 34 50	J1212-2221	13 34 02	12.4	199.1	1.3		12.3	13	44	18 34 50
18 37 00	---	13 36 12	12.3	199.6	1.4		12.6	130	77	18 34 51
18 37 00	J1218-2159	13 36 12	13.0	198.1	1.3		11.6	-16	77	No stop
18 40 40	---	13 39 53	12.8	198.9	1.3		12.1	204	134	18 37 01
18 41 20	J1212-2221	13 40 33	12.1	200.6	1.5		13.2	24	134	18 41 20
18 42 20	---	13 41 33	12.0	200.8	1.5		13.4	60	149	18 41 21
18 42 20	J1218-2159	13 41 33	12.7	199.3	1.4		12.4	-16	149	No stop
18 46 00	---	13 45 14	12.6	200.2	1.4		12.9	204	206	18 42 21
18 46 00	J1212-2221	13 45 14	11.8	201.7	1.5		13.9	-16	206	No stop
18 47 40	---	13 46 54	11.7	202.0	1.6		14.1	84	232	18 46 01
18 47 40	J1218-2159	13 46 54	12.5	200.5	1.4		13.1	-16	232	No stop
18 51 20	---	13 50 34	12.3	201.4	1.5		13.7	204	289	18 47 41
18 52 00	J1212-2221	13 51 15	11.5	203.0	1.6		14.7	24	289	18 52 00
18 53 00	---	13 52 15	11.4	203.3	1.7		14.9	60	304	18 52 01
18 53 00	J1218-2159	13 52 15	12.2	201.8	1.5		13.9	-16	304	No stop
18 56 40	---	13 55 55	12.0	202.6	1.6		14.4	204	361	18 53 01
18 56 40	J1212-2221	13 55 55	11.2	204.1	1.7		15.4	-16	361	No stop
18 58 20	---	13 57 36	11.1	204.5	1.7		15.6	84	386	18 56 41
18 58 20	J1218-2159	13 57 36	11.9	203.0	1.6		14.7	-16	386	No stop
19 02 00	---	14 01 16	11.6	203.8	1.7		15.2	204	443	18 58 21
19 02 40	J1212-2221	14 01 56	10.8	205.5	1.8		16.2	24	443	19 02 40
19 03 40	---	14 02 56	10.8	205.7	1.8		16.4	60	459	19 02 41

Schedule for TORUN (Code Tr )

Page 3

EVN 5 GHz and 22 GHz study of 43 compact radio sources

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 17 Jun 2021	Day 168					---				
19 04 40	J1340-0137	14 03 57	35.0	186.9	0.4		4.2	-45	459	19 04 40	
19 07 20	---	14 06 37	34.9	187.8	0.4		4.7	115	500	19 04 41	
19 07 20	J1340-0335	14 06 37	33.0	187.5	0.4		4.5	-21	500	No stop	
19 11 00	---	14 10 18	32.9	188.6	0.5		5.2	199	556	19 07 21	
19 11 40	J1340-0137	14 10 58	34.8	189.1	0.5		5.4	19	556	19 11 40	
19 12 40	---	14 11 58	34.8	189.4	0.5		5.6	60	572	19 11 41	
19 12 40	J1340-0335	14 11 58	32.8	189.1	0.5		5.5	-21	572	No stop	
19 16 20	---	14 15 39	32.8	190.2	0.6		6.1	199	629	19 12 41	
19 16 20	J1340-0137	14 15 39	34.7	190.5	0.6		6.3	-21	629	No stop	
19 18 00	---	14 17 19	34.6	191.0	0.6		6.6	79	654	19 16 21	
19 18 00	J1340-0335	14 17 19	32.7	190.7	0.6		6.4	-21	654	No stop	
19 21 40	---	14 20 59	32.6	191.8	0.7		7.1	199	711	19 18 01	
19 22 20	J1340-0137	14 21 40	34.5	192.3	0.7		7.4	19	711	19 22 20	
19 23 20	---	14 22 40	34.5	192.6	0.7		7.5	60	727	19 22 21	
19 23 20	J1340-0335	14 22 40	32.5	192.3	0.7		7.3	-21	727	No stop	
19 27 00	---	14 26 20	32.4	193.3	0.8		8.0	199	783	19 23 21	
19 27 00	J1340-0137	14 26 20	34.4	193.7	0.8		8.2	-21	783	No stop	
19 28 40	---	14 28 01	34.3	194.2	0.8		8.5	79	809	19 27 01	
19 28 40	J1340-0335	14 28 01	32.4	193.8	0.8		8.3	-21	809	No stop	
19 32 20	---	14 31 41	32.2	194.9	0.8		8.9	199	866	19 28 41	
19 33 00	J1340-0137	14 32 21	34.1	195.5	0.9		9.2	19	866	19 33 00	
19 34 00	---	14 33 21	34.1	195.8	0.9		9.4	60	881	19 33 01	
19 39 50	J1723+5236	14 39 12	65.4	74.4	-2.7		-72.2	92	881	19 39 50	
19 42 20	---	14 41 43	65.8	74.7	-2.7		-72.4	150	920	19 39 51	
19 42 20	J1721+5207	14 41 43	65.9	76.1	-2.7		-71.6	-16	920	No stop	
19 45 50	---	14 45 13	66.5	76.5	-2.6		-71.9	194	974	19 42 21	
19 46 20	J1723+5236	14 45 44	66.4	75.1	-2.6		-72.8	14	974	19 46 20	
19 47 20	---	14 46 44	66.5	75.2	-2.6		-72.9	60	989	19 46 21	
19 47 20	J1721+5207	14 46 44	66.7	76.7	-2.6		-72.0	-16	989	No stop	
19 50 50	---	14 50 14	67.2	77.1	-2.5		-72.3	194	1043	19 47 21	
19 50 50	J1723+5236	14 50 14	67.0	75.6	-2.6		-73.3	-16	1043	No stop	
19 52 20	---	14 51 44	67.3	75.8	-2.5		-73.4	74	1067	19 50 51	

Schedule for TORUN (Code Tr ) Page 4

EVN 5 GHz and 22 GHz study of 43 compact radio sources

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

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

Disk: GBytes recorded to this point.

TPStart: Recording start time. Frequencies are 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 17 Jun 2021 Day 168 ---										
19 52 20	J1721+5207	14 51 44	67.4	77.3	-2.5		-72.5	-16	1067	No stop
19 55 50	---	14 55 15	67.9	77.7	-2.4		-72.8	194	1121	19 52 21
19 56 20	J1723+5236	14 55 45	67.8	76.3	-2.5		-73.8	14	1121	19 56 20
19 57 20	---	14 56 45	68.0	76.4	-2.5		-73.9	60	1136	19 56 21
19 57 20	J1721+5207	14 56 45	68.1	77.9	-2.4		-72.9	-16	1136	No stop
20 00 50	---	15 00 16	68.7	78.3	-2.4		-73.2	194	1190	19 57 21
20 00 50	J1723+5236	15 00 16	68.5	76.8	-2.4		-74.2	-16	1190	No stop
20 02 20	---	15 01 46	68.7	76.9	-2.4		-74.4	74	1213	20 00 51
20 02 20	J1721+5207	15 01 46	68.9	78.5	-2.3		-73.3	-16	1213	No stop
20 05 50	---	15 05 17	69.4	78.9	-2.3		-73.6	194	1268	20 02 21
20 06 20	J1723+5236	15 05 47	69.3	77.4	-2.3		-74.7	14	1268	20 06 20
20 07 20	---	15 06 47	69.4	77.5	-2.3		-74.8	60	1283	20 06 21
20 09 20	J2102+6758	15 08 47	48.4	34.2	-5.9		-64.6	18	1283	20 09 20
20 11 40	---	15 11 08	48.6	34.4	-5.9		-65.0	140	1319	20 09 21
20 11 40	J2044+6649	15 11 08	49.7	37.0	-5.6		-67.2	-20	1319	No stop
20 15 20	---	15 14 48	50.0	37.3	-5.5		-67.8	200	1376	20 11 41
20 16 00	J2102+6758	15 15 28	48.9	34.6	-5.8		-65.9	20	1376	20 16 00
20 17 00	---	15 16 29	49.0	34.7	-5.8		-66.1	60	1391	20 16 01
20 17 00	J2044+6649	15 16 29	50.1	37.3	-5.5		-68.2	-20	1391	No stop
20 20 40	---	15 20 09	50.5	37.6	-5.4		-68.8	200	1448	20 17 01
20 20 40	J2102+6758	15 20 09	49.3	34.9	-5.7		-66.7	-20	1448	No stop
20 22 20	---	15 21 49	49.5	35.0	-5.7		-67.1	80	1474	20 20 41
20 22 20	J2044+6649	15 21 49	50.6	37.6	-5.4		-69.2	-20	1474	No stop
20 26 00	---	15 25 30	51.0	37.8	-5.3		-69.8	200	1530	20 22 21
20 26 40	J2102+6758	15 26 10	49.8	35.2	-5.6		-67.9	20	1530	20 26 40
20 27 40	---	15 27 10	49.9	35.3	-5.6		-68.1	60	1546	20 26 41
20 27 40	J2044+6649	15 27 10	51.1	37.9	-5.3		-70.2	-20	1546	No stop
20 31 20	---	15 30 51	51.5	38.1	-5.2		-70.9	200	1603	20 27 41
20 31 20	J2102+6758	15 30 51	50.3	35.5	-5.5		-68.8	-20	1603	No stop
20 33 00	---	15 32 31	50.4	35.6	-5.5		-69.1	80	1628	20 31 21

Schedule for TORUN (Code Tr ) Page 5

EVN 5 GHz and 22 GHz study of 43 compact radio sources

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

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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 17 Jun 2021 Day 168 ---										
20 33 00	J2044+6649	15 32 31	51.6	38.2	-5.2		-71.2	-20	1628	No stop
20 36 40	---	15 36 12	52.0	38.4	-5.1		-71.9	200	1685	20 33 01
20 37 20	J2102+6758	15 36 52	50.8	35.8	-5.4		-69.9	20	1685	20 37 20
20 38 20	---	15 37 52	50.9	35.8	-5.4		-70.1	60	1700	20 37 21
20 38 20	J2044+6649	15 37 52	52.1	38.5	-5.1		-72.2	-20	1700	No stop
20 42 00	---	15 41 33	52.5	38.7	-5.1		-72.9	200	1757	20 38 21
20 42 00	J2102+6758	15 41 33	51.2	36.0	-5.4		-70.8	-20	1757	No stop
20 43 40	---	15 43 13	51.3	36.1	-5.3		-71.2	80	1783	20 42 01
20 45 10	J2113+4012	15 44 43	35.3	67.9	-5.5		-46.8	12	1783	20 45 10
20 47 10	---	15 46 44	35.6	68.2	-5.5		-47.0	120	1814	20 45 11
20 47 10	J2114+4036	15 46 44	35.7	67.7	-5.5		-47.1	-11	1814	No stop
20 50 40	---	15 50 14	36.2	68.3	-5.4		-47.4	199	1868	20 47 11
20 51 10	J2113+4012	15 50 44	36.1	68.8	-5.4		-47.2	19	1868	20 51 10
20 52 10	---	15 51 44	36.3	69.0	-5.4		-47.3	60	1883	20 51 11
20 52 10	J2114+4036	15 51 44	36.4	68.5	-5.4		-47.5	-11	1883	No stop
20 55 40	---	15 55 15	36.9	69.1	-5.3		-47.7	199	1937	20 52 11
20 55 40	J2113+4012	15 55 15	36.8	69.5	-5.3		-47.5	-11	1937	No stop
20 57 10	---	15 56 45	37.0	69.8	-5.3		-47.6	79	1961	20 55 41
20 57 10	J2114+4036	15 56 45	37.1	69.3	-5.3		-47.8	-11	1961	No stop
21 00 40	---	16 00 16	37.6	69.9	-5.2		-48.0	199	2015	20 57 11
21 01 10	J2113+4012	16 00 46	37.5	70.4	-5.2		-47.9	19	2015	21 01 10
21 02 10	---	16 01 46	37.7	70.6	-5.2		-48.0	60	2030	21 01 11
21 02 10	J2114+4036	16 01 46	37.9	70.1	-5.2		-48.1	-11	2030	No stop
21 05 40	---	16 05 17	38.4	70.7	-5.2		-48.4	199	2084	21 02 11
21 05 40	J2113+4012	16 05 17	38.2	71.2	-5.2		-48.2	-11	2084	No stop
21 07 10	---	16 06 47	38.4	71.4	-5.1		-48.3	79	2107	21 05 41
21 07 10	J2114+4036	16 06 47	38.6	70.9	-5.1		-48.5	-11	2107	No stop
21 10 40	---	16 10 17	39.1	71.5	-5.1		-48.7	199	2162	21 07 11
21 10 40	J2113+4012	16 10 17	38.9	72.0	-5.1		-48.5	-11	2162	No stop
21 12 10	---	16 11 48	39.1	72.2	-5.0		-48.6	79	2185	21 10 41

Schedule for TORUN (Code Tr ) Page 6

EVN 5 GHz and 22 GHz study of 43 compact radio sources

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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 17 Jun 2021 Day 168 ---										
21 14 10	J2002+1501	16 13 48	31.3	107.6	-3.8		-36.3	34	2185	21 14 10
21 15 40	---	16 15 18	31.5	108.0	-3.8		-36.3	90	2208	21 14 11
21 15 40	J2010+1513	16 15 18	30.6	106.2	-3.9		-36.7	-17	2208	No stop
21 19 20	---	16 18 59	31.2	107.0	-3.9		-36.5	203	2265	21 15 41
21 20 00	J2002+1501	16 19 39	32.2	109.0	-3.7		-36.0	23	2265	21 20 00
21 21 00	---	16 20 39	32.3	109.2	-3.7		-36.0	60	2280	21 20 01
21 21 00	J2010+1513	16 20 39	31.4	107.4	-3.8		-36.5	-17	2280	No stop
21 24 40	---	16 24 20	31.9	108.2	-3.8		-36.3	203	2337	21 21 01
21 24 40	J2002+1501	16 24 20	32.8	110.1	-3.7		-35.7	-17	2337	No stop
21 26 20	---	16 26 00	33.0	110.5	-3.6		-35.6	83	2363	21 24 41
21 26 20	J2010+1513	16 26 00	32.2	108.6	-3.8		-36.2	-17	2363	No stop
21 30 00	---	16 29 41	32.7	109.4	-3.7		-35.9	203	2419	21 26 21
21 30 40	J2002+1501	16 30 21	33.7	111.5	-3.6		-35.4	23	2419	21 30 40
21 31 40	---	16 31 21	33.8	111.7	-3.5		-35.3	60	2435	21 30 41
21 31 40	J2010+1513	16 31 21	32.9	109.8	-3.7		-35.8	-17	2435	No stop
21 35 20	---	16 35 01	33.4	110.7	-3.6		-35.6	203	2491	21 31 41
21 35 20	J2002+1501	16 35 01	34.3	112.6	-3.5		-35.0	-18	2491	No stop
21 37 00	---	16 36 42	34.5	113.0	-3.4		-34.9	82	2517	21 35 21
21 37 00	J2010+1513	16 36 42	33.7	111.1	-3.6		-35.5	-17	2517	No stop
21 40 40	---	16 40 22	34.2	111.9	-3.5		-35.3	203	2574	21 37 01
21 40 40	J2002+1501	16 40 22	35.0	113.9	-3.4		-34.7	-18	2574	No stop
21 42 20	---	16 42 03	35.3	114.3	-3.4		-34.5	82	2600	21 40 41
21 46 20	J2005+7752	16 46 03	59.7	18.4	-3.3		-114.9	33	2600	21 46 20
21 49 20	---	16 49 04	59.8	18.3	-3.3		-115.8	180	2646	21 46 21
21 57 20	J1803-0433	16 57 05	30.6	160.4	-1.1		-11.6	182	2646	21 57 20
22 00 00	---	16 59 45	30.8	161.2	-1.1		-11.2	160	2687	21 57 21
22 00 00	J1805-0438	16 59 45	30.6	160.5	-1.1		-11.6	-12	2687	No stop
22 03 30	---	17 03 16	30.7	161.5	-1.1		-11.0	198	2741	22 00 01
22 04 00	J1803-0433	17 03 46	31.0	162.3	-1.0		-10.5	18	2741	22 04 00
22 05 00	---	17 04 46	31.0	162.6	-1.0		-10.4	60	2757	22 04 01



Schedule for TORUN (Code Tr ) Page 7

EVN 5 GHz and 22 GHz study of 43 compact radio sources

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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 17 Jun 2021 Day 168 ---										
22 05 00	J1805-0438	17 04 46	30.8	162.0	-1.0		-10.8	-12	2757	No stop
22 08 30	---	17 08 17	31.0	163.0	-1.0		-10.2	198	2811	22 05 01
22 08 30	J1803-0433	17 08 17	31.2	163.6	-0.9		-9.8	-12	2811	No stop
22 10 00	---	17 09 47	31.2	164.1	-0.9		-9.5	78	2834	22 08 31
22 10 00	J1805-0438	17 09 47	31.0	163.4	-0.9		-9.9	-12	2834	No stop
22 13 30	---	17 13 18	31.2	164.4	-0.9		-9.3	198	2888	22 10 01
22 14 00	J1803-0433	17 13 48	31.4	165.2	-0.8		-8.8	17	2888	22 14 00
22 15 00	---	17 14 48	31.4	165.5	-0.8		-8.7	60	2904	22 14 01
22 15 00	J1805-0438	17 14 48	31.2	164.8	-0.9		-9.1	-12	2904	No stop
22 18 30	---	17 18 19	31.4	165.8	-0.8		-8.5	198	2958	22 15 01
22 18 30	J1803-0433	17 18 19	31.5	166.5	-0.8		-8.1	-13	2958	No stop
22 20 00	---	17 19 49	31.6	167.0	-0.7		-7.8	77	2981	22 18 31
22 20 00	J1805-0438	17 19 49	31.4	166.3	-0.8		-8.2	-12	2981	No stop
22 23 30	---	17 23 19	31.6	167.3	-0.7		-7.6	198	3035	22 20 01
22 24 00	J1803-0433	17 23 49	31.7	168.1	-0.7		-7.1	17	3035	22 24 00
22 25 00	---	17 24 50	31.8	168.4	-0.7		-7.0	60	3050	22 24 01
22 25 00	J1805-0438	17 24 50	31.6	167.7	-0.7		-7.4	-12	3050	No stop
22 28 30	---	17 28 20	31.7	168.8	-0.6		-6.7	198	3105	22 25 01
22 28 30	J1803-0433	17 28 20	31.9	169.4	-0.6		-6.3	-13	3105	No stop
22 30 00	---	17 29 50	31.9	169.9	-0.6		-6.1	77	3128	22 28 31

## SETUP FILE INFORMATION:

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

==== Setup file: sess221.C2048

Setup group: 11	Station: TORUN	Total bit rate: 2048
Format: VDIF	Bits per sample: 2	Sample rate: 64.000
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	9	1	9	2	10	2	10	10
	3	11	3	11	4	12	4	12	12
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: 7 Setup file default. Used with PCAL = off

LO sum=	4830.49	4830.49	4830.49	4830.49	4894.49	4894.49	4894.49	4894.49
	4958.49	4958.49	4958.49	4958.49	5022.49	5022.49	5022.49	5022.49
BBC fr=	630.49	630.49	630.49	630.49	694.49	694.49	694.49	694.49
	758.49	758.49	758.49	758.49	822.49	822.49	822.49	822.49
Bandwd=	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00
	32.00	32.00	32.00	32.00	32.00	32.00	32.00	32.00

Matching frequency sets: 7

Track assignments are:

track1= 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16

barrel=roll\_off

#### POSITIONS OF SOURCES USED IN RECORDING SCANS

Source	Source position (RA/Dec)		(Date)	Error
	(B1950)	(J2000)		(mas)
* J2114+4036	21 12 14.071389	* 21 14 09.891796	21 14 59.840393	0.00
	40 24 14.39696	* 40 36 42.51571	40 41 47.99004	0.00
* J2010+1513	20 07 49.720433	* 20 10 08.199435	20 11 07.811490	0.00
	15 05 04.13002	* 15 13 58.81451	15 17 41.51972	0.00
* J1721+5207	17 20 27.176342	* 17 21 36.263130	17 22 07.685798	0.00
	52 09 59.37406	* 52 07 09.90109	52 05 58.43147	0.00
* J2044+6649	20 44 12.151397	* 20 44 48.971125	20 45 06.443193	0.00
	66 38 03.23625	* 66 49 02.23529	66 53 26.25334	0.00
* J1218-2159	12 16 22.909637	* 12 18 58.737261	12 20 04.846495	0.00
	-21 43 06.95175	*-21 59 46.20080	-22 06 56.52518	0.00
* J1340-0335	13 37 37.842692	* 13 40 13.304460	13 41 19.704056	0.00
	-03 20 10.59862	*-03 35 20.80316	-03 41 46.96626	0.00
* J1805-0438	18 02 51.908076	* 18 05 31.115508	18 06 39.749462	0.00
	-04 38 28.07189	*-04 38 09.71989	-04 38 01.56958	0.00
* J2113+4012	21 11 33.259883	* 21 13 29.486200	21 14 19.605489	0.00
	40 00 25.23950	* 40 12 51.38800	40 17 56.13930	0.00

* J2002+1501	20 00 23.600363	* 20 02 41.999200	20 03 41.603504	0.00
	14 52 47.66299	* 15 01 14.57400	15 04 45.72131	0.00
* J1723+5236	17 22 32.309984	* 17 23 39.746400	17 24 10.496285	0.00
	52 39 28.93541	* 52 36 48.39600	52 35 40.53920	0.00
* J2102+6758	21 02 04.948382	* 21 02 43.807500	21 03 02.000012	0.00
	67 46 23.98037	* 67 58 19.83500	68 03 06.93142	0.00
* J1212-2221	12 09 28.653785	* 12 12 03.697600	12 13 09.429294	0.00
	-22 05 10.38812	*-22 21 51.51300	-22 29 02.79836	0.00
* J1340-0137	13 37 30.112122	* 13 40 04.615100	13 41 10.605952	0.00
	-01 22 36.09970	*-01 37 46.54300	-01 44 12.21720	0.00
* J1803-0433	18 00 30.321213	* 18 03 09.427600	18 04 18.020861	0.00
	-04 33 10.83163	*-04 33 02.80100	-04 32 59.03528	0.00
* J2005+7752	20 07 20.430175	* 20 05 30.998500	20 04 48.177760	0.00
	77 43 58.12347	* 77 52 43.24800	77 56 09.63747	0.00
* J1229+0203	12 26 33.245804	* 12 29 06.699700	12 30 11.831586	0.00
	02 19 43.30550	* 02 03 08.59800	01 56 08.29989	0.00

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