

September 01, 2013 UTC (DOY-244)

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	ERT UTC OWLT = 1:26:13	SCET	PDT ERT-7hrs 7:00:00	Comments
Spacecraft is Earth Pointed				
Ka-Band ON: DOY-243	19:00:09	17:33:56	12:00:09	
DSS-43: Begin Pre-Cal: DOY 244	05:30:00	04:03:47	22:30:00	
RSSG: Begin Ingress DSS-43 X-band Open-Loop Recordings	05:45:00	04:18:47	22:45:00	
DSS-43: Beginning of Track	06:30:00	05:03:47	23:30:00	Spacecraft is Earth pointed; detectable X-band downlink
DSS-43: Begin X-band 1-Way Acquisition	06:30:00	05:03:47	23:30:00	PC/N0 (X-70m TLM ON) = 45 dB-Hz
RSSG: Begin Ingress DSS-43 S-band Open-Loop Recordings	06:50:00	05:23:47	23:50:00	
DSS-43 Transmitter ON, 18 kW, LCP, RAMP, SWEEP	06:59:00	05:32:47	23:59:00	Start transmitter time = start of 3-way baseline - RTLTL
S-Band ON	07:26:25	06:00:12	00:26:25	
DSS-43: Begin S-band 1-Way Acquisition	07:26:25	06:00:12	00:26:25	PC/N0 (S-70m) = 42 dB-Hz
DSS-34: Begin Pre-Cal	07:30:00	06:03:47	00:30:00	
RSSG: Begin DSS-34 X- & Ka-band Open-Loop Recordings	08:00:00	06:33:47	01:00:00	
DSS-34: Beginning of Track	09:00:00	07:33:47	02:00:00	
DSS-34: Begin X- & Ka-band 1-Way Acquisition	09:00:00	07:33:47	02:00:00	PC/N0 (X-34m TLM ON, Ka-34m) = 39, 48 dB-Hz
DSS-34: Enable Monopulse	TBD			
Official Start of Rev197 Observations	09:41:13	08:15:00	02:41:13	X/S/Ka downlink detectable
RNG OFF/TLM OFF	09:41:17	08:15:04	02:41:17	PC/NO (X-70m, X-34m) = 54, 48 dB-Hz
Start short 1-Way Free-Space Baseline	09:41:18	08:15:05	02:41:18	
DSS-55: Begin Pre-Cal	09:45:00	08:18:47	02:45:00	
DSS-43: Begin X- & S-band 2-Way Acquisition	09:51:26	08:25:13	02:51:26	PC/N0 (X-70m, S-70m) = 54 & 42 dB-Hz
DSS-34: Begin X- & Ka-band 3-Way Acquisition w/ DSS-43	09:51:26	08:25:13	02:51:26	PC/N0 (X-34m, Ka-34m) = 48 & 48 dB-Hz
Start 2- & 3-Way Free-Space Baseline	09:51:26	08:25:13	02:51:26	
DSS-63: Begin Pre-Cal	10:10:00	08:43:47	03:10:00	
RSSG: Begin Madrid Open-Loop Recordings	10:40:00	09:13:47	03:40:00	
DSS-63: Beginning of Track	11:10:00	09:43:47	04:10:00	
DSS-63: Begin X- & S-band 3-Way Acquisition (w/ DSS-43)	11:10:00	09:43:47	04:10:00	PC/N0 (X-70m, S-70m) = 54, 42 dB-Hz

DSS-55: Beginning of Track	11:15:00	09:48:47	04:15:00	
DSS-55: Begin X- & Ka-band 3-Way Acquisition (w/ DSS-43)	11:15:00	09:48:47	04:15:00	PC/N0 (X-34m, Ka-34m) = 48, 48 dB-Hz
DSS-55: Enable Monopulse	TBD			Low elevation angles (8 degrees ~11:22, 10 degrees ~11:33 ERT)
Top of the ionosphere (68,000 km)	11:19:18	09:53:05	04:19:18	
DSS-43: Transmitter OFF	11:26:47	10:00:34	04:26:47	Uplink coherent gap of about 8 min and 39 sec
DSS-63: Transmitter ON, 18 kW, LCP, RAMP, SWEEP	11:35:26	10:09:13	04:35:26	Uplink coherent gap of about 8 min and 39 sec
DSS-43 & DSS-34: End of Track	11:45:00	10:18:47	04:45:00	
DSS-43 & DSS-34: End of Post Cal	12:00:00	10:33:47	05:00:00	
RSSG: End Ingress Canberra Open-Loop Recordings	12:05:00	10:38:47	05:05:00	
Start of S/C Limb-Track Maneuver	12:06:13	10:40:00	05:06:13	
DSS-55: Disable Monopulse	12:15:00	10:48:47	05:15:00	Disable monopulse only when requested by RS Operations
Upper Troposphere (~0.02° BA)	12:19:03	10:52:50	05:19:03	S/X/Ka signal intensities slowly drop and scintillate
DSS-63: Begin X- & S-band 1-Way Acquisition	14:19:13	12:53:00	07:19:13	Begin of coherent gap (DSS-43 Transmitter OFF + RTLT)
DSS-55: Begin X- & Ka-band 1-Way Acquisition	14:19:13	12:53:00	07:19:13	Begin of coherent gap (DSS-43 Transmitter OFF + RTLT)
DSS-63: Begin X- & S-band 2-Way Acquisition	14:27:52	13:01:39	07:27:52	End of coherent gap (DSS-63 Transmitter ON + RTLT)
DSS-55: Begin X- & Ka-band 3-Way Acquisition (W/DSS-63)	14:27:52	13:01:39	07:27:52	End of coherent gap (DSS-63 Transmitter ON + RTLT)
End of Limb-Track Maneuver	14:41:13	13:15:00	07:41:13	Weak and scintillating S/X/Ka-band Signals until this time
Cassini is behind Saturn as seen from Earth				
RSSG: Stop Madrid RSR 100 KHz Recordings	15:25:00	13:58:47	08:25:00	RSR only. Continue narrower bandwidth recordings
RSSG: Continue Other Madrid Recordings All the Way Through				Intermittent weak S/X/Ka signals while behind Saturn
DSS-25: Begin Pre Cal	17:00:00	15:33:47	10:00:00	
DSS-14: Begin Pre Cal	17:30:00	16:03:47	10:30:00	
RSSG: Start Egress Goldstone Open-Loop Recordings	17:50:00	16:23:47	10:50:00	
DSS-25 & DSS-14: Beginning of Track	18:30:00	17:03:47	11:30:00	Intermittent weak S/X/Ka signals while behind Saturn
Cassini is still behind Saturn as seen from Earth				Intermittent weak S/X/Ka signals while behind Saturn
DSS-63: Transmitter OFF	19:20:46	17:54:33	12:20:46	End of 2/3-Way baseline - RTLT
RSSG: Resume Madrid RSR 100 KHz Recordings	19:55:00	18:28:47	12:55:00	
Ring B out	20:26:17	19:00:04	13:26:17	Cassini is within the Cassini Division; likely DST lock
DSS-63: Begin X- & S-band 2-Way Acquisition	20:26:17	19:00:04	13:26:17	
DSS-55: Begin X- & Ka-band 3-Way Acquisition (W/DSS-63)	20:26:17	19:00:04	13:26:17	
DSS-14: Begin X- & S-band 3-Way Acquisition (W/DSS-63)	20:26:17	19:00:04	13:26:17	
DSS-25: Begin X- & Ka-band 3-Way Acquisition (W/DSS-63)	20:26:17	19:00:04	13:26:17	

Top of the troposphere (0.02° BA)	20:27:53	19:01:40	13:27:53	
DSS-25: Enable Monopulse	20:27:53	19:01:40	13:27:53	Enable monopulse only when requested by RS Operations
DSS-55: End of Track	20:30:00	19:03:47	13:30:00	
DSS-25: Disable Monopulse	20:33:15	19:07:02	19:07:02	Disable monopulse only when requested by RS Operations
Ring A In	20:34:16	19:08:03	13:34:16	Detectable signals over most of Ring A
DSS-63: End of Track	20:40:00	19:13:47	13:40:00	
DSS-55: End of Post Cal	20:45:00	19:18:47	13:45:00	
In Mid Encke Gap	20:54:35	19:28:22	13:54:35	Signals are briefly back to full strength
DSS-63: End of Post Cal	20:55:00	19:28:47	13:55:00	
Ring A out	21:00:12	19:33:59	14:00:12	PC/N0 (X34, S34, Ka34) = 48, 36, and 48 dB-Hz
Ring F	21:12:27	19:46:14	14:12:27	Ring F is usually not detectable in real-time
RSSG: End Madrid Open-Loop Recordings	21:15:00	19:48:47	14:15:00	
Top of the ionosphere (~68,000 km)	21:15:14	19:49:01	14:15:14	Ionosphere primarily affects signals' frequency/phase
End of 2/3-Way Free-Space Baseline	22:13:12	20:46:59	15:13:12	
DSS-14: Begin X- & S-band 1-Way Acquisition	22:13:12	20:46:59	15:13:12	PC/N0 (X-70m, S-70m) = 54, 42 dB-Hz
DSS-25: Begin X- & Ka-band 1-Way Acquisition	22:13:12	20:46:59	15:13:12	PC/N0 (X-34m, Ka-34m) = 48, 48 dB-Hz
Start 1-Way Baseline	22:13:13	20:47:00	15:13:13	
DSS-25: Enable Monopulse	22:33:13	21:07:00	15:33:13	Enable monopulse only when requested by RS Operations
TLM ON/RNG ON	22:36:07	21:09:54	15:36:07	
S-Band and Ka-band OFF	22:36:13	21:10:00	15:36:13	
End of Rev197 RSS S/C Activities	22:36:13	21:10:00	15:36:13	
RSSG: End Egress Goldstone Open-Loop Recordings	23:00:00	21:33:47	16:00:00	
DSS-25 & DSS-14: End of Track	23:00:00	21:33:47	16:00:00	
DSS-25 & DSS-14: End Post Cal	23:15:00	21:48:47	16:15:00	

Canberra DSS-34 & DSS-43 related activities

Madrid DSS-55 & DSS-63 related activities

Goldstone DSS-25 & DSS-14 related activities

Predicted ring and atmospheric event times are approximate and are based on [NAV OD on 02 Aug 2013 \(130802AP_SCPSE_13217_13261.bsp\)](#)