

Timeline for Cassini Rev 248: 2-Way RSS Saturn's Ring Chord Occultation

November 12, 2016 UTC (DOY-317)

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	ERT UTC OWLT = 01:30:57	SCET	PST ERT-8hrs 08:00:00	Comments
DOY 2016-317				
RSSG: Load 1-W, 2-W, and 3-W Frequency Predicts				
Spacecraft is Earth Pointed During MIMI Observation	03:50:57	02:20:00	19:50:57	
DSS-74: Begin Pre-Cal	06:15:00	04:44:03	22:15:00	Detectable X-Band Downlink at DSS-74
DSS-74: Beginning Of Track	07:15:00	05:44:03	23:15:00	
DSS-74: Begin X-band 1-Way Acquisition	07:15:00	05:44:03	23:15:00	
DSS-74: Transmitter ON, 18 kW, LCP, RAMP, SWEEP	07:31:00	06:00:03	23:31:00	
S-Band ON	08:21:45	06:50:48	00:21:45	Per PEF; Detectable S-Band Downlink at DSS-74
DSS-74: Begin S-band 1-Way Acquisition	08:21:45	06:50:48	00:21:45	
Ka-Band ON	08:26:41	06:55:44	00:26:41	Per PEF
Spacecraft is Earth Pointed During Warmup				
DSS-55: Begin Pre-Cal	08:30:00	06:59:03	00:30:00	
DSS-63: Begin Pre-Cal	08:55:00	07:24:03	00:55:00	
RSSG: Start DSS-63 & DSS-55 Open-Loop Recordings	09:25:00	07:54:03	01:25:00	
DSS-63: Beginning Of Track	09:55:00	08:24:03	01:55:00	Detectable X/S Downlink at DSS-63
DSS-63: Begin X- & S-band 1-Way Acquisition	09:55:00	08:24:03	01:55:00	PC/N0 (X-70m, S-70m) = 54, 42 dB-Hz
1-Way X/S Baseline				
DSS-55: Beginning Of Track	10:00:00	08:29:03	02:00:00	Detectable X/Ka Downlink at DSS-55
DSS-55: Begin X- & Ka-band 1-Way Acquisition	10:00:00	08:29:03	02:00:00	PC/N0 (X-34m, Ka-34m) = 48, 48 dB-Hz
RSSG: Enter 1-Way Open-Loop Frequency Offsets as Needed				
1-Way Ka/X Baseline				
DSS-55: Enable Monopulse	TBD			Enable Monopulse only when requested by RS operations
DSS-63: Transmitter ON, 18kW, LCP, RAMP, NO SWEEP	10:18:00	08:47:03	02:18:00	Uplink transfer from DSS-74 to DSS-63
DSS-74: Transmitter OFF	10:18:05	08:47:08	02:18:05	
DSS-74: End Of Track	10:20:00	08:49:03	02:20:00	
Start of Rev 248 Chord Ring Occultation	10:30:57	09:00:00	02:30:57	
RNG OFF/TLM OFF	10:31:01	09:00:04	02:31:01	X-band signal level increases
DSS-55: Disable Monopulse Without Clearing the Offsets	10:30:00	08:59:03	02:30:00	Prior to mode switch to 3-way
DSS-63: Begin X- & S-band 3-Way Acquisition (w/DSS-74)	10:32:54	09:01:57	02:32:54	PC/N0 (X-70m, S-70m) = 54, 42 dB-Hz
DSS-55: Begin X- & Ka-band 3-Way Acquisition (w/DSS-74)	10:32:54	09:01:57	02:32:54	PC/N0 (X-34m, Ka-34m) = 48, 48 dB-Hz
RSSG: Clear 1-Way Open-Loop Frequency Offsets	10:32:54	09:01:57	02:32:54	
DSS-55: Enable Monopulse	TBD			
Coherent X/S/Ka Baseline	10:35:00	09:04:03	02:35:00	
DSS-74: End of Post-Cal	10:35:00	09:04:03	02:35:00	

Ring F	11:56:14	10:25:17	03:56:14	Approx. time; Ring F is usually not detectable in real-time
Ring A In	12:05:38	10:34:41	04:05:38	Approximate time
DSS-55: Disable Monopulse without Clearing the Offsets	12:35:00	11:04:03	04:35:00	
Ring A Out	12:53:49	11:22:52	04:53:49	Approximate time
RSSG: Switch predicts	12:56:24	11:25:27	04:56:24	
DSS-84: Begin Pre-Cal	13:10:00	11:39:03	05:10:00	
Ring B In	13:14:20	11:43:23	05:14:20	Approximate time
Uplink Transfer from DSS-74 to DSS-63 Observed	13:19:54	11:48:57	05:19:54	
DSS-63: Begin X- & S-band 2-Way Acquisition	13:19:54	11:48:57	05:19:54	PC/N0 (X-70m, S-70m) = 54, 42 dB-Hz
DSS-55: Begin X- & Ka-band 3-Way Acquisition (w/DSS-63)	13:19:54	11:48:57	05:19:54	PC/N0 (X-34m, Ka-34m) = 48, 48 dB-Hz
DSS-84: Beginning Of Track	14:10:00	12:39:03	06:10:00	
DSS-84: Begin X- & Ka-band 3-Way Acquisition (w/DSS-63)	14:10:00	12:39:03	06:10:00	
Rings Turn Around Time	14:13:00	12:42:03	06:13:00	Center of the chord occultation track
DSS-84: Transmitter ON, 18kW, LCP, RAMP, NO SWEEP	14:30:00	12:59:03	06:30:00	Uplink transfer from DSS-63 to DSS-84. For Testing Purposes
DSS-63: Transmitter OFF	14:30:05	12:59:08	06:30:05	
DSS-84: Transmitter OFF	15:09:00	13:38:03	07:09:00	
Ring B Out	15:11:30	13:40:33	07:11:30	Approximate time
Ring A In	15:32:00	14:01:03	07:32:00	Approximate time
DSS-55: Enable Monopulse	15:45:00	14:14:03	07:45:00	
Ring A out	16:20:08	14:49:11	08:20:08	All signals back to full strength levels
Ring F	16:29:32	14:58:35	08:29:32	Approx. time; Ring F is usually not detectable in real-time
Extended X/S/Ka Free-Space Baseline				
Uplink Transfer from DSS-63 to DSS-84 Observed	17:31:54	16:00:57	09:31:54	
DSS-63: Begin X- & S-band 3-Way Acquisition (w/DSS-84)	17:31:54	16:00:57	09:31:54	PC/N0 (X-70m, S-70m) = 54, 42 dB-Hz
DSS-55: Begin X- & Ka-band 3-Way Acquisition (w/DSS-84)	17:31:54	16:00:57	09:31:54	PC/N0 (X-34m, Ka-34m) = 48, 48 dB-Hz
DSS-84: Begin X- & Ka-band 2-Way Acquisition	17:31:54	16:00:57	09:31:54	
DSS-63 & DSS-55: End of Track	17:40:00	16:09:03	09:40:00	
DSS-63 & DSS-55: End of Post-Cal	17:55:00	16:24:03	09:55:00	
S-Band OFF	18:05:18	16:34:21	10:05:18	
Ka-Band OFF	18:05:20	16:34:23	10:05:20	
TLM ON/RNG ON	18:05:51	16:34:54	10:05:51	X-Band signal level drops
End of Rev 248 RSS S/C Activities	18:05:57	16:35:00	10:05:57	
RSSG: End DSS-63 & DSS-55 Open-Loop Recordings	18:10:00	16:39:03	10:10:00	
DSS-84: End Of Track	18:10:00	16:39:03	10:10:00	
DSS-84: End of Post-Cal	18:25:00	16:54:03	10:25:00	

New Norcia DSS-74 related activities

Madrid DSS-63 & DSS-55 related activities

Malargue DSS-84 related activities

Predicted rings event times are approximate and are based on [Ref Traj 140114](#)