Timeline for Cassini Rev 193: 2-Way RSS Saturn Rings Occultation

June 24, 2013 UTC (DOY-175)

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	ERT UTC OWLT = 1:17:03	SCET	PDT ERT-7hrs 7:00:00	Comments
Spacecraft is NOT Earth Pointed				
RSSG: Load 1-W, 2-W, and 3-W Frequency Predicts	TBD			
DSS-14: Begin Pre-Cal	01:30:00	00:12:57	18:30:00	
DSS-14: Begin of Track	02:30:00	01:12:57	19:30:00	Spacecraft is not Earth pointed
DSS-14 Transmitter ON, 18 kW, LCP, RAMP, SWEEP	**03:16:00**	01:58:57	20:16:00	Start transmitter time = start of 2- & 3-way baseline - RTLT
DSS-34: Begin Pre-Cal	03:20:00	02:02:57	20:20:00	
DSS-43: Begin Pre-Cal	03:50:00	02:32:57	20:50:00	
S-Band ON	03:58:07	02:41:04	20:58:07	Spacecraft is not Earth pointed
RSSG: Begin DSS-14, 34 and 43 Open-Loop Recordings	04:40:00	03:22:57	21:40:00	
Ka-Band ON	04:48:49	03:31:46	21:48:49	Spacecraft is not Earth pointed
DSS-34 & DSS-43: Begin of Track	04:50:00	03:32:57	21:50:00	Spacecraft is not Earth pointed
Spacecraft is Earth Pointed; Start of Rev193 Observations	05:24:03	04:07:00	22:24:03	Downlink signals detectable shortly before 05:24:03
DSS-14: Begin X- & S-band 1-Way Acquisition	05:24:03	04:07:00	22:24:03	PC/N0 (X-70m, S-70m) = 54, 42 dB-Hz
DSS-43: Begin X- & S-band 1-Way Acquisition	05:24:03	04:07:00	22:24:03	PC/N0 (X-70m, S-70m) = 54, 42 dB-Hz
DSS-34: Begin X- & Ka-band 1-Way Acquisition	05:24:03	04:07:00	22:24:03	PC/N0 (X-34m, Ka-34m) = 48, 48 dB-Hz
RNG OFF/TLM OFF	05:24:07	04:07:04	22:24:07	X-band signal level increase
Start 1-way baseline	05:24:08	04:07:05	22:24:08	About 26 m long 1-way baseline; FRO RSR if needed
DSS-34: Enable Monopulse	TBD			Enable monopulse only when requested by RS Operations
DSS-14: Begin X- & S-band 2-Way Acquisition	05:50:06	04:33:03	22:50:06	PC/N0 (X-70m, S-70m) = 54, 42 dB-Hz
DSS-43: Begin X- & S-band 3-Way Acquisition (w/ DSS-14)	05:50:06	04:33:03	22:50:06	PC/N0 (X-70m, S-70m) = 54, 42 dB-Hz
DSS-34: Begin X- & Ka-band 3-Way Acquisition (w/ DSS-14)	05:50:06	04:33:03	22:50:06	PC/N0 (X-34m, Ka-34m) = 48, 48 dB-Hz
Begin 2- & 3-Way Free-Space Baseline	05:52:06	04:35:03	22:52:06	
Ring F	06:54:06	05:37:03	23:54:06	Approx. time; Ring F is usually not detectable in real-time
Ring A In	06:57:12	05:40:09	23:57:12	Approximate time
Middle of Encke Gap	07:00:06	05:43:03	00:00:06	Increase in signal levels for a short period
Ring A Out	07:10:58	05:53:55	00:10:58	Approximate time
DSS-34: Disable Monopulse	07:11:25	05:54:22	00:11:25	Disable monopulse only when requested by RS Operations

Ring B In	07:15:25	05:58:22	00:15:25	Signals will likely be blocked over parts of Ring B
Ring C In	07:44:49	06:27:46	00:44:49	Approximate time
DSS-34: Enable Monopulse	07:46:00	06:28:57	00:46:00	Enable monopulse only when requested by RS Operations
DSS-14: Transmitter OFF	**07:50:00**	06:32:57	00:50:00	End of 3-Way baseline - RTLT
DSS-34: Transmitter ON, 18 kW, LCP, RAMP, SWEEP	**07:58:52**	06:41:49	00:58:52	For telemetry support that follows occultation experiment
DSS-14: End of Track	08:50:00	07:32:57	01:50:00	
DSS-34: Disable Monopulse	08:53:19	07:36:16	01:53:19	Disable monopulse only when requested by RS Operations
Ring B In	08:54:22	07:37:19	01:54:22	Signals will likely be blocked over parts of Ring B
DSS-14: End of Post Cal	09:05:00	07:47:57	02:05:00	
RSSG: End DSS-14 Open-Loop Recordings	09:10:00	07:52:57	02:10:00	
Ring B Out	09:23:46	08:06:43	02:23:46	Approximate time; Strong signals in the Cassini Division
DSS-34: Enable Monopulse	9:27:41	08:10:38	02:27:41	Enable monopulse only when requested by RS Operations
Ring A In	09:28:12	08:11:09	02:28:12	Detectable signals over most of Ring A
Middle of the Encke Gap	09:39:04	08:22:01	02:39:04	Strong signals over brief time period
Ring A out	09:41:58	08:24:55	02:41:58	All signals back to full strength (free-space) levels
Ring F	09:45:04	08:28:01	02:45:04	Approx. time; Ring F is usually not detectable in real-time
End of 3-Way free-space baseline	10:24:06	09:07:03	03:24:06	
DSS-34: Begin X- & Ka-band 1-Way Acquisition	10:24:06	09:07:03	03:24:06	PC/N0 (X-34m, Ka-34m) = 48, 48 dB-Hz
DSS-43: Begin X- & S-band 1-Way Acquisition	10:24:06	09:07:03	03:24:06	PC/N0 (X-70m, S-70m) = 54, 42 dB-Hz
Start 1-way baseline	10:24:06	09:07:03	03:24:06	
DSS-34: Begin X- & Ka-band 2-Way Acquisition	10:32:58	09:15:55	03:32:58	PC/N0 (X-34m, Ka-34m) = 48, 48 dB-Hz
DSS-43: Begin X- & S-band 3-Way Acquisition (w/ DSS-34)	10:32:58	09:15:55	03:32:58	PC/N0 (X-70m, S-70m) = 54, 42 dB-Hz
TLM ON/RNG ON	10:34:58	09:17:55	03:34:58	End of Rev193 RSS Experiment
S-Band OFF	10:35:03	09:18:00	03:35:03	Ka-band remains ON
End of Rev193 RSS S/C Activities	10:35:03	09:18:00	03:35:03	S/C remains Earth pointed. Telemetry support per DKF
DSS-34: Transmitter OFF	**10:52:57**	09:35:54	03:52:57	Per DKF
RSSG: End DSS-43 S-band Open-Loop Recordings	10:55:00	09:37:57	03:55:00	
DSS-43: End of Track	12:30:00	11:12:57	05:30:00	
RSSG: End DSS-43 X-band Open-Loop Recordings	12:35:00	11:17:57	05:35:00	
DSS-43: End of Post Cal	12:45:00	11:27:57	05:45:00	
DSS-34: End of Track	13:30:00	12:12:57	06:30:00	
RSSG: End DSS-34 Open-Loop Recordings	13:35:00	12:17:57	06:35:00	
DSS-34: End of Post Cal	13:45:00	12:27:57	06:45:00	

Canberra DSS-43 & DSS-34 related activities

Goldstone DSS-14 related activities

Predicted rings event times are approximate and are based on NAV OD on 07 June 2013

DSS-34 Monopulse strategy is preliminary at this time. Final strategy is decided in real-time