

**Timeline for Cassini Rev 266: 2-Way RSS Ingress Occultation of Saturn's Rings**

**March 22, 2017 (DOY-081)**

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	ERT UTC OWLT = 01:22:32	SCET	PDT ERT-7hrs 07:00:00	Comments
<b>DOY 2017-081</b>				
RSSG: Load 1-W Predicts, 2-W, and 3-W Frequency Predicts				
DSS-43: Begin Pre-Cal	12:20:00	10:57:28	05:20:00	
DSS-35: Begin Pre-Cal	13:10:00	11:47:28	06:10:00	
DSS-43: Beginning Of Track	13:20:00	11:57:28	06:20:00	Spacecraft is not Earth pointed; no detectable downlink
<b>DSS-43: Transmitter ON, 18 kW, LCP, RAMP, SWEEP</b>	<b>13:42:00</b>	12:19:28	06:42:00	Transmitter on time = Start of 2-Way acquisition - RTLTL
RSSG: Begin All DSS-43 and DSS-35 Open-Loop Recordings	14:20:00	12:57:28	07:20:00	
Being S/C Turn to Earth Point	14:22:32	13:00:00	07:22:32	40min allocated to turn but may complete sooner
DSS-35: Beginning Of Track	14:40:00	13:17:28	07:40:00	
S/C is Earth Pointed: Start of Rev 266 RSS Experiment	15:02:32	13:40:00	08:02:32	Detectable X-Band Downlink
RNG OFF/TLM OFF	15:02:33	13:40:01	08:02:33	
DSS-43 & DSS-35: Begin X-band 1-Way Acquisition	15:02:33	13:40:01	08:02:33	PC/N0 (X-70m, X-34m TLM OFF) = 54, 48 dB-Hz
RSSG: Enter 1-Way Open-Loop Frequency Offsets as Needed				
S-Band ON	15:03:16	13:40:44	08:03:16	Per PEF
DSS-43: Begin S-band 1-Way Acquisition	15:03:17	13:40:45	08:03:17	PC/N0 (S-70m TLM OFF) = 42 dB-Hz
Ka-Band ON	15:08:12	13:45:40	08:08:12	Per PEF
RSSG: Verify Ka-band 1-Way Offsets				
DSS-35: Begin Ka-band 1-Way Acquisition	15:08:13	13:45:41	08:08:13	PC/N0 (Ka-34m TLM OFF) = 48 dB-Hz
DSS-35: Enable Monopulse	15:10:00	13:47:28	08:10:00	Enable Monopulse only when requested by RS Operations
Start S/C Roll for MAG	15:32:32	14:10:00	08:32:32	Roll is Around HGA Ka-Band Boresight
RSSG: Clear 1-Way Open-Loop Frequency Offsets	16:25:00	15:02:28	09:25:00	
DSS-35: Disable Monopulse Without Clearing the Offsets	16:26:00	15:03:28	09:26:00	Prior to mode switch to 2- & 3-Way
DSS-43 Transmitter Sweep Observed	16:27:04	15:04:32	09:27:04	
DSS-43: Begin X- and S-band 2-Way Acquisition	16:27:04	15:04:32	09:27:04	DSS-43 Transmitter ON Time + RTLTL
DSS-35: Begin X- and Ka-band 3-Way Acquisition (w/DSS-43)	16:27:04	15:04:32	09:27:04	
DSS-35: Enable Monopulse	16:28:00	15:05:28	09:28:00	Enable Monopulse only when requested by RS Operations
End of Thermal Stabilization Period	17:08:12	15:45:40	10:08:12	PC/N0 (X-70m, S-70m TLM OFF) = 54, 42 dB-Hz
Start 2-Way/3-Way Baseline	17:08:12	15:45:40	10:08:12	PC/N0 (X-34m, Ka-34m TLM OFF) = 48, 48 dB-Hz
Ring F	19:05:33	17:43:01	12:05:33	Approx. time; Ring F is usually not detectable in real-time
Ring A In	19:11:56	17:49:24	12:11:56	Approximate time
DSS-35: Disable Monopulse Without Clearing the Offsets	19:34:00	18:11:28	12:34:00	Disable Monopulse only when requested by RS Operations

Ring A Out	19:39:27	18:16:55	12:39:27	
Ring B In	19:47:57	18:25:25	12:47:57	Potential loss of 2-Way signals over parts of Ring B
<b>DSS-43: Transmitter OFF</b>	<b>20:13:28</b>	<b>18:50:56</b>	<b>13:13:28</b>	<b>End of Experiment - RTLT</b>
Top of the Ionosphere	20:16:19	18:53:47	13:16:19	
End of S/C Roll for MAG	20:30:53	19:08:21	13:30:53	
Ring C In	20:36:35	19:14:03	13:36:35	
DSS-35: Enable Monopulse	20:38:00	19:15:28	13:38:00	Enable Monopulse only when requested by RS Operations
DSS-35: Disable Monopulse Without Clearing the Offsets	20:55:00	19:32:28	13:55:00	Disable Monopulse only when requested by RS Operations
Top of the Troposphere	20:56:22	19:33:50	13:56:22	
Attenuated X-Band Signal Drifting Out of the 1 KHz BW	20:56:23	19:33:51	13:56:23	No limb track maneuver; no compensation for atm Doppler
Quick Loss of all 2-Way Signals				Monitor the 16 kHz BW X- and S-band data
Likely Scintillating 1-Way S-Band Signal for Sometime				S-band HGA HPHW exceeds maximum bending angle
S-Band OFF	22:57:57	21:35:25	15:57:57	Per PEF
Ka-Band OFF	22:57:59	21:35:27	15:57:59	Per PEF
TLM ON/RNG ON	22:58:26	21:35:54	15:58:26	S/C is Behind Saturn!
<b>End of Rev 266 RSS Ring Occultation Experiment</b>	22:58:32	21:36:00	15:58:32	Spacecraft remains Earth pointed
RSSG: End DSS-43 & DSS-35 Open-Loop Recordings	23:30:00	22:07:28	16:30:00	
DSS-43 & DSS-35: End Of Track	23:30:00	22:07:28	16:30:00	
DSS-43 & DSS-35: End of Post-Cal	23:45:00	22:22:28	16:45:00	

#### Canberra DSS-43 & DSS-35 related activities

Predicted rings event times are approximate and are based on [Ref Traj 150901](#)