

Timeline for Cassini Rev 268: 2-Way RSS Ingress Saturn Ring & Atmospheric Occultations

April 5-6, 2017 UTC (DOY-095/096)

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	ERT UTC OWLT = 01:20:37	SCET	PDT ERT-7hrs 07:00:00	Comments
DOY 2017-095				
RSSG: Load 1-W, 2-W, and 3-W Frequency Predicts				
DSS-74: Begin Pre-Cal	21:45:00	20:24:23	14:45:00	
DSS-43: Begin Pre-Cal	22:15:00	20:54:23	15:15:00	
DSS-74: Beginning of Track	22:30:00	21:09:23	15:30:00	
DSS-43: Beginning Of Track	23:15:00	21:54:23	16:15:00	No downlink signals detectable. Uplink only support
DSS-43 Transmitter ON, 18 kW, LCP, RAMP, SWEEP	23:15:00	21:54:23	16:15:00	At BOT
DSS-55: Begin Pre-Cal	23:40:00	22:19:23	16:40:00	
S-Band ON	23:56:25	22:35:48	16:56:25	Per PEF
DOY 2017-096				
Ka-Band ON	00:01:21	22:40:44	17:01:21	Per PEF
DSS-63: Begin Pre-Cal	00:10:00	22:49:23	17:10:00	
DSS-74 Transmitter ON, 18 kW, LCP, RAMP	00:47:46	23:27:09	17:47:46	NO SWEEP ; Uplink transfer from DSS-43 to DSS-74
DSS-43: Transmitter OFF	00:47:51	23:27:14	17:47:51	Timed for the transfer to occur in mid Cassini Division ramp
DSS-63 & DSS-55: Beginning of Track	01:10:00	23:49:23	18:10:00	
RSSG: Begin DSS-63 and DSS-55 Open-Loop Recordings	01:10:00	23:49:23	18:10:00	
RSSG: Begin DSS-74 Open-Loop Recordings	01:10:00	23:49:23	18:10:00	
DSS-43: End of Track	01:25:00	00:04:23	18:25:00	
DSS-43: End of Post-Cal	01:40:00	00:19:23	18:40:00	
S/C is Earth Pointed; Start Inbound 20 m Deadtime	01:40:37	00:20:00	18:40:37	
DSS-63: Begin X- & S-Band 1-Way Acquisition	01:40:37	00:20:00	18:40:37	
DSS-55: Begin X- & Ka-Band 1-Way Acquisition	01:40:37	00:20:00	18:40:37	
DSS-74: Begin X- & S-Band 1-Way Acquisition	01:40:37	00:20:00	18:40:37	
DSS-55: Enable Monopulse	01:40:37	00:20:00	18:40:37	Enable monopulse only when requested by RS Operations
RNG OFF	01:40:37	00:20:00	18:40:37	
TLM OFF	01:40:38	00:20:01	18:40:38	
DSS-63: Transmitter ON, 18 kW, LCP, RAMP	01:46:50	00:26:13	18:46:50	NO SWEEP ; Uplink transfer from DSS-74 to DSS-63
DSS-74: Transmitter OFF	01:46:55	00:26:18	18:46:55	Timed for the transfer to occur in mid Ring C ramp
DSS-55: Disable Monopulse Without Clearing the Offsets	01:55:00	00:34:23	18:55:00	Prior to mode switch to 3-way
DSS-43 Uplink Sweep is Observed	01:56:14	00:35:37	18:56:14	
DSS-63: Begin X- & S-Band 3-Way Acquisition (w/DSS-43)	01:56:14	00:35:37	18:56:14	
DSS-55: Begin X- & Ka-Band 3-Way Acquisition (w/DSS-43)	01:56:14	00:35:37	18:56:14	
DSS-74: Begin X- & S-Band 3-Way Acquisition (w/DSS-43)	01:56:14	00:35:37	18:56:14	
DSS-55: Enable Monopulse	01:56:14	00:35:37	18:56:14	Enable monopulse only when requested by RS Operations

Start Coherent Baseline	01:58:14	00:37:37	18:58:14	
Official Start of Rev 268 Experiments	02:00:37	00:40:00	19:00:37	Waypoint X-Band to Earth, POS-X to NSP
DSS-74: End of Track	02:30:00	01:09:23	19:30:00	
DSS-74: End of Post-Cal	02:45:00	01:24:23	19:45:00	
RSSG: End DSS-74 Open-Loop Recordings	02:50:00	01:29:23	19:50:00	
Ring F	02:53:27	01:32:50	19:53:27	Approximate time; Ring F is usually not detectable in real-time
Ring A In	02:59:55	01:39:18	19:59:55	
DSS-55: Disable Monopulse Without Clearing the Offsets	03:20:00	01:59:23	20:20:00	Disable monopulse only when requested by RS Operations
Ring A Out	03:27:52	02:07:15	20:27:52	
DSS-43 to DSS-74 Uplink Transfer is Observed	03:29:00	03:29:00	03:29:00	Transfer occurs in in the Cassini Division Ramp
DSS-63: Begin X- & S-Band 3-Way Acquisition (w/DSS-74)	03:29:00	02:08:23	20:29:00	
DSS-55: Begin X- & Ka-Band 3-Way Acquisition (w/DSS-74)	03:29:00	02:08:23	20:29:00	
Ring B In	03:36:32	02:15:55	20:36:32	Approximate time
DSS-84: Begin Pre-Cal	04:15:00	02:54:23	21:15:00	
Top of the ionosphere (~68,000 km)	04:20:14	02:59:37	21:20:14	
Ring B Out	04:26:29	03:05:52	21:26:29	
DSS-55: Enable Monopulse	04:28:00	03:07:23	21:28:00	Enable monopulse only when requested by RS Operations
DSS-74 to DSS-63 Uplink Transfer is Observed	04:28:04	03:07:27	21:28:04	The transfer is timed to occur in the Ring C ramp
DSS-63: Begin X- & S-Band 2-Way Acquisition	04:28:04	03:07:27	11:48:04	
DSS-55: Begin X- & Ka-Band 3-Way Acquisition (w/DSS-63)	04:28:04	03:07:27	11:48:04	
RSSG: Begin DSS-84 Open-Loop Recordings	### 04:30:00	03:09:23	21:30:00	
Official Start of Rev 268 Ingress Atmospheric Occultation	04:56:37	03:36:00	21:56:37	
DSS-84: Beginning of Track	05:00:00	03:39:23	22:00:00	
DSS-84: Begin X- & Ka-band 3-Way Acquisition (w/DSS-63)	05:00:00	03:39:23	22:00:00	
DSS-55: Disable Monopulse Without Clearing the Offsets	05:00:00	03:39:23	22:00:00	Disable monopulse only when requested by RS Operations
Top of the Troposphere (~0.001° BA)	05:00:52	03:40:15	22:00:52	Atmosphere/Ring C interference
Ring C Out	05:03:17	03:42:40	22:03:17	
Start Tracking Ingress Occultation IVD	05:07:07	03:46:30	22:07:07	
Loss of 2-Way Ka-band signal (~1.0° BA)	06:07:37	04:47:00	23:07:37	Approximate time
Loss of 2-Way X-band signal (~1.2° BA)	06:26:17	05:05:40	23:26:17	Approximate time; 2-Way until DST loses lock, then 1-Way
DSS-63: Transmitter OFF	06:33:21	05:12:44	23:33:21	
Loss of 2-Way S-band signal (~1.35° BA)	06:44:57	05:24:20	23:44:57	Approximate time; 2-Way until DST loses lock, then 1-Way
DSS-26: Start Pre-Cal	06:50:00	05:29:23	23:50:00	
DSS-14: Start Pre-Cal	07:20:00	05:59:23	00:20:00	
DSS-84: Transmitter ON, 18 kW, LCP, RAMP, SWEEP	07:21:45	06:01:08	00:21:45	
End Tracking Ingress Occultation IVD	07:44:07	06:23:30	00:44:07	
S/C is Behind Saturn	07:44:08	06:23:31	00:44:08	S/C is occulted. No signal until shortly before 10:02:12
DSS-14 & DSS-26: Beginning Of Track	08:20:00	06:59:23	01:20:00	Goldstone Coverage is not Related to the RSS Experiment
DSS-14: Begin X- & S-band 3-Way Acquisition (w/DSS-63)	08:20:00	06:59:23	01:20:00	For Playback Purposes
DSS-26: Begin X- & Ka-band 3-Way Acquisition (w/DSS-63)	08:20:00	08:20:00	08:20:00	For Playback Purposes
DSS-14: Transmitter ON, 18 kW, LCP, RAMP	08:45:00	07:24:23	01:45:00	Uplink transfer from DSS-84 to DSS-14; Per DKF

DSS-84: Transmitter OFF	08:45:05	07:24:28	01:45:05	
End of Rev 268 Observations; Start of 20 m Deadtime	08:54:37	07:34:00	01:54:37	
DSS-55: End of Track	08:55:00	07:34:23	01:55:00	
DSS-63: End of Track	09:05:00	07:44:23	02:05:00	
DSS-55: Post-Cal	09:10:00	07:49:23	02:10:00	
S-Band OFF	09:13:56	07:53:19	02:13:56	Per PEF
Ka-Band OFF	09:14:02	07:53:25	02:14:02	Per PEF
TLM ON	09:14:29	07:53:52	02:14:29	
S/C is Still Behind Saturn	09:14:31	07:53:54	02:14:31	S/C is occulted. No signal until shortly before 10:02:12
RNG ON	09:14:33	07:53:56	02:14:33	
End of Deadtime	09:14:37	07:54:00	02:14:37	
Tracking Continues for Telemetry Purposes. Follow DKF	19:14:37	17:54:00	12:14:37	
DSS-63: Post-Cal	09:20:00	07:59:23	02:20:00	
DSS-84: End of Track	09:20:00	07:59:23	02:20:00	
RSSG: End DSS-63 and DSS-55 Open-Loop Recordings	09:25:00	08:04:23	02:25:00	
DSS-84: Post-Cal	09:35:00	08:14:23	02:35:00	
RSSG: End DSS-84 Open-Loop Recordings	09:40:00	08:19:23	02:40:00	
DSS-26: End of Track	09:40:00	08:19:23	02:40:00	
DSS-26: Post-Cal	09:55:00	08:34:23	02:55:00	
RSSG: End DSS-26 Open-Loop Recordings	10:00:00	08:39:23	03:00:00	
Top of Troposphere	10:02:12	08:41:35	03:02:12	S/C exits Saturn occultation within the Cassini Division
DSS-14: Begin X-Band 3-Way Acquisition (w/DSS-84)	10:02:55	08:42:18	03:02:55	
DSS-14: Begin X-Band 2-Way Acquisition	11:26:10	10:05:33	04:26:10	
DSS-14: Transmitter OFF	14:03:26	12:42:49	07:03:26	Per DKF
DSS-14: End of Track	16:45:00	15:24:23	09:45:00	
RSSG: End DSS-14 Open-Loop Recordings	16:50:00	15:29:23	09:50:00	
DSS-14: Post-Cal	17:00:00	15:39:23	10:00:00	

- Canberra DSS-43 & DSS-35 related activities
- Madrid DSS-63 & DSS-55
- Goldstone DSS-14 & DSS 26
- New Norcia DSS-74
- Malargue DSS-84

Predicted atmospheric & ring event times are approximate and are based on reference trajectory 150901