

Timeline for Cassini Rev 168: 2-Way RSS Ring Occultation

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	ERT UTC OWLT = 1:18:23	SCET	PDT ERT-7hrs 7:00:00	Comments
DSS-43: Begin Pre-Cal	6:10:00	4:51:37	23:10:00	
DSS-43: Begin of Track	7:10:00	5:51:37	0:10:00	
DSS-43: Transmitter ON, 18 kW, LCP	8:00:00	6:41:37	1:00:00	Ramped uplink predicts
Ka-Band ON	8:50:04	7:31:41	1:50:04	Spacecraft transition to RSSK op-mode is completed
DSS-34: Begin Pre-Cal	8:55:00	7:36:37	1:55:00	
RSSG: Load 1-W, 2-W, and 3-W Frequency Predicts	TBD			
DSS-34 Begin of Track	9:55:00	8:36:37	2:55:00	
Spacecraft is Earth Pointed	10:09:23	8:51:00	3:09:23	X- and Ka-band downlink signals detectable
Start of RSS Experiment	10:09:23	8:51:00	3:09:23	Spacecraft is Earth Pointed
RNG OFF/TLM OFF	10:09:28	8:51:05	3:09:28	
S-Band ON	10:10:04	8:51:41	3:10:04	Spacecraft transition to RSS3 op-mode is completed
Begin 1-Way Free-Space Baseline	10:10:05	8:51:42	3:10:05	PC/N0 (X70, S70, X34, Ka34) = 54, 42, 48, and 48 dB-Hz
DSS-34: Enable Monopulse	TBD			Enable monopulse only when requested by RS Operations
DSS-43: Begin X- & S-band 2-Way Acquisition	10:36:46	9:18:23	3:36:46	PC/N0 (X-70m, S-70m) = 54, 42 dB-Hz
DSS-34: Begin X- & Ka-band 3-Way Acquisition	10:36:46	9:18:23	3:36:46	PC/N0 (X-34m, Ka-34m) = 48, 48 dB-Hz
DSS-43: Transmitter OFF	10:50:00	9:31:37	3:50:00	End of uplink period
Start 2-Way and 3-Way Free-Space Baseline	11:00:00	9:41:37	4:00:00	PC/N0 (X70, S70, X34, Ka34) = 54, 42, 48, and 48 dB-Hz
Start of ingress ring occultation (Ring F)	11:39:50	10:21:27	4:39:50	Ring F is usually not detectable in real-time
Ring A In	11:43:47	10:25:24	4:43:47	Detectable signals over most of Ring A
In Mid Encke Gap	11:47:15	10:28:52	4:47:15	Signals are briefly back to full strength
Ring A Out	11:59:44	10:41:21	4:59:44	Relatively strong signals in the Cassini Division
Ring B In	12:04:39	10:46:16	5:04:39	Signals will be small or absent over most of Ring B
Ring B Out / Ring C In	12:32:23	11:14:00	5:32:23	Signals detectable; may be briefly blocked by dense ringlets
Ionosphere In (~68,000 km)	12:36:04	11:17:41	5:36:04	Ionospher primarily affects signal frequency
Upper Troposphere	12:50:12	11:31:49	5:50:12	S/X/Ka signal intensities quickly drop and scintillate

Ring C Out	12:51:43	11:33:20	5:51:43	Rings interfered with by the atmosphere
Atmosphere observed through Ring C	12:51:44	11:33:21	5:51:44	Successive loss of Ka-, then X-, then S-band signals
Likely loss of all signals	13:20:00	12:01:37	6:20:00	Approximate time
Cassini is behind Saturn as seen from Earth				Loss of all downlink signals
Ka-Band and S-Band OFF	13:57:44	12:39:21	6:57:44	End of RSS3 Op-Mode
TLM ON/RNG ON	13:58:21	12:39:58	6:58:21	
End of Rev 168 RSS Experiment	13:58:23	12:40:00	6:58:23	Spacecraft turns off Earth point (RWA bias)
DSS-34: End of Track	14:15:00	12:56:37	7:15:00	
DSS-34: End Post Cal	14:30:00	13:11:37	7:30:00	
DSS-43: End of Track	14:35:00	13:16:37	7:35:00	
DSS-43: End Post-Cal	14:50:00	13:31:37	7:50:00	

Canberra DSS-34 & DSS-43 related activities

Predicted ring occultation & atmospheric event times are approximate and are based on reference trajectory 110818

Monopulse strategy is preliminary at this time and is finalized during real-time operations