

Timeline for Cassini Rev 179: 2-Way RSS Ingress Ring Occultation

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	ERT UTC OWLT = 01:22:52	SCET	PST ERT-8hrs 08:00:00	Comments
Spacecraft is not Earth pointed				
RSSG: Load Frequency Predicts				
DSS-63: Begin Pre-Cal	01:20:00	23:57:08	17:20:00	
DSS-63: Begin of Track	02:20:00	00:57:08	18:20:00	S/C Off Earth point; no downlink signals detectble
DSS-63: TXR ON, 18 kW, LCP, Ramp, Sweep	02:45:00	01:22:08	18:45:00	Begin 2-Way Tracking - 2*OWLT
DSS-55: Begin Pre-Cal	03:20:00	01:57:08	19:20:00	
Ka-Band ON	03:26:02	02:03:10	19:26:02	Spacecraft transition to RSSK op-mode is completed
DSS-63: TXR OFF	04:34:00	03:11:08	20:34:00	End of uplink period
S-Band ON	04:45:52	03:23:00	20:45:52	No downlink signals are detectable till shortly before 05:18:27
Start turn from waypoint to Earth point	04:46:00	03:23:08	20:46:00	
RNG OFF/TLM OFF	04:45:57	03:23:05	20:45:57	
DSS-55: Begin of Track	04:50:00	03:27:08	20:50:00	No downlink signals are detectble till shortly before 05:18:27
Spacecraft is Earth Pointed	05:16:44	03:53:52	21:16:44	PC/N0 (X70, S70, X34, Ka34) = 54, 42, 48, and 48 dB-Hz
Start of RSS Experiment	05:16:45	03:53:53	21:16:45	
Begin 1-Way Free-Space Baseline	05:16:45	03:53:53	21:16:45	~14 m 1-way baseline is collected
DSS-55: Enable Monopulse	TBD			Enable monopulse only when requested by RS Operations
DSS-63: Begin X- & S-band 2-Way Acquisition	05:30:44	04:07:52	21:30:44	PC/N0 (X-70m, S-70m) = 54, 42 dB-Hz
DSS-55: Begin X- & Ka-band 3-Way Acquisition	05:30:44	04:07:52	21:30:44	PC/N0 (X-34m, Ka-34m) = 48, 48 dB-Hz
Start 2-Way & 3-Way Official Free-Space Baseline	05:46:00	04:23:08	21:46:00	PC/N0 (X70, S70, X34, Ka34) = 54, 42, 48, and 48 dB-Hz
Start of ingress ring occultation (Ring F)	06:16:22	04:53:30	22:16:22	Ring F is usually not detectable in real-time
Ring A In	06:19:13	04:56:21	22:19:13	Detectable signals over most of Ring A
In Mid Encke Gap	06:21:43	04:58:51	22:21:43	Signals are briefly back to full strength
Ionosphere In (~68,000 km)	06:25:07	05:02:15	22:25:07	Ionospher primarily affects signal frequency
Ring A Out	06:30:44	05:07:52	22:30:44	Relatively strong signals in the Cassini Division
Ring B In	06:34:17	05:11:25	22:34:17	Signals will be small or absent over Ring B

Upper Troposphere	06:43:18	05:20:26	22:43:18	Weak or absent scintillating signals
Dense Ring B Mixed with Atmosphere				Unpredictable signal behavior
Likely loss of all signals	07:00:00	05:37:08	23:00:00	Approximate time
Cassini is Behind Saturn as Seen From Earth				
Start spacecraft turn to waypoint	07:20:00	05:57:08	23:20:00	
DSS-55 & DSS-63: End of Track	07:40:00	06:17:08	23:40:00	End of Rev 179 RSS Experiment
Ka-Band and S-Band OFF	07:52:13	06:29:21	23:52:13	End of RSS3 Op-Mode
TLM ON/RNG ON	07:52:51	06:29:59	23:52:51	
Spacecraft is at waypoint	07:52:52	06:30:00	23:52:52	
End of Rev 179 RSS S/C Activities	07:52:52	06:30:00	23:52:52	
DSS-55 & DSS-63: Post Cal	07:55:00	06:32:08	23:55:00	

Madrid DSS-55 & DSS-63 related activities

Predicted ring occultation times are approximate and are based on [Ref Traj 110818](#)