

Timeline for Cassini Rev 178: 2-Way RSS Egress Atmospheric Occultations

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	ERT UTC OWLT = 1:24:35	SCET	PDT ERT-8hrs 8:00:00	Comments
Spacecraft is not Earth pointed				
RSSG: Load Frequency Predicts				
S-Band ON	22:55:41	21:31:06	14:55:41	Spacecraft transition to RSS2 op-mode is completed
DSS-45: Begin Pre-Cal	22:15:00	20:50:25	14:15:00	
DSS-45: Begin of Track	23:15:00	21:50:25	15:15:00	No X- or Ka-band signal is detectable
DSS-45: TXR ON, 18 kW, LCP, RAMP, No Sweep	23:20:00	21:55:25	15:20:00	Begin 2-Way Tracking - 2*OWLT
DSS-34: Begin Pre-Cal	00:10:00	22:45:25	16:10:00	
RNG OFF/TLM OFF	01:00:38	23:36:03	17:00:38	
Ka-Band ON	01:06:22	23:41:47	17:06:22	No Ka-band signal is detectable
Cassini is Behind Saturn as Seen From Earth				
Cassini is Earth Pointed	01:26:18	00:01:43	17:26:18	No X-, S-, and Ka-band signals detectable
DSS-55: Begin Pre-Cal	01:40:00	00:15:25	17:40:00	
DSS-34: Begin of Track	01:40:00	00:15:25	17:40:00	No X- or Ka-band signal is detectable
DSS-45: TXR OFF	02:09:00	00:44:25	18:09:00	End of DSS-45 uplink period
Begin 2-Way Tracking	02:09:10	00:44:35	18:09:10	~ 20 m earlier than detectable downlink signals (margin)
DSS-63: Begin Pre-Cal	02:10:00	00:45:25	18:10:00	
Begin Limb Track	02:20:35	00:56:00	18:20:35	
Weak S-band signal (~1.55° BA) at DSS-45	02:30:26	01:05:51	18:30:26	Approx. time; 1-Way until X-band uplink lock, then 2-Way
Weak X-band signal (~1.35° BA) at DSS-45	02:34:23	01:09:48	18:34:23	Approx. time; 1-Way until X-band uplink lock, then 2-Way
Weak X-band signal (~1.35° BA) at DSS-34	02:34:23	01:09:48	18:34:23	Approx. time; 1-Way until X-band uplink lock, then 3-Way/45
Weak Ka-band signal (~1.15° BA) at DSS-34	02:39:19	01:14:44	18:39:19	Approx. time; 1-Way until X-band uplink lock, then 3-Way/45
Upper Troposphere (~0.1° BA)	02:58:33	01:33:58	18:58:33	
DSS-55 & DSS-63: Begin of Track	03:10:00	01:45:25	19:10:00	

DSS-63: Begin X- & S-band 3-Way Acquisition	03:10:00	01:45:25	19:10:00	3-Way/45
DSS-55: Begin X- & Ka-band 3-Way Acquisition	03:10:00	01:45:25	19:10:00	3-Way/45
DSS-55 : Enable Monopulse	TBD			Enable monopulse only when requested by RS Operations
Top of the ionosphere (~68,000 km)	03:22:54	01:58:19	19:22:54	Ionosphere primarily affects signals frequency/phase
DSS-34: Enable Monopulse	03:38:00	02:13:25	19:38:00	Enable monopulse only when requested by RS Operations
DSS-34 & DSS-45: End of Track	03:40:00	02:15:25	19:40:00	
DSS-34 & DSS-45: End of Psot Cal	03:55:00	02:30:25	19:55:00	
End of official 2-way baseline	03:55:00	02:30:25	19:55:00	
TLM ON/RNG ON	04:38:28	03:13:53	20:38:28	End of Rev 178 RSS Experiments
End of Rev 178 RSS S/C Activities	04:38:34	03:13:59	20:38:34	
Ka-Band and S-Band OFF	04:57:35	03:33:00	20:57:35	End of RSS3 Op-Mode
End of 2-way baseline	04:57:35	03:33:00	20:57:35	
DSS-55 & DSS-63: End of Track	05:30:00	04:05:25	21:30:00	
DSS-55 & DSS-63: Post Cal	05:45:00	04:20:25	21:45:00	

Canberra DSS-34 & DSS-45 related activities

Madrid DSS-55 & DSS-63 related activities

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