

Timeline for Cassini Rev 182: 2-Way RSS Egress Atmospheric Occultations

February 25, 2013 (DOY 056)

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	ERT UTC OWLT = 1:17:41	SCET	PST ERT-8hrs 8:00:00	Comments
Spacecraft is not Earth pointed				
RSSG: Load Frequency Predicts				
DSS-14: Begin Pre-Cal	11:10:00	9:52:19	3:10:00	
S-Band ON	11:42:47	10:25:06	3:42:47	Spacecraft transition to RSS2 op-mode is completed
DSS-14: Begin of Track	12:10:00	10:52:19	4:10:00	No X- or S-band signals detectable
DSS-14: TXR ON, 18 kW, LCP, RAMP, No Sweep	12:22:00	11:04:19	4:22:00	Begin 2-Way Tracking - 2*OWLT
DSS-25: Begin Pre-Cal	13:00:00	11:42:19	5:00:00	
DSS-34: Begin Pre-Cal	13:00:00	11:42:19	5:00:00	
DSS-45: Begin Pre-Cal	13:30:00	12:12:19	5:30:00	
RNG OFF/TLM OFF	13:47:45	12:30:04	5:47:45	
Ka-Band ON	13:48:29	12:30:48	5:48:29	No Ka-band signal detectable
Cassini is Earth Pointed	14:07:41	12:50:00	6:07:41	No signals detectable
DSS-34 & DSS-45: Begin of Track	14:30:00	13:12:19	6:30:00	No X-, S, or Ka-band signals detectable
DSS-25: Begin of Track	14:30:00	13:12:19	6:30:00	No X-, or Ka-band signals detectable
Cassini is Behind Saturn as Seen From Earth				
Begin Limb Track	15:03:24	13:45:43	7:03:24	
Begin 2-Way Tracking	14:57:22	13:39:41	6:57:22	~ 20 m earlier than detectable downlink signals (margin)
Cassini is Behind Saturn as Seen From Earth				
DSS-14: Transmitter OFF	15:16:00	13:58:19	7:16:00	End of DSS-14 uplink period
Weak S-band signal (~1.55° BA) at DSS-14 & 45	15:18:34	14:00:52	7:18:34	Approx. time; 1-Way until X-band uplink lock, then 2/3-Way/14
Weak X-band signal (~1.35° BA) at DSS- 14 & 45	15:22:42	14:05:00	7:22:42	Approx. time; 1-Way until X-band uplink lock, then 2/3-Way/14
Weak X-band signal (~1.35° BA) at DSS-25 & 34	15:22:42	14:05:00	7:22:42	Approx. time; 1-Way until X-band uplink lock, then 3-Way/14
Weak Ka-band signal (~1.15° BA) at DSS-25 & 34	15:26:47	14:09:06	7:26:47	Approx. time; 1-Way until X-band uplink lock, then 3-Way/14
Upper Troposphere (~0.1° BA)	15:47:56	14:30:14	7:47:56	Pc/N0 (dB/Hz) ~ 54 14X, 48 25/34/45X, 48 25/34K, 42 14S, 36 45S
Top of the ionosphere (~68,000 km)	16:13:25	14:55:44	8:13:25	Ionosphere primarily affects signals frequency/phase

End of 2-way baseline	16:43:41	15:26:00	8:43:41	Pc/N0 (dB/Hz) ~ 54 14X, 48 25/34/45X, 48 25/34K, 42 14S, 36 45S
DSS-25: Enable Monopulse	16:44:00	15:26:19	8:44:00	Enable monopulse only when requested by RS Operations
DSS-25 & DSS-14: End of Track	16:55:00	15:37:19	8:55:00	
DSS-25 & DSS-14: End of Post Cal	17:10:00	15:52:19	9:10:00	
DSS-34: Enable Monopulse	17:46:00	16:28:19	9:46:00	Enable monopulse only when requested by RS Operations
Ka-Band and S-Band OFF	17:51:02	16:33:21	9:51:02	End of RSS3 Op-Mode
TLM ON/RNG ON	17:51:35	16:33:54	9:51:35	End of Rev 182 RSS Experiments
End of Rev 182 RSS S/C Activities	17:51:41	16:34:00	9:51:41	
DSS-34 & DSS-45: End of Track	18:25:00	17:07:19	10:25:00	
DSS-34 & DSS-45: Post Cal	18:40:00	17:22:19	10:40:00	

Goldstone DSS-25 & DSS-14 related activities

Canberra DSS-34 & DSS-45 related activities

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