

Timeline for Cassini Rev 44 RSS Atmospheric and Ring Occultations on May 10, 2007 (DOY 130)

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NOTE: Monopulse Strategy is still preliminary

	ERT UTC OWLT = 1:16:18	SCET	PDT ERT-7hrs 7:00:00	Comments
DSS-55: Start Precal	12:45:00	11:28:42	5:45:00	
DSS-63: Start Precal	13:30:00	12:13:42	6:30:00	
DSS-55 & 63 Begin of Track	14:30:00	13:13:42	7:30:00	
Start Live Movable Block (LMB)	14:46:18	13:30:00	7:46:18	Cassini HGA is ~Earth pointed; strong S/X/Ka signals
DSS-55: Enable Monopulse	14:47:00	13:30:42	7:47:00	Enable monopulse once receiver is locked
Start Turn from waypoint to Earth Point	15:00:21	13:44:03	8:00:21	Start of the three RSS occultation experiments
Start Free-Space Baseline	15:03:22	13:47:04	8:03:22	PC/N0 (X70, X&Ka34, S70) = ~54, 48, 48, and 41 dB
Ionosphere in (~68,000 km)	15:23:46	14:07:28	8:23:46	Ionospher primarily affects signal frequency
Troposphere in (~tropopause)	15:48:40	14:32:22	8:48:40	Some drop in signal intensity; signal scintillation
End of Ingress Atmospheric Occultation	15:50:50	14:34:32	8:50:50	Signals do not probe deep in the atmosphere
End Turn to waypoint	15:54:20	14:38:02	8:54:20	Signals will remain relatively strong till end time
DSS-55: Disable Monopulse	15:54:30	14:38:12	8:54:30	HGA strats turning away from Earth point
Cassini is Behind Saturn				No Downlink from Cassini during this time period
Start turn from waypoint to Saturn's limb	17:24:23	16:08:05	10:24:23	Signals are still not detectable at this time
Start Egress Atmospheric Occultation	17:27:54	16:11:36	10:27:54	Weak, by systematically increasing, S/X/Ka intensity
Troposphere Out (~tropopause)	17:54:48	16:38:30	10:54:48	PC/N0 (X70, X&Ka34, S70) = ~54, 48, 48, and 41 dB
Ionosphere Out (~68,000 km)	18:08:17	16:51:59	11:08:17	Ionosphere primarily affects signal frequency
DSS-55: Enable Monopulse	18:10:00	16:53:42	11:10:00	Real-time decision to keep/remove offsets
DSS-55: Disable Monopulse	18:12:00	16:55:42	11:12:00	Blind pointing is used for the ring occultation

Ring C in	18:16:26	17:00:08	11:16:26	Strong dynamically changing signal level
Ring B in	18:33:03	17:16:45	11:33:03	Signal level is small in most of Ring B
Ring B out	18:52:41	17:36:23	11:52:41	Signals are back strong in the Cassini Division
Ring A in	18:55:57	17:39:39	11:55:57	Dynamical signal level throughout most of Ring A
Enke Gap	19:04:07	17:47:49	12:04:07	Signals are back briefly to full strength
Ring A out	19:06:20	17:50:02	12:06:20	Sudden transition to free-space signal level
Ring F	19:08:56	17:52:38	12:08:56	Rings F is only detectable in postprocessing
End of Baseline	19:33:17	18:16:59	12:33:17	End of the rev 44 radio occultation experiments
End of Turn to the Waypoint	19:37:20	18:21:02	12:37:20	End of the rev 44 radio science observations period
End of Live Movable Block (LMB)	19:54:18	18:38:00	12:54:18	HGA Continues to be ~Earth pointed till this time
DSS-55 & 63: End of Track	20:00:00	18:43:42	13:00:00	
DSS-55 & 63: End of Postcal	20:15:00	18:58:42	13:15:00	

Note: Some Ring Edges are known to be noncircular, which will affect event times above

Indicates DSN Related Activities