

## Timeline for Cassini Rev 51 RSS Atmospheric and Ionospheric Occultations on October 24, 2007 (DOY 297)

Essam Marouf 10/15/2007 (v2)

	ERT UTC OWLT = 1:21:25	SCET	PDT ERT-7hrs 7:00:00	Comments
DSS-55: Start pre-cal	3:30:00	2:08:35	20:30:00	
DSS-63: Start pre-cal	4:15:00	2:53:35	21:15:00	
DSS-55 & 63 Begin-of-Track	5:15:00	3:53:35	22:15:00	
Start Live Movable Block (LMB)	5:35:25	4:14:00	22:35:25	Cassini HGA is Earth pointed; strong S/X/Ka signals
TWNC ON, RNG OFF, TLM OFF	5:35:31	4:14:06	22:35:31	PC/N0 (X70, X&Ka34, S70) = ~54, 48, 48, and 41 dB
DSS-55: Enable Monopulse	5:37:00	4:15:35	22:37:00	Enable monopulse once receiver is locked
DSS-55: Disable Monopulse	5:47:00	4:25:35	22:47:00	Real-Time decision to leave or remove the offset
Start Free-Space Baseline	6:11:01	4:49:36	23:11:01	PC/N0 (X70, X&Ka34, S70) = ~54, 48, 48, and 41 dB
Ionosphere in (~68,000 km)	6:23:50	5:02:25	23:23:50	Ionospher primarily affects signal frequency
Troposphere in (~0.1° BA)	6:36:23	5:14:58	23:36:23	S/X/Ka signal intensities start to drop and scintillate
Loss of the Ka-band signal (~1.15° BA)	6:43:12	5:21:47	23:43:12	approximate time
Loss of the X-band signal (~1.35° BA)	6:44:34	5:23:09	23:44:34	approximate time
Loss of the S-band signal (~1.55° BA)	6:45:57	5:24:32	23:45:57	approximate time
Cassini is Behind Saturn				No Downlink from Cassini during this time period
End of Ingress Limb-Track	7:41:38	6:20:13	0:41:38	No downlink signals are expected
Start of Egress Limb-Track	7:50:00	6:28:35	0:50:00	No downlink signals are expected
Weak S-band signal (~1.55° BA)	8:00:04	6:38:39	1:00:04	Weak but increasing and scintillating S-band signal
Weak X-band signal (~1.35° BA)	8:01:22	6:39:57	1:01:22	Weak but increasing and scintillating X-band signal

Weak Ka-band signal (~1.15° BA)	8:02:39	6:41:14	1:02:39	Weak but increasing and scintillating Ka-band signal
Troposphere Out (~0.1° BA)	8:09:02	6:47:37	1:09:02	PC/N0 (X70, X&Ka34, S70) = ~54, 48, 48, and 41 dB
Ionosphere Out (~68,000 km)	8:22:26	7:01:01	1:22:26	Ionosphere primarily affects signal frequency
End of Baseline	8:35:01	7:13:36	1:35:01	"Official" end of the rev 51 occultation
DSS-55: Enable Monopulse	9:51:25	8:30:00	2:51:25	Monopulse enabled to check blind pointing performance
TLM ON, TWNC OFF, RNG ON	9:55:21	8:33:56	2:55:21	
End of Live Movable Block (LMB)	9:55:25	8:34:00	2:55:25	HGA Continues to be Earth pointed until this time
DSS-55 & 63: End-of-Track	10:15:00	8:53:35	3:15:00	
DSS-55 & 63: End of post-cal	10:30:00	9:08:35	3:30:00	

Indicates DSN related activities