

Timeline for Cassini Rev 73 RSS Saturn Atmospheric Occultation on June 23, 2008 (DOY 175)

Essam Marouf 06/19/2008 (v2)

	ERT UTC OWLT = 1:21:08	SCET	PDT ERT-7hrs 7:00:00	Comments
DSS-43 Start Precal	0:45:00	23:23:52	17:45:00	
DSS-43: Begin of Track	1:45:00	0:23:52	18:45:00	
OTM-159 Block				
DSS-43: X-Band SNT Measurement				
Formal Start of Ingress Observation period	7:58:08	6:37:00	0:58:08	X-Band downlink only
DSS-47: Start Precal	8:00:00	6:38:52	1:00:00	
Top of the ionosphere (@~68,000 km)	8:17:26	6:56:18	1:17:26	Ionosphere primarily affects signal frequency
Transition to RSS3a Op-Mode starts	8:25:08	7:04:00	1:25:08	S band ON; Ka-band standby
Troposphere in (~0.1° BA)	8:28:22	7:07:14	1:28:22	X-band signal intensity starts to drop
X-band signal walks out of the HGA beam	8:29:33	7:08:25	1:29:33	X-band will likely disappear before this time
DSS-47: Begin of Track	8:30:00	7:08:52	1:30:00	No Ka-band downlink is available to track
Transition to RSS3a Op-Mode completed	8:30:08	7:09:00	1:30:08	Ka-band ON, but signal is refracted away from Earth
Likely loss of S-band signal (~1.55° BA)	8:33:07	7:11:59	1:33:07	Approximate time
S-band signal walks out of the HGA beam	8:34:02	7:12:54	1:34:02	S-band will likely disappear before this time
Cassini is Behind Saturn				
TWNC ON	8:42:00	7:20:52	1:42:00	
TLM OFF	8:42:05	7:20:57	1:42:05	
Formal End of Ingress Observation period	8:42:08	7:21:00	1:42:08	No S/X/Ka downlink detectable
Start Live Moveable Block (LMB)	8:42:08	7:21:00	1:42:08	Start of Egress Occultaion Period
End of OTM-159 Block				
Formal Start of Egress Observation period	9:00:21	7:39:13	2:00:21	
DSS43: S/X SNT Measurement	9:05:00	7:43:52	2:05:00	

Cassini is Behind Saturn				
Weak S-band signal (~1.55° BA)	9:32:39	8:11:31	2:32:39	Weak but increasing and scintillating S-band signal
Weak X-band signal (~1.35° BA)	9:33:18	8:12:10	2:33:18	Weak but increasing and scintillating X-band signal
Weak Ka-band signal (~1.15° BA)	9:33:58	8:12:50	2:33:58	Weak but increasing and scintillating Ka-band signal
Troposphere Out (~0.1° BA)	9:37:19	8:16:11	2:37:19	PC/N0 (X70, X&Ka34, S70) = ~54, 48, 48, and 42 dB
Ionosphere Out (~68,000 km)	9:51:32	8:30:24	2:51:32	Ionosphere primarily affects signal frequency
End of Free-Space Baseline	10:08:21	8:47:13	3:08:21	
End of Live Moveable Block (LMB)	10:11:08	8:50:00	3:11:08	
RSS3a Op-Mode Ends	10:11:08	8:50:00	3:11:08	Loss of S and Ka-band downlink
TLM ON	10:11:08	8:50:00	3:11:08	
TWNC OFF	10:11:14	8:50:06	3:11:14	
DSS-47: End of Track	10:30:00	9:08:52	3:30:00	
DSS-43: S/X SNT Measurement	TBD			
DSS-43 End of Track	10:45:00	9:23:52	3:45:00	
DSS-43 Postacl	11:00:00	9:38:52	4:00:00	
DSS-47: Postcal	11:00:00	9:38:52	4:00:00	

DSS-43 Activities

DSS-47 (Narrabri) Activities

All times are based on Rev 73 Live Update OD published on June 16, 2008 (same as updated OD on June 19, 2008)