

Timeline for Cassini Rev135 RSS Saturn Atmospheric Occultation on July 24, 2010 ERT UTC (DOY 205)

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Event	ERT UTC OWLT = 1:23:25	SCET	PDT ERT - 7hrs 7:00:00	Comments
Load 1-way ingress occultation frequency predicts	TBD			
Ka-band is turned ON	12:51:21	11:27:56	5:51:21	HGA is NOT Earth pointed
S-band is turned ON	12:51:25	11:28:00	5:51:25	No downlink Signals
DSS-55: Start pre-cal	13:10:00	11:46:35	6:10:00	
DSS-63: Start pre-cal	13:40:00	12:16:35	6:40:00	
DSS-55 & 63: Begin-of-Track	14:40:00	13:16:35	7:40:00	
DSS-55: Enable monopulse	14:42:00	13:18:35	7:42:00	
Start of the Rev135 RSS activities	15:06:25	13:43:00	8:06:25	Still no downlink signals
Start S/C turn from waypoint to Earth point	15:06:30	13:43:05	8:06:30	
TWNC ON, RNG OFF, TLM OFF	15:12:26	13:49:01	8:12:26	
End of S/C turn to Earth point	15:27:22	14:03:57	8:27:22	S-, X-, and Ka-signals observed shortly before 15:27:22
DSS-55: Enable Monopulse	15:28:00	14:04:35	8:28:00	Enable monopulse only when requested by RSS ops
Start of free-space baseline	15:28:01	14:04:36	8:28:01	PC/N0 (X70, X & Ka34, S70) = ~ 55, 49, 49, and 43 dB
Ionosphere in (~68,000 km)	15:48:13	14:24:48	8:48:13	Ionospher primarily affects signal frequency
Troposphere in (0.1° BA)	16:06:47	14:43:22	9:06:47	S/X/Ka signal intensities start to drop & scintillate
Loss of the Ka-band signal (~1.15° BA)	16:26:54	15:03:29	9:26:54	approximate time
Loss of the X-band signal (~1.35° BA)	16:30:41	15:07:16	9:30:41	approximate time
Loss of the S-band signal (~1.55° BA)	16:34:26	15:11:01	9:34:26	approximate time
Cassini is behind Saturn				
End of Limb-Track maneuver	16:51:28	15:28:03	9:51:28	No detectable signals till the end of the experiment
TLM ON, TWNC OFF, RNG OFF	17:09:18	15:45:53	10:09:18	
End S/C turn back to the waypoint	17:13:13	15:49:48	10:13:13	
End of Saturn egress occultation experiment	17:15:25	15:52:00	10:25:25	
S- and Ka-bands are turned OFF	17:25:25	16:02:00	10:25:25	
DSS-55 & DSS-63: End-of-Track	17:40:00	16:16:35	10:40:00	
DSS-55 & DSS-63: End of post-cal	17:55:00	16:31:35	10:55:00	
Cassini is still behind Saturn				

Occultation event times are based on reference tour 091005

Madrid DSS-55 & DSS-63 related activities