

**Timeline for Cassini Rev 137 RSS Saturn Ring Occultation  
on September 02, 2010 (DOY 245)**

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	ERT UTC OWLT = 1:27:01	SCET	PDT ERT-7hrs 7:00:00	Comments
Load free-space frequency predicts	TBD			Madrid & Goldstone Complexes
RSS3a OpMode ON	9:54:01	8:27:00	2:54:01	
DSS-55: Start pre-cal	10:00:00	8:32:59	3:00:00	
DSS-63: Start pre-cal	10:30:00	9:02:59	3:30:00	
DSS-55 & DSS-63 Begin-of-Track	11:30:00	10:02:59	4:30:00	No Downlink
Start RSS Observation Period	11:59:01	10:32:00	4:59:01	S/X/Ka downlink
TWNC ON, RNG OFF, TLM OFF	11:59:02	10:32:01	4:59:02	X-band signal level change
DSS-55: Enable Monopulse	12:02:00	10:34:59	5:02:00	Enable monopulse only when requested to do so by RS
DSS-55: Disable Monopulse	12:17:00	10:49:59	5:17:00	Real-time decision to keep or remove the offsets
Start free-space baseline	12:17:01	10:50:00	5:17:01	PC/N0 (X63, X55, K55, S63) = ~54, 48, 48, 42 dB-Hz
Official start of ingress ring occultation observation	12:19:01	10:52:00	5:19:01	
Ring A In	12:56:51	11:29:50	5:56:51	Detectable signals over parts of Ring A
Within the Encke Gap	13:03:48	11:36:47	6:03:48	Signals are back very briefly to full strength
Ring A Out	13:29:15	12:02:14	6:29:15	Relatively strong signals in the Cassini Division
Ring B In	13:39:27	12:12:26	6:39:27	Signals will be small or absent over most of Ring B
Ring C In	14:40:50	13:13:49	7:40:50	Signals mostly detectable; briefly blocked by dense ringlets
Ionosphere In (~68,000 km)	15:07:47	13:40:46	8:07:47	Ring C mixed with the ionosphere
Troposphere In	15:22:53	13:55:52	8:22:53	Ring C mixed with the atmosphere
Ring C Out	15:33:27	14:06:26	8:33:27	S/X atmospheric effects may continue to be observable
<b>Cassini is behind Saturn as seen from the Earth</b>				
Official End of ingress ring occultation	16:03:01	14:36:00	9:03:01	No detectable signals after this time
Start VIMS High-Phase Ring Observation	16:03:01	14:36:00	9:03:01	
DSS-55 & DSS-63: End-of-Track	16:30:00	15:02:59	9:30:00	
DSS-55 & DSS-63: End of post-cal	16:45:00	15:17:59	9:45:00	
DSS-25: Start pre-cal	16:40:00	15:12:59	9:40:00	
DSS-15: Start pre-cal	17:10:00	15:42:59	10:10:00	
DSS-15 & DSS-25: Begin-of-Track	18:10:00	16:42:59	11:10:00	

Ring B In	18:51:32	17:24:31	11:51:32	S/C is off Earth-line; No detectable signals
End VIMS High-Phase Ring Observation	19:00:01	17:33:00	12:00:01	
Official start of egress ring occultation	19:00:02	17:33:01	12:00:02	
Cassini still behind Saturn as seen from the Earth				Ring B mixed with atmosphere ; undetectable or weak signals
Troposphere Out	19:15:24	17:48:23	12:15:24	undetectable or weak signals
Ionosphere out (~68,000 km)	19:30:41	18:03:40	12:30:41	signals detectable few minutes before 19:54 ERT
Ring B Out	19:54:14	18:27:13	12:54:14	Strong S/X/Ka signals
Ring A In	20:04:47	18:37:46	13:04:47	Detectable signals over parts of Ring A
Within the Encke Gap	20:31:26	19:04:25	13:31:26	Signals are back very briefly to full strength
Ring A Out	20:38:47	19:11:46	13:38:47	All three signals are back to full strength
Official end of egress ring occultation experiment	21:17:01	19:50:00	14:17:01	PC/N0 (X25, K25, X15, S15) = ~48, 48, 48, 36 dB-Hz
End of egress baseline	21:27:59	20:00:58	14:27:59	
DSS-25: Enable monopulse	21:28:00	20:00:59	14:28:00	Monopulse enabled to check blind pointing performance
TLM ON, RNG ON, TWNC OFF	21:30:55	20:03:54	14:30:55	Decrease in X-band signal level
End of Rev 137 RSS observation period	21:31:01	20:04:00	14:31:01	HGA Continues to be Earth pointed
End of RSS3a Op-Mode	21:36:22	20:09:21	14:36:22	Loss of S- and Ka-band signals
S/C remains Earth pointed	21:37:02	20:10:01	14:37:02	
DSS-15: End-of-Track	22:10:00	20:42:59	15:10:00	
DSS-15: End of post-cal	22:25:00	20:57:59	15:25:00	
DSS-25: End-of-Track	23:00:00	21:32:59	16:00:00	
DSS-25: End of post-cal	23:15:00	21:47:59	16:15:00	

Goldstone DSS-55 & DSS-63 related activities

Canberra DSS-15 and DSS-25 related activities

Predicted ring occultation event times are approximate and are based on reference trajectory 091005