Timeline for Cassini Rev 174: 2-Way RSS Ingress Ring Occultation
November 9, 2012 PDT (DOY 314-315)
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	ERT UTC OWLT = 1:29:20	SCET	PST ERT-8hrs 8:00:00	Comments
RSSG: Load 1-W, 2-W, and 3-W Frequency Predicts				
DSS-43: Begin Pre-Cal	22:50:00	21:20:40	14:50:00	
DSS-43: Begin of Track	23:50:00	22:20:40	15:50:00	No downlink signals; spacecraft HGA is not Earth pointed
DSS-43: Transmitter ON, 18 kW, LCP, SWEEP	0:22:00	22:52:40	16:22:00	Ramped uplink predicts
DSS-34: Begin Pre-Cal	1:00:00	23:30:40	17:00:00	
Ka-Band ON	1:43:30	0:14:10	17:43:30	Spacecraft transition to RSSK op-mode is completed
DSS-34 Begin of Track	2:30:00	1:00:40	18:30:00	
Spacecraft is Earth Pointed	3:03:20	1:34:00	19:03:20	X- and Ka-band downlink signals detectable
Start of RSS Experiment	3:03:20	1:34:00	19:03:20	Spacecraft is Earth Pointed
RNG OFF/TLM OFF	3:03:25	1:34:05	19:03:25	
S-Band ON	3:04:02	1:34:42	19:04:02	Spacecraft transition to RSS3 op-mode is completed
Begin 1-Way Free-Space Baseline	3:04:03	1:34:43	19:04:03	PC/N0 (X70, S70, X34, Ka34) = 54, 42, 48, and 48 dB-Hz
DSS-34: Enable Monopulse	TBD			Enable monopulse only when requested by RS Operations
DSS-43: Begin X- & S-band 2-Way Acquisition	3:20:40	1:51:20	19:20:40	PC/N0 (X-70m, S-70m) = 54, 42 dB-Hz
DSS-34: Begin X- & Ka-band 3-Way Acquisition	3:20:40	1:51:20	19:20:40	PC/N0 (X-34m, Ka-34m) = 48, 48 dB-Hz
DSS-43: Transmitter OFF	3:25:34	1:56:14	19:25:34	End of uplink period
Start 2-Way and 3-Way Free-Space Baseline	4:04:02	2:34:42	20:04:02	PC/N0 (X70, S70, X34, Ka34) = 54, 42, 48, and 48 dB-Hz
Start of ingress ring occultation (Ring F)	4:34:02	3:04:42	20:34:02	Ring F is usually not detectable in real-time
Ring A In	4:38:13	3:08:53	20:38:13	Detectable signals over most of Ring A
In Mid Encke Gap	4:41:53	3:12:33	20:41:53	Signals are briefly back to full strength
Ring A Out	4:55:10	3:25:50	20:55:10	Relatively strong signals in the Cassini Division
Ring B In	5:00:24	3:31:04	21:00:24	Signals will be small or absent over most of Ring B
Ionosphere In (~68,000 km)	5:27:35	3:58:15	21:27:35	Ionosphere primarily affects signal frequency
Ring B Out / Ring C In	5:30:18	4:00:58	21:30:18	Signals detectable; may be briefly blocked by dense ringlets
Upper Troposphere	5:46:29	4:17:09	21:46:29	Quick loss of Ka-band then X-band

Ring C Out		5:51:40		4:22:20	21:51:40	Rings interfered with by the atmosphere
S-band observed through mixed atmosphere & rings						
Likely loss of all signals		6:21:40		4:52:20	22:21:40	Loss of S-band. Approximate time
Cassini is behind Saturn as seen from Earth						Loss of all downlink signals
Ka-Band and S-Band OFF		6:23:41		4:54:21	22:23:41	End of RSS3 Op-Mode
TLM ON/RNG ON		6:24:14		4:54:54	22:24:14	
End of Rev 168 RSS Experiment		6:24:14		4:54:54	22:24:14	Spacecraft turns off Earth point (VIMS Hi-Phase Obs)
DSS-34 and DSS43: End of Track		6:35:00		5:05:40	22:35:00	
DSS-34 and DSS-43: End Post Cal		6:50:00		5:20:40	22:50:00	

Canberra DSS-34 & DSS-43 related activities

Predicted ring occultation & atmospheric event times are approximate and are based on reference trajectory 110818

Monopulse strategy is preliminary at this time and is finalized during real-time operations