Cassini T12: Titan Radio Occultation & Bistatic Scattering Observations
March 18/19 (DOY 077/078), 2006

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	SCET UTC	ERT UTC OWLT = 1:10:38	PST ERT - 8 hrs 8:00:00	C/A Relative	Comments
Start Precals DSS 25	18:19:22	19:30:00	10:19:22	-5:46:34	
Start Precals DSS 63	18:44:22	19:55:00	10:44:22	-5:21:34	See separate detailed Precals timeline
Start Precals DSS 14, 25, 26	18:49:22	20:00:00	10:49:22	-5:16:34	
Begin-of-Track DSS 25	21:34:22	22:45:00	13:34:22	-2:31:34	
Begin-of-Track DSS 55, 63, 26	21:49:22	23:00:00	15:00:00	-2:16:34	No Cassini downlink signals till about 23:58:00
Begin-of-Track DSS 14	22:04:22	23:15:00	15:15:00	-2:01:34	
Telemetry OFF	22:39:22	23:50:00	14:39:22	-1:26:34	One-way expeiments using unmodulated carrier
Start HGA turn to Earth point	22:41:01	23:51:39	15:51:39	-1:24:55	Carrier signals should appear beore 23:58:29
Start Baseline	22:47:51	23:58:29	14:47:51	-1:18:05	PC/N0 ~ 54, 48, & 41 dB-Hz for X-, Ka-, S-Band
Enable Monopulse: DSS 25, 26, 55	22:48:00	23:58:38	15:58:38	-1:17:56	Monopulse Times & strategy are yet to be
Disable Monoplulse: DSS 25, 26, 55	22:50:00	0:00:38	16:00:38	-1:15:56	finalized
End Baseline	23:00:57	0:11:35	16:11:35	-1:04:59	Blind pointing starts 00:00:38 & used throughout
Start turn to Titan surface	23:01:06	0:11:44	16:11:44	-1:04:50	Quick loss of of the carrier signals
Start Bistatic Minical-1	23:03:00	0:13:38	16:13:38	-1:02:56	A 6 minutes bistatic calibration; see separate
End Bistatic Minical-1	23:09:00	0:19:38	16:19:38	-0:56:56	minical-1 timeline
End Turn to Titan surface	23:09:00	0:19:38	16:19:38	-0:56:56	HGA boresight is pointed to Titan's surface
Start Bistatic Observations	23:09:07	0:19:45	16:19:45	-0:56:49	Potential weak surface echo centered within the
End Bistatic Observations	23:55:17	1:05:55	17:05:55	-0:10:39	observations bandwidth
Start turn to Earth point	23:55:21	1:05:59	17:05:59	-0:10:35	Carrier signals should re-appear beore 01:10:22
End turn to Earth point	23:59:44	1:10:22	17:10:22	-0:06:12	
Start Occultation Observations	23:59:57	1:10:35	17:10:35	-0:05:59	PC/N0 ~ 54, 48, & 41 dB-Hz for X-, Ka-, S-Band
Titan Ionosphere (~1500 km alt)	0:00:36	1:11:14	17:11:14	-0:05:20	The ionosphere primarily affects the signal phase
Titan Top Atmosphere (~200 km alt)	0:05:42	1:16:20	17:16:20	-0:00:14	Signal strength drops over the course of the next
Titan Closest Approach (C/A)	0:05:56	1:16:34	17:16:34	0:00:00	2.5 min because of refraction in the amosphere
Titan Surface (~ 2575 km radius)	0:07:12	1:17:50	17:17:50	0:01:17	Hard-limb diffrction may cause the signals to
Behind Titan					continue to be briefly observed after 01:17:50
Start Bistatic Minical-2	0:09:27	1:20:05	17:20:05	0:03:31	A 6 minutes bistatic calibration; see separate
End Bistatic Minical-2	0:15:27	1:26:05	17:26:05	0:09:31	minical-2 timeline

Behind Titan						Signals may re-appear briefly before 01:28:45
Titan Surface (~2575 km radius)	0:18:07	1:28:45	17:28:45	0:12:11		Signal strength builds over the course of the next
Titan Top Atmosphere (~200 km alt)	0:19:56	1:30:34	17:30:34	0:14:00		2 min because of refraction in the amosphere
Titan Ionosphere (~1500 km alt)	0:24:58	1:35:36	17:35:36	0:19:02		The ionosphere primarily affects the signal phase
End Occultation Observations	0:31:57	1:42:35	17:42:35	0:26:01		Carriers observed in "free-space" for the next 18 m
Start Baseline	0:32:07	1:42:45	17:42:45	0:26:11		PC/N0 ~ 54, 48, & 41 dB-Hz for X-, Ka-, S-Band;
End baseline	0:50:17	2:00:55	18:00:55	0:44:21		levels may have been affected by blind-pointing drift
Start turn away from Earth point	0:50:17	2:00:55	18:00:55	0:44:21		Quick loss of the carriier signals
End of T12 RSS period	1:03:00	2:13:38	18:13:38	0:57:04		
Telemetry ON	1:03:22	2:14:00	18:14:00	0:57:26		
End-of-Track DSS 55, 63, 25, 26, 14	1:49:22	3:00:00	19:00:00	1:43:26		See separate detailed poscals timeline
End Postcal	2:49:22	4:00:00	20:00:00	2:43:26		No Cassini signals during the postcal period

CASSINI RSS

Atmospheric & C/A Times are based on the T12 Live Update OD

DSN Activities