

Activity	ERT UTC OWLT = 01:30:20	SCET UTC	PDT ERT - 7 hrs 07:00:00	Comments
DOY 296				
Spacecraft is not Earth Pointed				
RSSG: Load Predicts (Thermal Stabilization + Baseline)				
DSS-34: Start Pre-Cal	21:40:00	20:09:40	14:40:00	Keep antenna at stow after completing the set up activities
DSS-43: Start Pre-Cal	21:45:00	20:14:40	14:45:00	Keep antenna at stow after completing the set up activities
DSS-34: Switch 43 in B Position				When requested by Radio Science
DSS-34 & DSS-43: Start Pre-Cal Bistatic Calibrations				Guided by real-time instructions from Radio Science
RSSG: Begin 1 & 16 KHz OL Recording on all Receivers				
DOY 297				
DSS-34 & DSS-43: Beginning Of Track	00:45:00	23:14:40	17:45:00	No S/X/Ka downlink detectable
RSSG: Begin Recording All Subchannels	00:45:00	23:14:40	17:45:00	
S-Band ON	01:05:51	23:35:31	18:05:51	per PEF
Ka-Band ON	01:10:47	23:40:27	18:10:47	per PEF
Spacecraft is at Waypoint	01:10:50	23:40:30	18:10:50	Spacecraft is not Earth pointed
RNG OFF, TLM OFF	01:10:50	23:40:30	18:10:50	No downlink signals detectable
Start turn to Earth point (T1)	01:10:52	23:40:32	18:10:52	
SNT Measurement (All Stations)	TBD			
Spacecraft is Earth Pointed	01:14:29	23:44:09	18:14:29	S/X/Ka downlink detectable shortly before 23:44:09
DSS-43: Begin X- & S-Band 1-Way Acquisition	01:14:29	23:44:09	18:14:29	
DSS-34: Begin X- and Ka-Band 1-Way Acquisition	01:14:29	23:44:09	18:14:29	
Start Thermal Stabilization Period / Free-Space Baseline	01:15:00	23:44:40	18:15:00	PC/N0 (X34, Ka34, X43, S43) = 48, 48, 54, and 42 dB-Hz
RSSG: Enter Open-Loop 1-way Frequency Offsets as Needed				
DSS-34: Switch 43 in A Position	01:25:00	23:54:40	18:25:00	When requested by Radio Science
DSS-34: Enable Monopulse	TBD			When requested by Radio Science
DSS-34: Disable Monopulse	03:07:00	01:36:40	20:07:00	Keep or clear the offset decision before 03:06:00
DSS-34 Switch 43 in B Position	03:07:15	01:36:55	20:07:15	When requested by Radio Science
End Thermal Stabilization Period / Free-Space Baseline	03:08:56	01:38:36	20:08:56	PC/N0 (X34, Ka34, X43, S43) = 48, 48, 54, and 42 dB-Hz
INBOUND BISTATIC OBSERVATION				
RSSG: Load Bistatic Predicts	03:08:57	01:38:37	20:08:57	

Start Turn to to LAT/LNG Preposition (T2a)	03:08:58	01:38:38	20:08:58	Quick loss of S/X/Ka signals
Start Bistatic Mini Cal 1	03:10:30	01:40:10	20:10:30	Radio Science to confirm start time. Must end by 03:16:30
End Turn to to LAT/LNG Preposition	03:17:34	01:47:14	20:17:34	
Start turn to Bistatic IVD (T2b)	03:18:20	01:48:00	20:18:20	
End Turn to Bistatic IVD	03:18:31	01:48:11	20:18:31	HGA boresight is pointed to Titan's surface
Start Bistatic Observations	03:19:11	01:48:51	20:19:11	Potential surface echoes
at approx LAT=4.7S /LNG =3.2W degs	03:30:20	02:00:00	20:30:20	
at approx LAT= 0.5S /LNG =359.4W degs	03:50:20	02:20:00	20:50:20	
at approx LAT= 7.2N /LNG =352.9W degs	04:00:20	02:30:00	21:00:20	Rapidly changing latitude
at approx LAT= 33.3N/LNG=332.7W degs	04:10:20	02:40:00	21:10:20	
Titan Closest Approach (C/A)	04:10:20	02:40:00	21:10:20	T106 epoch
OUTBOUND BISTATIC OBSERVATION				
at approx LAT =58.03N / LNG =307.8W degs	04:21:20	02:51:00	21:21:20	Entering Kraken
at approx LAT =61.1 N / LNG =304.4 W degs	04:25:20	02:55:00	21:25:20	Exiting Kraken; intermittent echo
at approx LAT =63.2N / LNG =302.2W degs	04:29:20	02:59:00	21:29:20	Out of Kraken; intermittent echo
at approx LAT =65.5 N / LNG =299.9W degs	04:36:20	03:06:00	21:36:20	Entering Kraken
at approx LAT =67.8N / LNG =298.0W degs	04:04:20	02:34:00	21:04:20	Exiting Kraken; intermittent echo
at approx LAT =69.3N / LNG =296.9W degs	05:03:20	03:33:00	22:03:20	Entering Kraken
at approx LAT =71.3N / LNG =296.2W degs	05:50:20	04:20:00	22:50:20	In Kraken and end of experiment
End Outbound Bistatic Observations	06:02:54	04:32:34	23:02:54	In Kraken
Start Turn to Egress Baseline (T3)	06:02:57	04:32:37	23:02:57	
DSS-34 & 43 SNT Measurement	06:04:00	04:33:40	23:04:00	SNT measurements must end by 06:11:00
RSSG: Load Predicts (Baseline)	06:10:00	04:39:40	23:10:00	
End turn to egress baseline	06:12:46	04:42:26	23:12:46	
DSS-43: Begin X- and S-Band 1-Way Acquisition	06:12:47	04:42:27	23:12:47	
DSS-34: Begin X- and Ka-Band 1-Way Acquisition	06:12:47	04:42:27	23:12:47	
Start 15 minutes free-space baseline	06:13:20	04:43:00	23:13:20	PC/N0 ~ 54, 48, & 42 dB-Hz for X-, Ka-, S-Band
DSS-34: Switch 43 in A Position	06:26:00	04:55:40	23:26:00	When requested by Radio Science
DSS-34: Enable Monopulse	06:27:00	04:56:40	23:27:00	Allows assessment of Ka-band pointing quality
End 15 minutes free-space baseline	06:28:20	04:58:00	23:28:20	PC/N0 ~ 54, 48, & 42 dB-Hz for X-, Ka-, S-Band
Start Turn to Hand-Off Attitude	06:28:22	04:58:02	23:28:22	Speccraft starts turning off Earth point
DSS-34: Disable Monopulse	TBD			At loss of Ka-band Signal
End Turn to Hand-Off Attitude	06:35:07	05:04:47	23:35:07	
TLM ON, RNG ON	06:35:44	05:05:24	23:35:44	
End of T106 RSS Observations Period (at Hand-Off Attitude)	06:35:50	05:05:30	23:35:50	Quick loss of all downlink signals
S-Band OFF	06:35:50	05:05:30	23:35:50	per PEF

Ka-Band OFF	06:35:52	05:05:32	23:35:52	per PEF
DSS-34: Switch 43 in B Position				When requested by Radio Science
Start Bistatic Mini Cal 2	TBD			Radio Science to confirm start time. Must end by 06:50:00
DSS-34 & 43: End-of-Track	07:05:00	05:34:40	00:05:00	
DSS-34 & 43: Start of Post-Cal Bistatic Calibrations	07:05:00	05:34:40	00:05:00	Guided by Real-Time Instructions from RSS Ops-Room
RSSG: Continue Recording 1 & 16 KHz Only				Disable recording of all other subchannels on all receivers
DSS-34 & 43: End of Post-Cal	09:05:00	07:34:40	02:05:00	
RSSG: End 1 & 16 kHz Open-Loop Recordings				

Times are based on the 110818 reference trajectory and didn't change after the T106 Live Update Block (LUB) OD on 10/14/2014.

Canberra DSS-34 & 43 Related Activities
 Mini Calibration; SNT Measurements