

	ERT UTC OWLT = 01:16:21	SCET	PDT ERT-7hrs 07:00:00	Comments
DOY 2017-135				
DSS-55: Start Pre-Cal	01:40:00	00:23:39	18:40:00	
RSSG: Note TLM BR 1896	03:10:00	01:53:39	20:10:00	
RSSG: Start DSS-55 X-Band Open-Loop Recordings	02:40:00	01:23:39	19:40:00	
DSS-55: Beginning Of Track	03:10:00	01:53:39	20:10:00	Spacecraft is not Earth-pointed. No downlink signals detectable
DSS-55: Transmitter ON, 18kW, LCP, RAMP, SWEEP	03:20:00	02:03:39	20:20:00	
RSSG: Start DSS-55 Ka-Band Open-Loop Recordings	03:20:00	02:03:39	20:20:00	
Ka-Band ON	03:50:17	02:33:56	20:50:17	Per PEF
DSS-25: Start Pre-Cal	04:15:00	02:58:39	21:15:00	
S/C at Waypoint: X-Band to Earth, NEG_X to 50.78/-63.65	04:30:21	03:14:00	21:30:21	Spacecraft is Earth-pointed. Signals may be detectable shortly before
DSS-55: Begin X- & Ka-Band 1-Way Acquisition	04:30:21	03:14:00	21:30:21	Pc/N0 TLM ON (X-34) = 34 dB-Hz
DSS-55: Enable Monopulse	04:32:00	03:15:39	21:32:00	Enable/Disable Monopulse only when requested by RSSG
DSS-84: Start Pre-Cal	05:05:00	03:48:39	22:05:00	
RSSG: Start DSS-25 Open-Loop Recordings	05:15:00	03:58:39	22:15:00	
RSSG: Start DSS-84 Open-Loop Recordings	05:20:00	04:03:39	22:20:00	
DSS:25 Beginning Of Track	05:45:00	04:28:39	22:45:00	Pc/N0 TLM ON (Ka-34, X-34) = 48, 34 dB-Hz
DSS-25: Begin X- & Ka-Band 1-Way Acquisition	05:45:00	04:28:39	22:45:00	< 10 deg EL. Do not enable Monopulse until after switch to 3-way
RSSG: Enter 1-Way Open-Loop Frequency Offsets as Needed	05:45:00	04:28:39	22:45:00	
DSS 84: Beginning Of Track	05:50:00	04:33:39	22:50:00	
DSS-84: Do Not Acquire 1-Way Signal	05:50:00	04:33:39	22:50:00	Configure for 3-way/55
DSS-55: Disable Monopulse Without Clearing the Offsets	05:51:00	04:34:39	22:51:00	Before mode switch to 2-way; when requested by RSSG
DSS-55 Transmitter ON Observed	05:52:42	04:36:21	22:52:42	
DSS-55: Begin X- & Ka-Band 2-Way Acquisition	05:52:42	04:36:21	22:52:42	Pc/N0 TLM ON (Ka-34, X-34) = 48, 34 dB-Hz
DSS-25: Begin X- & Ka-Band 3-Way Acquisition w/DSS-55	05:52:42	04:36:21	22:52:42	< 10 deg EL. Do not enable Monopulse until after switch to 3-way
DSS-84: Begin X- & Ka-Band 3-Way Acquisition w/DSS-55	05:52:42	04:36:21	22:52:42	
RSSG: Clear 1-Way Open-Loop Frequency Offsets	05:52:42	02:32:42	09:32:42	
DSS-55: Enable Monopulse	05:56:00	04:39:39	22:56:00	Enable/Disable Monopulse only when requested by RSSG
Start of Rev 274 RSS Saturn Gravity Observaton	06:00:21	04:44:00	23:00:21	

RSSG: Note TLM BR Change to 14220	06:00:25	04:44:04	23:00:25	
DSS-55: Transmitter OFF	06:02:00	04:45:39	23:02:00	
DSS-25: Enable Monopulse	06:04:00	04:47:39	23:04:00	~10 deg EL. Enable/Disable Monopulse only when requested by RSSG
DSS-25 Transmitter ON, 18kW, LCP, RAMP	06:10:00	04:53:39	23:10:00	NO SWEEP
DSS-55: Disable Monopulse	06:20:00	05:03:39	23:20:00	
DSS-55: EOT	06:20:00	05:03:39	23:20:00	
RSSG: Note TLM BR Change to 22120	06:30:26	05:14:05	23:30:26	
DSS-55: Post-Cal	06:35:00	05:18:39	23:35:00	
RSSG: End DSS-55 Open-Loop Recordings	06:40:00	05:23:39	23:40:00	
RSSG: Note TLM BR Change to 27650	07:15:25	05:59:04	00:15:25	
DSS-35: Start Pre-Cal	08:20:00	07:03:39	01:20:00	
DSS-25: Disable Monopulse Without Clearing the Offsets	08:33:00	07:16:39	01:33:00	Before mode switch to 1-way; when requested by RSSG
DSS-55 Transmitter OFF Observed	08:34:42	07:18:21	01:34:42	Begin 8 min coherent gap
DSS-25: Begin X- & Ka-Band 1-Way Acquisition	08:34:42	07:18:21	01:34:42	Pc/N0 TLM ON (Ka-34, X-34) = 48, 34 dB-Hz
DSS-84: Do Not Configure for 1-Way	08:34:42	07:18:21	01:34:42	Keep 3-way configuration
RSSG: Enter 1-Way Open-Loop Frequency Offsets as Needed	08:34:42	07:18:21	01:34:42	
DSS-25 Transmitter ON Observed	08:42:42	07:26:21	01:42:42	End 8 min coherent gap
DSS-25: Begin X- & Ka-Band 2-Way Acquisition	08:42:42	07:26:21	01:42:42	Pc/N0 TLM ON (Ka-34, X-34) = 48, 34 dB-Hz
DSS-84: Begin X- & Ka-Band 3-Way Acquisition w/DSS-25	08:42:42	07:26:21	01:42:42	
RSSG: Clear 1-Way Open-Loop Frequency Offsets	08:42:42	07:02:42	14:02:42	
DSS-25: Enable Monopulse	08:45:00	07:28:39	01:45:00	Enable/Disable Monopulse only when requested by RSSG
DSS-43: Start Pre-Cal	08:45:00	07:28:39	01:45:00	
RSSG: Start DSS-35 Open-Loop Recordings	09:15:00	07:58:39	02:15:00	
RSSG: Start DSS-43 X-Band Open-Loop Recordings	09:15:00	07:58:39	02:15:00	
DSS-43: Beginning Of Track	09:45:00	08:28:39	02:45:00	
DSS-43: Begin X-Band 3-Way Acquisition w/DSS-25	09:45:00	08:28:39	02:45:00	Pc/N0 TLM ON (X-70) = 40 dB-Hz
DSS-35: Beginning Of Track	09:50:00	08:33:39	02:50:00	
DSS-35: Begin X- & Ka-Band 3-Way Acquisition w/DSS-25	09:50:00	08:33:39	02:50:00	Pc/N0 TLM ON (Ka-34, X-Band) = 48, 34 dB-Hz
DSS-35: Enable Monopulse	10:02:00	08:45:39	03:02:00	~10 deg EL. Enable/Disable Monopulse only when requested by RSSG
DSS-35: Transmitter ON, 18 kW, LCP, RAMP	10:25:00	09:08:39	03:25:00	NO SWEEP. Uplink Transfer from DSS-25 to DSS-35
DSS-25 Transmitter OFF	10:25:05	09:08:44	03:25:05	
DSS-84: EOT	11:30:00	10:13:39	04:30:00	
DSS-84: Post-Cal	11:45:00	10:28:39	04:45:00	
RSSG: Note TLM BR Change to 33180	12:00:24	10:44:03	05:00:24	
RSSG: End DSS-84 Open-Loop Recordings	12:05:00	10:48:39	05:05:00	
DSS-25 to DSS-35 Uplink Transfer Observed	12:57:42	11:41:21	05:57:42	
DSS-35: Start X- & Ka-Band 2-Way Acquisition	12:57:42	11:41:21	05:57:42	Pc/N0 TLM ON (Ka-34, X-34) = 48, 34 dB-Hz
DSS-43: Start X-Band 3-Way Acquisition w/DSS-35	12:57:42	11:41:21	05:57:42	Pc/N0 TLM ON (X-70) = 40 dB-Hz
DSS-25: Start X- & Ka-Band 3-Way Acquisition w/DSS-35	12:57:42	11:41:21	05:57:42	Pc/N0 TLM ON (Ka-34, X-34) = 48, 34 dB-Hz

RSSG: Note TLM BR Change to 35550	13:15:24	11:59:03	06:15:24	
DSS-25: Disable Monopulse	14:15:00	12:58:39	07:15:00	Enable/Disable Monopulse only when requested by RSSG
DSS-25: EOT	14:15:00	12:58:39	07:15:00	
DSS-25: Post-Cal	14:30:00	13:13:39	07:30:00	
RSSG: Start DSS-43 S-Band Open-Loop Recordings	14:40:00	13:23:39	07:40:00	
RSSG: End DSS-25 Open-Loop Recordings	14:50:00	13:33:39	07:50:00	
S-Band ON	15:10:05	13:53:44	08:10:05	Per PEF
DSS-43: Start S-Band 3-Way Acquisition w/DSS-35	15:10:05	13:53:44	08:10:05	Pc/N0 TLM ON (S-70) = 42 dB-Hz
Start of Rev 274 Periapse Ring Occultation	17:09:21	15:53:00	10:09:21	Gravity observation continues
RNG OFF	17:09:21	15:53:00	10:09:21	
TLM OFF	17:09:24	15:53:03	10:09:24	
Start Free-Space 2-Way/3-Way Baseline	17:09:25	15:53:04	10:09:25	Pc/N0 TLM FF (X-70, S-70, X-34, Ka-34) = 54, 42, 48, 48 dB-Hz
DSS-74: Start Pre-Cal	17:45:00	16:28:39	10:45:00	
Top of the Troposphere				
RSSG: Begin DSS-74 Open-Loop Recordings	18:00:00	16:43:39	11:00:00	
Saturn Closest Approach (Orbit Periapse)	18:01:41	16:45:20	11:01:41	
Ring C In	18:01:41	16:45:20	11:01:41	Approximate time
DSS-35: Disable Monopulse Without Clearing the Offsets	18:06:49	16:50:28	11:06:49	Enable/Disable Monopulse only when requested by RSSG
Ring C Out/Ring B In	18:07:03	16:50:42	11:07:03	Approximate time
Ring B Out	18:15:50	16:59:29	11:15:50	Approximate time
Ring A In	18:17:34	17:01:13	11:17:34	Approximate time
DSS-35: Enable Monopulse	18:19:30	17:03:09	11:19:30	Enable/Disable Monopulse only when requested by RSSG
Ring A Out	18:23:43	17:07:22	11:23:43	Approximate time
Ring F	18:25:18	17:08:57	11:25:18	Approximate time
Top of Ionosphere	18:25:23	17:09:02	11:25:23	
Start Free-Space 2-Way/3-Way Baseline	18:25:24	17:09:03	11:25:24	
DSS-74: Beginning Of Track	18:30:00	17:13:39	11:30:00	
DSS-74: Begin X- & Ka-Band 3-Way Acquisition/35	18:30:00	17:13:39	11:30:00	
DSS-74: Transmitter ON, 18 kW, LCP, RAMP	18:40:00	17:23:39	11:40:00	NO SWEEP. Uplink Transfer from DSS-35 to DSS-74
DSS-35: Transmitter OFF	18:40:05	17:23:44	11:40:05	
TLM ON	19:16:15	17:59:54	12:16:15	
RNG ON	19:16:19	17:59:58	12:16:19	
RSSG: Note TLM BR Change to 33180	19:16:23	18:00:02	12:16:23	
End of Rev 274 Periapse Ring Occultation	19:16:21	18:00:00	12:16:21	Gravity observation continues
RSSG: Note TLM BR Change to 27650	20:30:24	19:14:03	13:30:24	

DSS-55: Start Pre-Cal	20:55:00	19:38:39	13:55:00	
DSS-35 to DSS 74 Uplink Transfer Observed	21:12:42	19:56:21	14:12:42	
DSS-74: Begin X- & Ka-Band 2-Way Acquisition	21:12:42	19:56:21	14:12:42	
RSSG: Continue Using 3-Way/35 Predicts at DSS-74	21:12:42	19:56:21	14:12:42	Since 2-way predicts are not available
DSS-35: Begin X- & Ka-Band 3-Way Acquisition w/DSS-74	21:12:42	19:56:21	14:12:42	Pc/N0 TLM ON (X-34, Ka-34) = 40, 48 dB-Hz
RSSG: Continue Using 2-Way Predicts at DSS-35	21:12:42	19:56:21	14:12:42	Since 3-way/74 predicts are not available
DSS-43: Begin X- & Ka-Band 3-Way Acquisition w/DSS-74	21:12:42	19:56:21	14:12:42	Pc/N0 TLM ON (X-70, Ka-34) = 40, 48 dB-Hz
RSSG: Continue Using 3-Way/35 Predicts at DSS-43	21:12:42	19:56:21	14:12:42	Since 3-way/74 predicts are not available
RSSG: Note TLM BR Change to 22120	21:17:22	20:01:01	14:17:22	
DSS-63: Start Pre-Cal	21:25:00	20:08:39		
Start of Rev 274 Ingress Ring Occultation	21:32:21	20:16:00	14:32:21	Gravity Observation Continues
RNG OFF	21:32:21	20:16:00	14:32:21	
TLM OFF	21:32:24	20:16:03	14:32:24	
RSSG: Start DSS-63 & DSS-55 Open-Loop Recordings	21:55:00	20:38:39	14:55:00	
DSS-63 & DSS-55: Beginning Of Track	22:25:00	21:08:39	15:25:00	
DSS-55: Begin X- & Ka-Band 3-Way Acquisition w/DSS-74	22:25:00	21:08:39	15:25:00	Pc/N0 TLM ON (X-34, Ka-34) = 34, 48 dB-Hz
DSS-63: Begin X- & Ka-Band 3-Way Acquisition w/DSS-74	22:25:00	21:08:39	15:25:00	Pc/N0 TLM ON (X-70, Ka-34) = 40, 48 dB-Hz
RSSG: Use 3-Way/35 Predicts at DSS-63 and DSS-55	22:25:00	21:08:39	15:25:00	Since 3-way/74 predicts are not available
DSS-35: Disable Monopulse	22:45:00	21:28:39	15:45:00	Enable/Disable Monopulse only when requested by RSSG
DSS-43 & DSS-35: EOT	22:45:00	21:28:39	15:45:00	
DSS-55: Enable Monopulse	22:51:00	21:34:39	15:51:00	~10 deg EL. Enable/Disable Monopulse only when requested by RSSG
DSS-43 & DSS-35: Post-Cal	23:00:00	21:43:39	16:00:00	
Ring F	23:02:12	21:45:51	16:02:12	Approximate time
RSSG: End DSS-43 & DSS-35 Open-Loop Recordings	23:05:00	21:48:39	16:05:00	
Ring A In	23:16:16	21:59:55	16:16:16	Approximate time
DSS-55: Disable Monopulse Without Clearing the Offsets	23:30:00	22:13:39	16:30:00	Enable/Disable Monopulse only when requested by RSSG
DSS-74: Transmitter OFF	23:33:18	22:16:57	16:33:18	Uplink Transfer from DSS-74 to DSS-63
DSS-63: Transmitter ON	23:33:23	22:17:02	16:33:23	
Ring A Out	23:40:39	22:24:18	16:40:39	Approximate time
Ring B In	23:50:15	22:33:54	16:50:15	Approximate time
DOY 2017-136				
DSS-74: EOT	00:05:00	22:48:39	17:05:00	
DSS-74: Post-Cal	00:20:00	23:03:39	17:20:00	
RSSG: End DSS-74 Open-Loop Recordings	00:40:00	23:23:39	17:40:00	
Ring B Out/Ring C In	00:46:04	23:29:43	17:46:04	Approximate time
DSS-55: Enable Monopulse	00:47:45	23:31:24	17:47:45	Enable/Disable Monopulse only when requested by RSSG
RSSG: Switch DSS-63 Open-Loop Predicts to 2-Way	00:58:00	23:41:39	17:58:00	

RSSG: Switch DSS-55 Open-Loop Predicts to 3-Way/DSS-63	00:58:00	23:41:39	17:58:00	
Top of the Ionosphere	01:02:03	23:45:42	18:02:03	
DSS-84: Start Pre-Cal	01:15:00	23:58:39	18:15:00	
Ring C Out	01:29:51	00:13:30	18:29:51	Approximate time
RSSG: Start DSS-84 Open-Loop Recordings				
DSS-84: Beginning Of Track	02:00:00	00:43:39	19:00:00	
DSS-84: Begin X- & Ka-Band 3-Way Acquisition w/DSS-74	02:00:00	00:43:39	19:00:00	
RSSG: Use 3-Way/63 Predicts at DSS-84	02:00:00	00:43:39	19:00:00	Since 3-way/74 predicts are not available
DSS-55: Disable Monopulse Without Clearing the Offsets	02:05:00	00:48:39	19:05:00	Enable/Disable Monopulse only when requested by RSSG
Top of Troposphere	02:06:00	00:49:39	19:06:00	Approximate time
End of Rev 274 Ingress Ring Occultation	02:06:00	00:49:39	19:06:00	
Spacecraft is Occulted by Saturn's Atmosphere (No Limb-Track)				
DSS-74 to DSS-63 Uplink transfer Observed	02:06:00	-00:34:00	06:26:00	
DSS-63: Begin X- & S-Band 2-Way Acquisition	02:06:00	00:49:39	19:06:00	Pc/N0 TLM OFF (X-70, S-70) = 54, 42 dB-Hz
DSS-55: Begin X- & Ka-Band 3-Way Acquisition w/DSS-63	02:06:00	00:49:39	19:06:00	Pc/N0 TLM OFF (X-34, Ka-34) = 48, 48 dB-Hz
DSS-84: Begin X- & Ka-Band 3-Way Acquisition w/DSS-63	02:06:00	00:49:39	19:06:00	
Attenuated Ka-Band Signal May Drift Out of the 1 kHz BW	02:06:00	00:49:39	19:06:00	Approximate starting time
Attenuated X-Band Signal Likely Tracked Throughout	02:06:00	00:49:39	19:06:00	Approximate starting time
Attenuated S-Band Signal Likely Detectable Throughout	02:06:00	00:49:39	19:06:00	Approximate starting time
S-Band Maximum BA Reached (0.474°)	03:24:26	02:08:05	20:24:26	
All 2/3-Way Signals Detectable Just Before Atm Occ Egress				Shortly before 04:45:30
DSS-25: Start Pre-Cal	04:10:00	02:53:39	21:10:00	
DSS-14: Start Pre-Cal	04:40:00	03:23:39	21:40:00	
Start of Rev 274 Egress Ring Occultation	04:48:00	03:31:39	21:48:00	
Top of Troposphere	04:48:00	03:31:39	21:48:00	
DSS-55: Enable Monopulse	04:48:54	03:32:33	21:48:54	
DSS-55: Disable Monopulse Without Clearing the Offsets	04:59:06	03:42:45	21:59:06	
Ring C Out/Ring B In	05:00:44	03:44:23	22:00:44	Approximate time
RSSG: Start DSS-14 & DSS-25 Open-Loop Recordings	05:10:00	03:53:39	22:10:00	
DSS-14 & DSS-25: Beginning Of Track	05:40:00	04:23:39	22:40:00	
DSS-14: Begin X- & S-Band 3-Way Acquisition w/DSS-63	05:40:00	04:23:39	22:40:00	
DSS-25: Begin X- & Ka-Band 3-Way Acquisition w/DSS-63	05:40:00	04:23:39	22:40:00	
DSS-63: Transmitter OFF	05:42:39	04:26:18	22:42:39	
Ring B Out	05:55:15	04:38:54	22:55:15	Approximate time

End of Rev 274 Saturn Gravity Observations	06:00:21	04:44:00	23:00:21	
Ring A In	06:04:28	04:48:07	23:04:28	Approximate time
Top of the Ionosphere	06:07:06	04:50:45	23:07:06	
DSS-55: Enable Monopulse	06:13:40	04:57:19	23:13:40	Enable/Disable Monopulse only when requested by RSSG
DSS-25: Enable Monopulse	06:13:40	04:57:19	23:13:40	Enable/Disable Monopulse only when requested by RSSG
DSS-55: Disable Monopulse	06:20:00	05:03:39	23:20:00	Enable/Disable Monopulse only when requested by RSSG
DSS-63 & DSS-55: EOT	06:20:00	05:03:39	23:20:00	
Ring A Out	06:33:58	05:17:37	23:33:58	Approximate time
DSS-63 & DSS-55: Post-Cal	06:35:00	05:18:39	23:35:00	
RSSG: End DSS-63 & DSS-55 Open-Loop Recordings	06:40:00	05:23:39	23:40:00	
Ring F	06:40:45	05:24:24	23:40:45	Approximate time
DSS-25: Disable Monopulse	08:00:00	06:43:39	01:00:00	Enable/Disable Monopulse only when requested by RSSG
DSS-14 & DSS-25: EOT	08:00:00	06:43:39	01:00:00	
S-Band OFF	08:14:42	06:58:21	01:14:42	Per PEF
Ka-Band OFF	08:14:44	06:58:23	01:14:44	Per PEF
DSS-14 & DSS-25: Post-Cal	08:15:00	06:58:39	01:15:00	
TLM ON	08:15:15	06:58:54	01:15:15	
RNG ON	08:15:19	06:58:58	01:15:19	
DSS-63 Transmitter OFF Observed	08:15:21	06:59:00	01:15:21	
End of Rev 274 Egress Ring Occultaion	08:15:21	06:59:00	01:15:21	
Begin Spacecraft Turn Away From Earth Point	08:15:21	06:59:00	01:15:21	Loss of X-band signal
DSS-84: EOT	08:20:00	07:03:39	01:20:00	
DSS-84: Post-Cal	08:35:00	07:18:39	01:35:00	
RSSG: End DSS-14 & DSS-25 Open-Loop Recordings	08:35:00	07:18:39	01:35:00	
RSSG: End DSS-84 Open-Loop Recordings	08:40:00	07:23:39	01:40:00	

Canberra DSS-43 & DSS-35 related activities

Madrid DSS-55 related activities

Goldstone DSS-14 & DSS-25 related activities

Malargue DSS-84 related activities

New Norcia DSS-74 related activities

Predicted ring event times are approximate and are based on reference trajectory 150901