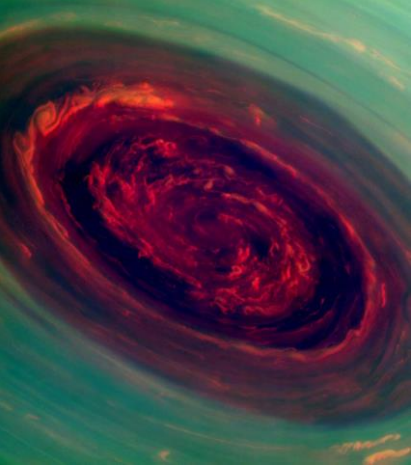

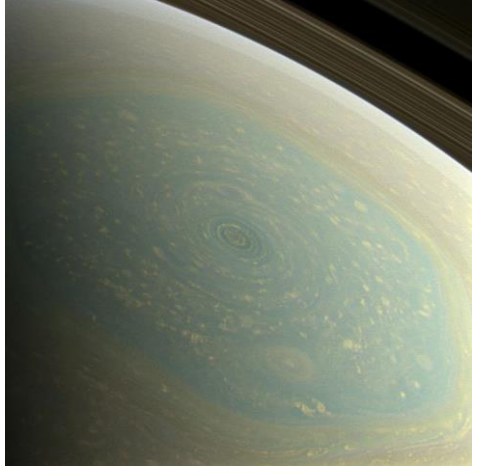
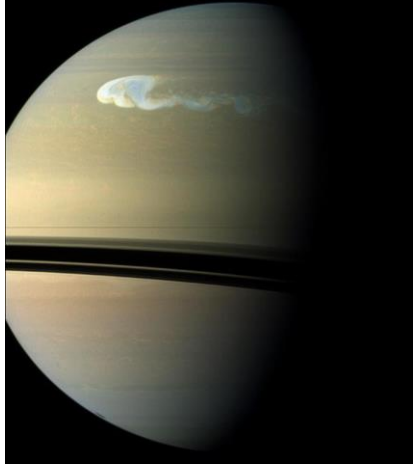

Science Planning & Sequence Team
CASSINI

SATURN TARGET WORKING TEAM

Rev 202-203 Segment Legacy Package

Segment Boundary: March 13 – March 13, 2014
2014- 072T21:12:00 – 2014-096T19:45:00 (SCET)

Integration Began 6/03/2013
Segment Delivered to S83 Sequence 9/13/2013
Lead Integrator was Kathleen Kelleher

Legacy Package Assembled by Kathleen Kelleher

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Segment Overview and Final Products

Segment Summary

- Saturn 202-203 was the second part of a 27-day “CAKE” (Cassini Apoapse for Kronian Exploration) split by a sequence boundary in between the second and third segments of the first equatorial phase (EQ-1B and 1C) of the Solstice Mission.
  - The first piece of this CAKE was in S82, an outbound segment ~2 days after periapse.
  - Saturn 202-203 was the second part of this CAKE continuing into S83, nearly 24-day piece and the bulk of the segment.
- The timeline was filled primarily with typical CAKE template activities in such inclined orbits, such as UVIS EUV/FUVs, Auroral Stares by UVIS and VIMS to map the northern polar region, and CIRS-led composition and mapping. Other Saturn observations included ISS tracking of the North Polar Vortex and wind studies.
- Noteworthy out-of-discipline activities included ISS irregular rock imaging and MAG calibration rolling, Titan Cloud Monitoring campaign, an interstellar dust observation by CDA and a star occultation by VIMS. An Opnav was also performed.
- As usual, significant data cuts in several rounds and five station upgrades were necessary to fit the data volume into available resources.

Final Sequenced SPASS (1 of 3)

Request	Riders	Start (SCET)	Start (Epoch)	Duration	End (SCET)	Primary	Secondary	Comments
Sequence S83, length = 72 days		2014-072T21:12:00		071T12:49:00	2014-144T10:01:00			
SATURN_202_203 Segment		2014-072T21:12:00		023T22:33:00	2014-096T19:45:00			
SP_202EA_S83IVP072_PRIME		2014-072T21:12:00		000T00:06:00	2014-072T21:18:00	XBAND to Earth	NEG_X to 313.0/25.0	S83 IVP Gap
ENGR_202SC_KPTYBIAS072_PRIME		2014-072T21:18:00		000T01:30:00	2014-072T22:48:00	NEG_Z to DELTA_H (0.0,0.0,41.001 deg. offset)	NEG_X to Sun	
ISS_202OT_FORROT030_PRIME		2014-072T22:48:00		001T11:44:00	2014-074T10:32:00	ISS_NAC to Rocks	NEG_Z to NEP	Jettison activity
SP_202EA_DLTURN074_PRIME		2014-074T10:32:00		000T00:10:00	2014-074T10:42:00	XBAND to Earth	NEG_X to 316.0/17.0	
NEW WAYPOINT		**2014-074T10:42:00**		**000T11:10:00**	**2014-074T21:52:00**	**XBAND to Earth**	**NEG_X to 316.0/17.0**	
SP_202EA_YGAP074_PRIME		2014-074T10:42:00		000T01:30:00	2014-074T12:12:00	XBAND to Earth	NEG_X to 316.0/17.0	
SP_202EA_C70METNON074_PRIME	C	2014-074T12:12:00		000T09:00:00	2014-074T21:12:00	XBAND to Earth	Rolling	CDA. NEG_X to (316/17).
SP_202SA_WAYPTTURN074_PRIME		2014-074T21:12:00		000T00:40:00	2014-074T21:52:00	ISS_NAC to Saturn	POS_Z to NSP	
NEW WAYPOINT		**2014-074T21:52:00**		**000T23:05:00**	**2014-075T20:57:00**	**ISS_NAC to Saturn**	**POS_Z to NSP**	
CIRS_202SA_MIRMAP004_PRIME	I, V	2014-074T21:52:00		000T22:00:00	2014-075T19:52:00	CIRS_FP3 to Saturn	POS_Z to NSP	
SP_202EA_DLTURN075_PRIME		2014-075T20:17:00		000T00:40:00	2014-075T20:57:00	XBAND to Earth	NEG_X to 316.0/17.0	
NEW WAYPOINT		**2014-075T20:57:00**		**000T10:55:00**	**2014-076T07:52:00**	**XBAND to Earth**	**NEG_X to 316.0/17.0**	
SP_202EA_YGAP075_PRIME		2014-075T20:57:00		000T01:30:00	2014-075T22:27:00	XBAND to Earth	NEG_X to 316.0/17.0	
SP_202EA_M34HEFNON075_PRIME	C	2014-075T22:27:00		000T08:35:00	2014-076T07:02:00	XBAND to Earth	NEG_X to 316.0/17.0	CDA. NEG_X to (316/17). SID suspend
SP_202SA_WAYPTTURN076_PRIME		2014-076T07:12:00		000T00:40:00	2014-076T07:52:00	ISS_NAC to Saturn	POS_Z to NSP	
NEW WAYPOINT		**2014-076T07:52:00**		**000T20:21:00**	**2014-077T04:13:00**	**ISS_NAC to Saturn**	**POS_Z to NSP**	
ISS_202TI_M120R2HZ076_PRIME	C, V	2014-076T07:52:00	E202_M120R2HZ076+000T00:00:00	000T01:30:00	2014-076T09:22:00	ISS_NAC to Titan	POS_Z to NSP	No Preference to secondary pointing
UVIS_202SA_EUVFUV002_PRIME	I	2014-076T09:22:00		000T16:00:00	2014-077T01:22:00	UVIS_FUV to Saturn	NEG_X to Sun	
SP_202EA_DLTURN077_PRIME		2014-077T03:33:00		000T00:40:00	2014-077T04:13:00	XBAND to Earth	NEG_X to 316.0/17.0	
NEW WAYPOINT		**2014-077T04:13:00**		**001T11:10:00**	**2014-078T15:23:00**	**XBAND to Earth**	**NEG_X to 316.0/17.0**	
ENGR_202SC_KPTYBIAS077_PRIME		2014-077T04:13:00		000T01:30:00	2014-077T05:43:00	POS_Z to DELTA_H (0.0,0.0,-47.999 deg. offset)	NEG_X to Sun	
SP_202EA_G34HEFNON077_PRIME	C	2014-077T05:43:00		000T09:00:00	2014-077T14:43:00	XBAND to Earth	NEG_X to 316.0/17.0	CDA. NEG_X to (316/17). SID suspend
MAG_202SU_CALROLL002_PRIME		2014-077T14:43:00		000T13:30:00	2014-078T04:13:00	NEG_X to Earth (0.0,0.0,-30.0 deg. offset)	Rolling	
SP_202EA_YGAP078_PRIME		2014-078T04:13:00		000T01:30:00	2014-078T05:43:00	XBAND to Earth	NEG_X to 316.0/17.0	
SP_202EA_G70METNON078_PRIME	C	2014-078T05:43:00		000T05:00:00	2014-078T10:43:00	XBAND to Earth	NEG_X to 316.0/17.0	CDA. NEG_X to (316/17). SID suspend
SP_202EA_C70METNON078_PRIME	C	2014-078T10:43:00		000T04:00:00	2014-078T14:43:00	XBAND to Earth	NEG_X to 316.0/17.0	CDA. NEG_X to (316/17). SID suspend
SP_202SA_WAYPTTURN078_PRIME		2014-078T14:43:00		000T00:40:00	2014-078T15:23:00	ISS_NAC to Saturn	POS_Z to NSP	
NEW WAYPOINT		**2014-078T15:23:00**		**000T14:05:00**	**2014-079T05:28:00**	**ISS_NAC to Saturn**	**POS_Z to NSP**	
VIMS_202SA_NAURSTARE001_PRIME	C, I, U	2014-078T15:23:00		000T06:30:00	2014-078T21:53:00	ISS_NAC to Saturn	POS_Z to NSP	
UVIS_202SA_NAURSLEW001_PRIME	C, V	2014-078T21:53:00		000T06:30:00	2014-079T04:23:00	UVIS_FUV to Saturn	POS_Z to NSP	
SP_202EA_DLTURN079_PRIME		2014-079T04:48:00		000T00:40:00	2014-079T05:28:00	XBAND to Earth	NEG_X to 316.0/17.0	
NEW WAYPOINT		**2014-079T05:28:00**		**000T09:40:00**	**2014-079T15:08:00**	**XBAND to Earth**	**NEG_X to 316.0/17.0**	
SP_202EA_G34BWGOTP079_PRIME	C, E, N	2014-079T05:28:00		000T08:45:00	2014-079T14:13:00	XBAND to Earth	NEG_X to 316.0/17.0	CDA. NEG_X to (316/17). OTP. SID suspend
SP_202SA_WAYPTTURN079_PRIME		2014-079T14:28:00		000T00:40:00	2014-079T15:08:00	ISS_NAC to Saturn	POS_Z to NSP	
NEW WAYPOINT		**2014-079T15:08:00**		**000T14:20:00**	**2014-080T05:28:00**	**ISS_NAC to Saturn**	**POS_Z to NSP**	
UVIS_202SA_EUVFUV003_PRIME	I	2014-079T15:08:00		000T13:40:00	2014-080T04:48:00	UVIS_FUV to Saturn	NEG_X to Sun	
SP_202EA_DLTURN080_PRIME		2014-080T04:48:00		000T00:40:00	2014-080T05:28:00	XBAND to Earth	NEG_X to 316.0/17.0	
NEW WAYPOINT		**2014-080T05:28:00**		**000T09:40:00**	**2014-080T15:08:00**	**XBAND to Earth**	**NEG_X to 316.0/17.0**	
SP_202EA_G34BWGOTB080_PRIME	C, N	2014-080T05:28:00		000T09:00:00	2014-080T14:28:00	XBAND to Earth	NEG_X to 316.0/17.0	CDA. same as OTP pass. OTB. SID suspend
SP_202SA_WAYPTTURN080_PRIME		2014-080T14:28:00		000T00:40:00	2014-080T15:08:00	ISS_NAC to Saturn	POS_Z to NSP	
NEW WAYPOINT		**2014-080T15:08:00**		**001T12:35:00**	**2014-082T03:43:00**	**ISS_NAC to Saturn**	**POS_Z to NSP**	
CIRS_202SA_MIRMAP005_PRIME	I, M, V	2014-080T15:08:00		000T22:00:00	2014-081T13:08:00	CIRS_FP3 to Saturn	POS_Z to NSP	
CIRS_202SA_COMPSIT006_PRIME	I, M, U, V	2014-081T13:08:00		000T13:55:00	2014-082T03:03:00	CIRS_FP3 to Saturn	POS_Z to NSP	Collaborative Rider(s): ISS
SP_202EA_DLTURN082_PRIME		2014-082T03:03:00		000T00:40:00	2014-082T03:43:00	XBAND to Earth	POS_X to 140.35/-3.4	
NEW WAYPOINT		**2014-082T03:43:00**		**000T11:10:00**	**2014-082T14:53:00**	**XBAND to Earth**	**POS_X to 140.35/-3.4**	
SP_202EA_YGAP082_PRIME		2014-082T03:43:00		000T01:30:00	2014-082T05:13:00	XBAND to Earth	POS_X to 140.35/-3.4	
SP_202EA_G70METNON082_PRIME	C	2014-082T05:13:00		000T07:20:00	2014-082T12:33:00	XBAND to Earth	Rolling/SRU	CDA. NEG_X to (316/17). SID suspend
SP_202EA_C70METNON082_PRIME	C	2014-082T12:33:00		000T01:40:00	2014-082T14:13:00	XBAND to Earth	Rolling/SRU	CDA. NEG_X to (316/17). SID suspend
SP_202SA_WAYPTTURN082_PRIME		2014-082T14:13:00		000T00:40:00	2014-082T14:53:00	ISS_NAC to Saturn	POS_Z to NSP	
NEW WAYPOINT		**2014-082T14:53:00**		**001T12:50:00**	**2014-084T03:43:00**	**ISS_NAC to Saturn**	**POS_Z to NSP**	
CDA_202DR_ISD0063004_PRIME		2014-082T14:53:00		000T20:00:00	2014-083T10:53:00	XBAND to Earth	NEG_X to 317.5/12.4	
CIRS_202SA_COMPSIT007_PRIME	I, U, V	2014-083T10:53:00		000T16:00:00	2014-084T02:53:00	CIRS_FP3 to Saturn	POS_Z to NSP	Collaborative Rider(s): ISS
Apoapse Per = 31.9 d, inc ...		2014-083T18:01:45		000T00:00:01	2014-083T18:01:46			
SP_203EA_DLTURN084_PRIME		2014-084T03:03:00		000T00:40:00	2014-084T03:43:00	XBAND to Earth	POS_X to 140.35/-3.4	
NEW WAYPOINT		**2014-084T03:43:00**		**000T10:30:00**	**2014-084T14:13:00**	**XBAND to Earth**	**POS_X to 140.35/-3.4**	
SP_203EA_YGAP084_PRIME	M	2014-084T03:43:00		000T01:30:00	2014-084T05:13:00	XBAND to Earth	POS_X to 140.35/-3.4	
SP_203EA_G34BWGNON084_PRIME	C, M	2014-084T05:13:00		000T08:30:00	2014-084T13:43:00	XBAND to Earth	Rolling/SRU	CDA. NEG_X to (316/17). SID suspend
SP_203SA_WAYPTTURN084_PRIME	C, M	2014-084T13:43:00		000T00:30:00	2014-084T14:13:00	ISS_NAC to Saturn	POS_Z to NEP	

Gap 1 → ISS_202OT_FORROT030_PRIME
Gap 2 → CIRS_202SA_MIRMAP004_PRIME
Gap 3 → ISS_202TI_M120R2HZ076_PRIME
Gap 4 → MAG_202SU_CALROLL002_PRIME
Gap 5 → VIMS_202SA_NAURSTARE001_PRIME
Gap 6 → UVIS_202SA_EUVFUV003_PRIME
Gap 7 → CIRS_202SA_MIRMAP005_PRIME
Gap 8 → CDA_202DR_ISD0063004_PRIME

Final Sequenced SPASS (2 of 3)

Gap 9	**NEW WAYPOINT**		**2014-084T14:13:00**		**001T19:46:00**	**2014-086T09:59:00**	**ISS_NAC to Saturn**	**POS_Z to NEP**	
	VIMS_203RI_LAMVELOCC001_PRIME	C, M	2014-084T14:13:00		001T00:45:00	2014-085T14:58:00	VIMS_IR to 136.999/-43.433	POS_Z to NEP	
	ISS_203TI_M90R3CLD084_PRIME	C, V	2014-085T14:58:00	E203_M90R3CLD084+000T00:00:00	000T01:30:00	2014-085T16:28:00	ISS_NAC to Titan	POS_Z to NEP	No Preference to secondary pointing
	UVIS_203SA_EUVFUV001_PRIME	I, M	2014-085T16:28:00		000T16:00:00	2014-086T08:28:00	UVIS_FUV to Saturn	NEG_X to Sun	
	SP_203EA_DLTURN086_PRIME	M	2014-086T09:19:00		000T00:40:00	2014-086T09:59:00	XBAND to Earth	POS_X to 140.35/-3.4	
	NEW WAYPOINT		**2014-086T09:59:00**		**000T11:10:00**	**2014-086T21:09:00**	**XBAND to Earth**	**POS_X to 140.35/-3.4**	
	SP_203EA_YGAP086_PRIME	M	2014-086T09:59:00		000T01:30:00	2014-086T11:29:00	XBAND to Earth	POS_X to 140.35/-3.4	
Gap 10	SP_203EA_C70METNON086_PRIME	C, E, M	2014-086T11:29:00		000T08:10:00	2014-086T19:39:00	XBAND to Earth	Rolling/SRU	CDA. NEG_X to (316/17). SID suspend
	SP_203SA_WAYPTTURN086_PRIME		2014-086T20:29:00		000T00:40:00	2014-086T21:09:00	ISS_NAC to Saturn	POS_Z to NSP	
	NEW WAYPOINT		**2014-086T21:09:00**		**001T12:35:00**	**2014-088T09:44:00**	**ISS_NAC to Saturn**	**POS_Z to NSP**	
	ISS_203TI_M90R3CLD086_PRIME	C, V	2014-086T21:09:00	E203_M90R3CLD086+000T00:00:00	000T01:30:00	2014-086T22:39:00	ISS_NAC to Titan	POS_Z to NSP	No Preference to secondary pointing
	VIMS_203SA_NAURSTARE001_PRIME	C, I, U	2014-086T22:39:00		000T11:00:00	2014-087T09:39:00	ISS_NAC to Saturn	POS_Z to NSP	
	UVIS_203SA_NAURSLEW001_PRIME	C	2014-087T09:39:00		000T11:00:00	2014-087T20:39:00	UVIS_FUV to Saturn	POS_Z to NSP	
	VIMS_203SA_NHEMMAP001_PRIME	C, I	2014-087T20:39:00		000T11:00:00	2014-088T07:39:00	ISS_NAC to Saturn	POS_Z to NSP	
	SP_203EA_DLTURN088_PRIME		2014-088T09:04:00		000T00:40:00	2014-088T09:44:00	XBAND to Earth	POS_X to 140.35/-3.4	
	NEW WAYPOINT		**2014-088T09:44:00**		**000T11:10:00**	**2014-088T20:54:00**	**XBAND to Earth**	**POS_X to 140.35/-3.4**	
	SP_203EA_YGAP088_PRIME		2014-088T09:44:00		000T01:30:00	2014-088T11:14:00	XBAND to Earth	POS_X to 140.35/-3.4	
Gap 11	SP_203EA_C34BWGNON088_PRIME	C, R	2014-088T11:14:00		000T09:00:00	2014-088T20:14:00	XBAND to Earth	Rolling/SRU	CDA. NEG_X to (316/17). SID suspend
	SP_203SA_WAYPTTURN088_PRIME		2014-088T20:14:00		000T00:40:00	2014-088T20:54:00	ISS_NAC to Saturn	POS_Z to NSP	
	NEW WAYPOINT		**2014-088T20:54:00**		**000T23:05:00**	**2014-089T19:59:00**	**ISS_NAC to Saturn**	**POS_Z to NSP**	
	ISS_203TI_M60R3CLD088_PRIME	C, V	2014-088T20:54:00	E203_M60R3CLD088+000T00:00:00	000T01:30:00	2014-088T22:24:00	ISS_NAC to Titan	POS_Z to NSP	No Preference to secondary pointing
	VIMS_203SA_NAURSTARE002_PRIME	I	2014-088T22:24:00		000T10:00:00	2014-089T08:24:00	ISS_NAC to Saturn	POS_Z to NSP	
	ISS_203SA_NPOLVORT001_PRIME	V	2014-089T08:24:00		000T10:00:00	2014-089T18:24:00	ISS_NAC to Saturn	POS_Z to NSP	No Preference to secondary pointing
	SP_203EA_DLTURN089_PRIME		2014-089T19:19:00		000T00:40:00	2014-089T19:59:00	XBAND to Earth	NEG_X to 316.0/17.0	
	NEW WAYPOINT		**2014-089T19:59:00**		**000T10:55:00**	**2014-090T06:54:00**	**XBAND to Earth**	**NEG_X to 316.0/17.0**	
	ENGR_203SC_KPTYBIAS089_PRIME		2014-089T19:59:00		000T01:30:00	2014-089T21:29:00	NEG_Z to DELTA_H (0.0,0.0,66.0 deg. offset)	NEG_X to Sun	
	SP_203EA_M34HEFNON089_PRIME	C	2014-089T21:29:00		000T07:00:00	2014-090T04:29:00	XBAND to Earth	Rolling/SRU	CDA. NEG_X to (316/17). SID suspend
Gap 12	SP_203SA_WAYPTTURN090_PRIME		2014-090T06:14:00		000T00:40:00	2014-090T06:54:00	ISS_NAC to Saturn	POS_Z to NSP	
	NEW WAYPOINT		**2014-090T06:54:00**		**000T20:20:00**	**2014-091T03:14:00**	**ISS_NAC to Saturn**	**POS_Z to NSP**	
	ISS_203TI_M60R3CLD090_PRIME	C, V	2014-090T06:54:00	E203_M60R3CLD090+000T00:00:00	000T01:30:00	2014-090T08:24:00	ISS_NAC to Titan	POS_Z to NSP	No Preference to secondary pointing
	ISS_203SA_NPOLVORT002_PRIME	V	2014-090T08:24:00		000T10:00:00	2014-090T18:24:00	ISS_NAC to Saturn	POS_Z to NSP	No Preference to secondary pointing
	UVIS_203SA_EUVFUV002_PRIME	I	2014-090T18:24:00		000T08:00:00	2014-091T02:24:00	UVIS_FUV to Saturn	NEG_X to Sun	
	SP_203EA_DLTURN091_PRIME		2014-091T02:34:00		000T00:40:00	2014-091T03:14:00	XBAND to Earth	NEG_X to 318.0/8.0	
	NEW WAYPOINT		**2014-091T03:14:00**		**000T11:10:00**	**2014-091T14:24:00**	**XBAND to Earth**	**NEG_X to 318.0/8.0**	
	SP_203EA_YGAP091_PRIME		2014-091T03:14:00		000T01:30:00	2014-091T04:44:00	XBAND to Earth	NEG_X to 318.0/8.0	
Gap 13	SP_203EA_G70METNON091_PRIME	C	2014-091T04:44:00		000T08:50:00	2014-091T13:34:00	XBAND to Earth	Rolling	CDA. NEG_X to (318/8).
	SP_203SA_WAYPTTURN091_PRIME		2014-091T13:44:00		000T00:40:00	2014-091T14:24:00	ISS_NAC to Saturn	POS_Z to NSP	
	NEW WAYPOINT		**2014-091T14:24:00**		**000T12:50:00**	**2014-092T03:14:00**	**ISS_NAC to Saturn**	**POS_Z to NSP**	
	ISS_203TI_M30R3CLD091_PRIME	C, V	2014-091T14:24:00	E203_M30R3CLD091+000T00:00:00	000T01:30:00	2014-091T15:54:00	ISS_NAC to Titan (0.0,48.0,0.0 deg. offset)	POS_Z to NSP	
	CIRS_203SA_COMPSIT001_PRIME	U, V	2014-091T15:54:00		000T10:30:00	2014-092T02:24:00	CIRS_FP1 to Saturn	POS_Z to NSP	
	SP_203EA_DLTURN092_PRIME		2014-092T02:34:00		000T00:40:00	2014-092T03:14:00	XBAND to Earth	NEG_X to 318.0/8.0	
	NEW WAYPOINT		**2014-092T03:14:00**		**000T11:10:00**	**2014-092T14:24:00**	**XBAND to Earth**	**NEG_X to 318.0/8.0**	
	SP_203EA_YGAP092_PRIME		2014-092T03:14:00		000T01:30:00	2014-092T04:44:00	XBAND to Earth	NEG_X to 318.0/8.0	
Gap 14	SP_203EA_G34HEFNON092_PRIME	C	2014-092T04:44:00		000T09:00:00	2014-092T13:44:00	XBAND to Earth	Rolling	CDA. NEG_X to (318/8).
	SP_203SA_WAYPTTURN092_PRIME		2014-092T13:44:00		000T00:40:00	2014-092T14:24:00	ISS_NAC to Saturn	POS_Z to NSP	
	NEW WAYPOINT		**2014-092T14:24:00**		**000T12:35:00**	**2014-093T02:59:00**	**ISS_NAC to Saturn**	**POS_Z to NSP**	
	ISS_203TI_M30R3CLD092_PRIME	C, V	2014-092T14:24:00	E203_M30R3CLD092+000T00:00:00	000T01:30:00	2014-092T15:54:00	ISS_NAC to Titan (0.0,28.0,0.0 deg. offset)	POS_Z to NSP	
	NAV_203SK_OPNAV921_PRIME		2014-092T15:54:00		000T01:30:00	2014-092T17:24:00	ISS_NAC to Satellites	POS_Z to NSP	No Preference to secondary pointing. Starts at waypoint, ends at same waypoint
	ISS_203SA_NPOLVORT003_PRIME	V	2014-092T17:24:00		000T08:55:00	2014-093T02:19:00	ISS_NAC to Saturn	POS_Z to NSP	No Preference to secondary pointing
	SP_203EA_DLTURN093_PRIME		2014-093T02:19:00		000T00:40:00	2014-093T02:59:00	XBAND to Earth	NEG_X to 318.0/8.0	
	NEW WAYPOINT		**2014-093T02:59:00**		**000T11:10:00**	**2014-093T14:09:00**	**XBAND to Earth**	**NEG_X to 318.0/8.0**	
	SP_203EA_YGAP093_PRIME		2014-093T02:59:00		000T01:30:00	2014-093T04:29:00	XBAND to Earth	NEG_X to 318.0/8.0	
Gap 15	SP_203EA_G34BWGNON093_PRIME	C, R	2014-093T04:29:00		000T09:00:00	2014-093T13:29:00	XBAND to Earth	Rolling	CDA. NEG_X to (318/8).
	SP_203SA_WAYPTTURN093_PRIME		2014-093T13:29:00		000T00:40:00	2014-093T14:09:00	ISS_NAC to Saturn	POS_Z to NSP	
	NEW WAYPOINT		**2014-093T14:09:00**		**000T14:20:00**	**2014-094T04:29:00**	**ISS_NAC to Saturn**	**POS_Z to NSP**	
	VIMS_203SA_NHEMMAP002_PRIME	C, I	2014-093T14:09:00		000T13:30:00	2014-094T03:39:00	ISS_NAC to Saturn	POS_Z to NSP	
	SP_203EA_DLTURN094_PRIME		2014-094T03:49:00		000T00:40:00	2014-094T04:29:00	XBAND to Earth	NEG_X to 318.0/8.0	
	NEW WAYPOINT		**2014-094T04:29:00**		**000T09:40:00**	**2014-094T14:09:00**	**XBAND to Earth**	**NEG_X to 318.0/8.0**	
	SP_203EA_G34HEFOTP094_PRIME	C, N	2014-094T04:29:00		000T09:00:00	2014-094T13:29:00	XBAND to Earth	4_Hr_Rolling	CDA. NEG_X to (318/8). OTP
	SP_203SA_WAYPTTURN094_PRIME		2014-094T13:29:00		000T00:40:00	2014-094T14:09:00	ISS_NAC to Saturn	POS_Z to NSP	

Final Sequenced SPASS (3 of 3)

Gap 16

Gap 17

NEW WAYPOINT		**2014-094T14:09:00**		**000T14:21:00**	**2014-095T04:30:00**	**ISS_NAC to Saturn**	**POS_Z to NSP**	
UVIS_203SA_EUVFUV003_PRIME	I	2014-094T14:09:00		000T13:30:00	2014-095T03:39:00	UVIS_FUV to Saturn	NEG_X to Sun	
SP_203EA_DLTURN095_PRIME		2014-095T03:50:00		000T00:40:00	2014-095T04:30:00	XBAND to Earth	NEG_X to 318.0/8.0	
NEW WAYPOINT		**2014-095T04:30:00**		**000T09:40:00**	**2014-095T14:10:00**	**XBAND to Earth**	**NEG_X to 318.0/8.0**	
SP_203EA_G34B26OTB095_PRIME	C, N	2014-095T04:30:00		000T09:00:00	2014-095T13:30:00	XBAND to Earth	Rolling	CDA. same as OTP pass. OTB
SP_203SA_WAYPTTURN095_PRIME		2014-095T13:30:00		000T00:40:00	2014-095T14:10:00	ISS_NAC to Saturn	POS_Z to NSP	
NEW WAYPOINT		**2014-095T14:10:00**		**000T19:05:00**	**2014-096T09:15:00**	**ISS_NAC to Saturn**	**POS_Z to NSP**	
ISS_203SA_WINDS001_PRIME	U, V	2014-095T14:10:00		000T05:00:00	2014-095T19:10:00	ISS_NAC to Saturn	POS_Z to NSP	No Preference to secondary pointing
CIRS_203SA_COMPSIT002_PRIME	U	2014-095T19:10:00		000T06:00:00	2014-096T01:10:00	CIRS_FP3 to Saturn	POS_Z to NSP	
ISS_203SA_WINDS002_PRIME	U, V	2014-096T01:10:00		000T05:00:00	2014-096T06:10:00	ISS_NAC to Saturn	POS_Z to NSP	No Preference to secondary pointing
SP_203EA_DLTURN096_PRIME		2014-096T08:35:00		000T00:40:00	2014-096T09:15:00	XBAND to Earth	NEG_Y to 149.0/28.0	
NEW WAYPOINT		**2014-096T09:15:00**		**000T11:12:00**	**2014-096T20:27:00**	**XBAND to Earth**	**NEG_Y to 149.0/28.0**	
SP_203EA_YGAP096_PRIME		2014-096T09:15:00		000T01:30:00	2014-096T10:45:00	XBAND to Earth	NEG_Y to 149.0/28.0	
SP_203EA_C70METNON096_PRIME	C, E	2014-096T10:45:00		000T09:00:00	2014-096T19:45:00	XBAND to Earth	NEG_Y to 149.0/28.0	MIMI. NEG_Y to Saturn (0,0,-9.5). pre-TOST flyby

Final Sequenced SMT and Data Volume (1 of 3)

DATA VOLUME SUMMARY --- TRANSFER FRAME OVERHEAD INCLUDED (80 BITS PER 8800-BIT FRAME)

			OBSERVATION_PERIOD							DOWNLINK_PASS							
			P4						P5	RECORDED		PLAYBACK					
DOWNLINK PASS NAME	Start doy hh:mm	End doy hh:mm	START (Mb)	SCI (Mb)	HK+E (Mb)	TOTAL (Mb)	CPACTY (Mb)	MRGN (Mb)	OPNAV (Mb)	SCI (Mb)	ENGR (Mb)	TOTAL (Mb)	CPACTY (Mb)	MARGN (Mb)	NET_MARGN (Mb)	(%)	CAROVR (Mb)
SP_202EA_C70METNON074_PRIME	074 12:12	074 21:12	934	1111	165	2209	3322	1113	0	159	53	2421	3820	1398	3024	24%	0
SP_202EA_M34HEFNON075_PRIME	075 22:27	076 07:02	0	1231	107	1338	3322	1984	0	153	51	1542	645	-898	1625	17%	897
SP_202EA_G34HEFNON077_PRIME	077 05:43	077 14:43	897	704	96	1697	3322	1625	0	159	53	1909	752	-1157	1902	20%	1157
SP_202EA_G70METNON078_PRIME	078 05:43	078 10:43	1157	200	63	1420	3322	1902	0	83	29	1532	1917	384	2563	21%	0
SP_202EA_C70METNON078_PRIME	078 10:43	078 14:43	0	0	0	0	3322	3322	0	75	24	99	1541	1442	2179	19%	0
SP_202EA_G34BWGOTP079_PRIME	079 05:28	079 14:13	0	788	62	851	3322	2471	0	154	52	1056	521	-536	736	7%	535
SP_202EA_G34BWGOTB080_PRIME	080 05:28	080 14:28	535	519	64	1119	3322	2203	0	159	53	1330	644	-687	736	6%	686
SP_202EA_G70METNON082_PRIME	082 05:13	082 12:33	686	1736	164	2586	3322	736	0	127	43	2756	2837	80	1923	14%	0
SP_202EA_C70METNON082_PRIME	082 12:33	082 14:13	0	0	0	0	3322	3322	0	31	10	41	724	682	1842	17%	0
SP_203EA_G34BWGNON084_PRIME	084 05:13	084 13:43	0	825	165	990	3322	2332	0	149	50	1189	626	-564	1159	10%	563
SP_203EA_C70METNON086_PRIME	086 11:29	086 19:39	563	1406	193	2163	3322	1159	0	143	48	2354	3516	1162	1162	10%	0
SP_203EA_C34BWGNON088_PRIME	088 11:14	088 20:14	0	2024	167	2192	3322	1130	0	159	53	2403	900	-1504	57	0%	1503
SP_203EA_M34HEFNON089_PRIME	089 21:29	090 04:29	1503	804	107	2414	3322	908	0	123	41	2578	604	-1975	57	0%	1975
SP_203EA_G70METNON091_PRIME	091 04:44	091 13:34	1975	1188	102	3265	3322	57	0	155	52	3472	3302	-171	1238	9%	170
SP_203EA_G34HEFNON092_PRIME	092 04:44	092 13:44	170	388	64	623	3322	2700	0	159	53	834	799	-36	1238	9%	35
SP_203EA_G34BWGNON093_PRIME	093 04:29	093 13:29	35	798	62	896	3322	2426	0	159	53	1108	664	-444	1238	8%	443
SP_203EA_G34HEFOTP094_PRIME	094 04:29	094 13:29	443	970	63	1477	3322	1845	0	159	53	1688	657	-1031	1238	7%	1031
SP_203EA_G34B26OTB095_PRIME	095 04:30	095 13:30	1031	510	63	1605	3322	1717	0	159	53	1816	743	-1074	1238	6%	1073
SP_203EA_C70METNON096_PRIME	096 10:45	096 19:45	1073	921	90	2084	3322	1238	0	159	53	2295	3834	1538	1543	7%	0

Final Sequenced SMT and Data Volume (2 of 3)

DATA VOLUME REPORT --- TRANSFER FRAME OVERHEAD NOT INCLUDED

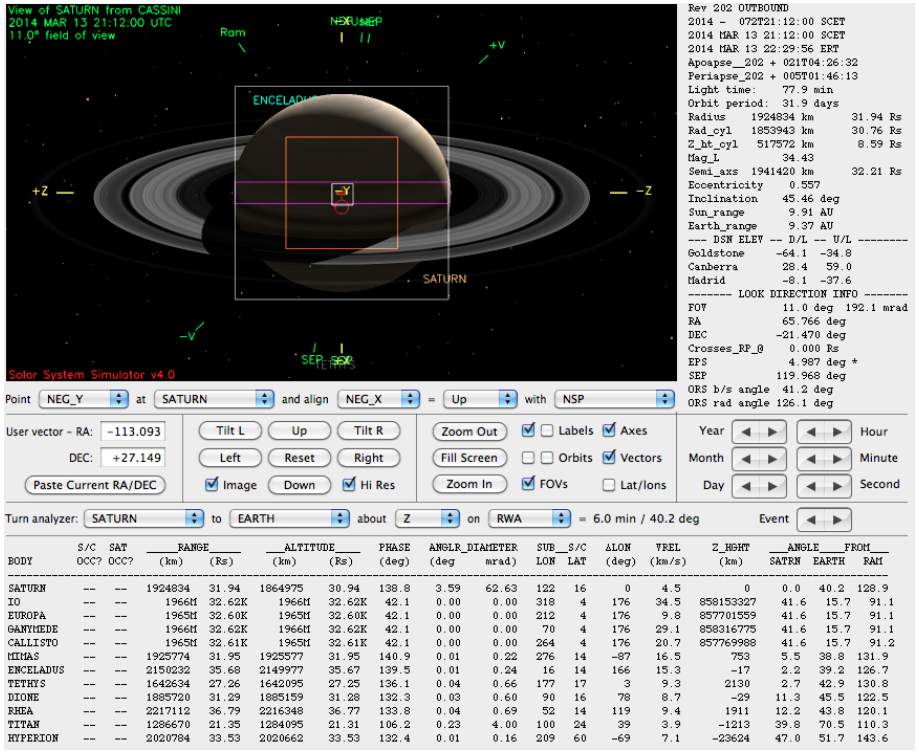
Event	Start doy hh:mm	End doy hh:mm	CAPS (Mb)	CDA (Mb)	CIRS (Mb)	INMS (Mb)	ISS (Mb)	MAG (Mb)	MIMI (Mb)	RADAR (Mb)	RPWS (Mb)	UVIS (Mb)	VIMS (Mb)	PROBE (Mb)	ENGR (Mb)	TOTAL (Mb)
OBSERVATION_NOR	072 21:12	074 12:12	0.0	36.8	0.0	18.4	800.0	34.7	84.2	0.0	126.4	0.0	0.0	0.0	163.0	1263.4
SP_202EA_C70METNON074_PRIME	074 12:12	074 21:12	0.0	8.5	86.4	3.2	0.0	8.0	19.4	0.0	29.2	2.5	0.0	0.0	0.0	157.2
DAILY TOTAL SCIENCE	072 21:12	074 21:12	0.0	45.3	86.4	21.6	800.0	42.7	103.7	0.0	155.5	2.5	0.0	0.0	163.0	
OBSERVATION_NOR	074 21:12	075 22:27	0.0	23.8	316.8	9.1	51.4	22.5	54.5	0.0	81.8	0.0	660.0	0.0	105.5	1325.4
SP_202EA_M34HEFNON075_PRIME	075 22:27	076 07:02	0.0	8.1	84.5	3.1	0.0	7.6	18.5	0.0	27.8	2.3	0.0	0.0	0.0	152.1
DAILY TOTAL SCIENCE	074 21:12	076 07:02	0.0	31.9	401.3	12.2	51.4	30.1	73.1	0.0	109.6	2.3	660.0	0.0	105.5	
OBSERVATION_NOR	076 07:02	077 05:43	0.0	21.4	138.7	10.1	85.0	20.2	49.0	0.0	73.5	289.9	10.0	0.0	94.8	792.5
SP_202EA_G34HEFNON077_PRIME	077 05:43	077 14:43	0.0	8.5	86.4	3.2	0.0	8.0	19.4	0.0	29.2	2.5	0.0	0.0	0.0	157.2
DAILY TOTAL SCIENCE	076 07:02	077 14:43	0.0	29.9	225.1	13.3	85.0	28.2	68.4	0.0	102.7	292.4	10.0	0.0	94.8	
OBSERVATION_NOR	077 14:43	078 05:43	0.0	14.1	0.0	5.4	0.0	97.4	32.4	0.0	48.6	0.0	0.0	0.0	62.7	260.6
SP_202EA_G70METNON078_PRIME	078 05:43	078 10:43	0.0	4.7	43.2	1.8	0.0	4.4	10.8	0.0	16.2	1.4	0.0	0.0	0.0	82.5
SP_202EA_C70METNON078_PRIME	078 10:43	078 14:43	0.0	3.8	43.2	1.4	0.0	3.6	8.6	0.0	13.0	1.1	0.0	0.0	0.0	74.7
DAILY TOTAL SCIENCE	077 14:43	078 14:43	0.0	22.6	86.4	8.6	0.0	105.4	51.8	0.0	77.8	2.5	0.0	0.0	62.7	
OBSERVATION_NOR	078 14:43	079 05:28	0.0	13.9	93.6	5.3	120.0	13.1	31.9	0.0	47.8	235.5	220.0	0.0	61.6	842.7
SP_202EA_G34BWGOTP079_PRIME	079 05:28	079 14:13	0.0	8.3	83.7	3.2	0.0	7.8	18.9	0.0	28.3	2.4	0.0	0.0	0.0	152.5
DAILY TOTAL SCIENCE	078 14:43	079 14:13	0.0	22.2	177.3	8.5	120.0	20.9	50.8	0.0	76.1	237.9	220.0	0.0	61.6	
OBSERVATION_NOR	079 14:13	080 05:28	0.0	14.4	101.1	5.5	50.0	13.6	32.9	0.0	49.4	247.6	0.0	0.0	63.7	578.3
SP_202EA_G34BWGOTB080_PRIME	080 05:28	080 14:28	0.0	8.5	86.4	3.2	0.0	8.0	19.4	0.0	29.2	2.5	0.0	0.0	0.0	157.2
DAILY TOTAL SCIENCE	079 14:13	080 14:28	0.0	22.9	187.5	8.7	50.0	21.6	52.4	0.0	78.6	250.1	0.0	0.0	63.7	
OBSERVATION_NOR	080 14:28	082 05:13	0.0	36.5	417.0	14.0	186.4	34.5	83.7	0.0	125.5	50.4	772.0	0.0	162.0	1881.9
SP_202EA_G70METNON082_PRIME	082 05:13	082 12:33	0.0	6.9	68.4	2.6	0.0	6.5	15.8	0.0	23.8	2.0	0.0	0.0	0.0	126.1
SP_202EA_C70METNON082_PRIME	082 12:33	082 14:13	0.0	1.6	18.0	0.6	0.0	1.5	3.6	0.0	5.4	0.5	0.0	0.0	0.0	31.1
DAILY TOTAL SCIENCE	080 14:28	082 14:13	0.0	45.0	503.4	17.2	186.4	42.5	103.1	0.0	154.7	52.9	772.0	0.0	162.0	
OBSERVATION_NOR	082 14:13	084 05:13	0.0	55.6	115.2	24.1	160.0	65.8	84.2	0.0	126.4	58.0	128.0	0.0	163.0	980.3
SP_203EA_G34BWGNON084_PRIME	084 05:13	084 13:43	0.0	8.0	81.0	3.1	0.0	7.6	18.4	0.0	27.5	2.3	0.0	0.0	0.0	147.9
DAILY TOTAL SCIENCE	082 14:13	084 13:43	0.0	63.7	196.2	27.2	160.0	73.4	102.6	0.0	153.9	60.3	128.0	0.0	163.0	
OBSERVATION_NOR	084 13:43	086 11:29	0.0	43.2	177.8	16.5	88.5	40.7	98.9	0.0	148.3	289.8	490.0	0.0	191.3	1584.9
SP_203EA_C70METNON086_PRIME	086 11:29	086 19:39	0.0	7.7	77.4	2.9	0.0	7.3	17.6	0.0	26.5	2.2	0.0	0.0	0.0	141.6
DAILY TOTAL SCIENCE	084 13:43	086 19:39	0.0	50.9	255.2	19.4	88.5	48.0	116.5	0.0	174.7	292.1	490.0	0.0	191.3	
OBSERVATION_NOR	086 19:39	088 11:14	0.0	37.3	268.2	14.3	358.5	35.2	85.5	0.0	128.2	398.8	680.0	0.0	165.4	2171.4
SP_203EA_C34BWGNON088_PRIME	088 11:14	088 20:14	0.0	8.5	86.4	3.2	0.0	8.0	19.4	0.0	29.2	2.5	0.0	0.0	0.0	157.2
DAILY TOTAL SCIENCE	086 19:39	088 20:14	0.0	45.8	354.6	17.5	358.5	43.2	104.9	0.0	157.4	401.2	680.0	0.0	165.4	

Final Sequenced SMT and Data Volume (3 of 3)

DATA VOLUME REPORT --- TRANSFER FRAME OVERHEAD NOT INCLUDED

Event	Start doy hh:mm	End doy hh:mm	CAPS (Mb)	CDA (Mb)	CIRS (Mb)	INMS (Mb)	ISS (Mb)	MAG (Mb)	MIMI (Mb)	RADAR (Mb)	RPWS (Mb)	UVIS (Mb)	VIMS (Mb)	PROBE (Mb)	ENGR (Mb)	TOTAL (Mb)
OBSERVATION_NOR	088 20:14	089 21:29	0.0	23.8	21.6	9.1	338.5	22.5	54.5	0.0	81.8	0.0	245.0	0.0	105.5	902.3
SP_203EA_M34HEFNON089_PRIME	089 21:29	090 04:29	0.0	6.6	66.9	2.5	0.0	6.2	15.1	0.0	22.7	1.9	0.0	0.0	0.0	122.0
DAILY TOTAL SCIENCE	088 20:14	090 04:29	0.0	30.4	88.5	11.6	338.5	28.7	69.7	0.0	104.5	1.9	245.0	0.0	105.5	
OBSERVATION_NOR	090 04:29	091 04:44	0.0	22.9	98.7	8.7	588.5	21.6	52.4	0.0	78.6	145.4	160.0	0.0	101.4	1278.1
SP_203EA_G70METNON091_PRIME	091 04:44	091 13:34	0.0	8.3	84.6	3.2	0.0	7.9	19.1	0.0	28.6	2.4	0.0	0.0	0.0	154.1
DAILY TOTAL SCIENCE	090 04:29	091 13:34	0.0	31.2	183.3	11.9	588.5	29.4	71.5	0.0	107.2	147.8	160.0	0.0	101.4	
OBSERVATION_NOR	091 13:34	092 04:44	0.0	14.3	99.0	5.5	38.5	13.5	32.8	0.0	49.1	38.1	94.0	0.0	63.4	448.1
SP_203EA_G34HEFNON092_PRIME	092 04:44	092 13:44	0.0	8.5	86.4	3.2	0.0	8.0	19.4	0.0	29.2	2.5	0.0	0.0	0.0	157.2
DAILY TOTAL SCIENCE	091 13:34	092 13:44	0.0	22.8	185.4	8.7	38.5	21.5	52.2	0.0	78.3	40.5	94.0	0.0	63.4	
OBSERVATION_NOR	092 13:44	093 04:29	0.0	13.9	21.6	5.3	488.5	13.1	31.9	0.0	47.8	0.0	160.0	0.0	61.6	843.7
OBSERVATION_SI	092 13:44	093 04:29	0.0	0.0	0.0	0.0	8.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.7
SP_203EA_G34BWGNON093_PRIME	093 04:29	093 13:29	0.0	8.5	86.4	3.2	0.0	8.0	19.4	0.0	29.2	2.5	0.0	0.0	0.0	157.2
DAILY TOTAL SCIENCE	092 13:44	093 13:29	0.0	22.4	108.0	8.6	497.2	21.1	51.3	0.0	76.9	2.5	160.0	0.0	61.6	
OBSERVATION_NOR	093 13:29	094 04:29	0.0	14.1	97.2	5.4	250.0	13.3	32.4	0.0	48.6	0.0	500.0	0.0	62.7	1023.8
SP_203EA_G34HEFOTP094_PRIME	094 04:29	094 13:29	0.0	8.5	86.4	3.2	0.0	8.0	19.4	0.0	29.2	2.5	0.0	0.0	0.0	157.2
DAILY TOTAL SCIENCE	093 13:29	094 13:29	0.0	22.6	183.6	8.6	250.0	21.3	51.8	0.0	77.8	2.5	500.0	0.0	62.7	
OBSERVATION_NOR	094 13:29	095 04:30	0.0	14.2	97.2	5.4	50.0	13.4	32.4	0.0	48.7	244.6	0.0	0.0	62.8	568.5
SP_203EA_G34B26OTB095_PRIME	095 04:30	095 13:30	0.0	8.5	86.4	3.2	0.0	8.0	19.4	0.0	29.2	2.5	0.0	0.0	0.0	157.2
DAILY TOTAL SCIENCE	094 13:29	095 13:30	0.0	22.7	183.6	8.6	50.0	21.4	51.9	0.0	77.8	247.0	0.0	0.0	62.8	
OBSERVATION_NOR	095 13:30	096 10:45	0.0	20.0	43.2	7.7	450.0	18.9	45.9	0.0	68.8	58.0	200.0	0.0	88.8	1001.3
SP_203EA_C70METNON096_PRIME	096 10:45	096 19:45	0.0	8.5	86.4	3.2	0.0	8.0	19.4	0.0	29.2	2.5	0.0	0.0	0.0	157.2
DAILY TOTAL SCIENCE	095 13:30	096 19:45	0.0	28.5	129.6	10.9	450.0	26.9	65.3	0.0	98.0	60.4	200.0	0.0	88.8	

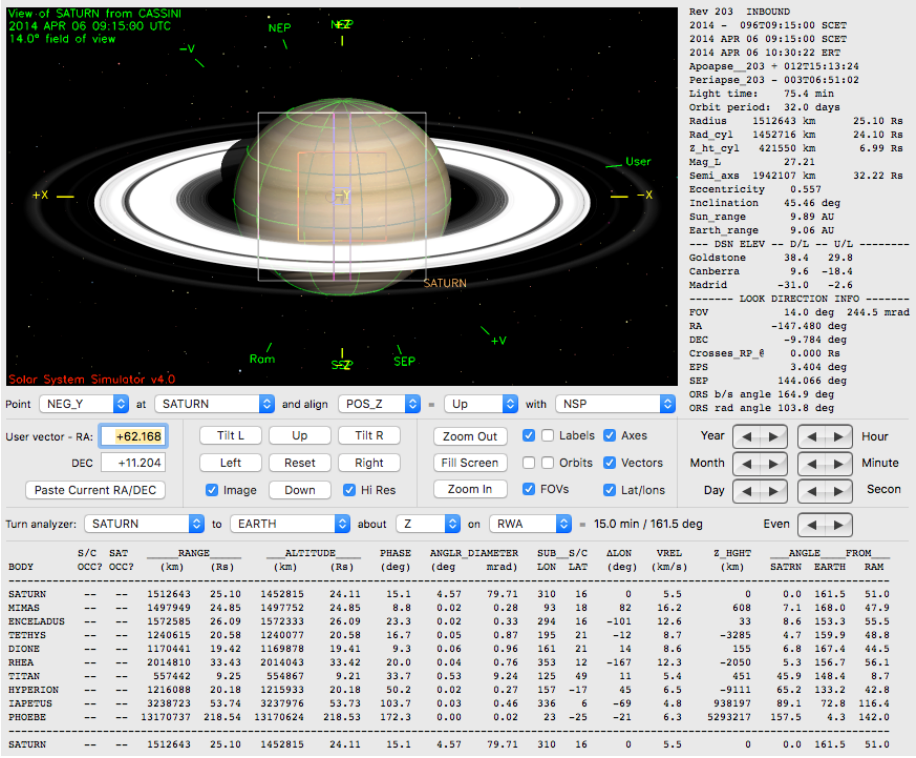
Segment Geometry (1 of 2)



BODY	S/C OCC?	SAT OCC?	RANGE (km)	RANGE (Rs)	ALTITUDE (km)	ALTITUDE (Rs)	PHASE (deg)	ANGLR_DIAMETER (deg)	ANGLR_DIAMETER mrad)	SUB_S/C LON	SUB_S/C LAT	ALON (deg)	VREL (km/s)	Z_HGHT (km)	ANGLE FROM SATRN	ANGLE FROM EARTH	ANGLE FROM RAM
SATURN	--	--	1924834	31.94	1864975	30.94	138.8	3.59	62.63	122	16	0	4.5	0	0.0	40.2	128.9
IO	--	--	1966M	32.62K	1966M	32.62K	42.1	0.00	0.00	318	4	176	34.5	858153327	41.6	15.7	91.1
EUROPA	--	--	1965M	32.60K	1965M	32.60K	42.1	0.00	0.00	212	4	176	9.8	857701559	41.6	15.7	91.1
GANYMEDE	--	--	1966M	32.62K	1966M	32.62K	42.1	0.00	0.00	70	4	176	29.1	858316775	41.6	15.7	91.1
CALLISTO	--	--	1965M	32.61K	1965M	32.61K	42.1	0.00	0.00	264	4	176	20.7	857769988	41.6	15.7	91.2
MIMAS	--	--	1925774	31.95	1925577	31.95	140.9	0.01	0.22	276	14	-87	16.5	753	5.5	38.8	131.9
ENCELADUS	--	--	2150232	35.68	2149977	35.67	139.5	0.01	0.24	16	14	166	15.3	-17	2.2	39.2	126.7
TETHYS	--	--	1642634	27.26	1642095	27.25	136.1	0.04	0.66	177	17	3	9.3	2130	2.7	42.9	130.8
DIONE	--	--	1885720	31.29	1885159	31.28	132.3	0.03	0.60	90	16	78	8.7	-29	11.3	45.5	122.5
RHEA	--	--	2217112	36.79	2216348	36.77	133.8	0.04	0.69	52	14	119	9.4	1911	12.2	43.8	120.1
TITAN	--	--	1286670	21.35	1284095	21.31	106.2	0.23	4.00	100	24	39	3.9	-1213	39.8	70.5	110.3
HYPERION	--	--	2020784	33.53	2020662	33.53	132.4	0.01	0.16	209	60	-69	7.1	-23624	47.0	51.7	143.6

Seg Start (Left)

Seg End (below)

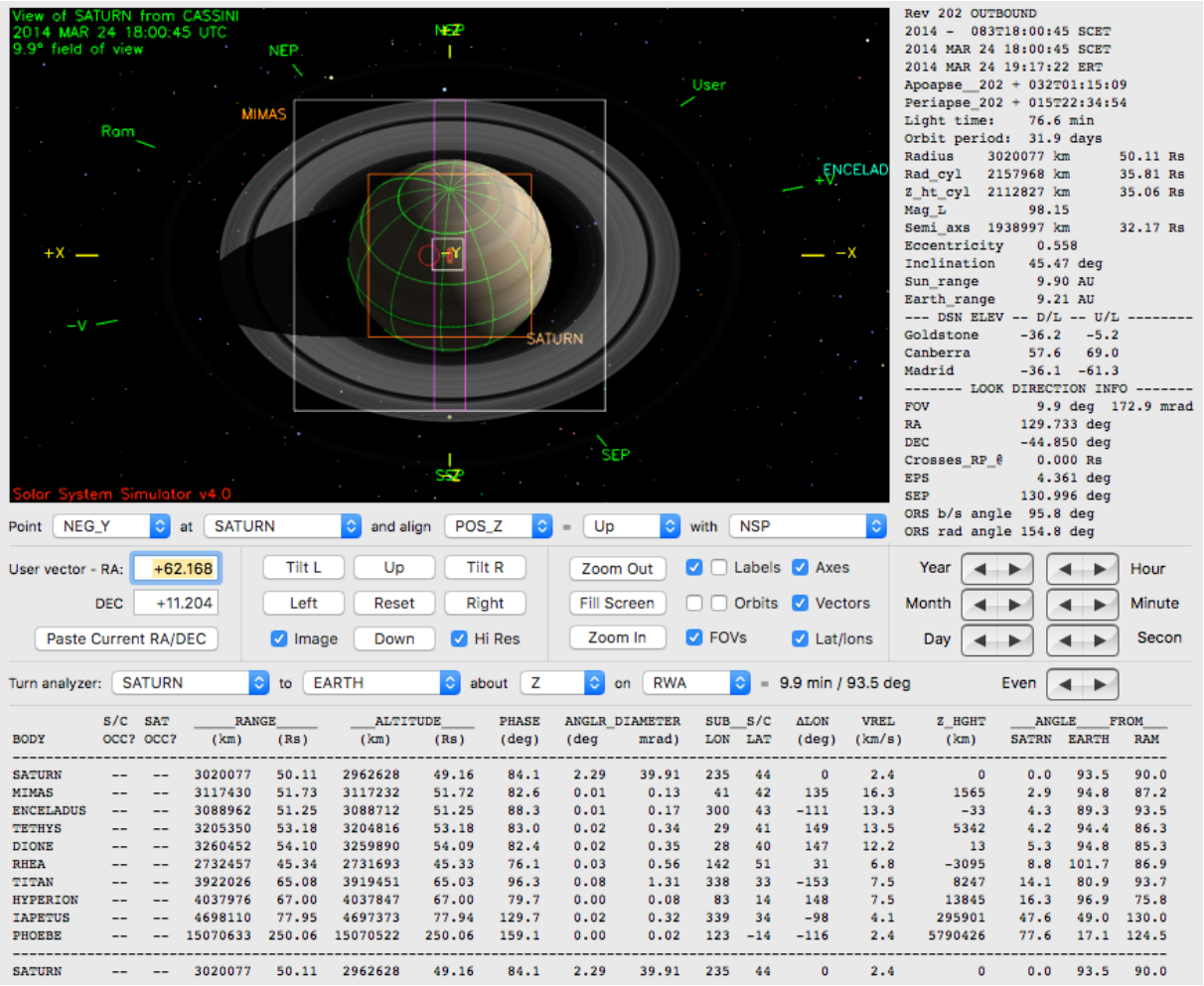


BODY	S/C OCC?	SAT OCC?	RANGE (km)	RANGE (Rs)	ALTITUDE (km)	ALTITUDE (Rs)	PHASE (deg)	ANGLR_DIAMETER (deg	ANGLR_DIAMETER mrad)	SUB_S/C LON	SUB_S/C LAT	ALON (deg)	VREL (km/s)	Z_HGHT (km)	ANGLE FROM SATRN	ANGLE FROM EARTH	ANGLE FROM RAM
SATURN	--	--	1512643	25.10	1452815	24.11	15.1	4.57	79.71	310	16	0	5.5	0	0.0	161.5	51.0
MIMAS	--	--	1497949	24.85	1497752	24.85	8.8	0.02	0.28	93	18	82	16.2	608	7.1	168.0	47.9
ENCELADUS	--	--	1572585	26.09	1572333	26.09	23.3	0.02	0.33	294	16	-101	12.6	33	8.6	153.3	55.5
TETHYS	--	--	1240615	20.58	1240077	20.58	16.7	0.05	0.87	195	21	-12	8.7	-3285	4.7	159.9	48.8
DIONE	--	--	1170441	19.42	1169878	19.41	9.3	0.06	0.96	161	21	14	8.6	155	6.8	167.4	44.5
RHEA	--	--	2014810	33.43	2014043	33.42	20.0	0.04	0.76	353	12	-167	12.3	-2050	5.3	156.7	56.1
TITAN	--	--	557442	9.25	554867	9.21	33.7	0.53	9.24	125	49	11	5.4	451	45.9	148.4	8.7
HYPERION	--	--	1216088	20.18	1215933	20.18	50.2	0.02	0.27	157	-17	45	6.5	-9111	65.2	133.2	42.8
IAPETUS	--	--	3238723	53.74	3237976	53.73	103.7	0.03	0.46	336	6	-69	4.8	938197	89.1	72.8	116.4
PHOEBE	--	--	13170737	218.54	13170624	218.53	172.3	0.00	0.02	23	-25	-21	6.3	5293217	157.5	4.3	142.0
SATURN	--	--	1512643	25.10	1452815	24.11	15.1	4.57	79.71	310	16	0	5.5	0	0.0	161.5	51.0

	Saturn Range	Phase Angle	Sub-S/C Lat.
Segment Start	31.94 R_{Sat}	138.8°	16° N
Apoapse	50.11 R_{Sat}	84.1°	44° N
Segment End	25.1 R_{Sat}	15.1°	16° N

Segment Geometry (2 of 2)

Apoapse: 2014-083T18:01:45



BODY	S/C OCC?	SAT OCC?	RANGE (km)	RANGE (Rs)	ALTITUDE (km)	ALTITUDE (Rs)	PHASE (deg)	ANGLR_DIAMETER (deg	mrad)	SUB_S/C LON	SUB_S/C LAT	ALON (deg)	VREL (km/s)	Z_HGHT (km)	ANGLE FROM SATRN	ANGLE FROM EARTH	ANGLE FROM RAM
SATURN	--	--	3020077	50.11	2962628	49.16	84.1	2.29	39.91	235	44	0	2.4	0	0.0	93.5	90.0
MIMAS	--	--	3117430	51.73	3117232	51.72	82.6	0.01	0.13	41	42	135	16.3	1565	2.9	94.8	87.2
ENCELADUS	--	--	3088962	51.25	3088712	51.25	88.3	0.01	0.17	300	43	-111	13.3	-33	4.3	89.3	93.5
TETHYS	--	--	3205350	53.18	3204816	53.18	83.0	0.02	0.34	29	41	149	13.5	5342	4.2	94.4	86.3
DIONE	--	--	3260452	54.10	3259890	54.09	82.4	0.02	0.35	28	40	147	12.2	13	5.3	94.8	85.3
RHEA	--	--	2732457	45.34	2731693	45.33	76.1	0.03	0.56	142	51	31	6.8	-3095	8.8	101.7	86.9
TITAN	--	--	3922026	65.08	3919451	65.03	96.3	0.08	1.31	338	33	-153	7.5	8247	14.1	80.9	93.7
HYPERION	--	--	4037976	67.00	4037847	67.00	79.7	0.00	0.08	83	14	148	7.5	13845	16.3	96.9	75.8
IAPETUS	--	--	4698110	77.95	4697373	77.94	129.7	0.02	0.32	339	34	-98	4.1	295901	47.6	49.0	130.0
PHOEBE	--	--	15070633	250.06	15070522	250.06	159.1	0.00	0.02	123	-14	-116	2.4	5790426	77.6	17.1	124.5
SATURN	--	--	3020077	50.11	2962628	49.16	84.1	2.29	39.91	235	44	0	2.4	0	0.0	93.5	90.0

Solar Geometry – ORS Boresight Concerns

No ORS Boresight Solar Constraints on Science Pointing Noted.

Daily Science Highlights (1 of 2)

DOY 72: The Saturn_202_203 segment kicked off S83 with the remaining 24 days of the 27-day Saturn CAKE to end S82. First he IVP was loaded and a BOS Bias. Was performed. Following that, ISS had the first observation of the small satellite Fornjo, lasting for nearly 36 hours.

DOY 72 and DOY 73: Continued with the observation of Fornjot.

DOY 74: The Fornjot observation finished. After then first downlink of S83, CIRS mapped Saturn's atmosphere in the mid-infrared.

DOY 75: Finishing up the 22-hour CIRS map, another downlink was performed.

DOY 76: After ending the downlink, ISS acquired their first Titan Cloud Monitor observation of S83. This was followed by the start of a UVIS EUVFUV as part of the normal Saturn CAKE template, with CIRS and ISS riding.

DOY 77: After a downlink, Cassini remained Earth-pointed while MAG executed an extended cal-roll.

DOY 78: MAG roll completed, after another downlink, VIMS performed a northern polar auroral map (stare), followed by a UVIS stare and slews across the auroral oval.

DOY 79: After completion of the UVIS stare/slew, a downlink occurred., followed by a EUVFUV observation.

DOY 80: After a downlink, CIRS mapped Saturn's atmosphere in the mid-infrared.

DOY 81: CIRS performed a COMPSIT as another common CAKE observation.

DOY 82: After the downlink, CDA performed a rare interstellar dust observation for 20 hours.

DOY 83: Following CDA, CIRS performed another COMPSIT as apoapse was approached.

DOY 84: Finishing up the CIRS COMPSIT, a downlink was performed to begin rev 203 and a long-duration, slow VIMS observation of a VIMS ring occultation. This particular occultation was unique, and occurred at almost 50 Rs. It was a chord occultation which penetrated from the F ring in to the middle-B ring and back out to the F ring, promising extremely high spatial resolution. CIRS was riding along.

DOY 85: ISS picked up for another Titan Cloud Monitor, then UVIS acquired another 16-hr. EUVFUV.

DOY 86: A downlink and another Titan Cloud Observation for ISS, followed by another VIMS northern polar auroral map (stare).

DOY 87: After a second stare at the aurora, by VIMS, UVIS acquired their own stare and slew across the auroral oval. Then VIMS acquired northern hemisphere maps.

DOY 88: Another downlink, this one with an RSS/DSN Monopulse Calibration, then another ISS Titan Cloud Observation, and another VIMS northern polar auroral map (stare).

This document has been reviewed and determined not to contain export controlled technical data

Daily Science Highlights (2 of 2)

DOY 89: ISS spent the bulk of this day on a NAC/WAC tracking movie of the northern polar vortex with VIMS riding along, after which a downlink was performed.

DOY 90: ISS acquired another Titan Cloud monitor followed by part two of ISS's northern polar vortex movie, again with VIMS tagging along. UVIS then acquired begins another EUVFUV, a standard in Saturn CAKEs.

DOY 91: Half of the day was downlink with the remainder spent on yet another Titan Cloud Monitor and another CIRS COMPSIT.

DOY 92: After another downlink, ISS acquired a Titan Cloud Monitor. After an Opnav, ISS acquired its third and final part of their northern polar vortex movie .

DOY 93: VIMS continued with its own mosaicking of the northern hemisphere map following an intermission for a downlink, during which a second RSS/DSN Monopulse Calibration occurred.

DOY 94: UVIS acquired their final EUVFUV for this CAKE.

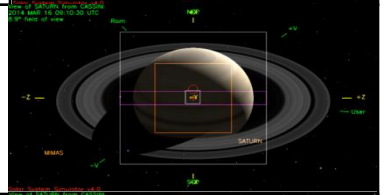
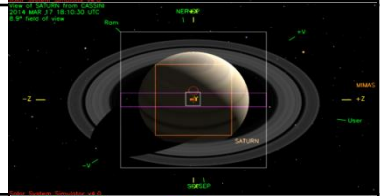
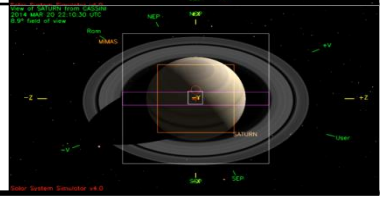
DOY 95 At relatively low phase angles, ISS tracked Saturn features for winds, with mosaics in longitude as UVIS and VIMS rode along. Then CIRS measured oxygen compounds (H_2O, CO_2) in the stratosphere as a function of latitude with UVIS riding.

DOY 96: Rounding out the segment and the CAKE, ISS repeated their Winds performance one last time to bookend CIRS' COMPSIT.

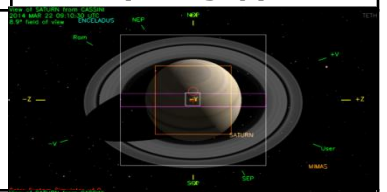
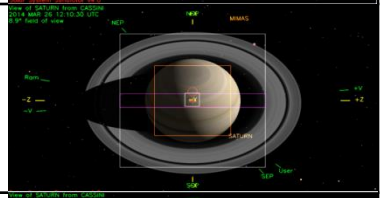
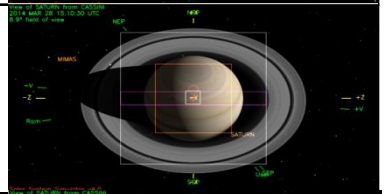
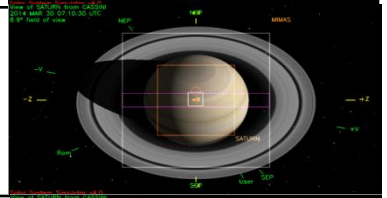
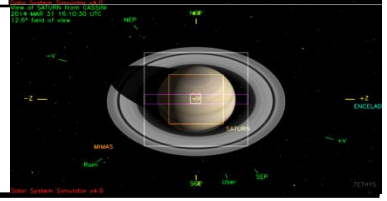
This document has been reviewed and determined not to contain export controlled technical data

Segment Integration Planning

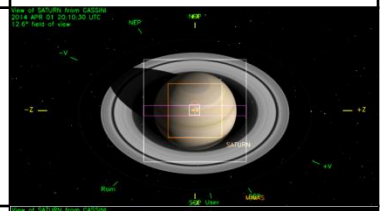
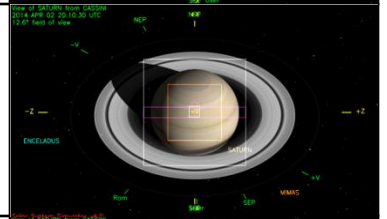
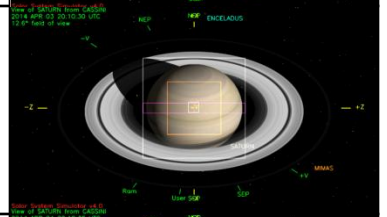
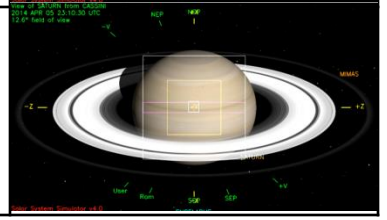
Timeline Gaps and Suggested Observations (1 of 3)

Obs	Start	End	Duration	Range (R_{Saturn})	SSC latitude	Snapshot (mid-gap)
1	2014-072T23:28:00	2014-074T10:02:00	001T10:34:00	31.2-35.96	16-24	
2	2014-074T21:52:00	2014-075T20:17:00	000T22:25:00	37.4-39.8	26-30	
3	2014-076T07:52:00	2014-077T03:33:00	000T19:41:00	41-42.7	31-34	
4	2014-077T15:23:00	2014-078T03:33:00	000T12:10:00	43.7-44.5	35-41	
5	2014-078T15:23:00	2014-079T04:48:00	000T13:25:00	45.3-46.1	37-38	
6	2014-079T15:08:00	2014-080T04:48:00	000T13:40:00	46.7-47.3	39-40	

Timeline Gaps and Suggested Observations (2 of 3)

Obs	Start	End	Duration	Range (R_{Saturn})	SSC latitude	Snapshot (mid-gap)
7	2014-080T15:08:00	2014-082T03:03:00	001T11:55:00	47.7-48.8	41-43	
8	2014-082T14:53:00	2014-084T03:03:00	001T12:10:00	49	43-45	
9	2014-084T14:53:00	2014-086T09:19:00	001T18:21:00	49-48	45	
10	2014-086T21:09:00	2014-088T09:04:00	001T11:55:00	47.7-46	45	
11	2014-088T20:54:00	2014-089T19:19:00	000T22:25:00	45.3-43.7	45-44	
12	2014-090T06:54:00	2014-091T02:34:00	000T19:40:00	42.8-41.1	43-42	

Timeline Gaps and Suggested Observations (3 of 3)

Obs	Start	End	Duration	Range (R_{Saturn})	SSC latitude	Snapshot (mid-gap)
13	2014-091T14:24:00	2014-092T02:34:00	000T12:10:00	39.9-38.7	41-40	
14	2014-092T14:24:00	2014-093T02:19:00	000T11:55:00	37.3-35.9	38-37	
15	2014-093T14:09:00	2014-094T03:49:00	000T13:40:00	34.4-32.7	35-32	
16	2014-094T14:09:00	2014-095T03:50:00	000T13:41:00	31.1-28.9	30-27	
17	2014-095T14:10:00	2014-096T08:35:00	000T18:25:00	27.3-24.2	23-16	

Initial SMT and Data Volume

DATA VOLUME SUMMARY --- TRANSFER FRAME OVERHEAD INCLUDED (80 BITS PER 8800-BIT FRAME)

	OBSERVATION_PERIOD							DOWNLINK_PASS						
	P4						P5	RECORDED		PLAYBACK				
DOWNLINK PASS NAME	Start doy hh:mm	End doy hh:mm	START (Mb)	SCI (Mb)	HK+E (Mb)	TOTAL (Mb)	CPACTY (Mb)	MRGN (Mb)	OPNAV (Mb)	SCI (Mb)	ENGR (Mb)	TOTAL (Mb)	CPACTY (Mb)	MARGN (Mb)	NET_MARGN (Mb)	CAROVR (%) (Mb)
SP_202EA_C34BWGNON074_PRIME	074 12:12	074 21:12	0	303	165	468	3322	2854	0	159	53	680	866	186	3208	32% 0
SP_202EA_M70METNON075_PRIME	075 22:27	076 07:12	0	193	107	300	3322	3022	0	157	52	508	2632	2123	5183	40% 0
SP_202EA_G34HEFNON077_PRIME	077 05:43	077 14:43	0	167	95	262	3322	3060	0	159	53	474	752	277	3422	30% 0
SP_202EA_G34B26NON078_PRIME	078 05:43	078 14:43	0	115	63	178	3322	3144	0	159	53	390	705	315	3462	26% 0
SP_202EA_G34BWGOTP079_PRIME	079 05:28	079 14:28	0	113	62	175	3322	3147	0	159	53	387	530	143	3259	25% 0
SP_202EA_G34BWGOTB080_PRIME	080 05:28	080 14:28	0	115	63	178	3322	3144	0	159	53	390	644	254	3115	23% 0
SP_202EA_G70METNON082_PRIME	082 05:13	082 14:13	0	297	164	461	3322	2861	0	159	53	672	3285	2612	5076	37% 0
SP_203EA_G34BWGNON084_PRIME	084 05:13	084 14:13	0	340	165	505	3322	2817	0	159	53	717	644	-73	2463	23% 73
SP_203EA_C70METNON086_PRIME	086 11:29	086 20:29	73	595	191	859	3322	2463	0	159	53	1070	3834	2763	5625	51% 0
SP_203EA_C34BWGNON088_PRIME	088 11:14	088 20:14	0	297	164	461	3322	2861	0	159	53	672	896	223	3246	30% 0
SP_203EA_M70METNON089_PRIME	089 21:29	090 06:14	0	193	107	300	3322	3022	0	157	52	508	2725	2216	5271	53% 0
SP_203EA_G34BWGNON091_PRIME	091 04:44	091 13:44	0	172	95	267	3322	3055	0	159	53	479	664	185	3329	46% 0
SP_203EA_G34HEFNON092_PRIME	092 04:44	092 13:44	0	115	63	178	3322	3144	0	159	53	390	799	408	3563	54% 0
SP_203EA_G34HEFNON093_PRIME	093 04:29	093 13:29	0	106	62	168	3322	3154	0	159	53	380	804	424	3568	61% 0
SP_203EA_G34BWGOTP094_PRIME	094 04:29	094 13:29	0	115	63	178	3322	3144	0	159	53	390	531	141	3285	65% 0
SP_203EA_G34BWGOTB095_PRIME	095 04:30	095 13:30	0	115	63	179	3322	3144	0	159	53	390	675	284	3354	74% 0
SP_203EA_C70METNON096_PRIME	096 10:45	096 19:45	0	163	90	253	3322	3069	0	159	53	464	3834	3369	3369	88% 0

This is a baseline SMT: Only downlinks and MAPS (all at minimal) are included.

Waypoint Selection

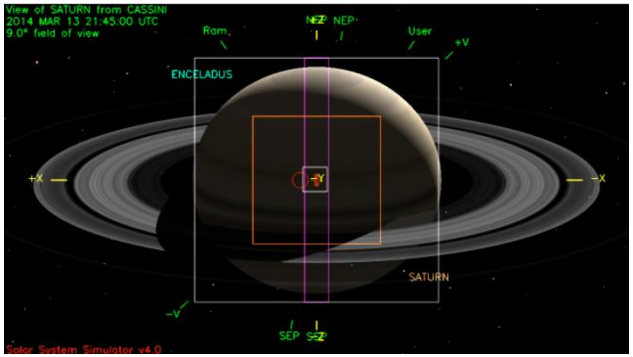
RBOT – Friendly as per CTV:

OBS_NAME	START	END	POS_X_2_NSP	POS_X_2_NEP	NEG_X_2_NSP	NEG_X_2_NEP	POS_Z_2_NSP	POS_Z_2_NEP	NEG_Z_2_NSP	NEG_Z_2_NEP	NEG_X_2_SUN	NEG_Z_2_EARTH
SP_202NA_OBSERV072_NA	2014-072T21:12:00	2014-074T12:12:00	**BAD**	**BAD**	OK	OK	OK	OK	**BAD**	**BAD**	OK	**BAD**
SP_202NA_OBSERV074_NA	2014-074T21:12:00	2014-075T22:27:00	**BAD**	**BAD**	OK	OK	OK	OK	**BAD**	**BAD**	OK	**BAD**
SP_202NA_OBSERV076_NA	2014-076T07:12:00	2014-077T05:43:00	**BAD**	**BAD**	OK	OK	OK	OK	**BAD**	**BAD**	OK	**BAD**
SP_202NA_OBSERV077_NA	2014-077T14:43:00	2014-078T05:43:00	**BAD**	**BAD**	OK	OK	OK	OK	**BAD**	**BAD**	OK	**BAD**
SP_202NA_OBSERV078_NA	2014-078T14:43:00	2014-079T05:28:00	**BAD**	**BAD**	OK	OK	OK	OK	**BAD**	**BAD**	OK	**BAD**
SP_202NA_OBSERV079_NA	2014-079T14:28:00	2014-080T05:28:00	**BAD**	**BAD**	OK	OK	OK	OK	**BAD**	**BAD**	OK	**BAD**
SP_202NA_OBSERV080_NA	2014-080T14:28:00	2014-082T05:13:00	**BAD**	**BAD**	OK	**BAD**	OK	OK	**BAD**	**BAD**	OK	**BAD**
SP_202NA_OBSERV082_NA	2014-082T14:13:00	2014-084T05:13:00	**BAD**	OK	OK	**BAD**	OK	OK	**BAD**	**BAD**	OK	**BAD**
SP_203NA_OBSERV084_NA	2014-084T14:13:00	2014-086T11:29:00	**BAD**	OK	OK	**BAD**	OK	OK	**BAD**	**BAD**	OK	**BAD**
SP_203NA_OBSERV086_NA	2014-086T20:29:00	2014-088T11:14:00	**BAD**	OK	OK	**BAD**	OK	OK	**BAD**	**BAD**	OK	**BAD**
SP_203NA_OBSERV088_NA	2014-088T20:14:00	2014-089T21:29:00	**BAD**	OK	OK	**BAD**	OK	OK	**BAD**	**BAD**	OK	**BAD**
SP_203NA_OBSERV090_NA	2014-090T06:14:00	2014-091T04:44:00	OK	OK	**BAD**	**BAD**	OK	OK	**BAD**	**BAD**	OK	**BAD**
SP_203NA_OBSERV091_NA	2014-091T13:44:00	2014-092T04:44:00	OK	OK	**BAD**	**BAD**	OK	OK	**BAD**	**BAD**	OK	**BAD**
SP_203NA_OBSERV092_NA	2014-092T13:44:00	2014-093T04:29:00	OK	OK	**BAD**	**BAD**	OK	OK	**BAD**	**BAD**	OK	**BAD**
SP_203NA_OBSERV093_NA	2014-093T13:29:00	2014-094T04:29:00	OK	OK	**BAD**	**BAD**	OK	OK	**BAD**	**BAD**	OK	**BAD**
SP_203NA_OBSERV094_NA	2014-094T13:29:00	2014-095T04:30:00	OK	OK	**BAD**	**BAD**	OK	OK	**BAD**	**BAD**	OK	**BAD**
SP_203NA_OBSERV095_NA	2014-095T13:30:00	2014-096T10:45:00	**BAD**	**BAD**	OK	**BAD**	OK	OK	**BAD**	**BAD**	OK	OK

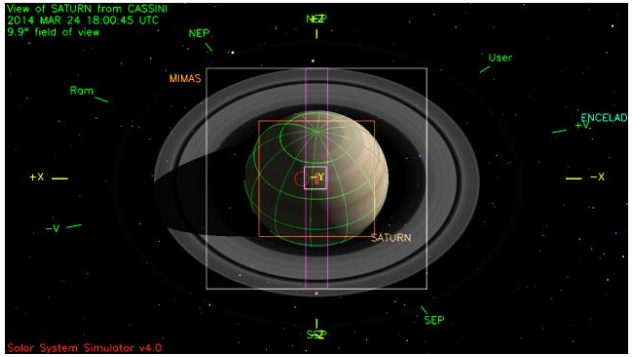
Pos_Z to NSP or NEP or Neg_X to Sun work throughout the segment.

Waypoint Chosen

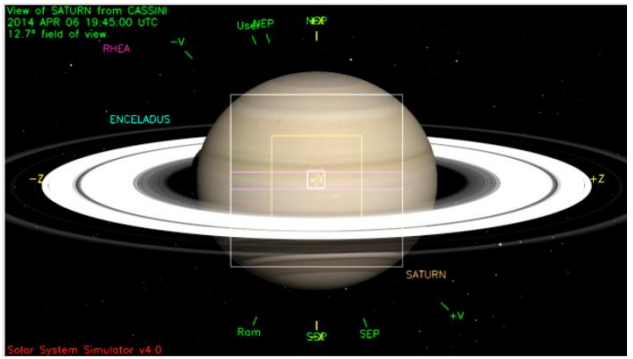
POS_Z to NSP



Beginning of segment



Middle of segment



End of segment

Notes & Liens (1 of 2)

- Pointing:
  - All downlink attitudes are from the DLWG and favor CDA for the secondary. Many have SID suspend requirements, including the turns to/from these attitudes.
  - According to target_motion_spass, nothing is being tracked more than 5.6 deg (but does not recognize Fornjot. This is an ISS rocks observation and jettison activity).
- RBOT:
  - RBOT friendly secondaries were used for all waypoints.
  - All downlink have YGAPs. No YGAPS are overlapping.
  - 2-of-3 rule observed except in period from beginning (DOY 295) to OTM on DOY 079. In this period there are:
    - Science turns (1)
    - MAG calroll (2)
    - No rolling downlinks (3)
    - ISS distant rocks observation (violation). If there are RBOT issues, this is jettison activity.
- DSN:
  - DSS-63 long-term maintenance extended past original proposed end of DOY 087 to DOY 101.
  - No split passes.
- Data Volume:
  - Left some wiggle room for DSN negotiations. Anything leftover can be given to RPWS, as MAPS instruments went to minimal rates, which is standard for a CAKE.
- Liens:
  - No liens, SPAM items, no valid SPLAT items, SMT warnings or Resource Checker items.
  - All gaps in SPASS are intended.
- Hydrazine Usage:
  - None

This document has been reviewed and determined not to contain export controlled technical data

Notes & Liens (2 of 2)

- Jettison activity:
  - ISS_202OT_FORROT030_PRIME, 2014-072T22:48 – 074T10:32
- Special Activities:
  - No PIEs or Level 3 observations.
  - One Opnav DOY 092.
  - No SFAD or Kodak Moments.
- Opmodes used:
  - DFPW
  - DFPW-TCM
  - ORSRWA for MAG SCAS
  - RSSKRWAP-FULL for two RSS Monopulse Calibrations on DOY 088 and DOY 092

This document has been reviewed and determined not to contain export controlled technical data