

Science Planning & Sequence Team

## SATURN TARGET WORKING TEAM

Rev 143\_R3 Segment Legacy Package

Segment Boundary: January 09, 2011 – January 12, 2011 2011-009T09:11 – 2011-012T17:26 (SCET)

Integration Began 04/19/2010 Segment Delivered to S65 Sequence 06/07/2010 Lead Integrator was Nimisha Mittal

Legacy Package Assembled by Kyle Cloutier

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#### \* N.A. = Slide present but content not available.

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# **Segment Overview and Final Products**

- Rev 143\_R3 is an EQ1 periapse segment.
  - Saturn science included two high priority UVIS scans across Saturn's visible hemisphere to form spectral images (EUVFUV) and two stellar occultations to determine H/He ratio in the atmosphere. VIMS also made regional maps near the equator.
- A Rhea flyby (R3) occurred on DOY 011.
  - CAPS and the rest of the MAPS team investigated the interaction between Rhea and Saturn's magnetosphere. ISS created a global mosaic of regions of Rhea. ISS also attempted to image possible rings around Rhea
  - A custom period and a Ground Movable Block was used to sequence this flyby
  - A Dual Playback of Rhea Flyby data was performed

# **Final Sequenced SPASS**

	Request	Pidore	Start (SCET)	Start (Epoch)	Duration	End	Primary	Secondary	Comments
	• • • •	Riders	2011-009T09:11:00				riinary	secondary	Comments
	"SATURN_143, Rhea Flyby R3"		2011-009109:11:00		003108:15:00	2011-012T17:26:00	155 NAC to Software (0.0.0.0.15.0		
			2011 000700 11 00		000700-20 00	2011 000700 40 00	ISS_NAC to Saturn (0.0,0.0,15.0		
	SP_143EA_WAYPTTURN009_PRIME		2011-009T09:11:00			2011-009T09:49:00		NEG_X to 41.0/83.6	Part 1 of 2 part turn.
_	SP_143EA_WAYPTTURN409_PRIME		2011-009T09:49:00			2011-009T09:55:00	ISS_NAC to Saturn	NEG_X to 41.0/83.6	Part 2 of 2 part turn
	NEW WAYPOINT		2011-009T09:55:00			2011-009T23:11:00		NEG_X to 41.0/83.6	
}- <mark>9</mark> 0	VIMS_143SA_REGMAP001_PRIME		2011-009T09:55:00			2011-009T13:06:00		NEG_X to 41.0/83.6	
	UVIS_143SA_EUVFUV001_PIE		2011-009T13:06:00			2011-009T22:31:00		NEG_X to 41.0/83.6	This is a PIE
5	SP_143EA_DLTURN009_PRIME		2011-009T22:31:00			2011-009T23:11:00		POS_X to NSP	
	NEW WAYPOINT		2011-009T23:11:00		000T11:10:00	2011-010T10:21:00		POS_X to NSP	
							NEG_Z to DELTA_H (0.0,0.0,-62.001		
	ENGR_143SC_KPTYBIAS009_PRIME		2011-009T23:11:00		000T01:30:00	2011-010T00:41:00	deg. offset)	NEG_X to Sun	
	SP_143EA_M34BWGSEQ010_PRIME	С	2011-010T00:41:00		000T09:00:00	2011-010T09:41:00	XBAND to Earth	POS_X to NSP	NEG_X to NEP or NSP, CAPS - changed to allow a safe turn
	SP_143EA_WAYPTTURN010_PRIME		2011-010T09:41:00		000T00:40:00	2011-010T10:21:00	ISS_NAC to Saturn	NEG_X to 39.8/83.6	
	NEW WAYPOINT		2011-010T10:21:00		001T19:35:00	2011-012T05:56:00	ISS_NAC to Saturn	NEG_X to 39.8/83.6	
N .	UVIS_143SA_EUVFUV002_PIE	М	2011-010T10:21:00		000T04:28:00	2011-010T14:49:00	UVIS_FUV to Saturn	NEG_X to 39.8/83.6	This is a PIE
· ·-(	VIMS_143SA_ALPCMAOCC001_PIE	C, I	2011-010T14:49:00		000T02:42:00	2011-010T17:31:00	CIRS_FPB to 101.287/-16.716	PIC	
<b>•</b> -	Periapse R = 3.578 Rs, lat		2011-010T16:13:38		000T00:00:01	2011-010T16:13:39			
` • ·	VIMS_143SA_RLEOOCC001_PIE	C, I	2011-010T17:31:00		000T02:30:00	2011-010T20:01:00	CIRS_FPB to 146.889/11.429	PIC	
- <del></del>	VIMS_143SA_REGMAP002_PRIME	С	2011-010T20:01:00		000T07:52:00	2011-011T03:53:00	ISS_NAC to Saturn	NEG_X to 39.8/83.6	
à		м	2011-011T04:03:00		000T00:05:25	2011-011T04:08:25	ISS_NAC to Saturn	NEG_X to 39.8/83.6	
al	Begin Custom		2011-011T04:08:25		000T00:00:01	2011-011T04:08:26	ISS_NAC to Saturn	NEG_X to 39.8/83.6	
Ŭ							NEG_X to Dust_RAM (40.0,0.0,0.0		Pick up at ISS_NAC to Saturn, NEG_X to 39.8/83.6; Hand
-	CAPS 143RH RHEAPTG001 PIE	I. M. U	2011-011T04:08:25	GMB E143 RHEA R3-000T00:45:00	000T01:24:00	2011-011T05:32:25	deg. offset)	POS_Y to COROT	off at ISS_NAC to Rhea, NEG_X to 39.8/83.6. Collaborative
	Begin Dual Playback Science		2011-011T04:20:25	GMB E143 RHEA R3-000T00:33:00	000T00:00:01	2011-011T04:20:26			
	143RH (t) R3 RHEA Outboun		2011-011T04:53:25		000T00:00:01	2011-011T04:53:26			
	End Dual Playback Science		2011-011T05:26:25	GMB E143 RHEA R3+000T00:33:00	000T00:00:01	2011-011T05:26:26			
									Pick up at ISS_NAC to Rhea, NEG_X to 39.8/83.6; Hand off
	ISS_143RH_RHEA001_PIE	с, м, и	2011-011T05:32:25	GMB_E143_RHEA_R3+000T00:39:00	000T04:06:00	2011-011T09:38:25	ISS NAC to Rhea	NEG_X to 39.8/83.6	at ISS_NAC to Saturn, NEG_X to 39.8/83.6.
	End Custom		2011-011T09:38:25			2011-011T09:38:26		NEG X to 39.8/83.6	
	SP_143SA_DEADTIME411_PRIME			GMB_E143_RHEA_R3+000T04:45:00				NEG_X to 39.8/83.6	
l r									
	SP_143EA_DLTURN011_PRIME		2011-011T09:43:00		000T00:40:00	2011-011T10:23:00	XBAND to Earth	NEG X to 281.664/47.792	add +45-degree offset to downlink per S65 RBOT strategy
5									
	SP_143EA_G70METNON011_PRIME	E	2011-011T10:23:00		000T02:48:00	2011-011T13:11:00	XBAND to Earth	NEG X to 281,664/47,792	add +45-degree offset to downlink per S65 RBOT strategy
ap			5100						
Ŭ	SP_143EA_C70METNON011_PRIME		2011-011T13:11:00		000T01:25:00	2011-011T14:36:00	XBAND to Earth	NEG X to 281,664/47 792	add +45-degree offset to downlink per S65 RBOT strategy
$\smile$	SP 143EA WAYPTTURNO11 PRIME		2011-011T14:36:00			2011-011T15:16:00	ISS NAC to Saturn	NEG X to 39.8/83.6	and angles offset to domining per sos hoor strateby
	VIMS_143SA_REGMAP003_PRIME	с	2011-011T15:16:00			2011-012T05:16:00	ISS_NAC to Saturn	NEG_X to 39.8/83.6	
L L	SP 143EA DLTURN012 PRIME		2011-012T05:16:00			2011-012T05:56:00	XBAND to Earth	POS X to NSP	
			2011-012T05:56:00			2011-012T19:00:00		POS X to NSP	
	ENGR 143SC KPTYBIAS012 PRIME		2011-012T05:56:00		000T01:30:00	2011-012T07:26:00	NEG Z to DELTA H	NEG X to Sun	
	SP_143EA_G70METSEQ012_PRIME	C	2011-012T07:26:00			2011-012T16:26:00		3_Hr_Rolling	POS_X to NEP or NSP, CAPS
	Pointer Reset in preparatio	-	2011-012T07.28.00		000T00:00:01	2011-012T16:26:01		o_iu_itoime	
	SP_143EA_C70METNON012_PRIME	C	2011-012T16:26:00			2011-012T17:26:00	YBAND to Farth	POS_X to NSP	POS_X to NEP or NSP, CAPS
	JI_14JEA_C/ONTETNONOI2_PRIME	C	2011-012110.20:00		00:00101.00:00	2011-012117.20:00	ADAIND TO Earth	103_X 10 NSF	ros_x to her of hor, cars

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

					OBS	ERVATI	ON_PERI	OD					DOWNLIN	K_PASS			
						P4			P5	RECO	RDED			PLAYE	АСК		
DOWNLINK PASS NAME	Start doy <u>hh:mm</u>	End   doy <u>hh:mm</u>	START (Mb)	SCI (Mb)	HK+E (Mb)	TOTAL (Mb)	CPACTY (Mb)	MRGN (Mb)	0PNAV (Mb)	SCI (Mb)	ENGR (Mb)	TOTAL (Mb)	CPACTY (Mb)	MARGN (Mb)	NET_M (Mb)	1ARGN (%)	CAROVR (Mb)
SP_143EA_M34BWGSEQ010_PRIME SP_143EA_G70METNON011_PRIME SP_143EA_C70METNON011_PRIME SP_143EA_G70METSEQ012_PRIME SP_143EA_C70METNON012_PRIME	011 10:23 011 13:11 012 07:26	011 13:11 011 14:36 012 16:26	2198	765 2673 0 1424 0	65 122 0 71 0	834 3320 2198 3345 48	3309 3309 3309 3309 3309 3309	2475 -10 1111 -35 3261	0 0 0 0	289 65 33 337 419	53 17 8 53 6	1176 3390 2239 3699 473		-525 -2199 -1850 -49 -42	-35 -35 -35 1756 1756	0% 0% 0% 19% 30%	525   2198   1850   48   42

#### DATA VOLUME REPORT --- TRANSFER FRAME OVERHEAD NOT INCLUDED

Event	Start doy <u>hh:mm</u>	End doy <u>hh:mm</u>	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 SP_143EA_M34BWGSEQ010_PRIME DAILY TOTAL SCIENCE	009 09:11 010 00:41 009 09:11	010 00:41 010 09:41 010 09:41	55.8 32.4 88.2	99.7 84.9 184.6	0.0 86.4 86.4	5.6 13.3 18.9	165.0 0.0 165.0	27.6 16.0 43.6	33.5 19.4 52.9	0.0 0.0 0.0	50.2 29.2 79.4	170.9 4.7 175.5	150.0 0.0 150.0	0.0 0.0 0.0	64.8 0.0 64.8	822.9 286.3
OBSERVATION_NOR SP_143EA_G70METNON011_PRIME SP_143EA_C70METNON011_PRIME DAILY TOTAL SCIENCE	011 10:23	011 14:36	196.9 10.1 5.1 212.1		221.3 0.0 0.0 221.3	39.1 1.0 0.5 40.6	769.9 0.0 0.0 769.9	77.6 5.0 2.5 85.1	62.2 8.6 4.3 75.1	0.0 0.0 0.0 0.0	427.4 13.1 6.6 447.1	121.5 0.0 0.0 121.5	500.0 0.0 0.0 500.0	0.0 0.0 0.0 0.0	120.9 0.0 0.0 120.9	2769.7 64.1 32.5
OBSERVATION_NOR SP_143EA_G70METSEQ012_PRIME SP_143EA_C70METNON012_PRIME DAILY TOTAL SCIENCE	012 07:26	012 17:26	60.6 32.4 3.6 96.6	50.7 17.0 1.9 69.6	100.8 86.4 10.8 198.0	6.1 3.2 0.4 9.7	140.0 0.0 0.0 140.0	29.9 16.0 1.8 47.7	51.5 27.5 3.1 82.1	0.0 0.0 0.0 0.0	221.5 146.1 4.7 372.3	0.0 4.9 0.0 4.9	750.0 0.0 0.0 750.0	0.0 0.0 0.0 0.0	70.4 0.0 389.5 459.8	1481.5 333.6 415.7

# **Segment Geometry**

Saturn 143\_R3 Legacy

### Segment Start: 2011-009T09:11

View of SAT	URN fr	om	CASSINI											Rev 143 II			
2011 JAN 0			OTC			NEP									9709:11:		
17.6* field	of view													2011 JAN 0" 2011 JAN 0"			
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	DEC:	-14.	253	Left	Rese	t Ri	ght	Fills	Screen		Orbits	Vec	tors	Month 🖪		4 1	Minute
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SATURN			982162	16.30	921894	15.30	138.8	7.04	122.80	61	-0	0	7.2	0	0.0	46.9	20.7
HIMAS			938119	15.57	937922	15.56	128.0	0.03	0.44	265	1	-71	7.5	-1642	10.9	57.5	31.6
ENCELADUS			1192909	19.79	1192654	19.79	144.6	0.02	0.43	29	-0	149	19.3	40	6.0	41.1	14.7
TETHYS			705899	11.71	705360	11.70	131.8	0.09	1.53	205	-0	-17	7.4	-3072	7.1	53.8	27.7
DIONE			1298556	21.55	1297993	21.54	128.5	0.05	0.87	332	-0	-142	11.8	-133	10.4	57.0	31.1
RHEA			1157790	19.21	1157026	19.20	112.2	0.08	1.33	305	-0	-95	5.4	-2700	27.0	73.2	47.6
TITAN			2136554	35.45	2133979	35.41	127.2	0.14		350	0	-159	10.1	-7240	11.7	58.3	32.4
HYPERION			575251	9.54	575125	9.54	99.0	0.03	0.57	111	36	21	7.8	22021	121.8	75.7	101.1
IAPETUS			2726230	45.24	2725483	45.22	68.4	0.03		7	-4	17	7.1	920480	149.8		132.7
PHOEBE			14679857	243.58	14679743	243.57	99.8	0.00	0.02	174	-21	54	6.8	7109781	118.4	73.7	100.7
SATIEN			982162	16.30	921994	15 30	139.9	2.04	122 80	61	-0	0	2.0	0	0.0	46.9	20.7

### Segment End: 2011-012T17:26

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														Sun_range		58 AU	
														Earth_range		15 AU	
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				-										Goldstone	5.1		
														Canberra	56.2		
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	s/c	SAT	RAI	19E	ALTI	TUDE	PHASE	ANGLE I	DIAMETER	SUB	S/C	ALON	TREL	Z HOHT	AN	LE F	BOR
BODY	000?	000?	(kn)	(Rs)	(kn)	(Rs)	(deg)	(deg	mrad)	LON	LAT	(deg)	(kn/s)	(kn)	SATER	EARTH	RAH
ATURN			1327492	22.03	1267225	21.03	59.0	5.20	90.83	333	0	0	5.6	0	0.0	126.0	152.9
INAS			1144786	18.99	1144579	18.99	60.1	0.02	0.36	171	Ū.	2	11.6	-517	1.2	124.9	151.7
NCELADUS			1346033	22.33	1345781	22.33	49.0	0.02	0.38	284	0	-89	17.6	-39	10.2	135.9	163.1
ETHY S			1046189	17.36	1045650	17.35	54.8	0.06	1.03	200	-1	-15	11.1	4203	4.3	130.1	157.2
IONE			1170482	19.42	1169921	19.41	74.6	0.06	0.96	106	0	58	4.5	-189	15.8	110.5	137.1
HEA			1363314	22.62	1362551	22.61	36.8	0.06	1.13	288	-0	-83	13.3	2086	22.6	147.7	175.5
ITAN			897214	14.89	894639	14.84	120.0	0.33	5.74	73	0	41	1.5	1288	61.6	65.5	91.3
VPERION .			2414254	40.06	2414139	40.06	31.9	0.01	0.14	243	-61	-126	11.0	-1930	27.6	152.5	179.4
APETUS			3618897	60.05	3618150	60.03	29.3	0.02	0.41	340	-4	-79	8.1	817168	80.0	145.1	126.3
PHOEBE			14144044	234.69	14143933	234.68	96.2	0.00	0.02	45	-21	-25	5.9	7116232	140.0	77.4	60.1
ATURN			1327492	22.03	1267225	21.03	59.0	5.20	90.83	333	0	0	5.6	0	0.0	126.0	152.9

#### Periapse: 2011-010T16:13:38

78.0° field of view IAPETUS -2 -2 Solor System Simulator v	55IN TC	NEP		SAT	- Uşer JRN					Rad_cyl Z_ht_cyl Mag_L Semi_axs 1 Eccentricit Eccentricit Earth_range DSW ELE Goldstone Canberra Madrid LOC FOV RA DEC Crosses_RP_ EPS SEP	DT16:13:3 0 16:13:3 0 16:13:3 0 16:13:3 0 17:32:3 13 + 0107 13 - 00:0 : 78:9 215870 k 135870 k 197 k 3:5 215870 k 197 k 3:5 215870 k 4467108 k 45:5 -53:3 0 0.0 21:6 45:5 -53:3 0 K DIRECT 78:0 1044 21:6 45:5 -53:3 0 K DIRECT 78:0 1044 21:0 21:0 21:0 21:0 21:0 21:0 21:0 21:0	38 SCET 30 ERT 708:43:( 00:01 9 min 0 days cm cm 553 9 AU 2 U/I 5 46.( 5 15.4 3 -34.2 710N INF	3.58 R 3.58 R 0.00 R 24.34 R 24.34 R
Point NEG_Y 🗘 at	SATURN	and align	POS_X	۵ = (	Up 🗘	with	NSP			ORS b/s and ORS rad and		5 deg 8 deg 🕈	÷
Point NEG_Y  at  User vector - RA: +86.556		<ul> <li>and align</li> <li>Up</li> </ul>	POS_X		Up 🗘			Axe:	0	ORS b/s and ORS rad and Year			Hour
Jser vector - RA: +86.55	8 Tilt L	Up	Tilt R		oom Out		Labels		\$	ORS rad and Year			Hour
Jser vector - RA: +86.554 DEC: -14.25	8 Tilt L 3 Left	Up Reset	Tilt R Right		oom Out II Screen		Labels Orbits	Vect	¢ s	Vear AMONTH			Hour Minute
Jser vector - RA: +86.55	8 Tilt L 3 Left	Up Reset	Tilt R		oom Out		Labels Orbits		¢ s	ORS rad and Year			Hour
Jser vector - RA: +86.554 DEC: -14.25	8 Tilt L 3 Left	Up Reset	Tilt R Right	E C	oom Out II Screen	<ul> <li>✓</li> <li>✓</li> <li>Fov</li> </ul>	Labels Orbits Vs	Vect	s tors ons	Vear Among A			Hour Minute
Jser vector - RA: +86.556 DEC: -14.253 Paste Current RA/DEC	8 Tilt L 3 Left C Imag	Up Reset ge Down	Tilt R Right ✓ Hi Re	E Z	oom Out II Screen Zoom In	<ul> <li>✓</li> <li>✓</li> <li>Fov</li> </ul>	Labels Orbits Vs	<ul> <li>✓ Vect</li> <li>✓ Lat/</li> </ul>	s tors ons	Vear Among A	jle 82.3	3 deg +	Hour Minut
Iser vector - RA: +86.551 DEC: -14.253 Paste Current RA/DEC urn analyzer: SATURN S/C SAT _	8 Tilt L 3 Left 2 Imag to E	Up Reset ge Down ARTH ALTITUD	Tilt R Right V Hi Re O about E P	E Z	oom Out II Screen Zoom In Con RWA LR_DIAMETER	♥ □ ♥ FO\ SUB_	Labels Orbits Vs = 1	✓ Vect ✓ Lat/ 9.5 min /	s ors ons 88.2 de	ORS rad and Year Month Day Z_HGHT	Ile 82.3	3 deg +	Hour Minut Secor
ser vector - RA:         +86.551           DEC:         -14.252           Paste Current RA/DEC         urn analyzer:           SATURN         s/C           SAC         0002	8 Tilt L 3 Left ? I may to E <u>RANGE</u>	Up Reset ge Down ARTH ALTITUD	Tilt R           Right           ✓ Hi Re           about           E         P           (Rs)         (	E Z FI	oom Out II Screen Zoom In C on RWA LR_DIAMETER g mrad)	♥ □ ♥ FO\ SUB_	Labels Orbits /s 	Vect Vect Lat/ 0.5 min /	≎ sors ons 88.2 de ₹REL	ORS rad and Year Month Day Z_HGHT	Event ANG SATRN 0.0	3 deg +	Hour Minut Secor
ser vector - RA: +86.55 DEC: -14.25 Paste Current RA/DEC urn analyzer: SATURN S/C SAT	8 Tilt L 3 Left ✓ Imag C to E RANGE (km) (Rs) 215870 3.58 238591 3.96	Up Reset ge Down ARTH 	Tilt R         Right         ♥ Hi Re         ♥ about         €       P         (Rs)       (         2.58       3.96         3.96       1	Z Fi es Z t Z PHASE ANG (deg) (de 86.5 32. 33.0 0.	oom Out II Screen Zoom In C on RWA LR DIAMETER g mrad) 42 565.90 10 1.74	<ul> <li>✓ FO\</li> <li>✓ FO\</li> <li>SUB_LON</li> <li>256</li> <li>301</li> </ul>	Labels Orbits /s 	<ul> <li>✓ Vect</li> <li>✓ Lat/</li> <li>9.5 min /</li> <li>△LON (deg)</li> <li>0 -73</li> </ul>	© sors ons 88.2 de VREL (km/s) 18.0 19.6	ORS rad and Year Month Day Z_RGHT (km) 0 4348	Ple 82.3	8 deg 4	Hour Minu Seco Rom RAM 90.0 43.1
ser vector - RA: +86.55i DEC: -14.25: Paste Current RA/DEC urn analyzer: SATURN S/C SAT ODY 0CC? -0CC? - ATURN 2 ITMAS 2 ITMAS 2	8 Tilt L 3 Left ✓ Imag to E RANGE (km) (Rs) 215870 3.58 238591 3.61	Up Reset Down ARTH <u>ALTITUD</u> (km) 155602 238391 217286	<ul> <li>Tilt R</li> <li>Right</li> <li>✓ Hi Re</li> <li>about</li> <li>E P</li> <li>(Rs) (</li> <li>2.58</li> <li>3.96 1</li> <li>3.61 1</li> </ul>	Z           Fi           es           t           Z           PHASE           ANG           (deg)           (deg)           33.0           52.2           0.	oom Out II Screen Zoom In Con RWA LR DIAMETER g mrad) 42 565.90 10 1.74 14 2.36	<ul> <li>✓</li> <li>✓</li> <li>FO</li> <li>✓</li> <li>SUB_</li> <li>LON</li> <li>256</li> <li>301</li> <li>307</li> </ul>	Labels Orbits /s 	<ul> <li>✓ Vect</li> <li>✓ Lat/</li> <li>9.5 min /</li> <li>△LON (deg)</li> <li>0</li> <li>-73</li> <li>-57</li> </ul>	C S S S S S S S S S S S S S	ORS rad and Year Month Day Z_HGHT (km) 0 43488 39	Ple 82.3	8 deg +	Hour Minu Seco Rom RAM 90.0 43.1 23.2
iser vector - RA:         +86.55i           DEC:         -14.25i           Paste Current RA/DEC         -14.25i           vara analyzer:         SATURN           soDy         OCC? OCC?           ATURN	8 Tilt L 3 Left ✓ Imag ↓ to E RAINGE (Km) (Rs) 215870 3.58 238591 3.96 217540 3.61 243070 7.68	Up Up Reset ge Down ARTH ALTTUD (km) 155602 238391 217286 462331	Tilt R           Right           ✓ Hi R           ◇ about           ○ about           E P           (Rs)           2.58           3.96 1           3.61 1           7.67 1	Z           Fi           es           t           Z           HASE           ANG           deg)           (de           86.5           33.0           .52.2           0.           52.2           15.7	oom Out II Screen Zoom In C on RWA LR DIAMETER g mrad) 12 565.90 10 1.74 14 2.36	<ul> <li>✓</li> <li>✓</li> <li>FOV</li> <li>SUB_</li> <li>LON</li> <li>256</li> <li>301</li> <li>307</li> <li>339</li> </ul>	Labels Orbits /s 	<ul> <li>✓ Vect</li> <li>✓ Lat/</li> <li>9.5 min /</li> <li>△LON (deg)</li> <li>0</li> <li>-73</li> <li>-57</li> <li>-130</li> </ul>	C S S S S S S S S S S S S S	ORS rad and Year Month Day Z_HGHT (km) 0 4348 39 5525	ple         82.3           >         -           >         -           >         -           Event         -	8 deg 4	Hour Minur Secon ROM RAM 90.0 43.1 23.2 60.6
ser vector - RA: +86.551 DEC: -14.252 Paste Current RA/DEC urn analyzer: SATURN S/C SAT ODY 0CC? 0CC? ATURN 2 CTMAS 2 ETMAS 2 ETMAS 5 TONE 5	8         Tilt L           3         Left           2         ✓ Imag           1         ✓ Imag           1         ✓ Imag           1         ✓ Imag           2         ×           1         ✓ Imag           2         ×	Up Reset Down ARTH <u>ALTITUD</u> (km) 155602 238391 217286 462231 593242	Tilt R           Right           ♥ Hi Ro           ● about           €           1000000000000000000000000000000000000	Z           Fi           es           t           Z           HASE           ANG           deg)           (deg)           (deg)	oom Out II Screen Zoom In C on RWA LR_DIAHETER g mrad) 42 565.90 10 1.74 14 2.36 13 2.33 11 1.90	<ul> <li>✓</li> <li>✓</li> <li>FO\</li> <li>SUB_ LON</li> <li>256 301 307 339 359</li> </ul>	Labels Orbits /s 	<ul> <li>✓ Vect</li> <li>✓ Lat/</li> <li>Ø.5 min /</li> <li>ΔL0%</li> <li>(deg)</li> <li>0</li> <li>-73</li> <li>-57</li> <li>-130</li> <li>-178</li> </ul>	C S S S S S S S S S S S S S	ORS rad and Year Month Day 2_HGHT (km) 0 4348 39 5525 104	Ple         82.3           Ple         82.3           Ple         Ple           Event         Ple           ANG SATRN         Ple           0.0         46.9         66.8           29.4         1.4         1.4	8 deg 4	Hour Minu Seco ROM RAM 90.0 43.1 23.2 60.6 88.6
iser vector - RA:         +86.55i           DEC:         -14.25i           Paste Current RA/DEC         -14.25i           Vara analyzer:         SATURN           SODY         OCC7           OCC7         OCC7           ATURN	8 Tilt L 3 Left → Imag → to E RAINGE (Im) (Rs) 215870 3.58 238591 3.96 217540 3.61 593806 9.85 593806 9.85	Up Reset ge Down ARTH <u>ALTITUD</u> (km) 155602 288391 215286 462531 593242 474237	Tilt R           Right           ♥ Hi Re           ● about           ● about           2.58           3.96           3.61           7.67           9.84           7.87	Z           Fi           es           It           Z           PHASE           ANG           deg)           (de           86.5           33.0           0.           52.2           0.15.7           0.71.8           0.71.8	oom Out II Screen Zoom In C on RWA LR_DIAHETER g mrsd) 42 565.90 10 1.74 14 2.36 13 2.33 11 1.90 19 3.23	<ul> <li>✓ FO\</li> <li>✓ FO\</li> <li>✓ SUB_LON</li> <li>256</li> <li>301</li> <li>307</li> <li>339</li> <li>359</li> <li>339</li> </ul>	Labels Orbits /s 	<ul> <li>✓ Vect</li> <li>✓ Lat/</li> <li>9.5 min /</li> <li>△LON (deg)</li> <li>0</li> <li>-73</li> <li>-57</li> <li>-130</li> <li>-178</li> <li>-64</li> </ul>	C C C C C C C C C C C C C C C C C C C	ORS rad and Year Month Day 2_HGHT (km) 0 4348 39 5525 104 -1261	Ame           0.0           46.9           66.8           29.4           1.4	8 deg 4	Hour Minu Secol ROM RAM 90.0 43.1 23.2 60.6 88.6 1.5
Iser vector - RA:         +86.55i           DEC:         -14.25i           Paste Current RA/DEC         -14.25i           Variation of the second s	8         Tilt L           3         Left           2         Imag           C to E         PANGE           (km) (Rs)         215870 3.58           236591 3.61         3.61           62070 7.68         3.61           643070 7.68         3.61           75500 7.88         77500 7.88           7078470 17.89         7.88	Up Reset Down ARTH 	Tilt R           Right           ♥ Hi Re           ● about           ● about           2.58           3.96 1           3.61 1           7.67 1           9.84           7.87 1           7.85 1	Z           Fi           It         Z           HASE         ANG           deg)         (de           86.5         32.2           0.52.2         0.           71.8         0.           71.8         0.           56.9         0.	oom Out II Screen Zoom In C on RWA LR DIAHETER g mrad) 42 565.90 10 1.74 14 2.36 10 1.74 14 2.36 11 1.90 19 3.23 11 1.90 19 3.27	<ul> <li>✓</li> <li>✓</li> <li>FOV</li> <li>✓</li> <li>SUB_ LON</li> <li>256</li> <li>301</li> <li>307</li> <li>339</li> <li>339</li> <li>339</li> <li>339</li> <li>339</li> <li>349</li> </ul>	Labels Orbits /s 	<ul> <li>✓ Vect</li> <li>✓ Lat/</li> <li>Ø.5 min /</li> <li>△LON (deg)</li> <li>0</li> <li>-73</li> <li>-57</li> <li>-130</li> <li>-73</li> <li>-64</li> <li>-55</li> </ul>	C C C C C C C C C C C C C C C C C C C	ORS rad and Year Month Day 2 2 49 2 49 2 49 2 49 40 40 40 40 40 40 40 40 40 40 40 40 40	ANG           SATRN           0.0           46.9           66.8           29.4           1.4           91.4           115.3	8 deg 4 6 b 6 b 6 b 6 b 6 b 7 c 8 c 8 c 9 c 9 c 9 c 9 c 9 c 9 c 9 c 9	Hour Minu Secon ROM RAM 90.0 43.1 23.2 60.6 88.6 1.5 25.3
Jser vector - RA:         +86.55i           DEC:         -14.25i           Paste Current RA/DEC         -14.25i           Vara analyzer:         SATURN           SODY         OCC?           SODY         OCC?           SATURN	8         Tilt L           3         Left           3         ✓ Imag           0         to E           FANOE         (km)           (km)         (Rs)           215870         3.58           228591         3.96           463070         7.68           593806         9.85           10747003         7.88           10747017         7.89           1078170         17.89	Up Reset Down ARTH <u>ALTITUD</u> (km) 155602 238391 217286 462531 217286 462531 217286 39242 217286 1508003	Tilt R Right Right Right Right It Re about E P (Rs) (Rs) (Rs) 17.87 117.85 125.02	Z           es         F           HASE         ANG           deg)         (de           52.2         0.           55.2         0.           75.2         0.           75.2         0.           75.4         0.           75.5         0.           75.6         0.           74.9         0.           42.9         0.	com Out II Screen Zoom In Con RWA LR_DIAHETER g mrad) LR_DIAHETER g mrad) 10 51.74 14 2.33 11 1.99 19 3.23 27 4.78 01 0.22	<ul> <li>✓</li> <li>✓</li> <li>FOV</li> <li>✓</li> <li>SUB_ LON</li> <li>256</li> <li>301</li> <li>307</li> <li>339</li> <li>359</li> <li>339</li> <li>339</li> <li>349</li> <li>172</li> </ul>	Labels Orbits /s ○ = 3 	<ul> <li>✓ Vect</li> <li>✓ Lat/</li> <li>Ø.5 min /</li> <li>(deg)</li> <li>0</li> <li>-73</li> <li>-57</li> <li>-130</li> <li>-178</li> <li>-64</li> <li>-55</li> <li>129</li> </ul>	© s tors ons 88.2 de VREL (km/s) 19.6 15.3 26.7 28.1 16.3 15.5 21.9	Vear Vear Month Day 2_H6HT (km) 0 4348 39 5525 104 -1261 -4846 14599 14549 15552 1044 14549 145599 145599 145599 145599 145599 1	Event 0.0 46.9 66.8 29.4 91.4 115.3 44.3	8 deg 4	Hour Minut Secor 7001 RAI1 23.2 60.6 88.6 1.5 25.3 134.2
Jser vector - RA: +86.55 DEC: -14.25 Paste Current RA/DEC urn analyzer: SATURN S/C SAT	8         Tilt L           3         Left           3         ✓ Imag           C to E         E           PAINGE         (Km) (Rs)           215870 3.58         238591 3.96           215870 3.61         217540 3.61           215870 3.7.68         593806 9.85           593806 9.85         25.02           503165 25.02         7.88           079470 17.89         792100 62.92	Up Up Reset ge Down ARTH ALTITUD (km) 155602 238391 217286 462231 593242 474237 1075895 1508003 3791353	Tilt R           Right           ♥ Hi R(           ♥ about           ♥ Bi R(           ♥	Z           Fi	com Out II Screen Zoom In C on RWA G ON	<ul> <li>✓ FO\</li> <li>SUB_ LON</li> <li>256 301</li> <li>307</li> <li>339</li> <li>359</li> <li>359</li> <li>339</li> <li>359</li> <li>339</li> <li>349</li> <li>359</li> <li>329</li> <li>349</li> <li>349</li> <li>349</li> <li>349</li> <li>359</li> <li>349</li> <li>349</li> <li>359</li> <li>349</li> <li>349</li> <li>359</li> <li>349</li> <li>349</li> <li>359</li> <l< td=""><td>Labels Orbits √s S/C LAT 0 -1 0 -0 0 -12 1</td><td><ul> <li>✓ Vect</li> <li>✓ Lat/</li> <li>Ø.5 min /</li> <li>△LON (deg)</li> <li>0</li> <li>-73</li> <li>-57</li> <li>-130</li> <li>-178</li> <li>-64</li> <li>-55</li> <li>129</li> <li>145</li> </ul></td><td>© s s ons 88.2 de VREL (km/s) 18.0 19.6 15.3 26.7 28.1 16.3 15.5 21.9 20.8</td><td>ORS rad and Year Month M</td><td>ARG           ARG           SATRI           0.0           46.9           66.8           29.4           1.4           91.4           115.3           44.3</td><td>8 deg 4</td><td>Hour Minut Secor RAM 90.0 43.1 23.2 60.6 88.6 88.6 1.5 25.3 134.2 121.8</td></l<></ul>	Labels Orbits √s S/C LAT 0 -1 0 -0 0 -12 1	<ul> <li>✓ Vect</li> <li>✓ Lat/</li> <li>Ø.5 min /</li> <li>△LON (deg)</li> <li>0</li> <li>-73</li> <li>-57</li> <li>-130</li> <li>-178</li> <li>-64</li> <li>-55</li> <li>129</li> <li>145</li> </ul>	© s s ons 88.2 de VREL (km/s) 18.0 19.6 15.3 26.7 28.1 16.3 15.5 21.9 20.8	ORS rad and Year Month M	ARG           ARG           SATRI           0.0           46.9           66.8           29.4           1.4           91.4           115.3           44.3	8 deg 4	Hour Minut Secor RAM 90.0 43.1 23.2 60.6 88.6 88.6 1.5 25.3 134.2 121.8
ser vector - RA: +86.55 DEC: -14.25 Paste Current RA/DEC urn analyzer: SATURN S/C SAT	8         Tilt L           3         Left           3         ✓ Imag           0         to E           FANOE         (km)           (km)         (Rs)           215870         3.58           228591         3.96           463070         7.68           593806         9.85           10747003         7.88           10747017         7.89           1078170         17.89	Up Up Reset ge Down ARTH ALTITUD (km) 155602 238391 217286 462231 593242 474237 1075895 1508003 3791353	Tilt R           Right           ♥ Hi R(           ♥ about           ♥ Bi R(           ♥	Z           es         F           HASE         ANG           deg)         (de           52.2         0.           55.2         0.           75.2         0.           75.2         0.           75.4         0.           75.5         0.           75.6         0.           74.9         0.           42.9         0.	com Out II Screen Zoom In C on RWA G ON	<ul> <li>✓</li> <li>✓</li> <li>FOV</li> <li>✓</li> <li>SUB_ LON</li> <li>256</li> <li>301</li> <li>307</li> <li>339</li> <li>359</li> <li>339</li> <li>339</li> <li>349</li> <li>172</li> </ul>	Labels Orbits /s ○ = 3 	<ul> <li>✓ Vect</li> <li>✓ Lat/</li> <li>Ø.5 min /</li> <li>(deg)</li> <li>0</li> <li>-73</li> <li>-57</li> <li>-130</li> <li>-178</li> <li>-64</li> <li>-55</li> <li>129</li> </ul>	© s tors ons 88.2 de VREL (km/s) 19.6 15.3 26.7 28.1 16.3 15.5 21.9	Vear Vear Month Day 2_H6HT (km) 0 4348 39 5525 104 -1261 -4846 14599 14549 15552 1044 14549 145599 145599 145599 145599 145599 1	Event 0.0 46.9 66.8 29.4 91.4 115.3 44.3	8 deg 4	Hour Minu Seco Seco Roff RAM 90.0 43.1 23.2 60.6 88.6 1.5 25.3 134.2

	Saturn Range	Phase Angle	Sub-S/C Lat.
Segment Start	16.30 Rs	138.8 deg	0
Periapse	3.58 Rs	86.5 deg	0
Segment End	22.03 Rs	59.0 deg	0

- Saturn 143\_R3 Legacy

No ORS Boresight Solar Constraints on Science Pointing Noted.

Jan 9 (DOY 9): VIMS made a regional map of Saturn to look for and characterize meteorological features and equatorial plumes. This was followed by a high priority UVIS scan across Saturn's visible hemisphere to form spectral images.

Jan 10 (DOY 10): UVIS performed another high priority scan across Saturn's visible hemisphere to form spectral images. A collaborative VIMS and CIRS PIE observed Saturn's atmosphere in stellar occultation mode (as the star Alpha CMa, commonly known as Sirius, was occulted) to gather data to determine the H/He ratio in the atmosphere. This was followed by another collaborative PIE between these instruments to continue these observations as the star R Leo was occulted by Saturn just after Cassini approached periapse.

Jan 11 (DOY 11): As part of MAPS high priority Rhea Campaign, CAPS controlled the pointing for the MAPS teams to investigate the interaction between Rhea and Saturn's magnetosphere as Cassini made a close approach to Rhea. ISS conducted high priority science in the four hours that followed, making a global mosaic of regions such as the large Tirawa basin, any fresh craters, and the equatorial dark bluish spots. It then attempted to image the largest chunks of the hypothetical rings around Rhea.

Jan 12 (DOY 12): VIMS continued making a regional map of Saturn near the equator to investigate equatorial plumes.

# **Segment Integration Planning**

- GAP 1 (2011-009T09:51:00 to 2011-009T18:00:00 Duration 8h 9m)
  - VIMS HIRES observation
  - Others?
- GAP 2 (2011-010T12:00:00 to 2011-010T14:49:00 Duration 2h 49m)
  - UVIS\_143SA\_EUVFUV002\_PIE to take first 30 minutes of GAP? Gap 1 will then start at 2011-010T12:30:00 (Duration 2 h 19 m)
- GAP 3 (2011-010T17:19:00 to 2011-010T17:31:00 Duration 12m)
  - Give the time to VIMS\_143SA\_ALPCMAOCC001\_PIE and/or VIMS\_143SA\_RLEOOCC001\_PIE ?
- GAP 4 (2011-010T20:01:00 to 2011-011T04:08:00 Duration 8h 7m)
  - VIMS HIRES observation?
  - Others?
- GAP 5 (2011-011T09:38:00 to 2011-012T05:16:00 Duration 19h 38m)
  - Short downlink?
  - VIMS HIRES observation?
  - Others?

### **Beginning of Integration:**

DATA VOLUME SUMMARY TRAN	SFER FRAME	OVERHEAD IN	CLUDED	(80 B	ITS PE	R 8800	-BIT FR	AME)									
					OBS	ERVATI	ON_PERI	0D		   			DOWNLIN	K_PASS			
						Р4			P5   	REC 	ORDED	   		PLAYE	ACK		   
DOWNLINK PASS NAME	Start doy hh:mm	End   doy hh:mm	START (Mb)		HK+E (Mb)	TOTAL (Mb)	CPACTY (Mb)	MRGN (Mb)	OPNAV   (Mb)	SCI   (Mb)		TOTAL (Mb)	CPACTY (Mb)	MARGN (Mb)	NET_M (Mb)	ARGN (%)	CAROVR   (Mb)
SP_143EA_M34BWGSEQ010_PRIME SP_143EA_G70METNON011_PRIME SP_143EA_G70METSEQ012_PRIME SP_143EA_C70METNON012_PRIME	011 10:23 012 07:26	011 14:36 012 16:26	522		65 122 71 0	3264 2964	3317 3317 3317 3317 3317	2487 53 353 3317	0 0 0 0	289 97 232 26	53 25 53 6	1173 3387 3249 32	651 1814 3651 431		53 353 800 399	1% 6% 20% 93%	522   1573   0   0

12

# **Waypoint Selection**

## **RBOT FRIENDLY WAYPOINTS**

### **PRIMARY : NEG\_Y to SATURN**

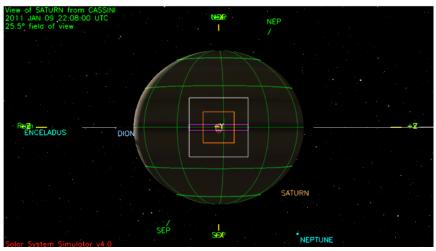
reminder: use an ra/dec average value and keep the same waypoint throughout your segment when possible

	<u> </u>		-		• •	-	
OBSERVATION PERIOD	START	END	POS_X	NEG_X	POS_Z	NEG_Z	
SP_143NA_OBSERV009_NA	2011-009T09:11:00	2011-010T00:41:00		41.0/ 83.6		41.0/ 83.6	
SP_143NA_OBSERV010_NA	2011-010T09:41:00	2011-012T07:26:00		39.8/ 83.6			

<b>OTHER WAYPOIN</b>	ITS											
PRIMARY : NEG_Y	to SATURN											
OBSERVATION PERIOD	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_143NA_OBSERV009_NA	2011-009T09:11:00	2011-010T00:41:00	**BAD**	OK	OK	**BAD**	**BAD**	**BAD**	OK	OK	ОК	OK
SP_143NA_OBSERV010_NA	2011-010T09:41:00	2011-012T07:26:00	**BAD**	**BAD**	OK	**BAD**	**BAD**	**BAD**	**BAD**	**BAD**	ОК	**BAD**

EQ-1 DOWNLINKS A	TTITUDE SUM	ARY ROL	LING+SRU S	AFETY SUM	IARY						
OBS_NAME	START	END	POS_X_2_NSP	POS_X_2_NEP	NEG_X_2_NSP	NEG_X_2_NEP	POS_Y_2_NSP	POS_Y_2_NEP	NEG_Y_2_NSP	NEG_Y_2_NEP	ROLL_FLAG
SP_143EA_M34BWGOTB008_PRIME	2011-009T00:11:00	2011-009T09:11:00	OK	OK	OK	OK	**BAD**	**BAD**	OK	OK	OK
SP_143EA_M70METSEQ009_PRIME	2011-010T00:11:00	2011-010T09:11:00	OK	OK	OK	OK	**BAD**	**BAD**	OK	OK	OK

#### Waypoint 1 (2011-009T09:55 - 010T10:21): NAC to Saturn, NEG\_X to 41.0/83.6



Waypoint 2 (2011-010T10:21 – 012T19:00): NAC to Saturn, NEG\_X to 39.8/83.6

View of SATURN from CASSINI. 2011 JAN 11 14:41:00 UTC 21.9° field of view Rogn Solor System Simulator v4.0

NOTE: Custom handoff from CAPS to ISS during mini-SOST segment 011T04:08:25 – 011T09:38:25

#### Pointing:

- Collaborative primes
  - VIMS\_143SA\_ALPCMAOCC001\_PIE
  - CAPS\_143RH\_RHEAPTG001\_PIE
  - ISS\_143RH\_RHEA001\_PIE
- Custom handoff from CAPS to ISS during mini-SOST segment
  - CAPS\_143RH\_RHEAPTG001\_PIE
  - ISS\_143RH\_RHEA001\_PIE
- 2 part waypoint turn total turn time 44 mins (with new XXM margin)
  - SP\_143EA\_WAYPTTURN009\_PRIME
  - SP\_143EA\_WAYPTTURN409\_PRIME
- Near 180 degree turn
  - SP\_143EA\_DLTURN012\_PRIME
  - Changed secondary attitude to POS\_X TO NSP (originally POS\_X to NEP)
- Ybias window not added for SP\_143EA\_G70METNON011\_PRIME downlink (downlink pass shorter than 5 hours)
- CAPS preferred secondary attitude of Neg\_X to NSP during SP\_143EA\_M34BWGSEQ010 had to be changed to Pos\_X to NSP to allow a safe turn
- RBOT friendly waypoint secondaries used for all observations except
  - CAPS\_143RH\_RHEAPTG001\_PIE for which the secondary was science driven
  - VIMS\_143SA\_ALPCMAOCC001\_PIE and VIMS\_143SA\_RLEOOCC001\_PIE list PIC for their secondary attitudes flexibility provided on next page.
- Data Volume:
  - Added SP\_143EA\_G70METNON011\_PRIME to allow teams accommodate data from Rhea flyby
  - Dual playback of Rhea data during the 1 hour SP\_143EA\_C70METNON012\_PRIME pass
- DSN: None
- Opmodes: None
- Special Activities:
  - SID suspend will be activated during the 10 minute gap between VIMS\_143SA\_REGMAP002\_PRIME and SP\_143SA\_DEADTIME011\_PRIME. Will be un-suspended during a quiescent period during ISS\_143RH\_RHEA001\_PIE

#### Sequence Liens:

• Information on the flexibility of secondary attitudes for RBOT is being provided by teams.

Observation	Response
VIMS_143SA_ALPCMAOCC001_PIE And For VIMS_143SA_RLEOOCC001_PIE	For VIMS_143SA_ALPCMAOCC001_PIE the stellar occultation occurs at 60S on the dark limb. A 60 degree rotation is needed from the waypoint secondary (NEG_X to NSP = NEG_X to 39.8/83.6). The CIRS limb integration, which takes place later in this observation, will probably have to take place at 60 South on the bright limb to avoid radiator constraints or a 120-degree turn. For VIMS_143SA_RLEOOCC001_PIE the stellar occultation occurs at 40N on the dark limb. A 40 degree rotation is needed from the waypoint secondary. The CIRS limb integration can take place on the dark limb in this case. The VIMS PDT designer may have to interact with Amy on the subtleties of limb sounding. However, we cannot simply use the waypoint secondary. –Gordy Bjoraker
ISS_143RH_RHEA001_PIE	<ul> <li>Our secondary is completely free NOW. If the secondary will be changed during RBOT, we might or will run into these problems:</li> <li>The turn from CAPS to ISS might need more time than available =&gt; a CIMS change would be needed.</li> <li>A secondary change for the ISS Rhea PIE would require a complete PDT re-design of the whole observation. We might do this, but would strongly prefer not getting asked for. This would be a huge effort to be done at very short notice.</li> <li>From science viewpoint, we might "tolerate" any secondary, but from the re-designing effort, it would be hard to doTilmann</li> </ul>

#### Sequence Liens:

• Information on the flexibility of secondary attitudes for RBOT is being provided by teams.

Observation	Response
VIMS_143SA_REGMAP001_PRIME VIMS_143SA_REGMAP002_PRIME VIMS_143SA_REGMAP003_PRIME	We can actually take any orientation. BUT: We prefer orientations that align the z-axis (or x-axis) within 5 degrees of either Saturn's equator or its polar axis (with near-perfect alignment being preferred, especially for equatorial orbits). Kevin Baines
UVIS_143SA_EUVFUV001_PIE UVIS_143SA_EUVFUV002_PIE	As a rule I select the secondary to be the same as the waypoint secondary. The EUVFUV are flexible. – Bob West
CAPS_143RH_RHEAPTG001_PIE	There is little to no flexibility, since the second axis was selected to satisfy CAPS, CDA, INMS, MIMI and to drag the ORS fields of view over Rhea at closest approach. –Frank Crary

Flyby	Driving Instrument	BEGHIVAL	ENDHIVAL	P4 Dual Playback	Carryover?	Fits in Existing Margin?
R3	CAPS	R3-00:33:00	R3+00:33:00	389.5 Mb	No	Yes

Reminder - ALL instruments' data is played back twice during P4 dual playback periods In addition to the P4 dual playback, SCO/AACS has asked for P6 playback for the flyby