S65 Icy satellites SOST

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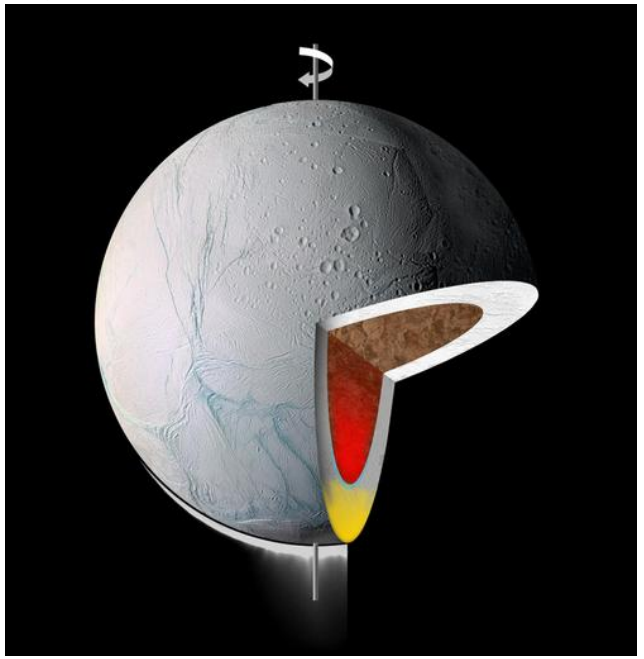
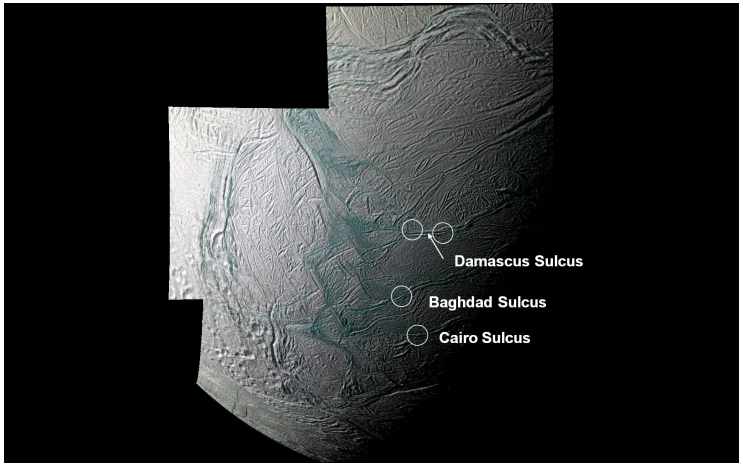
Rev 141 E12: the shape and interior of Enceladus

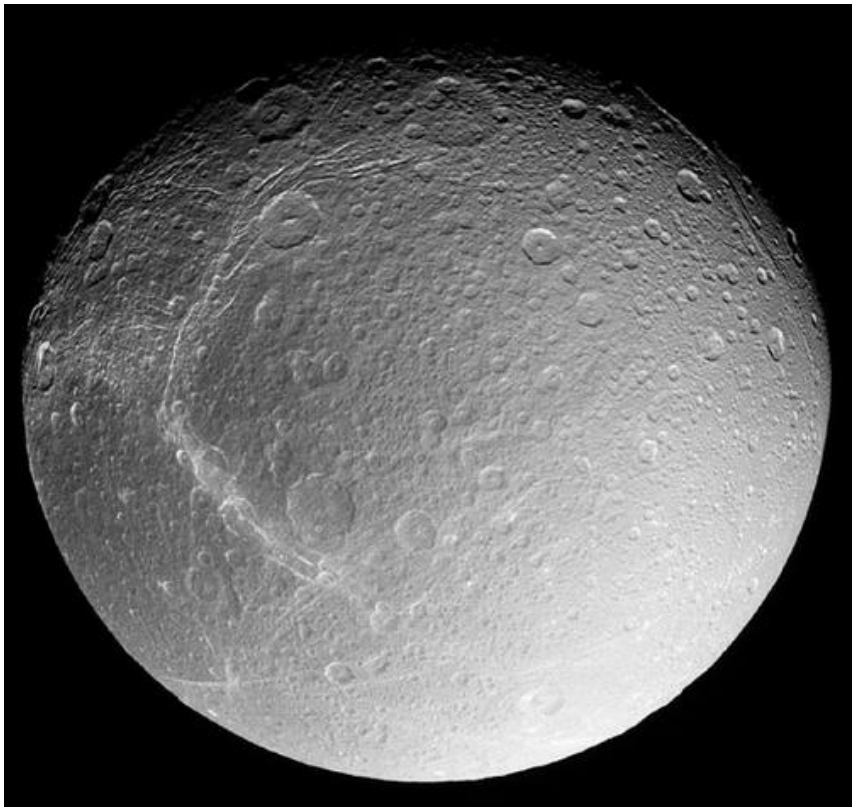
- **2010-334T11:53:58.87 (30 Nov) 51.4 km**
- **E12 and E19 are a pair of close (50-75 km) RSS flybys to understand the interior structure and differentiation of Enceladus. E12 is a north polar pass, while E19 goes south**
- **Other key observations (dark approach and lit exit) include a CDA ring shadow, a UVIS dark side Rhea, and ORS on the lit outbound. MAPS will be in ridealong during the RSS observations at C/A**
- **Hyperion at beginning: ~20 hours observations for a 71,900 km flyby (C/A around 2010-332T03:28)**
- **ISS search for Rhea leading Trojan (Lagrangians)**





Rev 142 E13: MAPS (CDA optimized with INMS prime) northern hemisphere pass

- **2010-355T01:08:25.62 (21 Dec) 51.3 km**
- **MAPS measurements at Enceladus outside of plume region**
- **Dione reg map at moderate resolution and phase angle (90-100º) with ISS, CIRS and VIMS**
- **Plume observations and CIRS nightside map**
- **Saturn VIMS occultation accommodated**
- **Saturn 143 Rhea ORS PIE (2011-011T05:38:00-011T09:38:00 is associated with the CDA rings flby of Rhea. These observations are moderate resolution (starts at 22,000 km), good phase angle (16º) and ~193-206º longitude. Rhea appears to "skim" along the rings**



141_EN (E12)

Disci-pline	CIMS Request Name	Start Time	End Time	Flexibility in secondary pointing	Comments (e.g., pointing tolerance, uniqueness; relative priority)	Objec tive	Pointing designer POC
Rings	CDA_141OT_RINGSHAD001_PIE	2010-333T22:34:05	2010-334T02:13:00			RC1a	
Icy	SP_141EA_M34BWGRSS334_PRIME (RSS_141EN_GRAVITY001_PIE)	2010-334T03:53:59 (E12 - 08:00:00)	2010-334T06:53:59 (E12 - 05:00:00)	Flexible	All secondaries are fine for RSS if safe, but currently using the Earth-pointed WP here so no time used for turns. (will need to find time, if change 2ry)	IN1a	RSS does no turns. Will be at Earth point because it is WP. (not sure who RSS POC is)
Icy	ISS_141EN_PLMHPHR001_PIE	2010-334T06:53:59 (E12 - 05:00:00)	2010-334T09:23:59 (E12 - 02:30:00)	Secondary Preferred	not very sensitive, but NEG_X to NSP is preferred for best pointing, if RBOT allows	IN1a	Josh Riley
Icy	CIRS_141EN_DRKMAP001_PRIME	2010-334T09:23:59 (E12 - 02:30:00)	2010-334T10:23:59 (E12 - 01:30:00)	Flexible	Secondary choice is not critical for science, but changes after PDT design will result in mistargeted observations. Also, CIRS here does turn to RSS attitude so 2ry changes to CIRS or RSS will alter turn times.	IN1a	?
Icy	RSS_141EN_GRAVITY002_PIE	2010-334T10:23:59 (E12 - 01:30:00)	2010-334T13:23:59 (E12 + 01:30:00)	Secondary Preferred	All secondaries are fine for RSS if safe, but 2ry is for ORS riders and CAPS here, too. (ORS drag at C/A during RSS prime)	IN1a	RSS does no turns. CIRS in custom period brackets RSS and puts them at Earth point. Paul Helfenstein, Tilmann Denk, and Todd Antsy worked on ORS drag 2ry.
Icy	CIRS_141EN_DAYMAP001_PRIME	2010-334T13:23:59 (E12 + 01:30:00)	2010-334T14:23:59 (E12 + 02:30:00)	Flexible	Secondary choice is not critical for science, but changes after PDT design will result in mistargeted observations. Also, CIRS here does turn from RSS attitude so 2ry changes to CIRS or RSS will alter turn times.	IN1a	?
Icy	VIMS_141EN_ENCELADUS001_PIE	2010-334T14:23:59 (E12 + 02:30:00)	2010-334T16:53:59 (E12 + 05:00:00)	Flexible		IN1a	?
Icy	SP_141EA_C34BWGRSS334_PRIME (RSS_141EN_GRAVITY003_PIE)	2010-334T16:53:59 (E12 + 05:00:00)	2010-334T19:53:59 (E12 + 08:00:00)	Flexible	All secondaries are fine for RSS if safe, but currently using the Earth-pointed WP here so no time used for turns. (will need to find time, if change 2ry)	IN1a	RSS does no turns. Will be at Earth point because it is WP. (not sure who RSS POC is)

142_EN (E13)

Discipline	CIMS Request Name	Start Time	End Time	Flexibility	Comments	Objective	Designer
Icy	ISS_142EN_PLMHPHR001_PIE	2010-354T15:15	2010-354T19:55	Secondary Preferred	2 PIEs were expanded and merged; original PIE times 15:10-16:40 and 18:25-19:55. Preferred secondaries for plume observations are +X to NSP, -Z to NSP, and -X to NSP, but others can be made to work	IC1a	Josh Riley
Icy	CIRS_142EN_NITEMAP_PRIME	2010-354T19:55	2010-354T20:35:00	Flexible	while high priority science, lower priority than others on this list	IC1a	
Saturn	VIMS_142SA_ALPORIOCC001_PIE	2010-354T20:42:00	2010-354T22:45:00	Secondary Preferred	Chosen secondary is preferred for collaborative science with CIRS, but others will work too	SC1a	
Icy	ISS_142EN_PLMHPHR002_PIE	2010-354T22:45:00	2010-355T00:15:00	Secondary Preferred	Preferred secondaries for plume observations are +X to NSP, -Z to NSP, and -X to NSP, but others can be made to work	IC1a	Josh Riley
Icy	INMS_142EN_ENCEL13001_PRIME	2010-355T00:15:00	2010-355T01:50:00	Flexible	Closest approach data high priority	IN1a	Greg Fletcher
Icy	ISS_142EN_ORSCA001_PIE	2010-355T02:13:40	2010-355T03:15	Significant Science Impact if Secondary Changed	High priority. Changing secondary will require some amount of redesign of the mosaic	IN1a	Todd Ansty
Icy	VIMS_142EN_ENCEL001_PIE	2010-355T03:25	2010-355T07:00	Flexible	original PIE time 05:30-07:00	IN1a	

143_RH (Saturn Segment)

Icy	ISS_143RH_RHEA001_PIE	2011-011T05:32:25	2011-011T09:38:25	Significant Science Impact if Secondary Changed	significant redesign required if changes are necessary. High Priority.	IN2a	Thomas Roatsch/Tilmann Denk