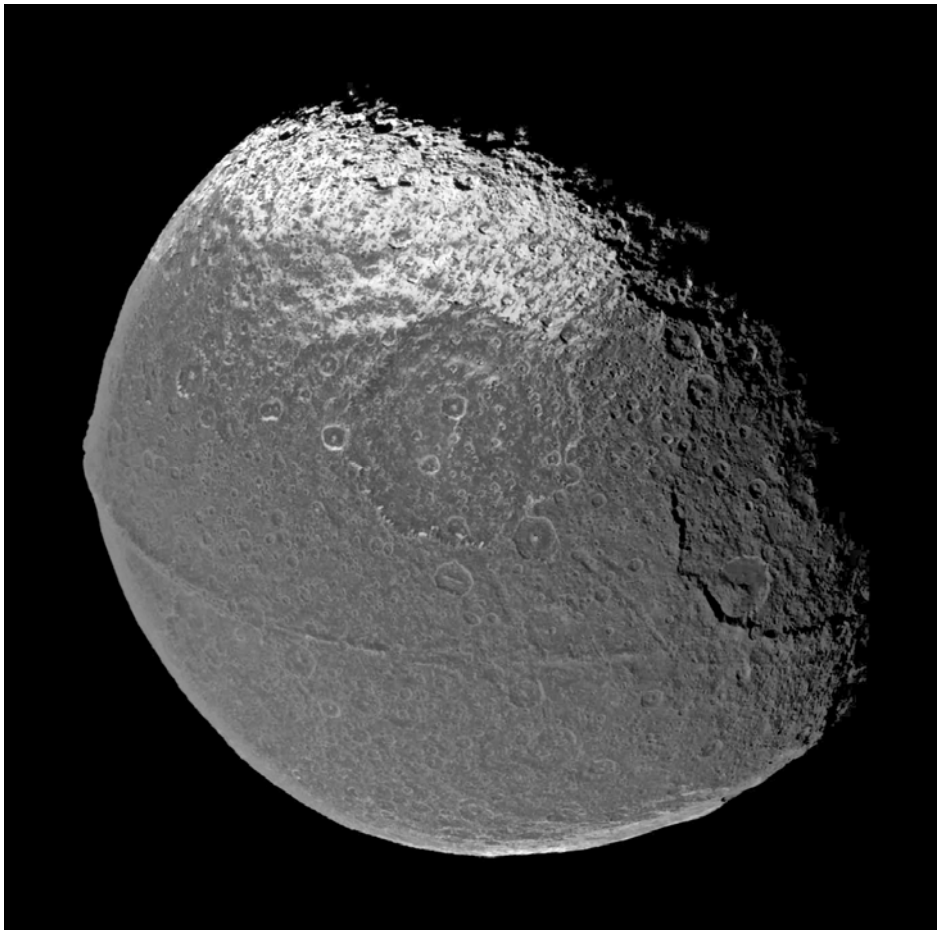
C A S S I N I



I A P E T U S **0 4 9 I A**
MISSION DESCRIPTION

September 2007

Jet Propulsion Laboratory
California Institute of Technology

Cover image: Iapetus' dark Cassini Regio (December 31, 2004). Within the dark terrain of the leading hemisphere, centered on 90°W, a mountainous ridge lies along the equator, as imaged here from 172,400 km (107,124 mi) during the Iapetus flyby on Rev B/C. The dark material is present across the leading hemisphere, and the streaky, "windswept" characteristics of the dark material against the bright north pole region suggest ballistic emplacement of the dark material from an exogenous source. Some craters have bright north-facing rims within the dark terrain remain bright, suggesting topographic protection. Large impact basins are present within the dark terrain, but no fresh bright craters are evident, suggesting recent or ongoing emplacement of the dark material. Credits: NASA/JPL/Space Science Institute

1.0 OVERVIEW

More than two-and-a-half years after its first Iapetus flyby, Cassini gets its best views yet of this enigmatic moon. The closest approach on this, the only targeted Iapetus flyby of the tour, occurs on Monday, September 10, at 2007-253T14:15:40 spacecraft time at an altitude of 1644 kilometers (~1021.5 miles) above the surface and at a speed of 2.4 kilometers per second (5368 mph). The latitude at closest approach is 4 degrees S, the longitude is 156 degrees W and the encounter occurs on orbit number 49.

This encounter will set up with two maneuvers, on September 2 and September 8. The Iapetus flyby occurs ten days after the Titan T35 flyby and four days before apoapse.

ABOUT IAPETUS

Iapetus has intrigued scientists since its discovery by Cassini in 1671, when the bizarre hemispheric albedo dichotomy was first noted. Because Iapetus is phase-locked, it keeps the same hemisphere (centered on 0°W) facing Saturn throughout its orbit. The leading hemisphere, centered on 90°W, is the hemisphere facing the direction of motion. The leading hemisphere of Iapetus is dominated by the dark terrain, Cassini Regio, which reflects just ~4% of the visible light that hits it. In contrast, the trailing hemisphere (centered on 270°W) is relatively icy-bright, with a visible albedo of ~60%.

A long-standing question has been whether Iapetus' dark terrain was created through exogenic processes or whether geologic activity emplaced dark material from within Iapetus. Voyager images of dark-floored craters within the bright terrain pointed to an endogenic source; they also suggested that the bright-dark boundary is too irregular to be consistent with infalling dust. However, albedo patterns observed by Cassini cameras during the Rev B/C flyby in December 2004 suggest external emplacement of material (e.g., dark material on ram-facing crater walls at high latitudes). The initial theory of an exogenically-created dark pattern suggested that pre-existing dark material was uncovered by meteoritic bombardment. Later researchers theorized that the dark material is exogenically emplaced on Iapetus' leading hemisphere as material is lost from the moon Phoebe. Retrograde Phoebe dust from 215 R_S would travel inward and impact the leading hemisphere of Iapetus, orbiting at 59 R_S. However, Phoebe is spectrally gray at visible wavelengths, while the Iapetus dark material is reddish. If the material does come from Phoebe, then some sort of chemistry or impact volatilization must occur to change the color and darken the material. Another possibility is that the exogenic source of the dark material is either Hyperion or Titan. It has been suggested that the impact that disrupted Hyperion created a debris cloud that subsequently impacted Iapetus. Both Hyperion and Titan tholin material are spectrally reddish, though not as dark as Iapetus. Another idea is that both Hyperion and Iapetus' leading hemispheres are impacted by dark, reddish dust from retrograde satellites exterior to Phoebe. However, it is likely that Phoebe would also be coated in the reddish dust (though not with the hemispheric pattern seen on Iapetus due to Phoebe's non-synchronous rotation) – but this does not appear to be the case.

Ground-based RADAR observations at 13 cm and Cassini RADAR data at 2.2 cm indicate that the dark terrain must be quite thin (one to several decimeters); an ammonia-water ice mixture may be present below several decimeters of the surface on both the leading and trailing hemispheres of Iapetus. The RADAR results appear to rule out the theories of a thick dark material layer. Cassini Radio Science results indicate a bulk density for Iapetus of 1.1 g/cm^3, from which it can be inferred that the moon is composed primarily of water ice. Because large craters within the dark terrain appear to be evenly colored with the dark material (no craters appear to break up the dark

material, exposing bright underlying terrain), this suggests the emplacement of the dark material is relatively new or ongoing.

The exact composition of the dark material is not known; the presence of a deep 3.0 μm absorption feature has led to comparisons with C-type asteroids and primitive meteorite-type material while its red VNIR (visible-near infrared) spectrum has been compared with organic material. Water ice is present in very small amounts in the dark material. The bright poles of Iapetus are consistent with the external source model; it has also been suggested that the poles are bright due to thermal segregation of water ice from the warmer low latitudes to the colder high latitudes. The peak daytime temperature in Iapetus' dark terrain is ~130 K, implying that surface water ice is not stable there on geological timescales. Ultraviolet measurements from Cassini have detected a latitudinal variation in water ice abundance within the dark terrain, consistent with thermal segregation of volatiles.

Iapetus has a distinctly non-spherical shape, with radial axes of 747.1 × 749 × 712.6 km. This flattening corresponds with a rotation period of 10 hours, in sharp contrast to its actual period of 79 days. This is interpreted to be the result of an early cooling/freezing of the moon, which locked in its shape, with its spin state being locked in later in its development. The presence of the equatorial ridge is also consistent with an earlier faster rotation period. Seen most prominently within Cassini Regio, the mountainous ridge reaches heights of ~13 km and is ~20 km in width.

1.1 IAPETUS-49 SCIENCE HIGHLIGHTS

- **VIMS** will map the surface throughout the flyby to thoroughly investigate the nature of the dark material in the 0.35-5.2 μm range. In particular, VIMS will probe spectral features possibly due to CO_2, CN, NH, and NH_3, and will the study the presence of polycyclic aromatic hydrocarbons (PAHs) on Iapetus.

- **ISS** will observe the dark and bright hemispheres of Iapetus. ISS will search for small fresh bright craters within the dark terrain, to probe the age of the dark material. The light-dark boundary and dark-floored craters within the bright terrain will be observed to study the possible source mechanisms of the dark material. The mountainous ridge will be observed at high resolution and the extent of the ridge within the bright terrain will be investigated. Spatial resolution of up to 10 m/pixel will be achieved.

- **CIRS** will measure daytime and nighttime temperatures to constrain the thermal inertia, bolometric albedo and volatile stability. Observations will be made in the 10-500 μm range to search for compositionally diagnostic spectral features.

- **UVIS:** The team will obtain spectral images of Iapetus in the EUV (500-1100 Å) and FUV (1100-1900 Å) to map the surface composition, including water ice abundances, within the dark terrain and to study volatile migration. Maps will be made of the bright-dark boundary. Iapetus occults Sigma Sgr, and UVIS will use the observation opportunity to search for a tenuous atmosphere.

- **RADAR** will obtain unprecedented coverage of Iapetus to further study the thickness and composition of the dark material. Furthermore, RADAR will perform the first-ever SAR imaging of Iapetus, with spatial resolution of ~2 km x ~6 km. This dataset represents the first SAR images of an icy satellite for which high-resolution optical images are available. Altimetry information will be obtained with a resolution of ~35 m.

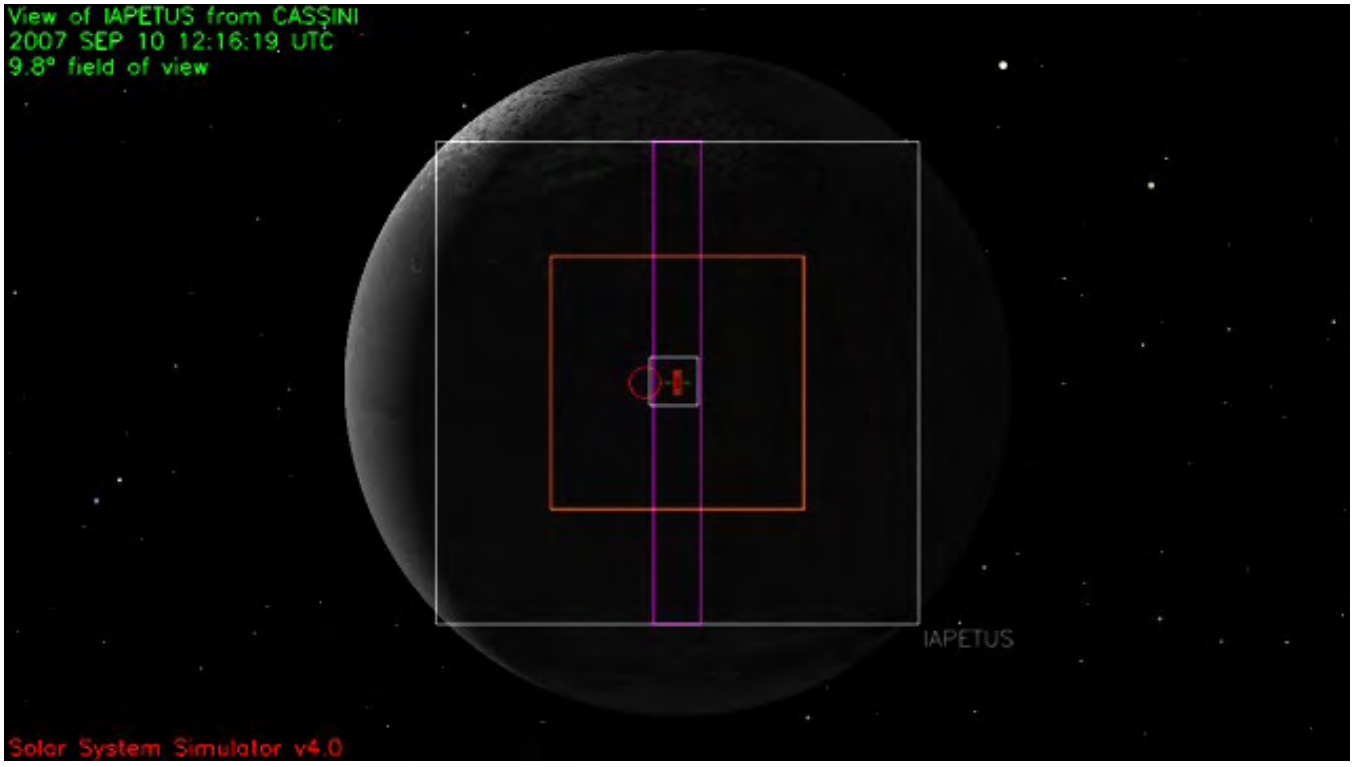
1.2 SAMPLE SNAPSHOTS

Three views of Iapetus from Cassini before, during, and after closest approach to Iapetus are shown below. The views are oriented such that the direction towards the top of the page is aligned with the Iapetus North Pole. The optical remote sensing instruments' fields of view are shown assuming they are pointed towards the center of Iapetus. The sizes of these fields of view vary as a function of the distance between Cassini and Iapetus. A key for use in identifying the remote sensing instruments fields of view in the figures is listed at the top of the next page.

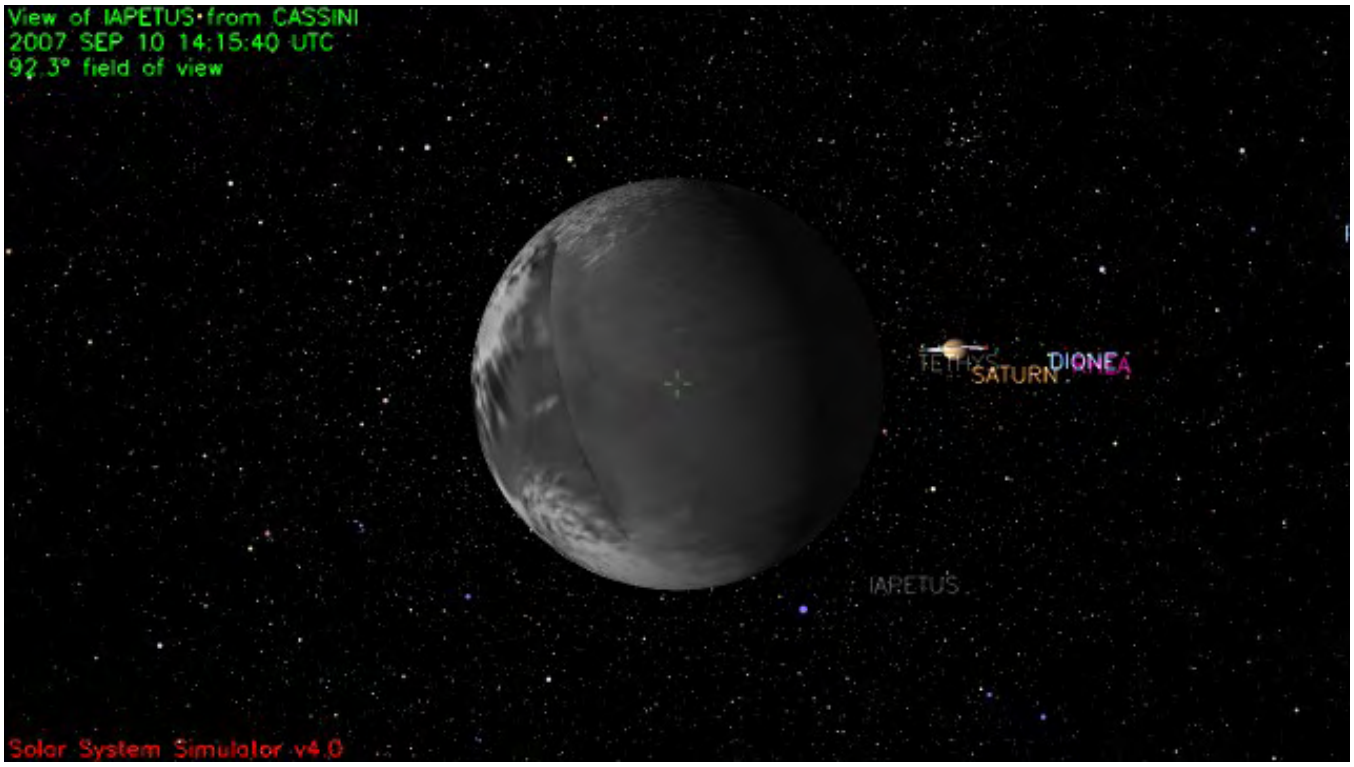
Key to ORS Instrument Fields of View in Figures

Instrument Field of View	Depiction in Figure
ISS WAC (imaging wide angle camera)	Largest square
VIMS (visual and infrared mapping spectrometer)	Next largest orange square
ISS NAC (imaging narrow angle camera)	Smallest green square
CIRS (composite infrared spectrometer) – Focal Plane 1	Small red circle near ISS_NAC FOV
UVIS (ultraviolet imaging spectrometer)	Vertical purple rectangle centered within largest square

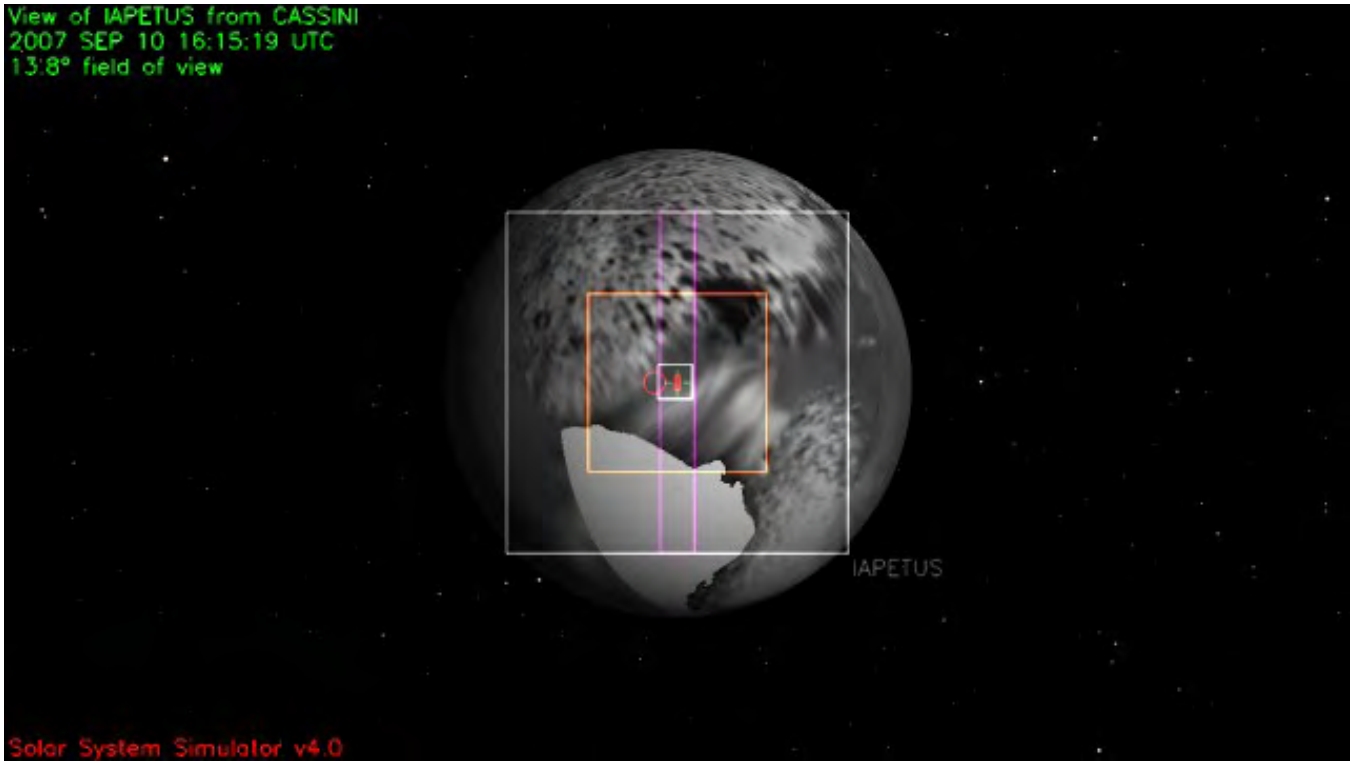
View of Iapetus from Cassini appox. two hours before closest approach



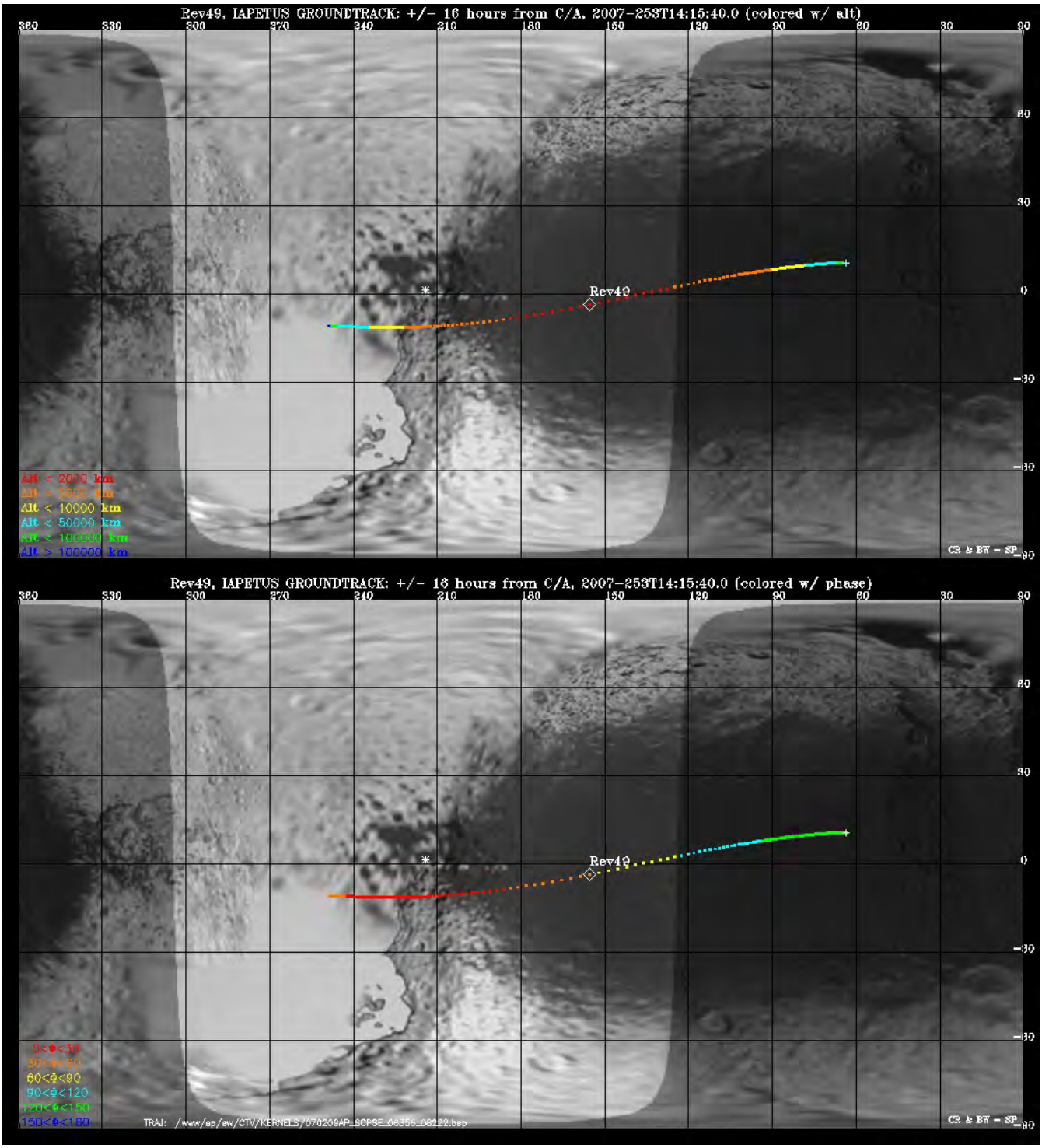
View of Iapetus from Cassini near Iapetus-49 closest approach



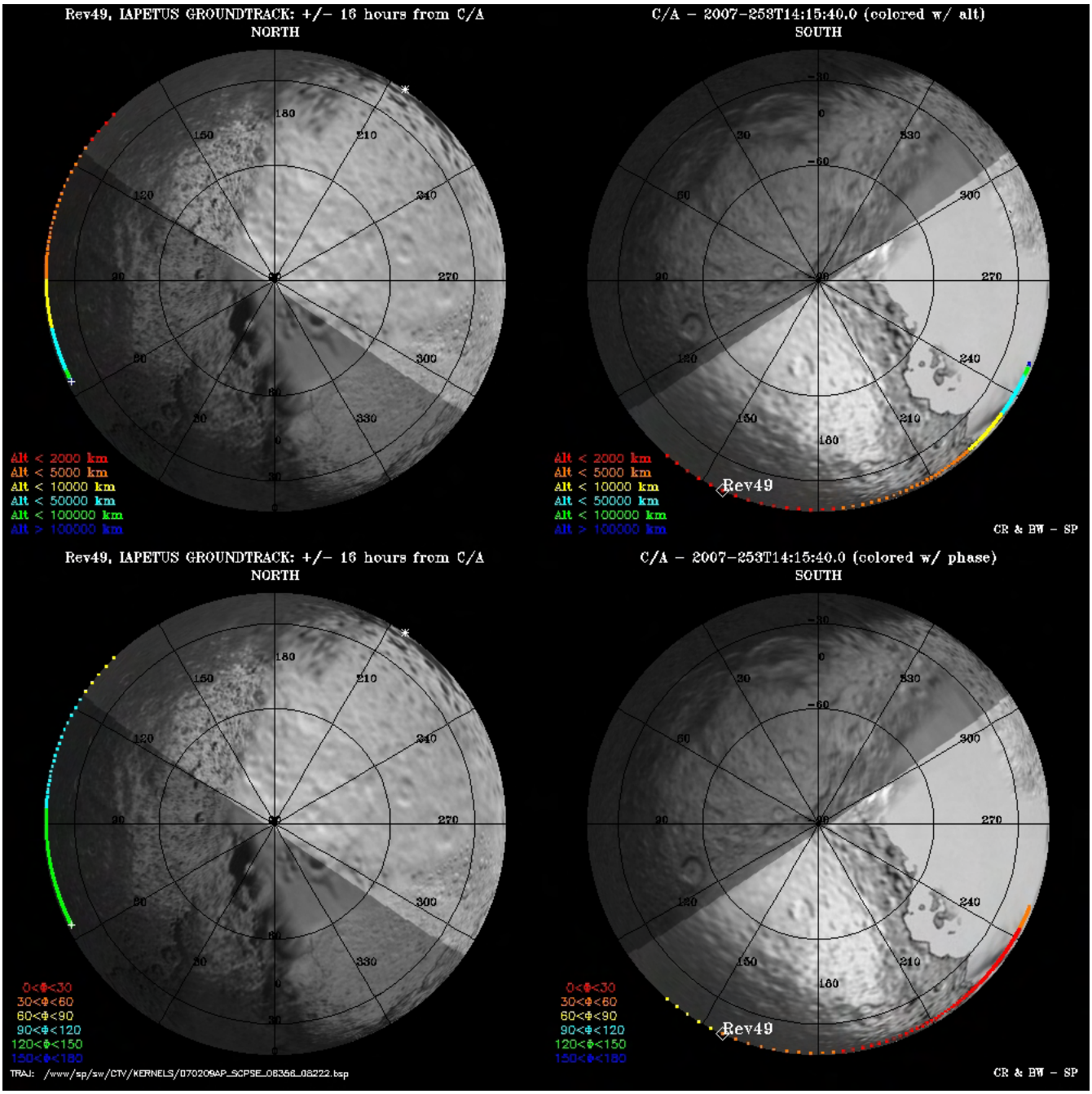
View of Iapetus from Cassini approx. two hours after closest approach



Groundtracks for Iapetus-49: Global Plot



Groundtracks for Iapetus-49: Polar Plot



The Iapetus-49 events timeline is as follows:

Cassini Iapetus-49 Timeline - September 2007

Colors: yellow = maneuvers; blue = geometry; pink = 049IA-ORS-related; orange=RADAR; green = RSS + data playbacks

Orbiter UTC	Ground UTC	Pacific Time	Time wrt 049IA	Activity	Description
223T23:20:00	Aug 12 00:44	Sat Aug 11 05:44 PM	IA-29d15h	Start of Sequence S33	Start of Sequence which contains Iapetus-49.
245T05:35:00	Sep 02 06:59	Sat Sep 01 11:59 PM	IA-08d09h	OTM #125 Prime	Iapetus-49 approach targeting maneuver
246T13:05:00	Sep 03 14:29	Mon Sep 03 07:29 AM	IA-07d01h	OTM #125 Backup	
251T21:50:00	Sep 08 23:14	Sat Sep 08 04:14 PM	IA-01d16h	Start of the SOST Segment	
251T12:50:00	Sep 08 14:14	Sat Sep 08 07:14 AM	IA-02d01h	OTM #127 Prime	Iapetus-49 approach targeting maneuver
252T12:45:00	Sep 09 14:09	Sun Sep 09 07:09 AM	IA-01d02h	OTM #127 Backup	
251T21:50:00	Sep 08 23:14	Sat Sep 08 04:14 PM	IA-01d16h	turn cameras to Saturn	
251T22:20:00	Sep 08 23:44	Sat Sep 08 04:44 PM	IA-01d16h	Saturn observation	VIMS compositional map + ISS imaging
252T04:25:00	Sep 09 05:49	Sat Sep 08 10:49 PM	IA-01d10h	turn cameras to Iapetus	
252T04:49:00	Sep 09 06:13	Sat Sep 08 11:13 PM	IA-01d09h	Inbound Iapetus ORS observations (distant)	Images, compositional and temperature maps; ISS resolution 1.7 km/px
252T04:55:00	Sep 09 06:19	Sat Sep 08 11:19 PM	IA-01d09h	Inbound Iapetus RADAR	
252T09:50:00	Sep 09 11:14	Sun Sep 09 04:14 AM	IA-01d04h	Inbound Iapetus ORS observations (distant)	Images, compositional and temperature maps ISS resolution 1.3 km/px
252T12:11:00	Sep 09 13:35	Sun Sep 09 06:35 AM	IA-01d02h	turn to Earth	
252T12:45:00	**Sep 09 14:09**	**Sun Sep 09 07:09 AM**	**IA-01d02h**	**Downlink + OTM Backup Window + Radio Science Iapetus Mass determination**	**9 hr downlink - Goldstone 70M**
252T21:34:00	Sep 09 22:58	Sun Sep 09 03:58 PM	IA-16h41m	turn to Iapetus	
252T22:05:00	Sep 09 23:29	Sun Sep 09 04:29 PM	IA-16h10m	ORS observations	Images, compositional and temperature maps; ISS resolution 800 m/px
252T23:55:00	Sep 10 01:19	Sun Sep 09 06:19 PM	IA-14h20m	Inbound Iapetus RADAR	
253T02:45:00	Sep 10 04:09	Sun Sep 09 09:09 PM	IA-11h30m	ORS observations (low-resolution)	Images, compositional and temperature maps; ISS resolution up to 450 m/px
253T05:26:00	Sep 10 06:50	Sun Sep 09 11:50 PM	IA-08h49m	turn to Earth	
253T06:00:00	**Sep 10 07:24**	**Mon Sep 10 12:24 AM**	**IA-08h15m**	**Downlink + Radio Science Iapetus Mass determination**	**2.75 hr downlink - Madrid 70M**
253T08:45:00	Sep 10 10:09	Mon Sep 10 03:09 AM	IA-05h30m	Deadtime	5 minutes long; used to accommodate changes in flyby time
253T08:50:40	Sep 10 10:14	Mon Sep 10 03:14 AM	IA-05h25m	ORS observations (low-resolution)	Images, compositional and temperature maps; ISS resolution of 235 m/px
253T11:05:40	Sep 10 12:29	Mon Sep 10 05:29 AM	IA-03h10m	Inbound Iapetus RADAR	
253T12:30:40	Sep 10 13:54	Mon Sep 10 06:54 AM	IA-01h45m	ORS observations (high-resolution)	Images, compositional and temperature maps, including UVIS stellar occultation and closest-approach imaging; ISS resolution up to 10 m/px
253T14:15:40	**Sep 10 15:39**	**Mon Sep 10 08:39 AM**	**IA+00h00m**	**Iapetus-49 Flyby Closest Approach Time**	**Altitude = 1644 km (1021.5 miles), speed = 2.4 km/s (5368 mph); high phase inbound, 59.9 deg phase at closest approach, low phase outbound**
253T20:00:00	Sep 10 21:24	Mon Sep 10 02:24 PM	IA+05h45m	Deadtime	5 minutes long; used to accommodate changes in flyby time
253T20:05:00	**Sep 10 21:29**	**Mon Sep 10 02:29 PM**	**IA+05h50m**	**Downlink + Radio Science Iapetus Mass determination**	**2.25 hr downlink - Canberra 70M**
253T22:20:00	Sep 10 23:44	Mon Sep 10 04:44 PM	IA+08h05m	turn to Iapetus	
253T22:40:00	Sep 11 00:04	Mon Sep 10 05:04 PM	IA+08h25m	ORS observations (low-resolution)	Images, compositional and temperature maps; ISS resolution up to 440 m/px
254T03:00:00	Sep 11 04:24	Mon Sep 10 09:24 PM	IA+12h45m	Outbound Iapetus RADAR	
254T05:10:00	Sep 11 06:34	Mon Sep 10 11:34 PM	IA+14h55m	turn to Earth	
254T05:30:00	**Sep 11 06:54**	**Mon Sep 10 11:54 PM**	**IA+15h15m**	**Downlink + Radio Science Iapetus Mass determination**	**15 hr downlink - Madrid 70M + Goldstone 70M**
254T20:25:00	Sep 11 21:49	Tue Sep 11 02:49 PM	IA+01d06h	turn to Iapetus	
254T20:45:00	Sep 11 22:09	Tue Sep 11 03:09 PM	IA+01d07h	ORS observations (low-resolution)	Images, compositional and temperature maps; ISS resolution 1.6 km/px
255T03:00:00	Sep 12 04:24	Tue Sep 11 09:24 PM	IA+01d13h	Outbound Iapetus RADAR	
255T06:00:00	Sep 12 07:24	Wed Sep 12 12:24 AM	IA+01d16h	ORS observations (low-resolution)	Images, compositional and temperature maps; ISS resolution 2.3 km/px
255T12:34:00	Sep 12 13:58	Wed Sep 12 06:58 AM	IA+01d22h	turn to Earth	
255T12:35:00	**Sep 12 13:59**	**Wed Sep 12 06:59 AM**	**IA+01d22h**	**Downlink + Radio Science Iapetus Mass determination**	**9 hr downlink - Goldstone 70M**

The Iapetus data playback timelines is as follows (next pages):

Iapetus 1 Playback Timeline **Created 13 Aug 2007**

Event or Observation	Observation Type (APGEN)	Observation Record Start Time (yyyy-dddThh:mm:ss) (SCET)	Record Start Time - Reference Epoch (hh:mm)	Start Playback (Ground UTC) Using CIMS Rates	Start Playback (Pacific Time) Using CIMS Rates	Obs p/b over which D/L	SSR Partition Where Data Recorded
RADAR_049OT_WARMUP4IA001_RIDER	RADAR_364800	2007-253T08:44:53	-00T05:31	Mon 09:42 PM	**Mon 02:42 PM**	M/G DL1	B4
CIRS_049IA_FP1NITMAP001_PRIME	CIRS_4000	2007-253T08:50:40	-00T05:25	Mon 09:43 PM	**Mon 02:43 PM**	M/G DL1	B4
ISS_049IA_FP1NITMAP001_CIRS	ISS_Phot_1_by_1	2007-253T08:50:40	-00T05:25	Mon 09:43 PM	**Mon 02:43 PM**	M/G DL1	B4
UVIS_049IA_ICYMAP001_CIRS	UVIS_32096	2007-253T08:50:40	-00T05:25	Mon 09:43 PM	**Mon 02:43 PM**	M/G DL1	B4
VIMS_049IA_IAPETUS017_CIRS	VIMS_18432	2007-253T08:50:40	-00T05:25	Mon 09:43 PM	**Mon 02:43 PM**	M/G DL1	B4
RADAR_049IA_SCATTRAD001_PRIME	RADAR_364800	2007-253T11:05:40	-00T03:10	Mon 10:49 PM	**Mon 03:49 PM**	M/G DL1	B4
MIMI_049IA_ENCOUNTER001_ISS	MIMI_8000	2007-253T11:39:16	-00T02:36	Mon 11:15 PM	**Mon 04:15 PM**	M/G DL1	B4
MAG_049IA_IATAR001_RIDER	MAG_1976	2007-253T12:15:40	-00T02:00	Tue 07:01 AM	**Tue 12:01 AM**	M70 DL2	B4
MAG_049IA_IATAR001_RIDER	MAG_1976	2007-253T12:15:40	-00T02:00	Tue 02:51 PM	**Tue 07:51 AM**	G70 B4 DL2	B4
CIRS_049IA_ISSUVIS001_ISS	CIRS_4000	2007-253T12:30:40	-00T01:45	Tue 07:13 AM	**Tue 12:13 AM**	M70 DL2	B4
CIRS_049IA_ISSUVIS001_ISS	CIRS_4000	2007-253T12:30:40	-00T01:45	Tue 03:01 PM	**Tue 08:01 AM**	G70 B4 DL2	B4
ISS_049IA_CASSREG001_PRIME	ISS_Phot_1_by_1	2007-253T12:30:40	-00T01:45	Tue 07:13 AM	**Tue 12:13 AM**	M70 DL2	B4
ISS_049IA_CASSREG001_PRIME	ISS_Phot_1_by_1	2007-253T12:30:40	-00T01:45	Tue 03:01 PM	**Tue 08:01 AM**	G70 B4 DL2	B4
UVIS_049IA_ICYMAP002_ISS	UVIS_32096	2007-253T12:30:40	-00T01:45	Tue 07:13 AM	**Tue 12:13 AM**	M70 DL2	B4
UVIS_049IA_ICYMAP002_ISS	UVIS_32096	2007-253T12:30:40	-00T01:45	Tue 03:01 PM	**Tue 08:01 AM**	G70 B4 DL2	B4
ISS_049IA_ICYMAP003_UVIS	ISS_Phot_1_by_1	2007-253T12:31:40	-00T01:44	Tue 07:16 AM	**Tue 12:16 AM**	M70 DL2	B4
ISS_049IA_ICYMAP003_UVIS	ISS_Phot_1_by_1	2007-253T12:31:40	-00T01:44	Tue 03:04 PM	**Tue 08:04 AM**	G70 B4 DL2	B4
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UVIS_049IA_ICYMAP003_PRIME	UVIS_32096	2007-253T12:31:40	-00T01:44	Tue 03:04 PM	**Tue 08:04 AM**	G70 B4 DL2	B4
CIRS_049IA_ICYEXO009_UVIS	CIRS_4000	2007-253T12:55:40	-00T01:20	Tue 07:31 AM	**Tue 12:31 AM**	M70 DL2	B4
CIRS_049IA_ICYEXO009_UVIS	CIRS_4000	2007-253T12:55:40	-00T01:20	Tue 03:17 PM	**Tue 08:17 AM**	G70 B4 DL2	B4
ISS_049IA_ICYEXO009_UVIS	ISS_Phot_1_by_1	2007-253T12:55:40	-00T01:20	Tue 07:31 AM	**Tue 12:31 AM**	M70 DL2	B4
ISS_049IA_ICYEXO009_UVIS	ISS_Phot_1_by_1	2007-253T12:55:40	-00T01:20	Tue 03:17 PM	**Tue 08:17 AM**	G70 B4 DL2	B4
UVIS_049IA_ICYEXO009_PRIME	UVIS_32096	2007-253T12:55:40	-00T01:20	Tue 07:31 AM	**Tue 12:31 AM**	M70 DL2	B4
UVIS_049IA_ICYEXO009_PRIME	UVIS_32096	2007-253T12:55:40	-00T01:20	Tue 03:17 PM	**Tue 08:17 AM**	G70 B4 DL2	B4
VIMS_049IA_IAPETUS019_UVIS	VIMS_18432	2007-253T12:55:40	-00T01:20	Tue 07:31 AM	**Tue 12:31 AM**	M70 DL2	B4
VIMS_049IA_IAPETUS019_UVIS	VIMS_18432	2007-253T12:55:40	-00T01:20	Tue 03:17 PM	**Tue 08:17 AM**	G70 B4 DL2	B4
CAPS_049IA_ENCOUNTER001_ISS	CAPS_16000	2007-253T13:15:40	-00T01:00	Tue 07:45 AM	**Tue 12:45 AM**	M70 DL2	B4

Iapetus 1 Playback Timeline Created 13 Aug 2007

Event or Observation	Observation Type (APGEN)	Observation Record Start Time (yyyy-dddThh:mm:ss) (SCET)	Record Start Time - Reference Epoch (hh:mm)	Start Playback (Ground UTC) Using CIMS Rates	Start Playback (Pacific Time) Using CIMS Rates	Obs p/b over which D/L	SSR Partition Where Data Recorded
CAPS_049IA_ENCOUNTER001_ISS	CAPS_16000	2007-253T13:15:40	-00T01:00	Tue 03:31 PM	**Tue 08:31 AM**	G70 B4 DL2	B4
INMS_049IA_I1CLOSE001_ISS	INMS_1498	2007-253T13:15:40	-00T01:00	Tue 07:45 AM	**Tue 12:45 AM**	M70 DL2	B4
INMS_049IA_I1CLOSE001_ISS	INMS_1498	2007-253T13:15:40	-00T01:00	Tue 03:31 PM	**Tue 08:31 AM**	G70 B4 DL2	B4
CIRS_049IA_ORSHIRES001_VIMS	CIRS_4000	2007-253T13:20:40	-00T00:55	Tue 07:49 AM	**Tue 12:49 AM**	M70 DL2	B4
CIRS_049IA_ORSHIRES001_VIMS	CIRS_4000	2007-253T13:20:40	-00T00:55	Tue 03:34 PM	**Tue 08:34 AM**	G70 B4 DL2	B4
ISS_049IA_ORSHIRES001_VIMS	ISS_Phot_1_by_1	2007-253T13:20:40	-00T00:55	Tue 07:49 AM	**Tue 12:49 AM**	M70 DL2	B4
ISS_049IA_ORSHIRES001_VIMS	ISS_Phot_1_by_1	2007-253T13:20:40	-00T00:55	Tue 03:34 PM	**Tue 08:34 AM**	G70 B4 DL2	B4
UVIS_049IA_ICYMAP004_VIMS	UVIS_32096	2007-253T13:20:40	-00T00:55	Tue 07:49 AM	**Tue 12:49 AM**	M70 DL2	B4
UVIS_049IA_ICYMAP004_VIMS	UVIS_32096	2007-253T13:20:40	-00T00:55	Tue 03:34 PM	**Tue 08:34 AM**	G70 B4 DL2	B4
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VIMS_049IA_ORSHIRES001_PRIME	VIMS_18432	2007-253T13:20:40	-00T00:55	Tue 03:34 PM	**Tue 08:34 AM**	G70 B4 DL2	B4
MIMI_049CO_SURVEY007_RIDER	MIMI_8000	2007-253T13:39:18	-00T00:36	Tue 08:06 AM	**Tue 01:06 AM**	M70 DL2	B4
MIMI_049CO_SURVEY007_RIDER	MIMI_8000	2007-253T13:39:18	-00T00:36	Tue 03:52 PM	**Tue 08:52 AM**	G70 B4 DL2	B4
CAPS_049IA_ENCOUNTER002_ISS	CAPS_16000	2007-253T13:45:40	-00T00:30	Tue 08:12 AM	**Tue 01:12 AM**	M70 DL2	B4
CAPS_049IA_ENCOUNTER002_ISS	CAPS_16000	2007-253T13:45:40	-00T00:30	Tue 03:58 PM	**Tue 08:58 AM**	G70 B4 DL2	B4
CDA_049IA_IAPDUST001_PRIME	CDA_524	2007-253T13:45:40	-00T00:30	Tue 08:12 AM	**Tue 01:12 AM**	M70 DL2	B4
CDA_049IA_IAPDUST001_PRIME	CDA_524	2007-253T13:45:40	-00T00:30	Tue 03:58 PM	**Tue 08:58 AM**	G70 B4 DL2	B4
RPWS_049IA_IACA001_PRIME	RPWS_182784	2007-253T13:45:40	-00T00:30	Tue 08:12 AM	**Tue 01:12 AM**	M70 DL2	B4
RPWS_049IA_IACA001_PRIME	RPWS_182784	2007-253T13:45:40	-00T00:30	Tue 03:58 PM	**Tue 08:58 AM**	G70 B4 DL2	B4
RPWS_049IA_IACA002_PRIME	RPWS_182784	2007-253T14:20:40	00T00:04	Tue 09:14 AM	**Tue 02:14 AM**	M70 DL2	B4
RPWS_049IA_IACA002_PRIME	RPWS_182784	2007-253T14:20:40	00T00:04	Tue 05:00 PM	**Tue 10:00 AM**	G70 B4 DL2	B4
CAPS_049IA_ENCOUNTER003_ISS	CAPS_16000	2007-253T14:45:40	00T00:29	Tue 12:08 PM	**Tue 05:08 AM**	M70 DL2	A4
RPWS_049SA_OUTSURVEY005_PRIME	RPWS_30464	2007-253T14:45:40	00T00:29	Tue 12:08 PM	**Tue 05:08 AM**	M70 DL2	A4
CAPS_049SA_SURVEY004_RIDER	CAPS_16000	2007-253T15:15:40	00T00:59	Tue 12:36 PM	**Tue 05:36 AM**	M70 DL2	A4
INMS_049SA_SURVEY010_RIDER	INMS_1498	2007-253T15:15:40	00T00:59	Tue 12:36 PM	**Tue 05:36 AM**	M70 DL2	A4
MAG_049OT_SURVEY005_PRIME	MAG_1976	2007-253T16:15:40	00T01:59	Tue 01:28 PM	**Tue 06:28 AM**	M70 DL2	A4
CIRS_049IA_FP1DAYMAP001_PRIME	CIRS_4000	2007-253T17:15:40	00T02:59	Tue 02:19 PM	**Tue 07:19 AM**	M70 DL2	A4
ISS_049IA_FP1DAYMAP001_CIRS	ISS_Phot_1_by_1	2007-253T17:15:40	00T02:59	Tue 02:19 PM	**Tue 07:19 AM**	M70 DL2	A4

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Event or Observation	Observation Type (APGEN)	Observation Record Start Time (yyyy-dddThh:mm:ss) (SCET)	Record Start Time - Reference Epoch (hh:mm)	Start Playback (Ground UTC) Using CIMS Rates	Start Playback (Pacific Time) Using CIMS Rates	Obs p/b over which D/L	SSR Partition Where Data Recorded
UVIS_049IA_ICYMAP005_CIRS	UVIS_32096	2007-253T17:15:40	00T02:59	Tue 02:19 PM	**Tue 07:19 AM**	M70 DL2	A4
VIMS_049IA_IAPETUS023_CIRS	VIMS_18432	2007-253T17:15:40	00T02:59	Tue 02:19 PM	**Tue 07:19 AM**	M70 DL2	A4
CIRS_049IA_IAPETUS013_VIMS	CIRS_4000	2007-253T19:15:40	00T04:59	Tue 07:51 PM	**Tue 12:51 PM**	G70 A4 DL2	A4
ISS_049IA_IAPETUS013_VIMS	ISS_Phot_1_by_1	2007-253T19:15:40	00T04:59	Tue 07:51 PM	**Tue 12:51 PM**	G70 A4 DL2	A4
UVIS_049IA_ICYMAP006_VIMS	UVIS_32096	2007-253T19:15:40	00T04:59	Tue 07:51 PM	**Tue 12:51 PM**	G70 A4 DL2	A4
VIMS_049IA_IAPETUS013_PRIME	VIMS_18432	2007-253T19:15:40	00T04:59	Tue 07:51 PM	**Tue 12:51 PM**	G70 A4 DL2	A4
UVIS_049SW_IPHSURVEY028_RIDER	UVIS_5032	2007-253T20:05:00	00T05:49	Tue 09:49 AM	**Tue 02:49 AM**	M70 DL2	B4
UVIS_049SW_IPHSURVEY028_RIDER	UVIS_5032	2007-253T20:05:00	00T05:49	Tue 05:35 PM	**Tue 10:35 AM**	G70 B4 DL2	B4
CIRS_049IA_WAYPTTURN253_SP	CIRS_4000	2007-253T22:20:00	00T08:04	Tue 09:57 AM	**Tue 02:57 AM**	M70 DL2	B4
CIRS_049IA_WAYPTTURN253_SP	CIRS_4000	2007-253T22:20:00	00T08:04	Tue 05:42 PM	**Tue 10:42 AM**	G70 B4 DL2	B4
RADAR_049OT_WARMUP4IA002_RIDER	RADAR_364800	2007-253T22:20:00	00T08:04	Tue 09:57 AM	**Tue 02:57 AM**	M70 DL2	B4
RADAR_049OT_WARMUP4IA002_RIDER	RADAR_364800	2007-253T22:20:00	00T08:04	Tue 05:42 PM	**Tue 10:42 AM**	G70 B4 DL2	B4
CIRS_049IA_REGMAPTRL001_ISS	CIRS_4000	2007-253T22:40:00	00T08:24	Tue 09:59 AM	**Tue 02:59 AM**	M70 DL2	B4
CIRS_049IA_REGMAPTRL001_ISS	CIRS_4000	2007-253T22:40:00	00T08:24	Tue 05:44 PM	**Tue 10:44 AM**	G70 B4 DL2	B4
ISS_049IA_REGMAPTRL001_PRIME	ISS_Phot_1_by_1	2007-253T22:40:00	00T08:24	Tue 09:59 AM	**Tue 02:59 AM**	M70 DL2	B4
ISS_049IA_REGMAPTRL001_PRIME	ISS_Phot_1_by_1	2007-253T22:40:00	00T08:24	Tue 05:44 PM	**Tue 10:44 AM**	G70 B4 DL2	B4
UVIS_049IA_ICYMAP007_ISS	UVIS_32096	2007-253T22:40:00	00T08:24	Tue 09:59 AM	**Tue 02:59 AM**	M70 DL2	B4
UVIS_049IA_ICYMAP007_ISS	UVIS_32096	2007-253T22:40:00	00T08:24	Tue 05:44 PM	**Tue 10:44 AM**	G70 B4 DL2	B4
VIMS_049IA_REGMAPTRL001_ISS	VIMS_18432	2007-253T22:40:00	00T08:24	Tue 09:59 AM	**Tue 02:59 AM**	M70 DL2	B4
VIMS_049IA_REGMAPTRL001_ISS	VIMS_18432	2007-253T22:40:00	00T08:24	Tue 05:44 PM	**Tue 10:44 AM**	G70 B4 DL2	B4
CIRS_049IA_DAYPOLRIZ001_PRIME	CIRS_4000	2007-254T00:40:00	00T10:24	Tue 11:07 AM	**Tue 04:07 AM**	M70 DL2	B4
CIRS_049IA_DAYPOLRIZ001_PRIME	CIRS_4000	2007-254T00:40:00	00T10:24	Tue 06:53 PM	**Tue 11:53 AM**	G70 B4 DL2	B4
CIRS_049IA_DAYPOLRIZ001_SI	ISS_SUPPORT_IM	2007-254T00:40:00	00T10:24	Tue 11:07 AM	**Tue 04:07 AM**	M70 DL2	B4
CIRS_049IA_DAYPOLRIZ001_SI	ISS_SUPPORT_IM	2007-254T00:40:00	00T10:24	Tue 06:53 PM	**Tue 11:53 AM**	G70 B4 DL2	B4
UVIS_049IA_ICYMAP008_CIRS	UVIS_32096	2007-254T00:40:00	00T10:24	Tue 11:07 AM	**Tue 04:07 AM**	M70 DL2	B4
UVIS_049IA_ICYMAP008_CIRS	UVIS_32096	2007-254T00:40:00	00T10:24	Tue 06:53 PM	**Tue 11:53 AM**	G70 B4 DL2	B4
CIRS_049IA_REGCOLTRL001_ISS	CIRS_4000	2007-254T02:20:00	00T12:04	Tue 11:22 AM	**Tue 04:22 AM**	M70 DL2	B4
CIRS_049IA_REGCOLTRL001_ISS	CIRS_4000	2007-254T02:20:00	00T12:04	Tue 07:08 PM	**Tue 12:08 PM**	G70 B4 DL2	B4

Iapetus 1 Playback Timeline — Created 13 Aug 2007

Event or Observation	Observation Type (APGEN)	Observation Record Start Time (yyyy-dddThh:mm:ss) (SCET)	Record Start Time - Reference Epoch (hh:mm)	Start Playback (Ground UTC) Using CIMS Rates	Start Playback (Pacific Time) Using CIMS Rates	Obs p/b over which D/L	SSR Partition Where Data Recorded
ISS_049IA_REGCOLTRL001_PRIME	ISS_Phot_1_by_1	2007-254T02:20:00	00T12:04	Tue 11:22 AM	**Tue 04:22 AM**	M70 DL2	B4
ISS_049IA_REGCOLTRL001_PRIME	ISS_Phot_1_by_1	2007-254T02:20:00	00T12:04	Tue 07:08 PM	**Tue 12:08 PM**	G70 B4 DL2	B4
UVIS_049IA_ICYMAP009_ISS	UVIS_32096	2007-254T02:20:00	00T12:04	Tue 11:22 AM	**Tue 04:22 AM**	M70 DL2	B4
UVIS_049IA_ICYMAP009_ISS	UVIS_32096	2007-254T02:20:00	00T12:04	Tue 07:08 PM	**Tue 12:08 PM**	G70 B4 DL2	B4
VIMS_049IA_REGCOLTRL001_ISS	VIMS_18432	2007-254T02:20:00	00T12:04	Tue 11:22 AM	**Tue 04:22 AM**	M70 DL2	B4
VIMS_049IA_REGCOLTRL001_ISS	VIMS_18432	2007-254T02:20:00	00T12:04	Tue 07:08 PM	**Tue 12:08 PM**	G70 B4 DL2	B4
RADAR_049IA_SCATTRAD002_PRIME	RADAR_364800	2007-254T03:00:00	00T12:44	Tue 08:21 PM	**Tue 01:21 PM**	G70 A4 DL2	A4
UVIS_049SW_IPHSURVEY029_RIDER	UVIS_5032	2007-254T05:30:00	00T15:14	Tue 11:39 AM	**Tue 04:39 AM**	M70 DL2	B4
CIRS_049IC_DSCAL07254_RIDER	CIRS_4000	2007-254T06:15:00	00T15:59	Tue 11:42 AM	**Tue 04:42 AM**	M70 DL2	B4
ISS_049IA_IAPETUS010_VIMS	ISS_Phot_1_by_1	2007-254T20:45:00	01T06:29	Wed 02:14 PM	**Wed 07:14 AM**	DL3 B4	B4
UVIS_049IA_ICYLON010_VIMS	UVIS_5032	2007-254T20:45:00	01T06:29	Wed 02:14 PM	**Wed 07:14 AM**	DL3 B4	B4
VIMS_049IA_IAPETUS010_PRIME	VIMS_18432	2007-254T20:45:00	01T06:29	Wed 02:14 PM	**Wed 07:14 AM**	DL3 B4	B4
CIRS_049IA_FP1FP3MAP001_PRIME	CIRS_4000	2007-254T23:00:00	01T08:44	Wed 03:30 PM	**Wed 08:30 AM**	DL3 B4	B4
RADAR_049OT_WARMUP4IA005_RIDER	RADAR_364800	2007-254T23:00:00	01T08:44	Wed 03:30 PM	**Wed 08:30 AM**	DL3 B4	B4
UVIS_049IA_ICYMAP011_CIRS	UVIS_32096	2007-254T23:00:00	01T08:44	Wed 03:30 PM	**Wed 08:30 AM**	DL3 B4	B4
RADAR_049IA_SCATTRAD005_PRIME	RADAR_364800	2007-255T03:00:00	01T12:44	Wed 04:44 PM	**Wed 09:44 AM**	DL3 B4	B4
ISS_049SA_STRMOVIEE002_PRIME	ISS_Phot_1_by_1	2007-255T06:00:00	01T15:44	Wed 05:49 PM	**Wed 10:49 AM**	DL3 B4	B4
VIMS_049SA_STRMOVIEE001_ISS	VIMS_18432	2007-255T06:00:00	01T15:44	Wed 05:49 PM	**Wed 10:49 AM**	DL3 B4	B4
UVIS_049IA_ICYLON011_ISS	UVIS_5032	2007-255T07:05:00	01T16:49	Wed 05:59 PM	**Wed 10:59 AM**	DL3 B4	B4
ISS_049IA_LIMBTOPOI001_PRIME	ISS_Phot_1_by_1	2007-255T10:35:00	01T20:19	Wed 06:40 PM	**Wed 11:40 AM**	DL3 B4	B4
CIRS_049IC_DSCAL07255_RIDER	CIRS_4000	2007-255T13:35:00	01T23:19	Wed 06:54 PM	**Wed 11:54 AM**	DL3 B4	B4