Out of Discipline SOST PIEs in S92

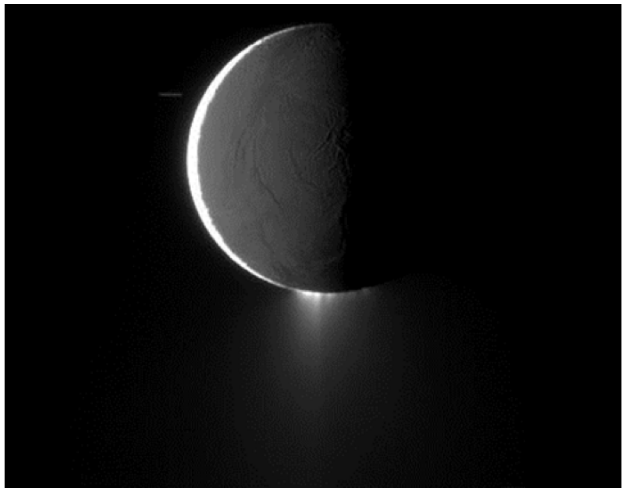
1. Rings rev 227 Epimetheus, Atlas, and Pandora

2015-340T18:40-340T22:30

Epimetheus will be observed for 20 minutes at a phase angle of 28 degrees from a distance of 31,000 and 25,000 kilometers , then there is a dust hazard from 19:49 to 21:08, during which we have to point Cassini's high-gain antenna in the Dust RAM direction to protect the instruments from dust impacts. During this period, which includes the closest flyby of Epimetheus of the entire mission at 20:37 (2680 km, phase angle 66), Cassini will attempt to capture images of Epimetheus as it zips through the camera's fields of view near closest approach by manipulating the spacecraft's secondary axis. Immediately after the dust hazard we turn and image two more ringmoons, Prometheus and Atlas. ISS will spend 29 minutes imaging At las at distances ranging from 31,000 to 44,000 kilometers and at phase angles ranging between 53 and 75 degrees. Prometheus will be imaged for 28 minutes from distances ranging between 24,000 and 29,000 kilometers at moderate phase angles between 83 and 95 degrees.

2. MAPS 229 ISS Plume Pie

2016-002T04:55:00-002T06:55:00



GOALS:

To obtain different viewing geometries which better characterize plume morphology, particle size, and the relationship between individual jets and surface features and thermal anomalies. Specific jets are mapped to specific locations. In addition, large distances are required for context and to understand the relationship of the plumes to E-ring.

To understand the variability of geologic activity on Enceladus. The same viewing conditions at different times are required.

Cassini Future Opportunities: rev 227

View of Cassini from Above
2015 DEC 06 20:26:24 UTC
30.7° field of view

From hand-off package

CASSINI

EPIMETHEUS

ATLAS

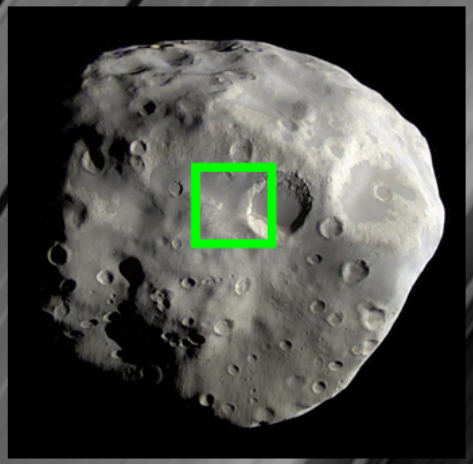
PROMETHEUS

View from north.
Movements of objects: CCW.
Sun direction: up.

Solar System Simulator v4.0

Epimetheus

2,680 km / 16 m/pxl

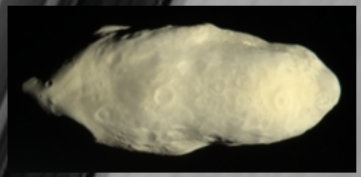


Atlas

20,640 km / ~130 m/pxl

Prometheus

20,860 km / ~130 m/pxl



Rev 230 Highlights

ISS_230EN_ENCEL001_PIE

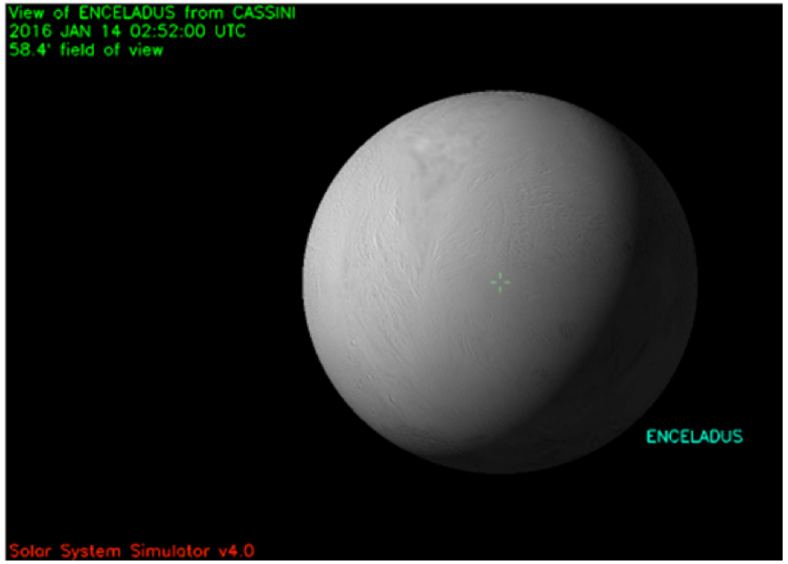
2016-014T02:31-04:00; 80400 km; phase angle 45° to 92°. 1X2 ISS color mosaics of Enceladus

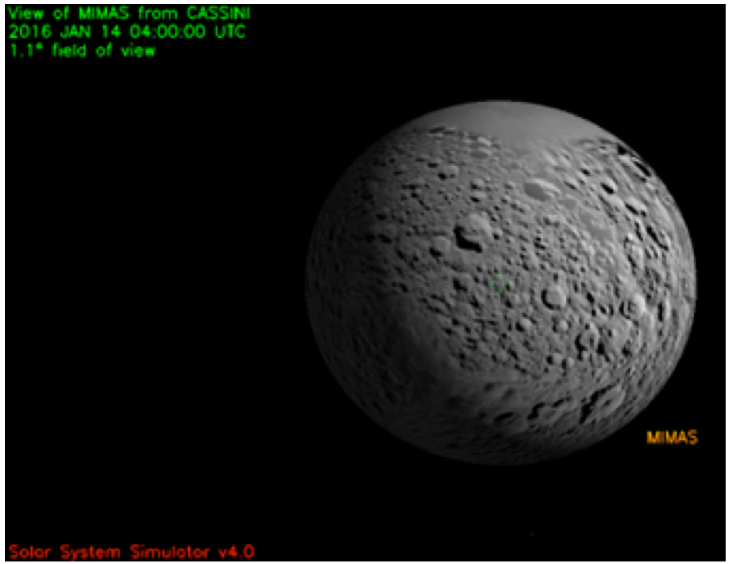
ISS_230MI_MIMAS001_PIE 2016-014T04:00-07:00; 27,200 km; color mosaics.

ISS_230DA_DAPHNIS001_PIE 2016-014T07:00-09:00; 22,500 km

I**SS_230TL_TELESTO001_PRIME** 2016-014T11:00; 15,200 a Lagrange satellite of Tethys; good phase and color coverage

Observations of Narvi (one of 6 total in late 2015), an outer irregular, to determine dynamical properties.





E22: Rev 228

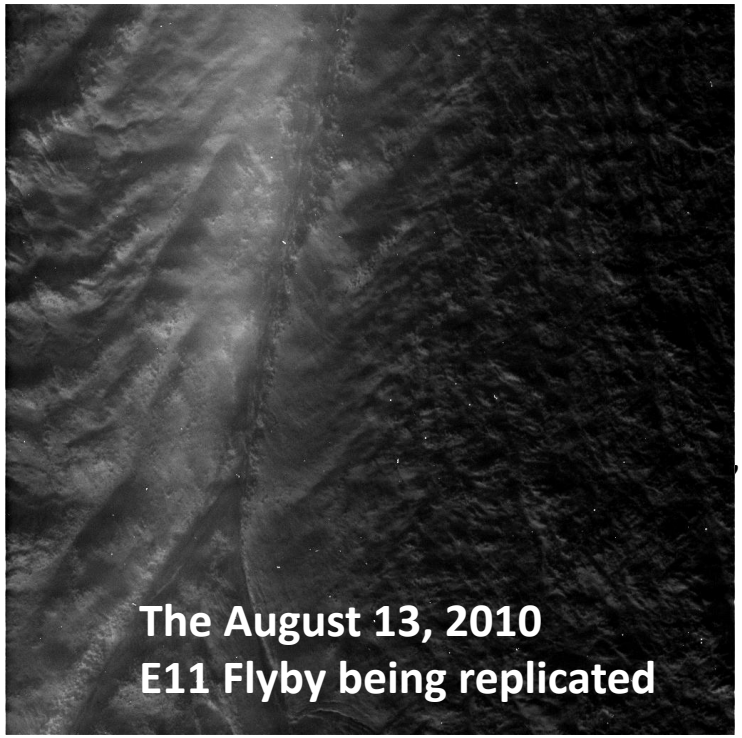
2015-353T17:49:20.28 (19 Dec 2015)
5003km

This is the final targeted Enceladus flyby. It is our last chance to see the active region of Enceladus close-up, until a new generation of scientists rises up to fill our shoes.

The geometry of E11 flyby will be replicated as much as possible, to look for changes over the past five years.

Other activities:

PIE of closest (2500 km) observation of tiny Aegaeon , a tiny moon embedded in G-ring; distant CIRS observation of Dione thermal properties; a VIMS α-Boo occ of the plume to determine dust/gas ratio; two plume observations; a large phase angle plume search on Dione; UVIS Saturn occ; observations of Hati (one of 6 total in late 2015), an outer irregular, to determine dynamical properties.



The August 13, 2010
E11 Flyby being replicated