

E18: Rev 164

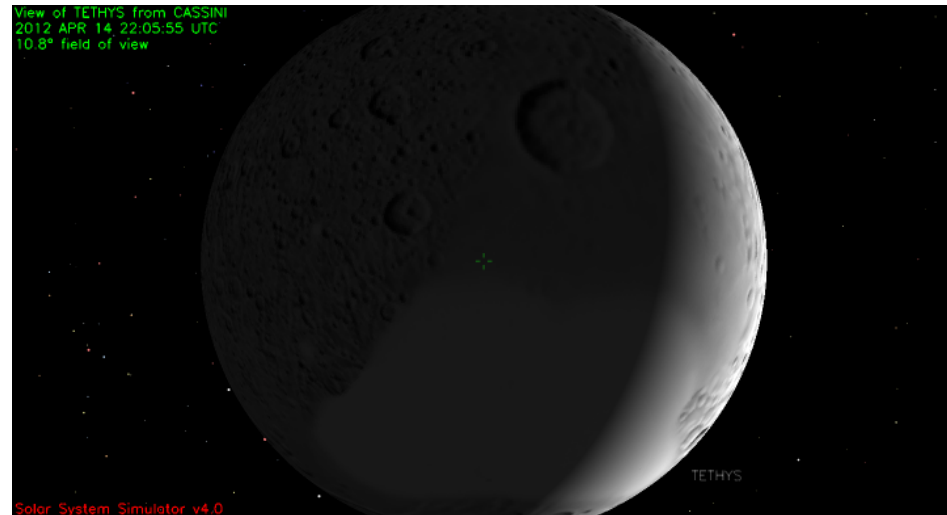
2012-105T14:01:37 (14 April 2012) 74 km

This flyby is a MAPS (INMS prime) to study the composition, density, three-dimensional structure and variability of plumes; with E14, and E17 provides good coverage of S. polar regions.

Other highlights: during dark approach, CIRS will be observing the anti-Saturn hemisphere to monitor hot spots, and discover new ones. During the exit leg, observations of a 9037 km Tethys untargeted flyby will take priority, with CIRS, VIMS, and ISS taking turns at prime observations to better map the Tethys “pacman”, which is due to a different thermal inertia and possible bombardment of high-energy electrons; and study the composition and morphology of Tethys.

Other observations include a plume observation at low latitude and a variety of spatial scales for context; searches for Rhea’s Lagrangians; and two Titan cloud monitors

There is also an out-of-discipline VIMS atmosphere occultation.



Tethys at the time of closest approach during its untargeted flyby

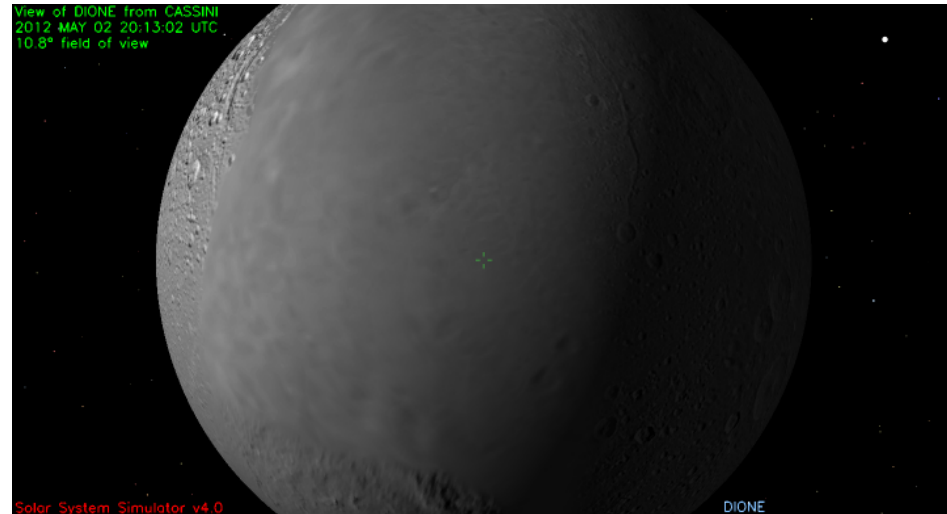
E19: Rev 165

2012-123T09:31:28.85 (2 May 2012) 77.3 km

E19 is an RSS gravity flyby, one of a pair designed to understand the internal structure of Enceladus, particularly the concentration of mass under the south polar regions. RSS will have its usual three periods of observation: 2 wings and closest approach. The MAPS pointing will be optimized to gather data near C/A.

Other highlights: during the dark approach, CIRS will be observing the anti-Saturn hemisphere to monitor hot spots, and discover new ones to understand the global energy balance of Enceladus. During the exit leg, CIRS will be observing near the equator during the day (again to understand the global energy balance). After E19, there is an 8063 km Dione untargeted flyby with ISS and CIRS prime. This flyby is designed to seek hot spots and possible emission from Dione, and to map poorly observed regions (see Figure at right).

Other observations include a plume observation similar to one taken on the previous rev, to understand plume variability on the scale of weeks; and two 10-hour irregular satellite observation to derive their lightcurve and rotational states, to give further information on the collisional environment in the outer Saturnian system.

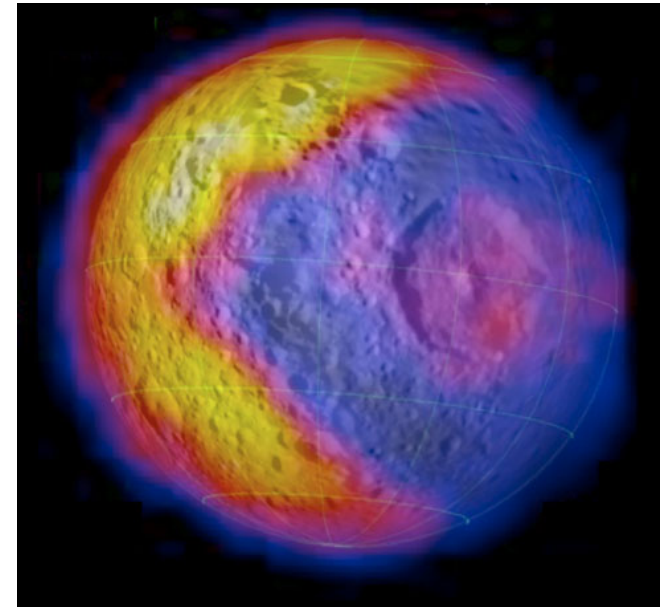


Dione at the time of closest approach (8063 km) showing new areas to be mapped during its untargeted flyby

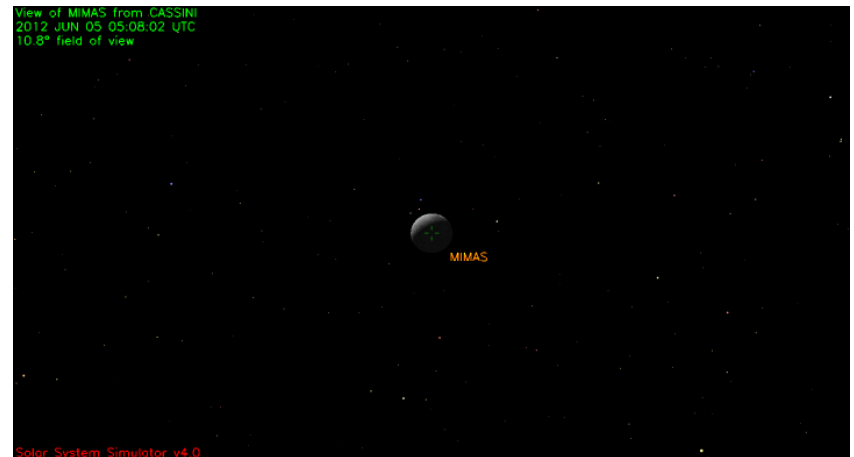
Rev 167 Rings Segment (Mimas ORS PIE)

2012-157T03:47:00-
157T09:00:00

Key CIRS observation of Mimas to better define the “pacman” (especially away from the equator to characterize its spatially resolved thermal inertia and global energy balance). Other ORS are in ridealong



‘Pacman’



Mimas near C/A of ~43,000 km

Rev 166 SOST Segment

2012-141T01:16:00-142T08:31:00

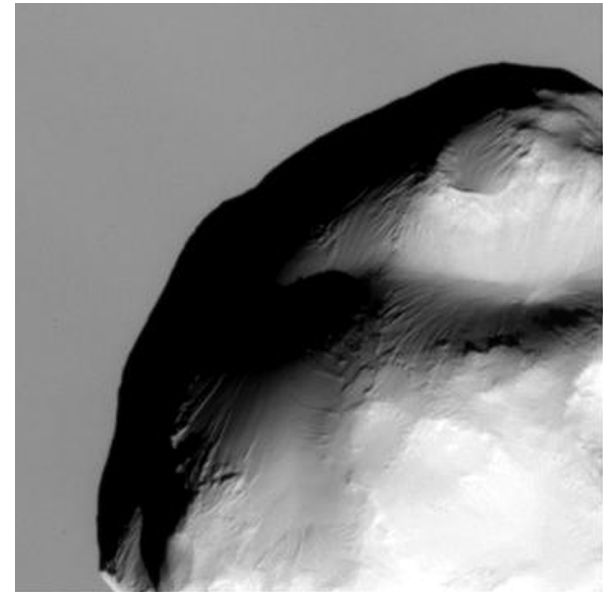
No targeted flybys

Highlights:

CIRS observation (~5 hours) of Tethys to characterize its spatially resolved thermal inertia and global energy balance. ORS ridealongs

ORS observations of Methone at 1900 km to give the first good close-up of this body, and the first spectra in the UV, VIS and IR. This is a unique small moon between Mimas and Enceladus.

The rest of the segment is CAPS Saturn atmosphere observations.



What will Methone look like (this is Helene)?

Best ever of Methone

