

Cassini Equinox Mission Quick-Look Flyby Facts

Enceladus E11 Encounter (Rev 136)



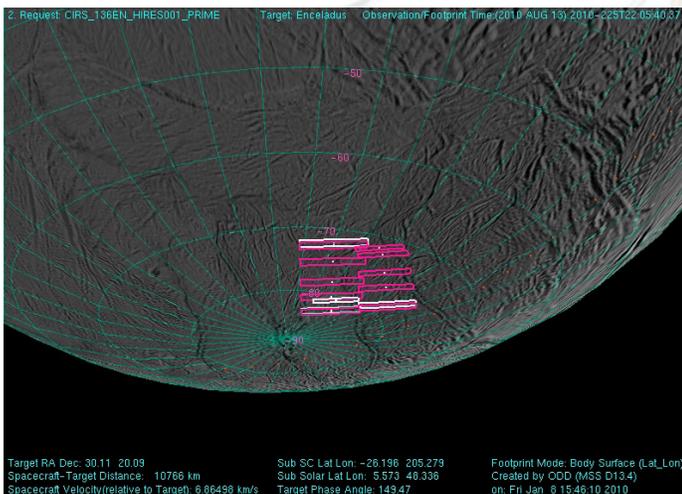
Quick Facts

Closest Approach at 2010-225T22:29:42.33
Aug. 13, 2010
Altitude: 2,502 km (1,555 miles)
Speed: 6.8 km/sec (~15,000 mph)

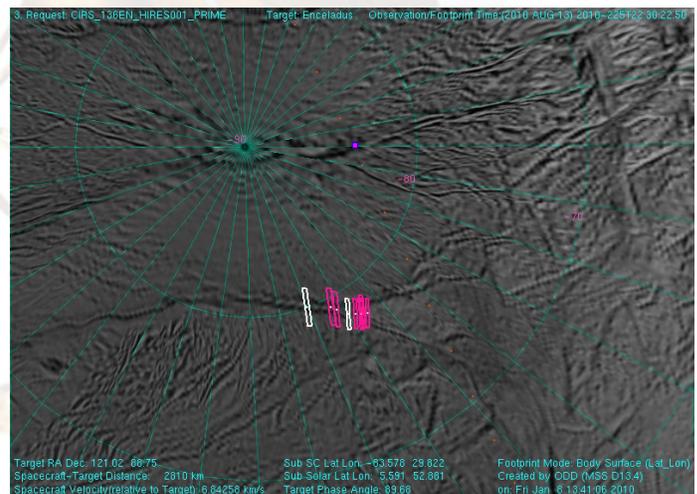
Science Highlights

[CIRS](#) will have prime pointing during closest-approach. The observations will map the thermal radiation from the tiger stripes, continuing coverage from previous flybys and taking advantage of the excellent viewing geometry of this flyby. In particular, CIRS will focus on warm transverse fractures that connect Alexandria and Cairo Sulci, and on studying whether substantial heat is escaping from the interior from the regions between the tiger stripes.

To close out this flyby, [VIMS](#) will stare at Enceladus to collect compositional data, and then handover to [ISS](#) to take some images of Enceladus' sister satellite, Tethys.



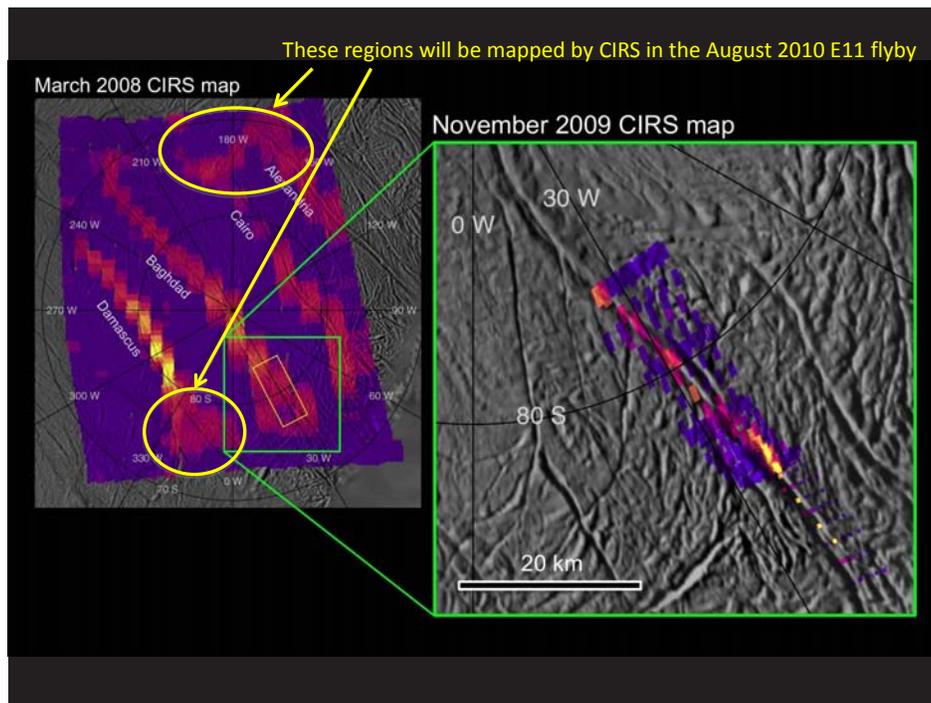
The CIRS field-of-view performs a mosaic of the Cairo-Alexandria region of the south pole prior to closest/approach.



The CIRS field-of-view is shown tracing the Damascus "tiger stripe" fracture at closest approach.

Significance of This Flyby

The focus of the flyby is the study of thermal emission from the south polar tiger stripes. Because the spacecraft flies no closer than 2,500 kilometers (about 1,500 miles) from Enceladus, the spacecraft is able to track Enceladus throughout the flyby, and the cameras can carefully guide their fields-of-view along the tiger stripes. (On the fast, very close flybys, the cameras have used the “skeet-shoot” technique.)



Sequence of Events

The Cassini spacecraft will start off the Enceladus flyby period with distant, high-phase imaging opportunities of Enceladus and the plume. Cassini instruments will also take advantage of the opportunity to observe Dione in eclipse during this period. The highlight of the flyby is the CIRS observation, with other instruments riding along, of the south-polar region of Enceladus. Previous measurements

have shown that heat emanates along the “tiger stripe” fractures, and that many of these hot spots are also the jet sources that make up Enceladus’s spectacular plume. During the closest-approach period, CIRS will map the temperatures along the tiger stripes while other instruments image the region and make compositional measurements.