

Cassini finishes sleigh ride by icy moons

December 22 2010, By Jia-Rui C. Cook



This raw image of Saturn's moon Enceladus was taken by NASA's Cassini spacecraft on Dec. 20, 2010. The spacecraft was approximately 158,000 kilometers (98,000 miles) away from Enceladus. Image credit: NASA/JPL/SSI

On the heels of a successful close flyby of Saturn's moon Enceladus, NASA's Cassini spacecraft is returning images of Enceladus and the nearby moon Dione.

Several pictures show Enceladus backlit, with the dark outline of the moon crowned by glowing jets from the south polar region. The images show several separate jets, or sets of jets, emanating from the fissures known as "tiger stripes." Scientists will use the images to pinpoint the jet source locations on the surface and learn more about their shape and

variability.

The Enceladus [flyby](#) took Cassini within about 48 kilometers (30 miles) of the moon's [northern hemisphere](#). Cassini's fields and particles instruments worked on searching for particles that may form a tenuous atmosphere around Enceladus. They also hope to learn whether those particles may be similar to the faint oxygen- and carbon-dioxide atmosphere detected recently around Rhea, another Saturnian moon. The scientists were particularly interested in the Enceladus environment away from the jets emanating from the south polar region. Scientists also hope this flyby will help them understand the rate of micrometeoroid bombardment in the Saturn system and get at the age of Saturn's main rings.



This raw image of Saturn's moon Dione taken by NASA's Cassini spacecraft

shows the fractured region known as "wispy terrain." The image was obtained on Dec. 20, 2010, from a distance of about 107,000 kilometers (66,000 miles).
Image credit: NASA/JPL/Space Science Institute

This flyby of Enceladus, the 13th in Cassini's mission, took a similar path to the last Enceladus flyby on Nov. 30.

About eight hours before the Enceladus flyby, Cassini also swung past Dione at a distance of about 100,000 kilometers (62,000 miles). During that flyby, the spacecraft snapped clear, intriguing images of the bright, fractured region known as the "wispy terrain." These features are tectonic ridges and faults formed by geologic activity on the [moon](#) sometime in the past. Scientists will now be able to measure the depth and extent of them more accurately.

Provided by JPL/NASA

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