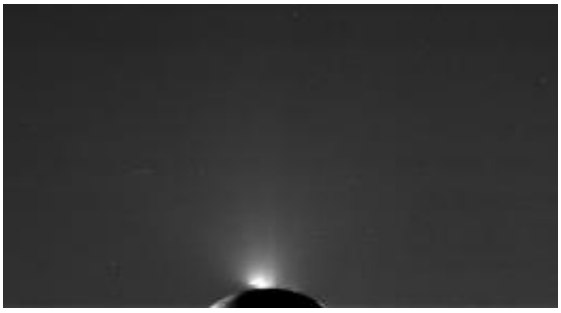
Cassini, Saturn Moon Photographer

May 3 2012



NASA's Cassini spacecraft successfully flew by Saturn's moons Enceladus and Dione during close flybys on May 2, 2012, capturing these raw images. The flybys were the last close encounters of these icy moons that Cassini will make for three years.

Cassini flew by Enceladus at an altitude of about 46 miles (74 kilometers). This flyby was designed primarily for the radio science sub-system to measure variations in Enceladus' gravity field.

On approach to Enceladus, Cassini's cameras imaged the icy satellite's south polar plume, which consists of jets of water ice, water vapor and organic compounds sprayed into space from the moon's famed "tiger stripe" fractures. The plume images were captured at distances ranging from 259,000 miles (416,000 kilometers) down to 66,000 miles (106,000 kilometers) when Enceladus was just a thin crescent and the

plume was backlit.

During closest approach, the radio science team looked for a concentration of mass at the south pole that could indicate sub-surface liquid water or an intrusion of warmer-than-average ice that might explain the intriguing geologic activity at the south pole. After the closest approach, the composite infrared spectrometer obtained a map of Enceladus' sun-lit side while Cassini's visible light cameras rode along and captured several images of the moon's leading hemisphere at resolutions of about 1,500 feet (450 meters) per pixel.

Later this month, a close encounter with Titan on May 22 will pitch the spacecraft up out of the equatorial plane and into a nearly three-year-long phase of inclined orbits that will showcase the northern and southern reaches of Saturn. On March 9, 2013, Cassini will make a close pass by Rhea, but the spacecraft won't have another close, targeted encounter with any of Saturn's other icy satellites until June 2015, when it encounters Dione. Cassini will make its next flyby of Enceladus on Oct. 14, 2015.

Provided by JPL/NASA