This view of the largest crater on Eros—a mosaic of NEAR Shoemaker images taken September 10, 2000, from an altitude of 62 miles (100 kilometers)—offers a new perspective on the feature known as Psyche.
A Look at Psyche

This view of the largest crater on Eros—a mosaic of NEAR Shoemaker images taken September 10, 2000, from an altitude of 62 miles (100 kilometers)—offers a new perspective on the feature known as Psyche. The images were taken as the spacecraft flew directly over the 3.3-mile (5.3-kilometer) wide crater and its smaller sister craters, which align its rim and create a paw-like appearance. Providing additional clues to the history of Eros, the image shows several troughs and scarps that appear to cut through the crater. These structural features occurred after the crater was formed, perhaps resulting from a large impact elsewhere on the asteroid.

The low light coming from the right of the photo highlights the crater’s raised rim. Bright patterns on the crater wall likely come from dark material moving downslope and revealing fresher material underneath. A large boulder perched on the crater wall illustrates Eros’ unusual gravity; because of its elongated shape the gravity “lows” on Eros are not necessarily in the lowest parts of craters. In this section, the boulder seems to rest on the wall, instead of rolling down to the floor.

NEAR Mission

As the first launch in the National Aeronautics and Space Administration’s (NASA) Discovery Program, the Near Earth Asteroid Rendezvous (NEAR) mission is setting the stage for asteroidal exploration and forming a base of knowledge that will be the framework for future asteroid missions. The Johns Hopkins University Applied Physics Laboratory (JHU/APL) designed and built the NEAR Shoemaker spacecraft and manages the mission for NASA. The Mission Team is drawn internationally from universities, government agencies and private industry.

Launched February 17, 1996, NEAR Shoemaker began its orbital mission at asteroid 433 Eros on February 14, 2000. From May through August 2000, the spacecraft traveled in a circular orbit at a radius of 31 miles (50 kilometers) from the center of Eros. It was then boosted to a higher orbit to view Eros from the direction of the sun. In late December 2000, NEAR Shoemaker will descend to a 22-mile (35-kilometer) orbit and operate at that altitude or lower for the remainder of the mission. By February 2001, the NEAR mission will provide the first comprehensive data on the physical geology, composition and geophysics of an asteroid.

For more information visit the NEAR Web site: http://near.jhuapl.edu.

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