

MRO Sees Rover from Orbit

October 6 2006



This high-resolution part of a new HiRISE image shows the rover, Opportunity, at Victoria crater on Mars. It also shows the rover wheel tracks in the soil behind it, and the rover's shadow, including the shadow of the camera mast. Since this image was taken, Opportunity has moved to the very tip of Cape Verde to perform more imaging of the interior of the crater. Credit: NASA/JPL/University of Arizona

With stunningly powerful vision, the HiRISE camera on NASA's Mars Reconnaissance Orbiter has taken a remarkable picture that shows the exploration rover Opportunity poised on the rim of Victoria crater on Mars.

The High Resolution Imaging Science Experiment (HiRISE) camera detailed the entire 800-meter (roughly half-mile) Victoria crater and the rover -- down to its rover tracks and shadows -- in a single high-resolution image taken Wednesday (Oct. 3).

Alfred S. McEwen of the University of Arizona Lunar and Planetary Laboratory released portions of the image that show views of the rover and crater at a NASA press conference in Washington, D.C., today. McEwen is principal investigator for HiRISE, which is operated from UA's Lunar and Planetary Laboratory in Tucson.

"We're poised to have a fantastic mission, and we're not even at prime science mission yet," McEwen said at NASA press briefing this morning. "This was our very first attempt to image 'off-nadir' (at an angle as opposed to straight down), and it worked fabulously well," McEwen added. "It's been an exciting week."

The HiRISE images for Victoria crater are available online at hiroc.lpl.arizona.edu/images/TRA/TRA_000873_1780/

Opportunity drove nine kilometers (more than five miles) to Victoria crater, an impact crater at Meridiani Planum, near Mars' equator. The HiRISE camera took its picture five days later, at 3:30 p.m. local Mars time, as the sun was about 30 degrees above the horizon, illuminating the scene from the west. The NASA orbiter was flying 297 kilometers (185.6 miles) above the planet's surface. The HiRISE camera is able to resolve objects that are 89 centimeters (35 inches) across at that altitude.

Opportunity has since driven north to the tip of the Cape Verde promontory, where the rover will take images of the crater interior.

HiRISE's stunning overview of Victoria crater shows a distinctive scalloped shape to its rim. This is formed by eroding crater wall material

moving downhill. Layered sedimentary rocks are exposed along the inner wall of the crater, and boulders that have fallen from the crater wall are visible on the crater floor. A striking field of sand dunes covers much of the crater floor.

"The ground-truth we get from the rover images and measurements enables us to better interpret features we see elsewhere on Mars, including very rugged and dramatic terrains that we can't currently study on the ground," McEwen said.

"Stay tuned," McEwen said at the NASA briefing. "If you think this HiRISE image is spectacular, just wait."

Source: University of Arizona

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