

Mars Exploration Rover Mission

**Spirit
and
Opportunity**



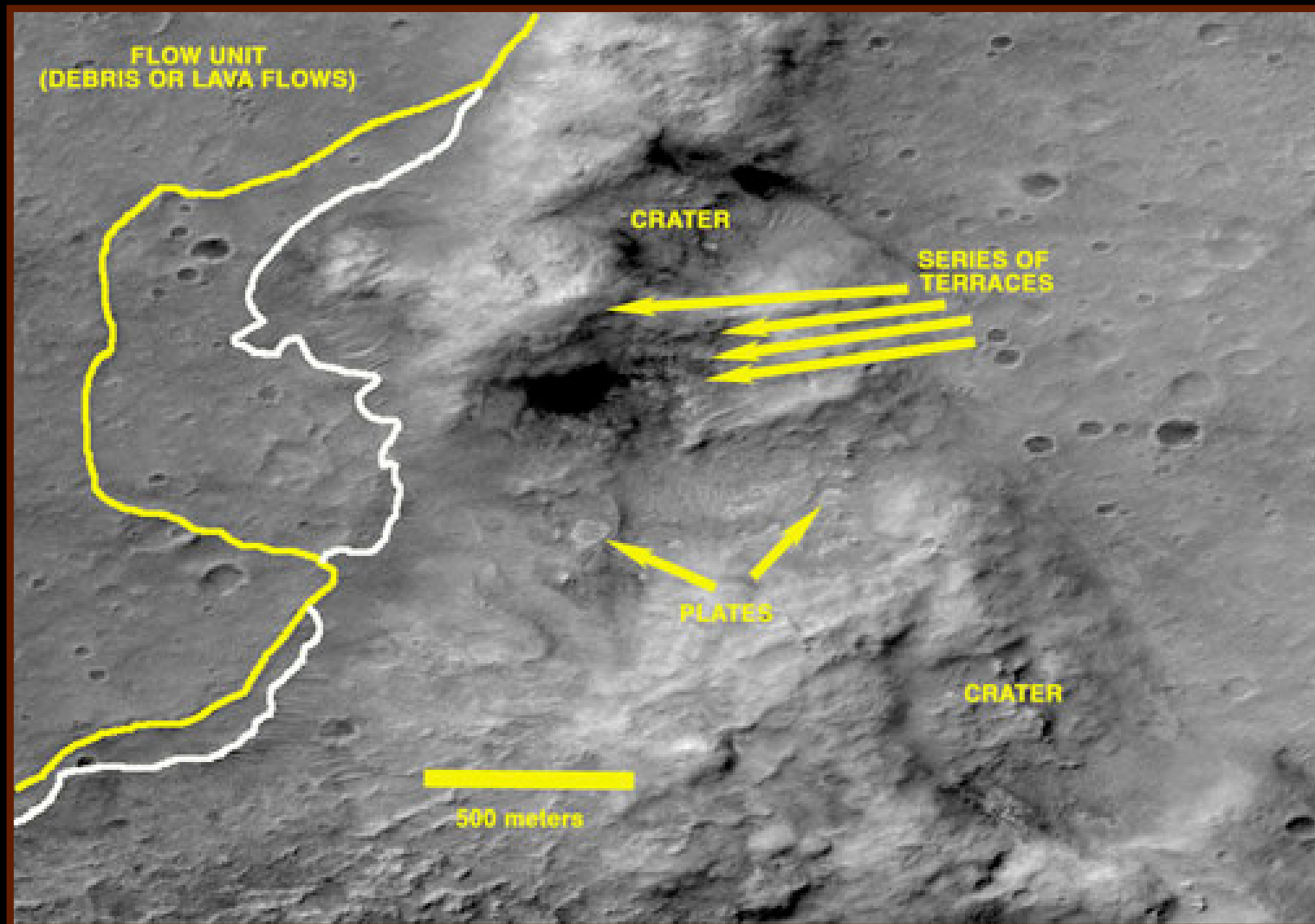
**Week in Review
May 29 - June 4**

As Spirit drives toward Columbia Hills, scientists want to study large boulders and rocks that may reveal clues about how these hills formed.

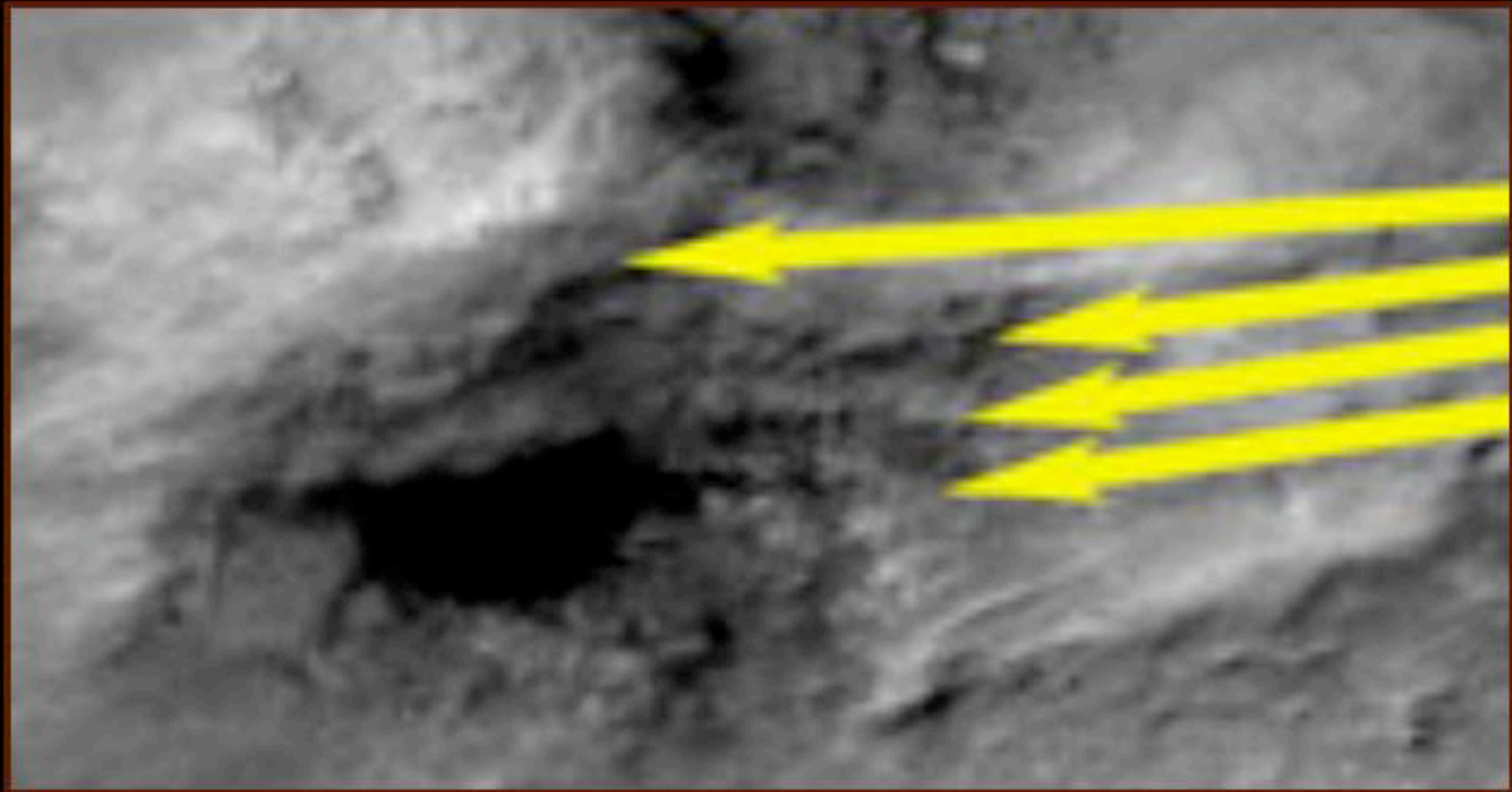


Panoramic camera image taken on May 31, 2004.

This image from above taken by NASA's Mars Global Surveyor orbiter shows features that hint at various hill formation processes.



Terraces may signal the presence of rock layers that have been more resistant to erosion through Mars' geologic history.



Spirit has just over 0.4 miles (620 meters) to rove before reaching the base of Columbia Hills.



Panoramic camera image taken on May 20, 2004.

Spirit's planned first stop at the hills is West Spur.

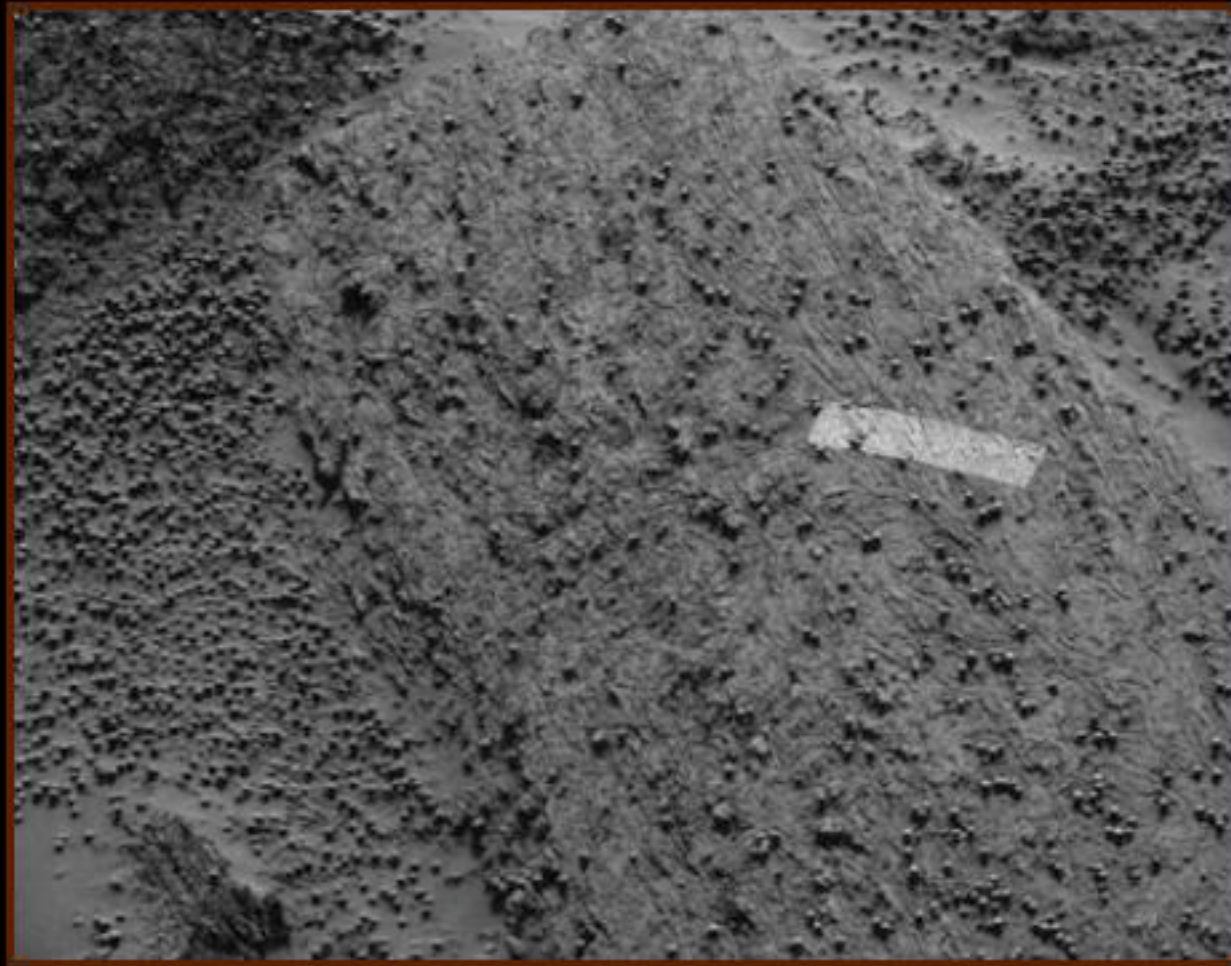
Meanwhile, Opportunity acquired hundreds of microscopic images of rocks around the rim of Endurance Crater this week.



Two and a half images shown here, out of the total 150 microscopic images taken between May 29 and May 31, 2004.

Scientists are examining the small-scale ripple patterns that are suggestive of past water processes on Mars.

The highlighted strip below was one target area for microscopic images.



Nicknamed Pyrrho, the rock target shows interesting braided patterns up-close.

Opportunity also performed a set of mobility tests and preparation activities to enter Endurance Crater.



In a “draw-bar pull test,” the front rover wheels were locked and dragged back across rocks as the other four wheels went in reverse.

This draw-bar pull test gave engineers insights into the friction between the wheels and the rock surface.



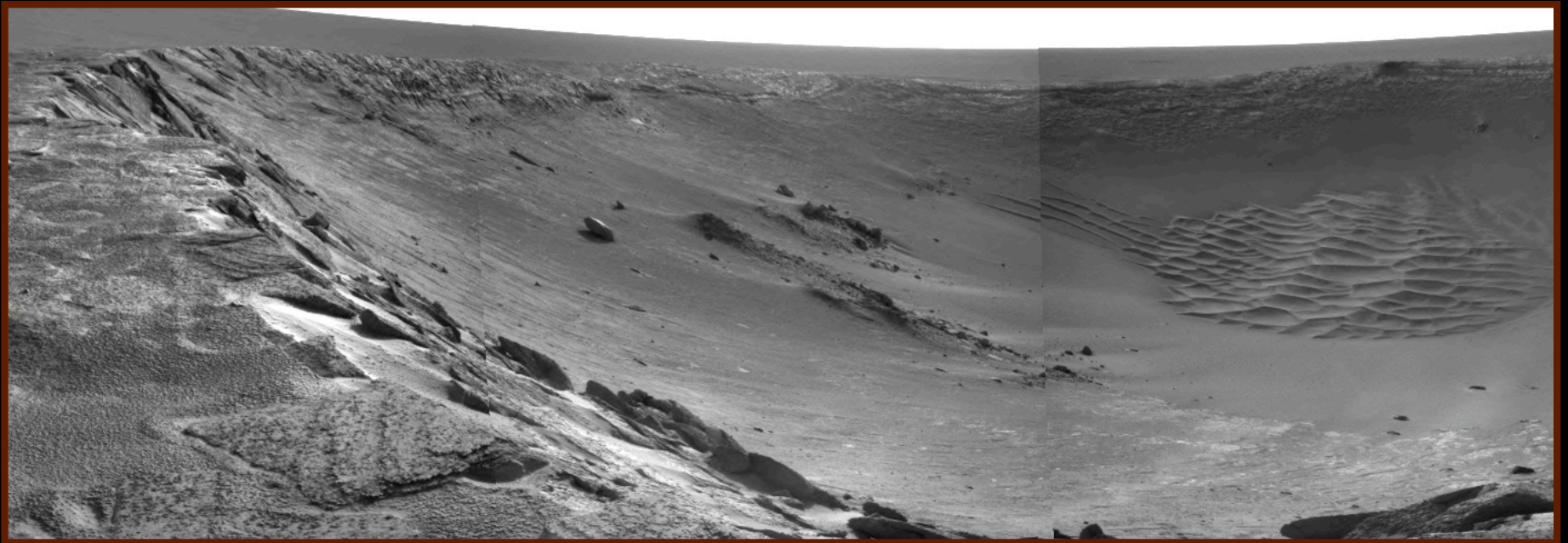
Front hazard avoidance camera image taken at 2:32 p.m. Mars local solar time June 1, 2004.

“Pawing at the ground” meant driving one wheel at a time for a few rotations in each direction with all the other wheels locked.



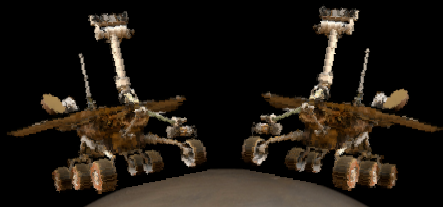
This process scrubbed off the protective oxide layer on the surface of the wheels, allowing for a better grip.

On June 4, NASA announced that the potential science value gained by sending Opportunity into Endurance outweighs the risk of not being able to get the rover back out.



Navigation camera mosaic taken on May 1, 2004 from the southeast side of the crater.

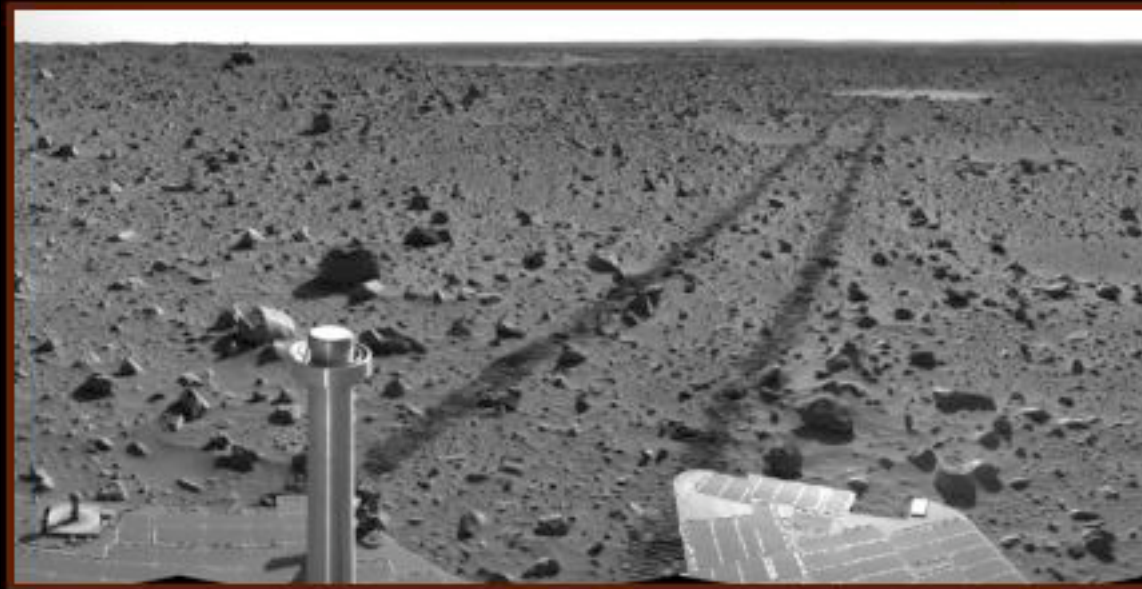
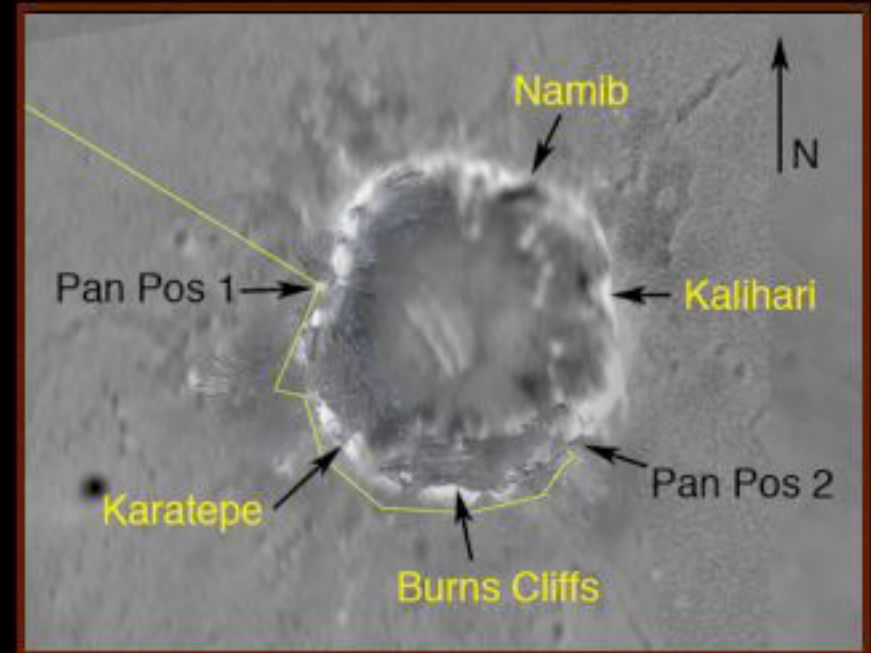
Opportunity may enter the crater early next week!



COMING UP!

*Named locations and
panorama imaging locations
on the crater rim.*

**Opportunity will drive to the top
of a prospective entry-and-exit
route and make a final check of
the slope to enter Endurance.**



Navigation camera mosaic of Spirit's rear view taken June 2, 2004.

**Spirit will keep on
rolling toward the
Columbia Hills.**