Updates from NASA's Rovers and ESA's Mars Express

March 8, 2004 Darmstadt, Germany

European Space Agency (ESA)

Beagle 2 Video Shows Bright Object

European scientists said today they are examining a strange blot of an unidentified object in the same frame with its Beagle 2 Mars lander photographed right after the lander separated from its mothership. Beagle 2 was supposed to have landed and operated on December 25, 2003, but there has been only silence and its fate is unknown.

Mark Sims, ESA's Beagle 2 Mission Manager, is trying to figure out if an image of a bright spot on the shady side of the lander, and another bright spot on Beagle 2 are results of image processing or could be an event that might have affected Beagle 2's trajectory. Sims said, "The bright object and the glint on the side of Beagle 2 may be nothing, they may be everything."

He also described a Mars Express orbiter photograph which shows four light-colored spots referred to as a "string of pearls." Scientists wonder now if the lander went through the atmosphere too quickly and crash landed instead of the soft landing it was supposed to have with its parachute and airbags.

NASA reported that the Martian atmosphere is less dense than expected and that its first rover landing of Spirit went faster than planned because of the thinner atmosphere.

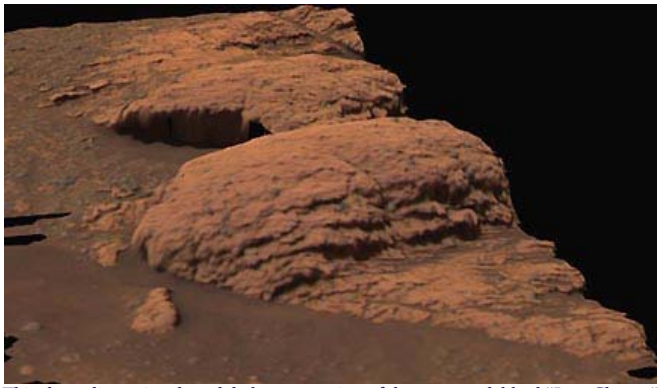
March 8, 2004 Pasadena, California

Opportunity Update

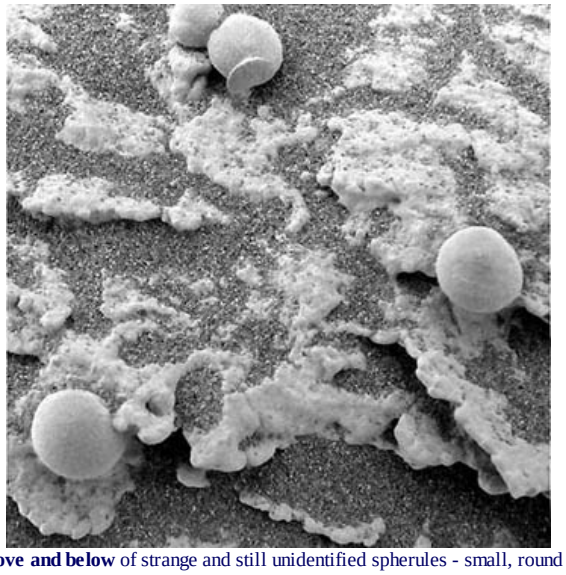
Rock Abrasion Tool Couldn't Grind Through 'Flat Rock'

NASA reports that "Opportunity's attempt to grind a shallow hole into a target called 'Flat Rock' at the Meridiani Planum bedrock during its 42nd sol on Mars, ending at 10:51 a.m. Sunday, PST. However, the operation of the rover's rock abrasion tool produced almost no discernible impression on the rock. All indications are that the tool is healthy. Controllers plan to run some diagnostic tests during sol 43 (ending at 11:31 a.m. Monday, PST) to aid with tuning parameters for a second grinding attempt on the target on sol 44. The alpha particle X-ray spectrometer was placed against 'Flat Rock' for an overnight reading to identify the chemical elements present.

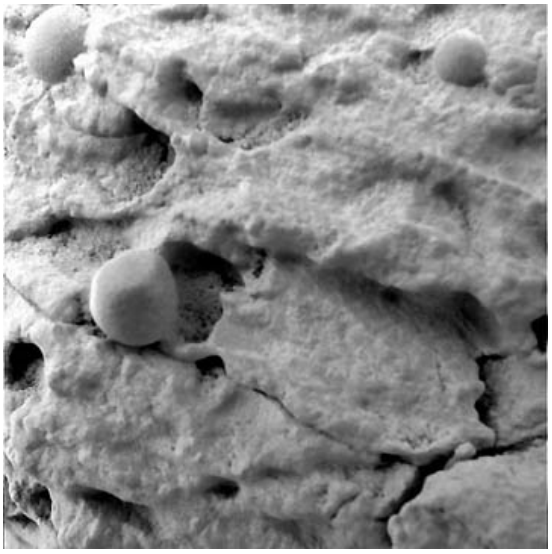
"Opportunity observed the Sun with its panoramic camera on sol 42 as a practice run for future imaging of Mars' moon Phobos passing in front of the Sun."



This three dimensional model shows a region of the outcrop dubbed "Last Chance" near the Mars Exploration Rover Opportunity's landing site. The model was created with images taken by the rover's panoramic camera. The layered rocks were recently the subject of an extensive series of microscopic images that include those shown below.



Latest images above and below of strange and still unidentified spherules - small, round objects about 1-5 millimeters in diameter -
that are in the hundreds on the bedrock soil and embedded in the bedrock as shown here at the Opportunity rover's landing site in the
Meridiani Planum. The image below seems to show one of the spherules hanging from an empty space in which it probably
was embedded. Currently, NASA/JPL scientists hypothesize that the spherules are "concretions" formed from water at the time
the bedrock of sulfur and sulfate salts was formed on Mars. Images from Microscopic Imager Non-linearized Full frame EDR
acquired on Sol 39 of Opportunity's mission to Meridiani Planum at approximately at approximately 12:23:50 Mars
local solar time. Image credit: NASA/JPL/Cornell/USGS.



Spirit Update

Rocky Road to Bonneville Crater

Spirit Rover's Right Panoramic Camera Non-linearized Full frame EDR acquired on Sol 63 of Spirit's mission to Gusev Crater at approximately 13:27:36 Mars local solar time, camera commanded to use Filter 1 (719 nm). Image credit: NASA/JPL/Cornell.

NASA: "During its 62nd sol on Mars, ending at 10:30 p.m. Saturday, PST, NASA's Spirit advanced about one-fifth of the remaining distance between where it began the sol and its mid-term destination, the rim of the crater nicknamed 'Bonneville.' In the Martian afternoon, Spirit took images and infrared readings of the area right in front of its stopping place to support the following morning's close-up inspection of that new location with instruments on the rover's robotic arm.

"Spirit drove 26.15 meters (85.8 feet) on sol 62, bringing its odometer total to 250.71 meters (822.5 feet). Some of the drive maneuvered around obstacles. The net gain in the northeasterly direction toward the crater rim was 22 meters (72 feet), and that destination was estimated to be about 88 meters (289 feet) away from Spirit's new location. The miniature thermal emission spectrometer was used for ground and sky observations both before and after the drive.

"For sol 62, ending at 11:10 p.m. Sunday, PST, Spirit's agenda is to drive on toward the Bonneville crater rim after using the microscope and spectrometers on its arm to inspect the site where it wakes up."

Websites:

http://marsrovers.jpl.nasa.gov/home/index.html

http://www.esa.int/export/esaCP/index.html

http://athena.cornell.edu

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