Phoenix Monitors Frosty Clumps on its Struts

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The Robotic Arm Camera on the Phoenix Mars Lander took this view under the spacecraft on Sept. 1, 2008, the 97th Martian day of the mission after landing. The lander leg strut at upper left features clumps larger than those seen three months ago. Also, exposed patches beneath the lander are darker than they used to be. (NASA/JPL-Calech/University of Arizona/Max Planck Institute)

(PhysOrg.com) -- The latest look underneath NASA's Phoenix Mars Lander shows growth of clumps that are adhering to a leg strut.

The Robotic Arm Camera on NASA's Phoenix Mars Lander took this image on Sept. 1, 2008, at about 4 a.m. local solar time during the 97th Martian day, or sol, since landing.

The view underneath the lander shows growth of the clumps adhering to leg strut (upper left) compared with what was present when a similar image was taken about three months earlier.

The view in this Sol 97 image is southward. Illumination is from the early morning sun above the northeastern horizon. This is quite different from the illumination in the Sol 8 image, which was taken in mid-afternoon.

The science team has discussed various possible explanations for these clumps. One suggestion is that they may have started from a splash of mud if Phoenix's descent engines melted icy soil during the landing. Another is that specks of salt may have landed on the strut and began attracting atmospheric moisture that freezes and accumulates. The clumps are concentrated on the north side of the strut, usually in the shade, so their accumulation could be a consequence of the fact that condensation favors colder surfaces.

In this image, compared with the one from three months earlier, the flat, smooth patches of ice exposed underneath the lander seem to be partly covered by darker material left behind as ice vaporizes away. The flat patch in the center of the image has the informal name "Holy Cow," based on researchers' reaction when they saw the initial image of it.

The Phoenix Mission is led by the University of Arizona, Tucson, on behalf of NASA. Project management of the mission is by NASA's Jet Propulsion Laboratory, Pasadena, Calif. Spacecraft development is by Lockheed Martin Space Systems, Denver.

Provided by NASA