

Results from LRO-LCROSS-2

Tony Colaprete – LCROSS Results.

Impact was in to Cabeus Crater;

Instruments on shepherding spacecraft turned on 55 minutes prior to impact – 4 minutes of observations recorded;

All data “blank-subtracted”;

Impact cloud hung over site until shepherding space craft impacted;

Impact flash was dim – energy was quenched by the target;

Water could be the minor H-bearing phase, OH observed, along with C-H bonds;

> 100 kg of H observed (CH₄, CO₂, NH₃, SO₂) and could be 1-2 % of H₂O in the impacted site);

Pete Schultz – LCROSS Results.

Impact crater was imaged by shepherding spacecraft - ~20 meter diameter crater;

Crater interior = heat sink – consistent with ice?

Impactor probably hit something “fluffy” – consistent with ejecta cloud observations;

Regolith was highly compressible;

Was the impactor inclined at impact? Modeling still on going.

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Earwin Mazarico – Knowledge of locations on the lunar surface.

Laser ranging helps get the baseline for laser topography data;
More data will allow features to be better defined and correlated precisely with exact locations on the lunar surface.

Mark Robinson – Imaging away from the poles.

Fantastic images of impact melt inside craters – can pinpoint impact melts associated with different craters;
Significant data can be obtained from images taken with the sun directly overhead (e.g., rock abundances from the NAC).

Carl Allen – Diviner Infrared Results.

Surface temperature variations calibrated by Apollo surface temperature measurements (Apollo 15 and Apollo 17);
Rock abundance data for rocks > 1 m diameter because these retain heat during the lunar night and can, therefore, be imaged (at the resolution of the instrument).

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Greg Neumann – Surface Roughness.

Data from LOLA can be used to calculate slope angles.

LOLA is the first lunar altimeter to resolve slope and roughness at scales below 1 km.

LOLA data can resolve roughness at a large range of scales, from ~5 m footprint to basin

John Gruener – Constellation Sites; Brad Jolliff – LROC Imaging of Constellation Sites.

Went through the process of how 50 sites were selected from targeting by LROC;

LEAG involvement in the process;

“Baseball Cards” developed for each site;

NOTE: LROC is targeting >16,000 sites for detailed photography

NOTE: These are not landing sites;

Progress to date on images already taken of these sites was given with example pictures.

Sarah Noble – Lunar Mapping and Modeling Project.

initiated in 2007 to help in making the anticipated results of the LRO spacecraft **useful** and **accessible** to Constellation.

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LMMP is managing and developing a suite of lunar mapping and modeling tools and products that support the Constellation Program (CxP) and other lunar exploration activities;

Dec 3rd 2009 – Beta release of Mapper, ILIADS, Portal, infrastructure and content

Late 2010/Early 2011 – Version 1 release