Thursday, March 10, 2011
POSTER SESSION II: THE DUST BIN: LUNAR SOIL AND REGOLITH PROCESSES
6:00 p.m. Town Center Exhibit Area

Cook A. C.
Tidal Influences at the Lunar Crater Aristarchus and Transient Lunar Phenomena **[#2811]**
This abstract investigates whether there is an obvious correlation between transient lunar phenomena and Earth tides on the Moon, as has been claimed in past publications. Aristarchus Crater observations are used in this study.

Crotts A. P. S.
Search for Short-Term Changes in the Lunar Surface: Permanent Alterations Over Four Decades **[#2600]**
We compare similar, high-resolution images from Lunar Orbiter III and V and Lunar Reconnaissance Orbiter Camera's narrow angle channel, separated by more than four decades, and sensitive to changes caused by impacts, mass wasting, and outgassing through the regolith.

Binnie S. A. Nishiizumi K. Welten K. C. Caffee M. W.
Lunar Regolith Dynamics Inferred from Cosmogenic Radionuclides ^{10}Be and ^{36}Cl in Core 68002/68001 **[#2713]**
Measurements of cosmogenic ^{10}Be and ^{36}Cl from lunar core 68002/68001 are compared to steady-state production profiles. Results suggest regolith mixing at this site may occur over timescales shorter than previously documented.

Yakovlev O. I. Gerasimov M. V. Dikov Yu. P.
Genesis of Lunar Segregated and Grain Rims Condensates. **[#1664]**
All compositions of condensed lunar findings are correlated with compositional evolution of the vapor over basaltic melt within the whole range of its variation.

Sakatani N. Ogawa K. Iijima Y. Honda R. Tanaka S.
Experimental Study of Thermal Conductivity for Regolith Using Glass Beads as Analogous Material **[#1686]**
In this study, parameter dependencies of the thermal conductivity of powder materials were investigated using glass beads. Our experiments revealed that there are effects that increase the thermal conductivity with depth on the Moon.

Cooper B. L. McKay D. S. Wallace W. T. Gonzalez C. P.
Fluids and Their Effect on Measurements of Lunar Soil Particle Size Distribution **[#2210]**
Laser diffraction instruments allow rapid assessment of particle size distribution, and eventually may replace sieve measurements. However, care must be taken in choosing a carrier fluid that is compatible with lunar material.

Barmatz M. Steinfeld D. Begley S. B. Winterhalter D. Allen C.
Microwave Permittivity and Permeability Measurements on Lunar Soils **[#1041]**
There has been speculation that the excellent microwave absorption of lunar soil came from the nanophase iron content. This room temperature study suggests that nanophase iron does not play a major heating role.

Crites S. T. Lucey P. G.
Characterization of Lunar Soils Using a Thermal Infrared Microscopic Spectral Imaging System **[#1340]**
We present a study of effects of space weathering on thermal infrared properties of lunar soils using a thermal infrared hyperspectral imaging system developed for remote sensing and altered to enable resolved microscopic spectral imaging.

Bandfield J. L. Hayne P. O. Ghent R. R. Greenhagen B. T. Paige D. A.
Lunar Surface Roughness and Anisothermality Effects on Infrared Measurements **[#2468]**
Surface roughness has been derived from LRO Diviner Radiometer nadir and multiple emission angle observations. Both near- and thermal-infrared spectra are significantly affected, resulting in spectral features correlated with latitude and local time.

Bauch K. E. Hiesinger H. Robinson M. S. Scholten F.
Thermophysical Properties of Selected Lunar Study Regions Determined from LROC and Diviner Data **[#2278]**
Using Diviner temperature data combined with subsets of the 100 m grid LROC WAC DTM (GLD100), we derived maps of thermal inertia for different study regions, such as Taurus-Littrow Valley, Aristarchus and Lichtenberg Crater.

Campbell B. A. Hawke B. R. Carter L. M.
Blocky Regolith and Rugged Subsurface Deposits on the Moon: Correlation of Dual-Wavelength Radar Data and High-Resolution Images **[#1417]**
Earth-based radar observations at 12.6-cm and 70-cm wavelengths show that some lunar domes and mare complexes have rugged morphology. We compare radar images with LROC photos to better understand the geology of these surprising deposits.

Nickerson R. D. Bart G. D. Lawder M. T. Melosh H. J.
Global Lunar Regolith Depths Revealed **[#2607]**
We examine global lunar regolith depth averages in order to obtain a global understanding of the development of the lunar regolith.

Bart G. D. Nickerson R. D. Lawder M. T.
Geologic Unit Differences are Reflected by Lunar Regolith Depths **[#2597]**
We examine the relationship between individual lunar regolith depth measurements, lunar subsurface structure, and specific lunar geologic units in order to better understand how the lunar surface has evolved at particular locations.

Fa W. Wieczorek M. A.
A Preliminary Inversion of Lunar Regolith Thickness Using Earth-Based 70-cm Arecibo Radar Observations **[#1506]**
In this study, a rigorous radar scattering model based on vector radiative transfer theory and Earth-based 70-cm Arecibo radar data are used to invert for regolith thickness over the lunar nearside hemisphere.

Morgan G. A. Campbell B. A. Thompson T. W. Hawke B. R.
70-cm Radar Studies of Blocky Crater Ejecta as a Guide to Megaregolith Thickness Across the Nearside of the Moon **[#2497]**
We surveyed radar bright craters on the nearside of the moon from 70-cm Arecibo data. The spatial distribution of these craters provides a proxy for megaregolith thickness that in turn can be used to map the presence of ancient basin ejecta material.

Patterson G. W. Cahill J. T. S. Bussey D. B. J. Lawrence S. J. Turtle E. P. Robinson M. S.
Characterizing the Surface Roughness of Ejecta Fields Associated with Km-Scale Fresh Lunar Craters **[#2188]**
Using the Mini-RF and LROC NAC instruments aboard LRO, we have begun to characterize the distribution of cm- to m-scale boulders associated with the ejecta of km-scale fresh lunar craters.

McAdam M. M. Cahill J. T. S. Patterson W. Aldridge T. Bussey D. B. J. Turtle E. P. Thomson B. J. Neish C. D. Mni-RF Team
Mini-RF Global Radar Observations of the Moon **[#2197]**
A presentation and analysis of the global Mini-RF radar products.