Thursday, March 26, 2009
POSTER SESSION II: LUNAR DUST AND TRANSIENT SURFACE PHENOMENA
6:30 p.m. Town Center Exhibit Area

Wohl C. J. Belcher M. A. Hopkins J. W. Connell J. W.
Topographical Modification of Materials for Lunar Dust Adhesion Mitigation **[#1121]**
The surface energy of polymer films was reduced by topographical modification, towards lunar dust adhesion mitigation. Contact angle goniometry and microscopy characterized the modified surfaces. Laser ablation afforded high fidelity topographies.

Tranfield E. Rask J. C. Wallace W. T. Kerschmann R. Loftus D. J.
Enhanced Chemical Reactivity of Crystalline Quartz by Mechanical Grinding **[#2529]**
We have developed a technique for mechanically grinding crystalline silica which increases the chemical reactivity of the material as judged by the terephthalate assay. This technique uses a modern, commercially available ball mill.

Wallace W. T. Jeevarajan A. S.
Understanding the Activation and Solution Properties of Lunar Dust for Future Lunar Habitation **[#2483]**
Grinding of lunar dust results in increased hydroxyl radical production in solution. Lower pH and grinding causes lunar simulant to release increased amounts of ions into solution.

Horanyi M. Sternovsky Z. Gruen E. Srama R. Lankton M. Gathright D.
The Lunar Dust EXperiment (LDEX) on the Lunar Atmosphere and Dust Environment Explorer (LADEE) Mission **[#1741]**
LDEX is designed to map the variability of the spatial and size distributions of dust grains in the lunar environment.

Wilson T. L.
Lunar Dust and Dusty Plasma Physics **[#1314]**
Lunar dust is addressed using the physics of dusty plasmas. Equations for small dust grains on the Moon are given and related to MHD effects of plasma precipitation as it orbits through the Earth's plasma sphere, magnetosphere, and the solar wind.

Taylor L. A. Liu Y. Zhang A.
Shape and Size Relationship of Several Lunar Dusts: Preliminary Results **[#2106]**
The abstract reports preliminary results of shape and size relationship of several lunar dusts.

Irwin S. A. Durrance S. T. Buhler C. R. Calle C. I.
Method to Investigate the Charging of Lunar Dust Particles **[#2521]**
Charging characteristics of lunar dust particles are studied experimentally with borosilicate glass beads in a constant electric field, within an environmental chamber at various humidities.

Cook A. C. Grande M.
Preliminary Analysis of Transient Lunar Phenomena Catalog Data **[#2429]**
We have completed a new catalog of Transient Lunar Phenomena and have performed an initial statistical analysis on this.

Crotts A. P. S. Berger A. Cecil G. Cseresnjes P. Ebel D. Hickson P. Joner M. Pfrommer T. Marka S. Morehead R. Radebaugh J. Schultz P.
Status of a Program Monitoring Optical Lunar Surface Transients **[#2373]**
We are observing the lunar near side intensively with a network of robotic imaging telescopes tuned to detect small transient changes in photometry (on timescales of ~1 to 100 min). We also describe a parallel program to detect quasi-permanent photometric surface changes.

Daly R. T. Radebaugh J. Austin D. E.
Computational Study of the Lunar Time-of-Flight Mass Spectrometer (LTMS): Meteorite Impacts and Outgassing Events **[#2411]**
A miniature mass spectrometer uses imaging pattern analysis to determine the location, magnitude, and composition of meteorite impacts and regolith outgassing on the lunar surface. Simulations examine range, detection limit, and spatial resolution.