Tuesday, March 20, 2012
POSTER SESSION I: LUNAR REMOTE SENSING:
TECHNIQUES AND LABORATORY GROUND TRUTH
6:00 p.m. Town Center Exhibit Area

Wong U. H. Wu Y. Z.
A Monte Carlo Ray Tracing Model for Lunar Soil and Its Applications to Chang'e-1 Topography Data and LSCC Data Set **[#1222]**
In this paper, a Monte Carlo ray tracing model for lunar soils is proposed for the purpose of simulating the reflection of electromagnetic radiation in the lunar surface. The reflectance spectrum is calculated using Hapke model with the LSCC data.

Serventi G. Carli C. Sgavetti M. Pompilio L.
Effects of Plagioclase Chemistry and Modal Abundance on Spectral Properties of Multimineral Fe,Mg Mixtures **[#1404]**
In this abstract we show plagioclase effects on three different Fe,Mg mixtures. The spectra of these mixtures were analyzed via decomposition with an EGO algorithm in order to determine band spectral parameters, particularly in the 1.2-μm region.

Hiroi T. Kaiden H. Misawa K. Kojima H. Uemoto K. Ohtake M. Arai T. Sasaki S. Takeda H. Nyquist L. E. Shih C.-Y.
Diversity in the Visible-NIR Absorption Band Characteristics of Lunar and Asteroidal Plagioclase **[#1168]**
Visible and NIR reflectance spectra of plagioclase in lunar anorthosites and basalt samples, and lunar and HED meteorites, have been analyzed using the modified Gaussian model. Lunar anorthosite 60015 shows an unusually short band center wavelength.

Mall U. Korokhin V. Bugiolacchi R. Shkuratov Y.
Towards a Quantitative Determination of the Modal Mineralogy of Planetary Surfaces Using Near-Infrared Spectroscopic Data from the Moon **[#1893]**
We investigate data returned from the SIR-2 NIR spectrometer on the Chandrayaan-1 mission with the Shkuratov spectral model. We selected from measured lunar samples an optimal set of seven mineral components for describing the lunar soil composition.

Cavanagh P. D. Li. L.
Band Selection Method Applied to Moon Mineralogy Mapper (M^3) **[#2742]**
A previously developed band selection method identified 15 bands that describe the greatest variability of the M^3 hyperspectral dataset from the Apollo 17 landing site. The 15 bands accurately reconstructed the 74 original bands with minimal error.

Thomas I. R. Bowles N. E. Warren T. Greenhagen B. T. Donaldson Hanna K. L. Paige D. A.
Thermal Infrared Emission and Goniometric Laboratory Measurements **[#2637]**
This presentation describes the thermal-infrared laboratory experiments that have been constructed: a simulated lunar environment chamber, multiple-angle reflectance apparatus, and goniometer. Results from these experiments are presented.

Donaldson Hanna K. L. Pieters C. M. Patterson W. R. III Hiroi T. Moriarty D.
Wyatt M. B. Thompson C.
Asteroid and Lunar Environment Chamber (ALEC): Simulated Asteroid and Lunar Environments for Measuring Analog Materials **[#2241]**
First light results from the Asteroid and Lunar Environment Chamber (ALEC) at Brown University. ALEC will simulate asteroid and lunar environments to enable spectral measurements of analog materials.

Crites S. Lucey P. G.
Characterization of Lunar Soils Using Infrared Microscopic Hyperspectral Imaging **[#1653]**
We present a study to characterize mineralogy of lunar soils at an individual grain level using a thermal infrared hyperspectral imaging system equipped to take data in both emission and reflectance, and a near-infrared hyperspectral imaging system.

Taylor G. J. Martel L. M. V. Lucey P. G. Crites S. Blake D. F.
Modal Analyses of Apollo 16 Soils by X-Ray Diffraction **[#2316]**
Modal mineralogy of 30 Apollo 16 soils confirms the Descartes highlands are more feldspathic than the Cayley plains and the chemical differences between the mineral and glass components in each. This affects calibration of remote sensing data.

Retherford K. D. Davis M. W. Winters G. S. Patrick E. L. Escobedo S. M. Nagengast M. E. Gladstone G. R. Miles P. F. Parker J. Wm. Stern S. A. Hendrix A. R.
Lunar Ultraviolet Reflectance Experiment (LURE): Far-UV Signatures of Water Ice **[#2190]**
The Lunar Ultraviolet Reflectance Experiment (LURE) conducts laboratory measurements of the far-ultraviolet (115–200 nm) spectral signatures of water ice and lunar simulants over various reflectance angles to characterize their BRDF.