Friday, March 27, 2009
PLANNING FOR FUTURE EXPLORATION OF THE MOON
1:30 p.m. Waterway Ballroom 6

Chairs: **Jacob Bleacher**
Noah Petro

1:30 p.m. Neal C. R. *
The Lunar Exploration Roadmap: A Progress Report from the Lunar Exploration Analysis Group (LEAG) **[#2558]**
The paper is a summary of progress to date of progress of LEAG in developing a grassroots community Lunar Exploration Roadmap.

1:45 p.m. Stubbs T. J. Glenar D. A. * Richard D. T. Colaprete A.
Predictions for the Optical Scattering at the Moon, as Observed by the LADEE UV/Vis Spectrometer **[#2348]**
Predictions are made for exospheric atomic line emissions, coronal and zodiacal light, as well as for "lunar horizon glow" produced by the forward scattering of sunlight by exospheric dust.

2:00 p.m. Halekas J. S. * Delory G. T. Stubbs T. J. Farrell W. M. Lin R. P.
Developing a Predictive Capability for Lunar Surface Charging During Solar Energetic Particle Events **[#1357]**
We investigate lunar surface charging during solar energetic particle events, with the aim of developing a predictive capability. The lunar surface can charge to kilovolt-scale negative potentials during these events, which has possible implications for lunar exploration.

2:15 p.m. Xiao Z. * Zeng Z. Xie H. Birnbaum S. J. Zhang Z.
A Preliminary Study on the Effect of Lunar-Dust Movement on the Lunar Magnetic Field **[#1227]**
Result from our model, the Electromagnetic Induction Model of Charged Active Lunar Dust, suggests the movement of lunar dust has influenced the lunar magnetic field and the influence is not negligible.

2:30 p.m. Kuhlman K. R. * Sridharan K. Garrison D. H. McKay D. S. Taylor L. A.
Decay of Reactivity Induced by Simulated Solar Wind Implantation of a Forsteritic Olivine **[#2303]**
LADTAG is studying the lifetime of reactive sites on the surfaces of irradiated lunar analogs of interest to those studying human health because of the free radicals that may be formed and not passivate when exposed to spacecraft air.

2:45 p.m. Siegler M. A. * Bills B. G. Paige D. A.
History of the Lunar Polar Cryosphere **[#2259]**
Cold traps near the lunar poles have not always existed due to changes in the lunar orbit. We examine a 4.5 Byr history of insolation in the lunar polar environment and the resulting surface and subsurface temperatures to comment on ice mobility.

3:00 p.m. Hibbitts C. A. * Dyar M. D. Orlando T. M. Grieves G. Szanyi J.
Cold Trapping of Volatiles in the Lunar Regolith **[#1926]**
Water may cold trap (cryosorb) onto non-ice materials at the lunar poles, and not exist as ice. Water can remain present, adsorbed onto the samples, at several 10s of degrees above which its ice would sublime, but not at or near room temperature.

3:15 p.m. Fouch M. J. * Garnero E. J. Robinson M. S. Yu H.
A New Paradigm for Seismic Exploration of the Moon, Mars, and Beyond **[#2233]**
In this abstract, we propose a new approach to seismic exploration of the Moon using arrays of seismic systems, which we term Small Aperture Lunar Seismic Arrays (SALSAs).

3:30 p.m. Li R. * Wu B. He S. Skopljak B. Yilmaz A. Jiang J. Banks M. S. Oman C. Bhasin K. B. Warner J. D. Knoblock E. J.
LASOIS: Enhancing the Spatial Orientation Capabilities of Astronauts on the Lunar Surface **[#1191]**
This paper presents the initial efforts in developing a Lunar Astronaut Spatial Orientation and Information System (LASOIS) to enhance the spatial-orientation capabilities of astronauts on the lunar surface to support future lunar manned missions.

3:45 p.m. Kohout T. * O'Sullivan K. Losiak A. Thaisen K. G. Weider S. Kring D. A.
Scientific Opportunities for Human Exploration of the Moon's Schrödinger Basin **[#1572]**
The Schrödinger Basin provides a diverse suite of scientific opportunities because of the superposition of several geologic processes and because of its relatively young age. Three possible landing sites were evaluated for human exploration.

4:00 p.m. Clark P. E. * Bleacher J. Mest S. Petro N. Leshin L.
Lunar Field Exploration Scenarios for a South Pole Outpost **[#1135]**
Three major 10–100's km scale field science thrusts could address high priority science objectives from the outpost: 1) SPA Basin structure (Malapert, Schrodinger); 2) Bombardment history, South Pole Highlands; 3) Volatile anomaly and inventory study.

4:15 p.m. Bleacher J. * Clark P. E. Mest S. Petro N. Leshin L.
Lunar Field Exploration Scenarios for Three Sorties **[#2148]**
We report the planning of three representative science objective-driven Apollo J scale (10 km radius) sortie missions to sites of potentially high science yield (Marius Hills, Olivine Hill, Nectaris Basin) to supplement outpost activity.

4:30 p.m. Yingst R. A. * Gregg T. K. P.
Lunar Geologic Mapping: A Preliminary Map of a Portion of the Marius Quadrangle **[#1319]**
As part of a new lunar mapping program, we report on a 1:2,500,000-scale preliminary map of a subset of Lunar Quadrangle 10 and discuss the first-order science results.