Thursday, October 23, 2014
LUNAR VOLATILES: CURRENT UNDERSTANDING III
1:30 p.m. Bldg. 200, Room 100

Chairs: **William Farrell**
Timothy Glotch

1:30 p.m. Schwadron N. *
CRATER

1:50 p.m. Chin G. * Sagdeev R. Millikh G. M. Usikov D. Su J. J. Boynton W. Golovin D. Harshman K. Litvak M. Mitrofanov I. G. McClanahan T. Livengood T. A. Evans L. Starr R.
Determining the Magnitude of Neutron and Galactic Cosmic Ray (GCR) Fluxes at the Moon Using the Lunar Exploration Neutron Detector (LEND) During the Historic Space-Age Era of High GCR Flux **[#3001]**
The Lunar Reconnaissance Orbiter was launched during an era of minimum solar activity that also gave rise to historically high Galactic Cosmic Ray flux. Simultaneous LEND observations determine the scale of emergent lunar neutron flux unambiguously.

2:10 p.m. McCubbin F. M. * Shearer C. K.
Volatiles (H, C, N, F, S, Cl) in the Lunar Mantle, Crust, and Regolith: What Questions Remain and Where do We go Next? **[#3052]**
This paper presents a summary of data pertaining to the "magmatic volatile" elements H, C, N, F, S, Cl in and on the Moon. The progress made thus far is presented and future avenues of research are highlighted.

2:30 p.m. Robinson K. L. * Taylor G. J.
Variable Abundance and Isotopic Composition of Hydrogen Inside the Moon **[#3028]**
Measurements of H abundance and isotopes in lunar samples show that H is distributed heterogeneously in the lunar interior.

2:50 p.m. Pieters C. M. * Milliken R. E.
Important SKGs for Lunar Water Resources: Time/Space Variations of Surficial OH/H2O **[#3051]**
The pervasive nature of surficial OH/H_2O across the Moon may make it the most valuable resource. Although our knowledge of its origin, abundance, and properties is currently very limited, this is easy to correct with new orbital spectroscopic data.

3:05 p.m. Kring D. A. * Kramer G. Y. Bussey D. B. J. Hurley D. M.
Prominent Volcanic Source of Volatiles in the South Polar Region of the Moon **[#3057]**
Volatiles produced by an immense pyroclastic vent in Schrodinger basin may be a good target for future missions that test models of volatile production, transport, and deposition.

3:25 p.m. BREAK

3:40 p.m. Allen C. C. *
Taurus Littrow Pyroclastic Deposit — An Optimum Feedstock for Lunar Oxygen **[#3046]**
A lunar resources demonstration mission to Taurus Littrow will encounter a >10 m thick pyroclastic deposit with few landing hazards, a uniform composition, and a predicted oxygen yield of approximately 3 wt. %, among the highest values on the Moon.

4:00 p.m. Petro N. E. *
Association Between Small Thorium Enhancements, Silicic Volcanism, and Enhanced OH/H_2O as Measured by the Moon Mineralogy Mapper **[#3053]**
The association between the 3 μm absorption feature measured by M^3 and locations of silicic volcanism is evaluated. There are a number of small-scale features on the Moon that appear to contain abundance endogenic hydroxyls at the lunar surface.

4:20 p.m. Glotch T. D. * Bandfield J. L. Lucey P. G. Hayne P. O. Greenhagen B. T. Arnold J. A. Ghent R. R. Paige D. A.
Spectral and Thermophysical Properties of Lunar Swirls from the Diviner Lunar Radiometer **[#3017]**
Diviner Lunar Radiometer observations support the solar wind standoff model for lunar swirl formation. Spectral and thermophysical data are consistent with retarded or abnormal space weathering at the swirls.

4:40 p.m. Clegg R. N. * Jolliff B. L. Boyd A. K. Stopar J. D. Sato H. Robinson M. S. Hapke B. W.
LROC NAC Photometry as a Tool for Studying Physical and Compositional Properties of the Lunar Surface **[#3032]**
LROC NAC photometry has been used to study the effects of rocket exhaust on lunar soil properties, and here we apply the same photometric methods to place compositional constraints on regions of silicic volcanism and pure anorthosite on the Moon.

5:00 p.m. DISCUSSION