Wednesday, March 18, 2015
THE LUNAR CRUST: NEW CONSTRAINTS FROM NEAR AND FAR
1:30 p.m. Waterway Ballroom 1

Chairs: Noah Petro
        Ryan Clegg

1:30 p.m. Peplowski P. N.* Lawrence D. J. Bazell D.
Composition of the Lunar Highlands as Revealed by Lunar Prospector Thermal Neutron Measurements [#2545]
We explore mixtures of ferroan anorthosite, norite, and mare basalts to explain the observed variability in thermal neutron measurements of the lunar highlands.

1:45 p.m. Hagerty J. J.* Skinner J. A. Jr. Gaddis L. R. Fortezzo C. M.
Compositional and Morphologic Mapping of the Copernicus Quadrangle, the Moon: New Constraints on Regional Lithologic Complexity [#2329]
Two investigative strategies are used to determine the distribution of specific lithologies in the Copernicus quadrangle: geologic and compositional mapping.

2:00 p.m. Lucey P. G.* Norman J. A. Crites S. T. Taylor G. J. Lemelin M. T. et al.
A Large Spectral Survey of Small Lunar Craters [#1655]
Spectra of over 2700 small highland craters reveal an extremely uniform and noritic sample that can be explained by excavation of an orthopyroxenite mantle.

2:15 p.m. Petro N. E.* Klima R. L. Ostrach L. R.
Constraining the Origin of Apollo 17’s Station 8 Boulder: Implications for the Origin of the Sculptured Hills and the Mg-Suite [#2687]
Apollo 17’s station 8 boulder is an excellent example of the Mg-suite; its source remains enigmatic. The source crater is considered and may be distant from the landing site.

2:30 p.m. Moriarty D. P. III* Pieters C. M.
The Composition of Mafic Mound: An Unusual Feature Within the South Pole-Aitken Basin [#2105]
Mafic mound pyroxenes are very rich in Fe and Ca, similar to mare basalts, but other properties (weak 1.2 µm band) distinguish these unusual non-mare materials.

2:45 p.m. Neal C. R.* Wu Y. Z. Cui X. Z. Peng W. X. Ping J. S.
Regolith at the Chang’e-3 Landing Site: A New Type of Mare Basalt Composition [#1641]
The X-ray Spectrometer data from Chang’e-3 define a new type of mare basalt that requires an adjustment to lunar basalt classification.

3:00 p.m. Sato H.* Robinson M. S. Hapke B. Lawrence S.
New LROC WAC TiO2 Abundance Map of the Moon [#1111]
We present a new TiO2 abundance map based on LROC WAC near-global mosaic and the comparisons with TiO2 maps based on Clementine and Lunar Prospector data sets.

3:15 p.m. Lawrence S. J.* Stopar J. D. Jolliff B. L. Robinson M. S. Sato H. et al.
Characterizing Mare Deposits in the Australe Regione [#2739]
We discuss new remote sensing and geological observations of the Australe region derived from LRO results.

3:30 p.m. Antonenko I.*
The Complexity of Cryptomaria: A Case Study in the Humorum Region of the Moon [#2808]
A variety of basalt-exposing craters provide different information about the Humorum area of the Moon, indicating that cryptomaria in the region are complex.
Compton-Belkovich is associated with high Bouguer gravity and low topography. Inversions predict higher density crust as could result from loss of pore space.

4:00 p.m.  Clegg R. N. * Jolliff B. L. Coman E. Analysis of Compositional Variations at Non-Mare Volcanic Regions Using LROC NAC Photometry and Spectra of Glassy and Silicic Mineral Mixtures [1467]
Silicic regions/A rare feature on the Moon/Pyroclastic volcanics?

4:15 p.m.  Cronberger K. * Neal C. R. 14160,214: A KREEPy Endogenous, Basalt. Evidence for Magma Chamber Processes [1295]
14160,214, a endogenous KREEP basalt, shows evidence for complex magma chamber processes. Petrographic, major element, and trace element analysis is presented.

We have initiated space weathering experiments to evaluate its influence on the absorption strength of spinel and to constrain how spinel-rich lunar PSA is.

Lunar spinel-rich rocks, seen in VNIR reflectance, likely form from impact melts, solidified quickly. Anorthosite assimilation by picrite magma is unlikely.