Thursday, March 20, 2014 **[R451]**
LUNAR IGNEOUS PROCESSES
1:30 p.m. Waterway Ballroom 1

Chairs: **Amy Fagan**
Timothy Fagan

1:30 p.m. Day J. M. D. * Nowell G. M. Pearson D. G. Taylor L. A.
A Sr-Nd-Hf Isotope, Trace-Element, and Petrological Study of Apollo Mare Basalts and Low-Ti Mare Basalt Meteorites **[#1336]**
Comprehensive petrological, geochemical, and isotopic study of mare basalts reveals petrogenetic processes and the compositional evolution of the Moon.

1:45 p.m. Elardo S. M. * Shearer C. K. McCubbin F. M. Bell A. S.
Experimental Constraints on the Thermal State of the Lunar Mantle and the Compositions of Mare Basalt Sources Three Billion Years Ago **[#2745]**
Petrologic experiments on two basaltic lunar meteorite compositions are used to constrain their origin and the pressure and temperature conditions of melting.

2:00 p.m. Sonzogni Y. * Treiman A. H.
Petrology of a Very-Low Titanium Basalt (or Picrite) Clast in Lunar Highland Regolith Breccia 15295 **[#1030]**
A holocrystalline clast in regolith breccia 15295 is mineralogically similar to VLT mare basalt but has a bulk composition like those of Apollo green glasses.

2:15 p.m. Stopar J. D. * Hawke B. R. Lawrence S. J. Robinson M. S. Giguere T. A.
Basaltic Cones: A Relatively Common and Distinct Style of Lunar Volcansim **[#1425]**
Lunar volcanic cones are more numerous than previously recognized. Cones 1–2 km in diameter in nearside maria formed from basaltic cinder, spatter, and/or lava.

2:30 p.m. Simon S. B. * Sutton S. R. Grossman L.
Valence of Ti in Lunar Igneous Rocks: The First Direct Measurements **[#1063]**
XANES analysis provides insight into the valence state and coordination of Ti in pyroxene and olivine in a diverse suite of lunar igneous rocks.

2:45 p.m. Donohue P. H. * Neal C. R.
The Provenance of High-Titanium Cumulate 71597 **[#2731]**
New mineral trace-element analyses support a cumulate origin of 71597 within a high-Ti basalt flow, likely of Type B1 composition.

3:00 p.m. Fagan T. J. *
Effect of Titanium Abundance on Silica vs. Iron Enrichment in Lunar Basalts: Modeling and Comparisons with Northwest Africa 773 **[#1599]**
Models show that high-Ti in lunar basalt stabilizes Fe-oxide, leading to Ti-Fe-depletion and Si-enrichment. NWA 773 clasts show Ti-Fe-enrichment of VLT origin.

3:15 p.m. North - Valencia S. N. * Jolliff B. L. Korotev R. L.
Ferroan Gabbro and Leucogabbro Lithologies in NWA 3170, Possible Petrogenetic Link and Comparison to NWA 2727 **[#2858]**
We examined the ferroan gabbro and leucogabbro lithologies in NWA 3170 and compare them to NWA 2727 using pyroxene and plagioclase compositions.

3:30 p.m. Zeigler R. A. * Jolliff B. L. Korotev R. L.
Apollo 16 Evolved Lithology Sodic Ferrogabbro **[#2005]**
Petrography and geochemistry of two SFG-like Apollo 16 soil particles compared to recent analyses on the type specimen of SFG from lunar breccia 67915.

3:45 p.m. Roberts S. E. * Neal C. R.
Taking Off the Potassium Coat: A New Hypothesis for VHK Petrogenesis **[#1282]**
New hypothesis for impact-generated K enrichment in VHK basalts.

4:00 p.m. Clegg R. N. * Jolliff B. L. Boyd A. Hawke B. R.
Compositional Constraints on Lunar Silicic Volcanic Regions Using LROC NAC Photometry **[#1256]**
Photometric studies provide evidence to support the presence of highly reflective minerals such as alkali feldspar and quartz at lunar silicic volcanic regions.

4:15 p.m. Hawke B. R. * Giguere T. A. Lawrence S. J. Glotch T. D. Greenhagen B. T. et al.
Remote Sensing Studies of Hansteen Alpha **[#1730]**
LROC and Clementine images + LRO Diviner data were used to investigate the composition and geology of Hansteen A, a Th-rich, silicic, spectral anomaly on the Moon.

4:30 p.m. Lawrence S. J. * Robinson M. S. Hawke B. R. Sato H. Denevi B. W. et al.
Remote Sensing and Geologic Observations of "Red Spots" in the Cognitum Region **[#2279]**
We use LROC NAC images and DTMs and LROC WAC multispectral data to study lunar red spots in the Cognitum/Procellarum region, focusing on the Herigonius feature.