Thursday, March 21, 2013 **[R454]**

LUNAR SAMPLES: OUR EVOLVING VIEW OF THE LUNAR CRUST

1:30 p.m. Waterway Ballroom 6

Chairs: **Amy Fagan**
Ryan Zeigler

1:30 p.m. Zeigler R. A. * Jolliff B. L. Korotev R. L.
Lunar Meteorites Sayh al Uhaymir 449 and Dhofar 925, 960, and 961: Windows into South Pole Aitken Basin? **[#2437]**
We assess the likelihood that the provenance of the Dhofar 961 meteorite clan is the SPA basin based on their bulk compositions and lithologic components.

1:45 p.m. Wittmann A. * Korotev R. L. Jolliff B. L.
Feldspathic Granulite Clasts in Lunar Meteorite Shişr 161 — Cumulates from a Differentiated Basin Melt Sheet? **[#2061]**
Poikilitic granulites could be cumulate rocks that formed from fractional crystallization in lunar basin impact melt sheets.

2:00 p.m. McLeod C. L. * Brandon A. D. Lapen T. J. Shafer J. T. Peslier A. H. et al.
The Petrology and Geochemistry of Feldspathic Granulitic Breccia NWA 3163: Implications for the Lunar Crust **[#2003]**
New geochemical and geochronological data from lunar granulite NWA 3163 aims to provide new insights into the evolution of the lunar crust.

2:15 p.m. Shaulis B. J. * Righter M. Lapen T. J. Irving A. J.
3.1 Ga Crystallization Age of Magnesian and Ferroan Gabbro Lithologies in Lunar Meteorites Northwest Africa 773, 3170, 6950 and 7007 and Evidence for 3.95 Ga Components in NWA 773 Polymict Breccia **[#1781]**
Baddeleyite crystallization ages of lunar meteorites Northwest Africa 773, 3170, 6950 and 7007.

2:30 p.m. Fagan A. L. * Joy K. H. Kring D. A.
Trapped $^{40}Ar/^{36}Ar$ Closure Ages of Apollo 15 Regolith Samples Lithified over the past 3 Billion Years **[#2392]**
We recalculate the closure ages of selected Apollo 15 regolith breccias, which potentially provide an archive of regolith processes in the last 3 billion years.

2:45 p.m. Niihara T. * Beard S. P. Swindle T. D. Kring D. A.
Evidence for Multiple Impact Events from Centimeter-Sized Impact Melt Clasts in Apollo 16 Ancient Regolith Breccias: Support for Late Stage Heavy Bombardment of the Moon **[#2083]**
We have been probing that issue with a series of studies of Apollo 16 impact melts to determine if they were produced by a single event or multiple events.

3:00 p.m. Warren P. H. * Harrison T. M. Isa J. Boehnke P. Heizler M.
Petrology and Geochemistry of Apollo 16 North Ray Crater Rocks: Precursor to an Argon-Thermochronologic Investigation **[#3107]**
We report the petrology and geochemistry of a suite of 30 Apollo 16 North Ray Crater rocklets, some of which will be used for thermochronology.

3:15 p.m. Park J. * Nyquist L. E. Shih C.-Y. Herzog G. F. Yamaguchi A. et al.
Late Bombardment of the Lunar Highlands Recordeded in MIL 090034, MIL 090036 and MIL 090070 Lunar Meteorites **[#2576]**
Anorthosite Ar ages are 3.0–3.6 Ga — the same range seen for impact melt clasts from other lunar feldspathic breccias. M(IL 0900)34 and M70 differ from M36.

3:30 p.m. Nishiizumi K. * Caffee M. W.
Relationships Among Six Lunar Meteorites From Miller Range, Antarctica Based on Cosmogenic Radionuclides **[#2715]**
Exposure histories, ejection depth, and pairing of six Miller Range lunar meteorites are presented using cosmogenic radionuclide measurements.

3:45 p.m. Merle R. E. * Nemchin A. A. Grange M. L. Whitehouse M. J.
Stratigraphy of the Fra Mauro Formation Defined by U-Pb Zircon Ages of Breccia Samples from Apollo 14 Landing Site **[#1833]**
We compared U-Pb age distribution patterns of zircon grains extracted from different breccia types from the Fra Mauro Formation (Apollo 14 landing site).

4:00 p.m. Grange M. L. * Nemchin A. A. Pidgeon R. T. Merle R. E. Timms N. E.
What Lunar Zircon Ages Can Tell? **[#1884]**
Distribution of published lunar zircon ages is shown and possible origin of age groups is discussed in terms of magmatic and impact activity on the Moon.

4:15 p.m. Korotev R. L.
Siderophile Elements in Brecciated Lunar Meteorites **[#1028]**
Most brecciated lunar meteorites have an asteroidal meteorite component that is chondritic. Some do not.

4:30 p.m. Norman M. D. Roberts J.
Metal Particles in Apollo 17 Impact Melt Breccias: Textures and Highly Siderophile Element Compositions **[#1802]**
Complex textures and siderophile-element abundances of metal in Apollo 17 melt breccias illustrate the difficulties associated with impactor fingerprinting.