Friday, March 16, 2007
LUNAR IMPACTS AND METEORITES
1:30 p.m. Marina Plaza Ballroom

Chairs: **M. D. Norman**
B. A. Cohen

1:30 p.m. Norman M. D. * Shih C.-Y. Nyquist L. E. Bogard D. D. Taylor L. A.
Early Impacts on the Moon: Crystallization Ages of Apollo 16 Melt Breccias **[#1991]**
New geochemical and petrologic data for Apollo 16 crystalline breccia 67955 document a lunar impact-melt breccia with an age of 4.2 Ga.

1:45 p.m. Cohen B. A. * Symes S. J. Swindle T. D. Weirich J. Isachsen C.
Ages of Impact-Melt Clasts in Apollo 16 Breccias **[#1006]**
Feldspathic clasts in several Apollo 16 feldspathic breccias have trapped Ar ratios indicating exposure ~3.5–4 Gyr ago and ages ~3.83 Ga, consistent with the inferred age of the youngest nearside basins.

2:00 p.m. Zellner N. E. B. * Delano J. W. Swindle T. D. Whittet D. C. B.
Geochemistry and Impact History at the Apollo 17 Landing Site **[#1007]**
Impact glasses from regolith 71501,262 show diverse compositions and ages. Together with orbital data, they can provide geochemical constraints on the local and regional geology of the Moon.

2:15 p.m. Lawrence S. J. * Taylor G. J. Norman M. D. Keil K.
Trace Element Geochemistry of Apollo 17 Mafic Impact Melt Breccias **[#1696]**
We discuss new trace element geochemical data from Apollo 17 Serenitatis impact melt breccias.

2:30 p.m. Puchtel I. S. * Walker R. J. Kring D. A. James O. B.
Further Study of $^{187}Os/^{188}Os$ and Highly Siderophile Element Systematics of Lunar Impact Melt Rocks **[#2040]**
$^{187}Os/^{188}Os$ and Ru, Pd, Re, Ir, Os, and Pt abundances are reported for Apollo 17 impact melt breccias 73215, 73255, and 76215, and for lunar meteorite NWA 482. The data indicate that some of the lunar rocks diverge from the known chondrite groups.

2:45 p.m. Korotev R. L. * Zeigler R. A.
Keeping Up with the Lunar Meteorites **[#1340]**
We report compositional data for numerous “new” lunar meteorites, summarize the compositional distribution of lunar meteorite types, compare data for lunar meteorites and Apollo rocks, and present some astute observations and speculations.

3:00 p.m. Fernandes V. A. * Burgess R. Bischoff A. Sokol A. K. Haloda J.
Kalahari 009 and North East Africa 003: Young (<2.5 Ga) Lunar Mare Basalts **[#1611]**
Ar-Ar age determination of lunar mare basalts Kalahari 009 and NEA 003. Kal 009 and NEA 003 have low-Ti content and are the two youngest basalts dated to now, 1.70 ± 0.04 Ga and 2.38 ± 0.04 Ga, respectively.

3:15 p.m. Nyquist L. E. * Shih C.-Y. Reese Y. D.
Sm-Nd and Rb-Sr Ages for MIL 05035: Implications for Surface and Mantle Sources **[#1702]**
Sm-Nd and Rb-Sr ages of MIL 05035 are 3.80±0.05 and 3.90±0.04 Ga, resp., the same as for Asuka 881757. Sr, Nd, and Sm isotopic compositions also are the same. Assuming launch-pairing, an origin in the maria Australe or Humboldtianum is suggested.

3:30 p.m. Burgess R. * Fernandes V. A. Irving A. J. Bunch T. E.
Ar-Ar Ages of NWA 2977 and NWA 3160 — Lunar Meteorites Paired with NWA 773 **[#1603]**
Ar-Ar ages are presented for lunar basaltic meteorites NWA 3160, a porphyritic olivine basalt, and NWA 2977, an olivine gabbro cumulate. Results are indistinguishable from the breccia and cumulate lithologies of NWA 773 indicating that these meteorites are all from the same source region on the Moon.

3:45 p.m. Jolliff B. L. * Zeigler R. A. Korotev R. L.
Compositional Characteristics and Petrogenetic Relationships Among the NWA 773 Clan of Lunar Meteorites **[#1489]**
The NWA 773 "Clan" includes compositionally distinctive olivine-gabbro-cumulate and olivine-phyric-basalt lithologies among related breccia components. These lithologies can be related by origin from a common source similar to Apollo 14 green glass.

4:00 p.m. Arai T. * Misawa K. Kojima H.
Lunar Meteorite MIL 05035: Mare Basalt Paired with Asuka-881757 **[#1582]**
MIL 05035 is a new lunar meteorite that is a crystalline mare basalt. With remarkable similarity in mineralogy and bulk TiO_2 content, it is likely paired with Asuka 881757, which is 3.87 Ga-aged mare basalt.

4:15 p.m. Zeigler R. A. * Korotev R. L. Jolliff B. L.
Miller Range 05035 and Meteorite Hills 01210: Two Basaltic Lunar Meteorites, Both Likely Source-Crater Paired with Asuka 881757 and Yamato 793169 **[#2110]**
We present the petrography, geochemistry, and pairing relationships of Miller Range 05035 (an Fe-rich lunar basalt) and Meteorite Hills 01210 (a basaltic regolith breccia), which are likely paired with lunar meteorites Yamato 793169 and Asuka 881757.

4:30 p.m. Hudgins J. A. * Walton E. L. Spray J. G.
Mineralogy, Petrology, and Shock History of Lunar Meteorite Sayh Al Uhaymir 300: A Crystalline Impact Melt Breccia **[#1674]**
A summary of the mineralogy, petrology, and shock history of the lunar meteorite SaU 300. Previously described as an anorthositic regolith breccia, we interpret it to be a polymict, crystalline impact melt breccia that has undergone at least two episodes of brecciation and shock metamorphism.