Tuesday, March 2, 2010
POSTER SESSION I: LUNAR ORIGINS AND CHRONOLOGY
7:00 p.m. Town Center Exhibit Area

Zindler A. Jacobsen S. B.
Rethinking Lunar Formation: Back to the Future? **[#2702]**
Review Giant Impact and arguments for formation of the Moon from the Earth's mantle.

Canup R. M. Barr A. C.
Modeling Moon-forming Impacts; High-Resolution SPH and CTH Simulations **[#2488]**
We compare results from SPH and CTH simulations of Moon-forming impacts, in particular to determine the effect of resolution and simulation method on the fraction of orbiting protolunar disk material that originates from the impactor vs. the proto-Earth's mantle.

Crawford D. A. Kipp M. E.
Giant Impact Theory for Origin of the Moon: High Resolution CTH Simulations **[#1405]**
We present high resolution simulations of the giant impact theory of lunar origin using adaptive mesh refinement, an improved ANEOS representation and self gravity. The calculation shows clumping, spiral shocks and streamer development.

Zhong S. J.
Are Mare Basalt Volcanism, Volatile Distribution in the Lunar Mantle, and Moonquakes Related? **[#2063]**
A new hypothesis on mare basalts, moonquakes, and lunar interior structures including volatile distributions is proposed. The new hypothesis is to be tested with new tidal deformation model that accounts for heterogeneous lunar mantle structure.

Pidgeon R. T. Nemchin A. A. Grange M. L. Meyer C.
Evidence for a Lunar "Cataclysm" at 4.34 Ga from Zircon U-Pb Systems **[#1126]**
The dating of large impacts on the Moon is a major problem for lunar evolution. We discuss evidence from SIMS U-Pb analyses of zircons from lunar breccias, together with textural and mineral data, for an extremely large impact on the Moon at ~4.34Ga.

Connelly J. N. Borg L. E.
Revisiting the Pb Isotopic System in Lunar Ferroan Anorthosite 60025 **[#1966]**
After extensive pre-cleaning and using a stepwise dissolution procedure, we have analyzed Pb from a mafic fraction from lunar ferroan anorthosite 60025 to determine a preliminary Pb-Pb crystallization age of 4382 ± 8 Ma.

Jacobsen S. B. Ranen M. C. Chakrabarti R. Farkas J. Huang S. Parai R. Yu G. Zindler A.
The Isotopic Composition of the Lunar Crust and the Age and Origin of the Moon: Evidence from Lunar Soils **[#2596]**
Trace element and isotope data show that our lunar soil samples span the entire range of compositions from an >4.46 Ga old, almost pure highland end-member to a ~3.8 Ga KREEP end member.

Zhang A. Hsu W. Li X. Li Q. Tang G. Jiang Y.
Cameca IMS-1280 Pb/Pb Dating of Baddeleyite in LAP 02224 **[#1080]**
This abstract reports baddeleyite Pb/Pb dating results of LAP 02224. Our data show that the crystallization age of LAP 02224 is much older than that from other methods (~3 to 3.1 Ga).

Arai T. Yoshitake M. Tomiyama T. Niihara T. Yokoyama T. Kaiden H. Misawa K. Irving A. J.
Support for a Prolonged KREEP Magmatism: U-Pb Age Dating of Zircon and Baddeleyite in Lunar Meteorite NWA 4485 **[#2379]**
The U-Pb and Pb-Pb age spectrum of 4352–3922 Ma obtained from analyses of zircon and baddeleyite in a KREEP-rich lunar meteorite NWA 4485 supports a prolonged KREEP magmatism, which has been suggested from U-Pb isotopic studies of zircons in the Apollo non-mare samples.