

Tuesday, March 8, 2011

POSTER SESSION I:

COMPOSITION AND STRUCTURE OF THE LUNAR CRUST: SAMPLES

6:00 p.m. Town Center Exhibit Area

Serefiddin F. Ma P. Herzog G. F. Reedy R. C. Knie K. Rugel G. Faestermann T. Korschinek G.  
[Al-26, Be-10, and Mn-53 in Six Lunar Meteorites](#) [#1392]

We construct cosmic-ray exposure (CRE) histories of six lunar meteorites. All six Moon-Earth transit times are <2 Ma. The preservation of SCR effects may reflect low arrival velocities.

Macke R. J. Kiefer W. S. Britt D. T. Irving A. J. Consolmagno G. J.

[Densities, Porosities and Magnetic Susceptibilities of Meteoritic Lunar Samples: Early Results](#) [#1986]

We will report the current results of an ongoing survey of density, porosity and magnetic susceptibility of lunar materials. Our database of measurements has recently expanded by 24 meteorites, of which 16 have porosities.

Seddio S. M. Jolliff B. L. Korotev R. L. Zeigler R. A.

[Fragments of Granite in Apollo 12 Regolith: Pieces of 12013?](#) [#2381]

We compare the petrography, mineralogy, bulk composition, and likely petrogenesis of the granitic component of lunar breccia 12013 with lunar granite 12032,366-19, whose differences imply formation by different processes.

Liu Y. Patchen A. Taylor L. A.

[Lunar Highland Breccias MIL 090034/36/70/75: A Significant KREEP Component](#) [#1261]

Study of new lunar highland breccias MIL 090034/36/70/75.

Simon J. I. Shih C.-Y. Nyquist L. E.

[K-Ca and Rb-Sr Dating of Lunar Granite 14321 Revisited](#) [#2754]

K-Ca and Rb-Sr ages were improved for Apollo lunar granite clast 14321. The initial Ca isotopic ratio can be used to constrain the K/Ca ratio (~0.7) of its source material. This value is significantly higher, thus more evolved, than previous thought.

Vaughan W. M. Wittmann A. Joy K. H. Lapen T. J. Kring D. A.

[Provenance of Impact Melt and Granulite Clasts in Lunar Meteorite PCA 02007](#) [#1247]

EMP and LA ICP-MS analyses of impact melt and granulite clasts in the lunar meteorite PCA 02007 reveal clues to their provenance in KREEP-poor regions of the Moon dominated by feldspathic lithologies.

Braun S. A. Brandon A. D. Joy K. H. Kring D. A.

[Did Meteorite Bombardment Sample Deep Lunar Crust?: Major and Trace Element Compositions of Granu-Lite Clasts in Lunar Regolith Breccia MAC 88104.](#) [#2762]

This work seeks to determine the depth of formation of granulite clasts in MAC 88104 through major and trace element analysis. Preliminary results suggest that the source of these granulites is mixed and may represent sourcing from mid to shallow crustal depths.

Spicuzza M. J. Valley J. W. Kitajima K. Ushikubo T.

[Oxygen Isotope Ratios and Trace Element Concentrations in Zircons from Lunar Rocks and Regolith](#) [#2445]

High-precision SIMS analyses of  $\delta^{18}\text{O}$  values in zircons from lunar rocks and regolith show a very narrow range. Correlations between [Ti] and other trace elements in lunar zircons reflect magmatic evolution and fractionation of phosphates.

Carpenter P. Edmunson J. Cohen B. A. Zeigler R. A. Jolliff B. L.

[First Lunar Occurrence of Keiviite-\(Y\) in Troctolitic Anorthosite 76335](#) [#2767]

We report the first lunar occurrence of keiviite-(Y) with formula  $(Y,REE)_2Si_2O_7$  in troctolitic anorthosite 76335,59. It has been characterized by EPMA utilizing new analytical methods.

Tanosaki T. Miura Y.

[Mafic, Calcium and Carbon Contents of the Lunar Plagioclases of the Apollo Samples and Lunar Meteorites](#) [#2817]

Compositional data of lunar plagioclases show that impact breccias have high Ca exchange contents with high carbon contents. In fact, *in situ* analyses of the two lunar meteorites with the FE-ASEM show significant carbon with calcium or iron elements.

Chakrabarti R. Jacobsen S. B.

[The Isotopic Composition of Magnesium in Bulk Lunar Soils](#) [#2006]

We present Mg isotopic data in 14 lunar soil samples from the Apollo 14 and Apollo 16 missions using MC-ICPMS. Mg-isotopic compositions of these soils are broadly similar to that of lunar basalts and breccia, the bulk silicate Earth, and chondrites.