

**Wednesday, March 17, 2004**  
**LUNAR CRUST AS SAMPLED BY BASINS AND CRATERS**  
**1:30 p.m. Salon A**

**Chairs: M. D. Norman**  
**G. J. Consolmagno**

- 1:30 p.m. Campbell B. A. \* Campbell D. B. Hawke B. R. Lucey P. G.  
*Radar Properties of Lunar Basin Deposits* [#1659]  
 We study lunar highland basin deposits using new high-resolution 70-cm radar images and eclipse thermal maps.
- 1:45 p.m. Collins G. S. \* Melosh H. J.  
*Numerical Modeling of the South Pole-Aitkin Impact* [#1375]  
 We report on numerical simulations of the impact event that created the South Pole-Aitkin basin to aid in site selection for future sample return missions and to investigate the effect of the thermal state of the early Moon on final crater structure.
- 2:00 p.m. Hiesinger H. \* Head J. W. III  
*Lunar South Pole-Aitken Impact Basin: Topography and Mineralogy* [#1164]  
 We report on the structure and mineralogy of the South Pole-Aitken basin (SPA), discuss whether it is most similar to the Tranquillitatis-, Valhalla-, or Orientale-type of impact basins, and investigate the distributions of major elements in SPA.
- 2:15 p.m. Petro N. E. \* Pieters C. M.  
*Comparison of the Geologic Setting of the South Pole-Aitken Basin Interior with Apollo 16: Implications for Regolith Components* [#1345]  
 Model estimates for the amount of foreign material in the regolith at a site in SPA are compared to estimates for Apollo 16. Model predictions for the Apollo 16 site are validated by the abundance of foreign components in samples of the regolith.
- 2:30 p.m. Duncan R. A. \* Norman M. D. Ryder G. Dalrymple G. B. Huard J. J.  
*Identifying Impact Events Within the Lunar Cataclysm from  $^{40}\text{Ar}$ - $^{39}\text{Ar}$  Ages of Apollo 16 Impact Melt Rocks* [#1328]  
 Correlated ages and compositions within the Apollo 16 impact melt rocks implies that numerous impact events occurred on the lunar surface within the period 3.75 to 3.90 Ga.
- 2:45 p.m. Zeigler R. A. \* Korotev R. L. Jolliff B. L. Haskin L. A. Floss C.  
*Apollo 16 Mafic Glass: Geochemistry, Provenance, and Implications* [#2082]  
 We present the major- and trace-element chemistry of mafic glasses from the A16 regolith and discuss the likely provenances of the major glass groups. High-Ti, low-Ti, and high-Al basaltic glass and two distinct KREEPy glass groups were identified.
- 3:00 p.m. Taylor L. A. Anand M. Neal C. Patchen A. Kramer G.  
*Lunar Meteorite PCA 02 007: A Feldspathic Regolith Breccia with Mixed Mare/Highland Components* [#1755]  
 Lunar Antarctic Meteorite PCA 02 007 is a regolith breccia containing clasts of both highland and mare derivation, set within a glassy matrix. This rock may be paired with QUE 94281, based upon our initial observations.

- 3:15 p.m. Korotev R. L. \* Zeigler R. A. Jolliff B. L.  
*Compositional Constraints on the Launch Pairing of LAP 02205 and PCA 02007 with Other Lunar Meteorites* [#1416]  
Compositional data suggest that new lunar meteorite LAP 02205 (mare basalt) is launch paired with NWA 032 (high probability) and that PCA 02007 (feldspathic regolith breccia) is launch paired with Yamato 791197 (lower probability).
- 3:30 p.m. Consolmagno G. J. \* Russell S. S. Jeffries T. E.  
*An In-Situ Study of REE Abundances in Three Anorthositic Impact Melt Lunar Highland Meteorites* [#1370]  
REE measurements of the lunar highland meteorites DAG 400, Dhofar 081, and NWA 482, and models of the REE in melts in equilibrium with them, suggest that they may contain components more primitive than those found in Apollo FAN samples.
- 3:45 p.m. Takeda H. \* Bogard D. D. Yamaguchi A. Ohtake M. Saiki K.  
*A Crustal Rock Clast in Magnesian Anorthositic Breccia, Dhofar 489 and Its Excavation from a Large Basin* [#1222]  
From the older Ar-Ar age (4.27 Gyr) and the presence of a spinel troctolite clast in Dhofar 489, we propose that a large basin formation other than Imbrium may have mixed deep crustal rocks and “pure” anorthosites to produce a magnesian breccia.
- 4:00 p.m. Yamaguchi A. \* Takeda H. Nyquist L. E. Bogard D. D. Ebihara M. Karouji Y.  
*The Origin and Impact History of Lunar Meteorite Yamato 86032* [#1474]  
Y86032 is a complicated feldspathic breccia formed by at least two stages of impact events. This breccia is mainly composed of nonmare components and minor possible mare basalts. Some components may have been derived from unknown highland lithologies.
- 4:15 p.m. Jolliff B. L. \*  
*Evolved Lithologies and Their Inferred Sources in the Northwestern Procellarum Region of the Moon* [#2032]  
Remotely sensed data in the NW Procellarum region of the Moon indicate exposure of material rich in the alkali igneous differentiates monzogabbro, granite, and alkali anorthosite, especially materials excavated by the Aristarchus crater.
- 4:30 p.m. Lawrence D. J. \* Hawke B. R. Elphic R. C. Feldman W. C. Prettyman T. H. Vaniman D. T.  
*Revisiting the Interpretation of Thorium Abundances at Hansteen Alpha* [#1727]  
We carry out a forward modeling analysis of Lunar Prospector Th data at Hansteen Alpha and find that this region may be composed of highly evolved highlands material.