Tuesday, March 11, 2008
POSTER SESSION I: LUNAR REMOTE SENSING:
BASINS AND MAPPING OF GEOLOGY AND GEOCHEMISTRY
6:30 p.m. Fitness Center

Wood C. A.
The Werner-Airy Basin and Hints of Highlands Volcanism **[#2021]**
Werner-Airy is, if real, an ancient basin with little remaining surface expression. It contains four small possible volcanos. Is the basin real; are the landforms volcanic?

Garry W. B. Bleacher J. E. Warner N. A.
Emplacement Scenarios for Vallis Schröteri, Aristarchus Plateau, the Moon **[#2261]**
Vallis Schröteri has a complex morphology and superposition relationships that cannot be explained by a single emplacement process. We apply observations of terrestrial volcanic processes to explain the formation of the rille's final morphology.

De Hon R. A.
East Procellarum Basin Revisited **[#1182]**
Isopach mapping of Oceanus Procellarum reveals several thickened lenses of basalt that probably occupy flooded impact basins. The buried East Procellarum basin is responsible for the large gap in the western rim of Imbrium basin.

Byrne C. J.
The Near Side Megabasin: Topography and Crustal Thickness **[#1302]**
Topographic and crustal thickness data confirms the model of the Near Side Megabasin, an impact feature whose crater covered the near side of the Moon and whose ejecta landed on the far side. Isostasis reduced the vertical dimensions by a factor of 6.

Petro N. E. Mest S. C.
Investigating the Cratering History of the South Pole-Aitken Basin **[#1685]**
We investigate the cratering history of SPA and compare it to surrounding areas dominated by ancient crust. We show that SPA has a unique cratering history for two groups of craters >60 km in diameter, which contribute to the unique composition of SPA.

Ambrose W. A.
Origin, Distribution, and Chronostratigraphy of Asymmetric Secondary Craters Associated with Nearside Lunar Basins **[#1019]**
Large asymmetric secondary craters associated with lunar basins can be used to constrain estimated ages of extrabasinal landforms. Many formed from low-angle impacts and have beak-shaped rims pointing away from genetically associated basins.

Van Arsdall L. E. Mest S. C.
Geologic Mapping of the Schrodinger Basin Area, Lunar South Pole **[#1706]**
Updated digital geologic maps of the lunar north and south polar regions (poleward of 70°) are being produced at 1:1M scale using post-Lunar Orbiter data. This abstract presents mapping near the lunar south pole covering the Schrödinger impact basin.

Pieters C. M. Isaacson P. J. Klima R. L. Hiroi T. Sarbadhikari A. B. Liu Y. Taylor L. A.
Lunar Rock and Mineral Characterization Consortium (LRMCC): Links to Global Science and Exploration **[#1900]**
Coordinated detailed studies of the petrology, chemistry, and spectroscopy of lunar rocks and minerals provide essential ground truth to address larger lunar science issues from high quality orbital data soon to be available.

Basu Sarbadhikari A. Liu Y. Taylor L. A. Isaacson P. J. Klima R. L. Pieters C. M.
Lunar Rocks and Minerals Characterization Consortium: Mineral Chemistry, and Mineral Separations for Reflectance Spectral Analysis **[#1290]**
This study has done the petrography, mineral chemistry of Apollo 15 and Apollo 17 rock thin-sections, and prepared the mineral separates and samples of the powdered rocks, along with their detailed petrology and chemistry.

Ling Z. C. Wang A. Jolliff B. L. Arvidson R. E. Xia H. R.
Mineralogy of Three Lunar Soil Endmembers by Raman, Mid-IR, and Vis-NIR Spectroscopic Studies **[#1458]**
Raman, mid-IR and Vis-NIR spectroscopy were used to study three lunar soil samples that represent three endmembers in lunar soil chemistry. This study presents definitive mineralogical information obtained through these spectroscopic investigations.

Nimura T. Hiroi T. Pieters C. M.
An Integrated Model Utilizing the Modified Gaussian Model, a Mineral-Mixing Model, and a Space-Weathering Model **[#2392]**
We present a model to derive space weathering, mineral assembly, and chemical compositions of component minerals from the visible and near-infrared reflectance spectra of planetary surface materials.

Klima R. L. Pieters C. M.
MGM Analysis of Pyroxene Mineral Separates from Apollo 15 and 17 **[#1756]**
MGM deconvolution of NIR lunar pyroxene spectra allows the composition and cooling rate of pyroxenes to be characterized. Here we compare spectral analyses of pyroxene separates from Apollo 15 and 17 with petrographic studies of the same samples.

Hagerty J. J. Lawrence D. J. Hawke B. R.
An Improved Method for Estimating the Thorium Abundances of Mare Basalts in South Pole-Aitken Basin **[#1307]**
We demonstrate that the use of the Pixon deconvolution method, in conjunction with our previous forward modeling efforts, provides an enhanced estimate of thorium abundances of mare basalts within South Pole-Aitken Basin.

Gillis-Davis J. J.
Improved Lunar Hydrogen Compositions by Reducing the Effects of Sm and Gd Concentration on Lunar Prospector Epithermal Neutron Data **[#2549]**
An analysis of Lunar Prospector epithermal neutron data to improved estimates of equatorial hydrogen composition.

Gillis-Davis J. J. Lucey P. G. Hammer J. E. Denevi B. B.
Syntheses and Reflectance Analyses of Lunar Green Glass Compositions: Information to Improve Understanding of Remotely Sensed Spectral Data **[#1535]**
We report on our success of synthesizing and deriving optical constants for lunar green glass. These data are important for Hapke modelling of spectral reflectance data of the lunar surface (e.g., Clementine, Chandrayaan-1, SELENE, Chang'e-1, and LRO).

Zhang J. Jolliff B. L.
Aristarchus Region: A Potential Location for Future Surface Exploration **[#2534]**
The Aristarchus region of the Moon is a key area for exploration and as a possible lunar outpost site. Important scientific questions can be answered at Aristarchus Crater and plateau, as well as nearby Lichtenberg Crater and the Gruithuisen Domes.

Chen L. J. Bleacher J. E. Lowman P. D.
The Sinuosity of Lunar Rilles in the Aristarchus Plateau **[#1713]**
The sinuosity of rilles in the Aristarchus Plateau displays a positive correlation with increased rille length. A complete catalog of rille sinuosity values will reveal any differences between regions on the Moon.

Lawrence S. J. Hawke B. R.
Lunar Pyroclastic Deposits: An Accessible and Quantifiable Lunar Resource **[#1804]**
The advantages of lunar pyroclastic deposits as an exploration-enabling resource are outlined, and future resource assessment activities are proposed.

Gaddis L. R.
Volcanism in Alphonsus Crater: Evidence for Compositional Variation Within Lunar Pyroclastic Deposits **[#2249]**
This study uses Clementine 11-band data to identify and characterize compositional variations within the Alphonsus pyroclastic deposits.

Hawke B. R. Giguere T. A. Gaddis L. R. Campbell B. A. Blewett D. T. Boyce J. M. Gillis-Davis J. J. Lucey P. G. Peterson C. A. Robinson M. S. Smith G. A.
The Origin of Copernicus Rays: Implications for the Calibration of the Lunar Stratigraphic Column **[#1092]**
The presence of bright rays is not a reliable indicator that a crater was formed during the Copernican Period because compositional rays can persist for 3 Ga or more. The optical maturity parameter should be used to define the C-E boundary.

Hawke B. R. Giguere T. A. Blewett D. T. Boyce J. M. Gillis-Davis J. J. Hagerty J. J. Lucey P. G. Peterson C. A. Smith G. A. Spudis P. D. Taylor G. J.
Light Plains and Cryptomare Deposits on the Northeastern Portion of the Lunar Nearside **[#1512]**
A major expanse of cryptomare has been identified east of Mare Frigoris. These cryptomare deposits are dominated by VLT and low-TiO_2 mare basalts.

Honda C. Ono S. Morota T. Okada T.
Effect of Sun Elevation on Crater Size-Frequency Distribution. **[#1922]**
We examined the effect of Sun-elevation on crater size-frequency distribution. As a result, to improve the accuracy of age determination using CSFD, we should use a Sun elevation lower than about 10°.

Bussey D. B. J. Spudis P. D. Nozette S. Lichtenberg C. L. Raney R. K. Marinelli W. Winters H. L.
Mini-RF Imaging Radars for Exploring the Lunar Poles **[#2389]**
This year two imaging radars will fly to the Moon to search for ice in the lunar polar regions.

Stubbs T. J. Glenar D. A. Hahn J. M. Cooper B. L. Farrell W. M. Vondrak R. R.
Predictions for the Lunar Horizon Glow Observed by the Lunar Reconnaissance Orbiter Camera **[#2378]**
We model the lunar horizon glow intensities that the Lunar Reconnaissance Orbiter Camera is anticipated to detect based on previous observations.

Cohen B. A. Nall M. E. French R. A. Muery K. G. Lavoie A. R.
The Lunar Mapping and Modeling Project (LMMP) **[#1640]**
The Lunar Mapping and Modeling Project will provide access to lunar maps, models, tools and data for Constellation Program lunar planning, the science community, future robotic missions, international partners, commercial entities, and E/PO.

Hare T. M. Archinal B. A. Becker T. L. Gaddis L. R. Lee E. M. Redding B. L. Rosiek M. R.
Clementine Mosaics Warped to ULCN2005 Network **[#2337]**
Over the past year we have released updated Clementine mosaics and the USGS lunar airbrushed shaded relief global map which have been warped to the ULCN 2005 control network. This abstract describes the methods and related errors.

Archinal B. A. Hare T. M. Becker T. L. Becker L. A. Lee E. M. Rosiek M. R. Gaddis L. R. Kirk R. L.
New Lunar Cartographic Products Registered to the Unified Lunar Control Network 2005 (ULCN 2005) **[#2245]**
A number of old and new lunar cartographic products have been registered to the Unified Lunar Control Network 2005, including the Clementine mosaics, Lunar Orbiter mosaic and images, and the ULCN2005 and NASM-USGS 1 km topographic models of the Moon.

Garcia P. A. Gaddis L. R. Isbell C. LaVoie S. K. Becker K. Stanboli A.
Lunar Image Data at the Imaging Node of the Planetary Data System **[#2365]**
Information is provided on the lunar image data available through the Imaging Node of the Planetary Data System (cohosted by USGS and JPL) and methods for accessing and obtaining these data.

Schultz A. Williams D. R. Guinness E. A.
Restoration of Apollo Data by the Lunar Data Project/PDS Lunar Data Node **[#2085]**
We report on progress made in the Lunar Data Project/Lunar Data Node's ongoing effort to put scientifically important Apollo data, particularly surface environment data, into accessible digital form for use by researchers and mission planners.

Robinson M. S. Lawrence S. J. Close W. Bode R. Grunsfeld J. M. Ingram R. Jefferson L. Locke S. Mitchell R. Scarsella T. White M. Hager M. A. Mackwell S. Watters T. R. Bowman-Cisneros E. Danton J. Speyerer E. Dam A. Calarco A. Garvin J. B.
The Apollo Digital Image Archive **[#1515]**
The original first generation Apollo flight films are being scanned and archived by the NASA Johnson Space Center and Arizona State University. Image products are accessible through a searchable interface (http://apollo.sese.asu.edu).

Becker T. L. Weller L. Gaddis L. R. Cook D. Archinal B. A. Rosiek M. P. Isbell C. Hare T. M. Kirk R. L.
Lunar Orbiter Mosaic of the Moon **[#2357]**
A Lunar Orbiter Near Side mosaic is available online.