Tuesday, March 24, 2009
POSTER SESSION I: GEOPHYSICAL ANALYSIS OF THE LUNAR SURFACE AND INTERIOR
6:30 p.m. Town Center Exhibit Area

Reiff P. H. Freeman J. W. Vondrak R.
Apollo ALSEP Results — 40 Years Later **[#2363]**
This paper will discuss the main results from the Apollo/ALSEP SIDE and CPLEE experiments.

Lawrence K. P. Johnson C. L.
Magnetic Characterization of Lunar Samples: Back to Basics **[#1433]**
We present preliminary results of low and high temperature hysteresis, low and high temperature magnetic susceptibility, and Curie temperature analyses of multiple lunar samples.

Chi P. J. Russell C. T. Walker R. J. Williams D. Hills H. K. Mehlman R.
Restoration of Apollo Magnetic Field Data: A Progress Report **[#1894]**
Under the support by NASA's LASER Program we are restoring the Apollo data from Lunar Surface Magnetometer and Subsatellite Biaxial Magnetometer. These restored data will be accessible through a dedicated online server, PDS, and NSSDC.

Halekas J. S. Lillis R. J. Purucker M. E. Louzada K. L. Stewart S. T. Manga M.
Interpreting Lunar Impact Demagnetization Signatures Using Lunar Prospector Magnetometer/Electron Reflectometer Data **[#1354]**
We investigate impact demagnetization signatures observed by Lunar Prospector. We construct crater demagnetization models and compare to observations in order to constrain the strength and coherence scale of lunar crustal magnetization.

Williams J. G. Boggs D. H. Ratcliff J. T.
A Larger Lunar Core? **[#1452]**
New data improves lunar science results. A fluid core and tidal dissipation are inferred from dissipation effects on orientation. Detection of core-mantle boundary flattening and fluid core moment are additional evidence for a fluid core.

de Vries J. van den Berg A. P. van Westrenen W.
The Formation and Evolution of a Lunar Core from Ilmenite-rich Magma Ocean Cumulates **[#1244]**
The possibility of forming an ilmenite-rich core in the moon is studied, using numerical models. It is shown that core density and sharpness of the core-mantle boundary depend on the heat production in and the density of the ilmenite-rich material.

Sakai R. Kushiro I. Nagahara H. Ozawa K. Tachibana S.
Experimental Constraints on Composition of Lunar Magma Ocean from Physical Properties of Magma **[#1839]**
We performed high-pressure experiments to determine density and viscosity of magma with chemical compositions plausible to the anorthosite crust formation in order to put physical and chemical constraints on differentiation of the lunar magma ocean.

Tronche E. J. van Westrenen W.
Experimental Petrology of a Lunar Bulk Composition Constrained by Geophysical Data **[#1782]**
The crystallization sequence and phase chemistry of a cooling lunar magma ocean is experimentally investigated for a new lunar bulk composition relatively Al-poor and Fe-rich derived from inversion of seismic and gravity data.

Bauch K. E. Hiesinger H. Helbert J.
Estimation of Lunar Surface Temperatures: A Numerical Model **[#1789]**
We present global temperature estimates for sunrise, noontime and sunset. This work provides new and updated research on the temperature variations by taking into account the surface and subsurface bulk thermophysical properties.

Weber R. C. Bills B. G. Johnson C. L.
A Simple Physical Model for Deep Moonquakes **[#1870]**
Tidal stress is widely believed to influence the occurrence times of deep moonquakes. We explore several simple models of stress buildup and release that can be used to create moonquake-like time sequences of events.

Kawamura T. Tanaka S. Saito Y. Kobayashi Y. Horai K. Hagermann A.
Re-Determination of Deep Moonquake Sources Using the Apollo 17 Lunar Surface Gravimeter **[#1653]**
We performed the first seismic analysis of deep moonquakes using the Apollo 17 Lunar Surface Gravimeter. We re-determined the seismic source of the deep moonquakes and evaluated the contribution of the LSG.

Mazarico E. Han S.-C. Lemoine F. G. Smith D. E.
A New Solution of the Lunar Gravity Field Using Localized Spectral Constraint **[#2248]**
We use localized spherical harmonics to create a lunar gravity field solution with the Kaula constraint applied only to the far side. The differences with a globally constrained solution are correlated with the topography, suggesting an improvement.

de Meijer R. J. van Westrenen W.
An Alternative Hypothesis for the Formation of the Moon **[#1847]**
We propose an alternative explanation for the compositional correspondence between Moon and silicate Earth: the Moon formed from the ejection of terrestrial mantle material, triggered by a run-away natural georeactor at Earth's core-mantle boundary.

Bussey D. B. J. Sorensen S.-A. Spudis P. D.
Illumination and Temperature Modelling of the Lunar Polar Regions **[#2027]**
We have produced a model for determining the illumination and thermal conditions inside the permanently shadowed regions near the lunar poles.