Thursday, March 22, 2012
POSTER SESSION II: LUNAR GEOPHYSICS AND INTERNAL STRUCTURE
6:00 p.m. Town Center Exhibit Area

Kattoum Y. K. Andrews-Hanna J. C.
Evidence of Ring-Faults in Orientale from Gravity **[#2767]**
The internal structure of Orientale Basin is examined through means of gravity to determine the existence of ring faults and to place a constraint on their geometry.

Sasaki S. Goossens S. Ishihara Y. Araki H. Hanada H. Matsumoto K. Noda H. Kikuchi F. Iwata T.
Kaguya Selenodesy and the South Pole Aitken Basin **[#1838]**
Kaguya obtained accurate lunar farside gravity for the first time. The region with the thinnest crust is offset southward from the center of the SPA basin. Using a localized gravity analysis, we analyzed the interior structure of small basins in and around SPA.

Yang H. W. Zhao W. J. Wu Z. H.
Solution and Preliminary Explanations for Gravity Field of the Moon **[#1865]**
A lunar gravity model was built with the transplanted GEODYN2. A lunar Bouguer gravity anomalies field was established. With some necessary constraints, the thickness of the uplifted Moho subsurface in three mare basins was calculated respectively.

Meyer H. M. Frey H. V.
Using a New Crustal Thickness Model to Test Previous Candidate Lunar Basins and to Search for New Candidates **[#1936]**
A new crustal thickness model was used to test the viability of 110 previously identified candidate large lunar basins and to search for new candidates. We eliminated 11 of 27 previous candidates, and found evidence for at least 8 new candidates.

Li F. Wang W. R. Chen W. Hao W. F.
Lunar Global Crustal Thickness Estimation Using Compensated Terrain Gravity Effect (CTGE) Data **[#1432]**
A global lunar crustal thickness model is constructed, with the topography and gravity data from the Japanese SELENE mission. The mean thickness of the new global crustal thickness model is 42 km, with the maximum value 85.6 km, the minimum value –0.6 km.

Byrne C. J.
A Layered Model of the Moon’s Far Side Bulge **[#2037]**
The Moon’s farside bulge could have been created by ejecta from the nearside megabasin, depositing the bulge in two layers. The subsurface structure of the two layers after isostatic compensation is described. GRAIL data may detect the layers.

Weber R. C. Knapmeyer M.
Deep Moonquake Focal Mechanisms: Recovery and Implications **[#1466]**
In this study, we analyze Apollo deep moonquake seismograms in an attempt to constrain their focal mechanisms using first arrival amplitudes. The goal is to asses tidal stress as a driving force behind moonquake generation.

Blanchette-Guertin J.-F. Johnson C. L. Lawrence J. F.
Modeling Seismic Waveforms in a Highly Scattering Moon **[#1473]**
We model lunar seismic waveforms in a highly heterogeneous media and investigate suites of scattering models of the Moon. The decay parameters of the synthetic coda are compared to those of the Apollo lunar seismic dataset.

Schmerr N. C. Ashley J. W. Petro N. E.
Identifying Impact Craters Recorded by the Apollo Passive Seismic Experiment **[#2220]**
We identify fresh impact craters associated with seismic recordings of meteoroid impacts on the Moon. Precise hypocenters improve seismic constraints on lunar regolith properties, crustal thickness, seismic attenuation, and elastic velocity.

Yamada R. Yamamoto Y. Nakamura Y. Kuwamura J.
A New Retrieval System of Apollo Lunar Seismic Data with Data Correction **[#1712]**
We have a constructed a new retrieval system for the Apollo seismic data that enables the user to obtain the data as well as metadata necessary to use them properly. We will report on the new convenient system in this presentation.

Laneuville M. Wieczorek M. Breuer D.
Asymmetric Thermal Evolution of the Moon **[#1928]**
We study the thermal evolution of the Moon using a two- and three-dimensional convection code when initially concentrating most of the heat sources in the PKT region. We find that this initial asymmetry has long-lasting consequences on magmatism and gravimetry.

Fuller M. Weiss B. P.
The Paleomagnetic Record of Melt Breccia 62235 Yields Consistent Estimates of a Lunar Field of ~100µT at 3.9 Ga **[#1690]**
The melt breccia 62235 is critical in lunar paleomagnetism because it gives a consistent paleointensity of ~100 µT by different methods for 3.9 Ga, thereby affirming a high field era at that time.

Williams J. G. Boggs D. H. Ratcliff J. T.
Lunar Moment, Love Number, and Core **[#2230]**
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 is also fluid core evidence. A new Love number and solid moment are given.

Fa W.
Exploration Subsurface Structure of the Moon: Potential Scientific Return from a Ground Penetrating Radar **[#1274]**
In this study, we analyzed the potential scientific return from a ground-penetrating radar to the Moon for China's Chang-E 3 lunar mission.

Salmon J. J. Canup R. M.
Three-Stage Lunar Accretion: Slow Growth of the Moon and Implications for Earth-Moon Isotopic Similarities **[#2540]**
We have developed a new hybrid numerical model to study the accretion of the Moon from an impact-generated circumterrestrial disk: a fluid disk for material inside the Roche limit, and an N-body code to track outer solid bodies.