Tuesday, March 19, 2013 [T626]
POSTER SESSION: THE LUNAR INTERIOR FROM GRAVITY AND TIDES: GRAIL, LUNAR PROSPECTOR, CHANG'E AND LASER RANGING
6:00 p.m. Town Center Exhibit Area

Goossens S. J. Lemoine F. G. Sabaka T. J. Nicholas J. B. Mazarico E. et al. ***POSTER LOCATION #354***
High Degree and Order Gravity Field Models of the Moon Derived From GRAIL Primary and Extended Mission Data **[#2382]**
We present high-resolution lunar gravity field models derived from GRAIL primary and extended mission data.

Mazarico E. Goossens S. J. Lemoine F. G.
Neumann G. A. Torrence M. H. et al. ***POSTER LOCATION #355***
Improved Orbit Determination of Lunar Orbiters with Lunar Gravity Fields Obtained by the GRAIL Mission **[#2414]**
The lunar gravity field solutions obtained with the GRAIL data alone provide significant improvements to the orbit reconstruction quality of the LRO spacecraft.

Andrews-Hanna J. C. Freed A. M. Head J. W. III Melosh H. J. Neumann G. A. et al.***POSTER LOCATION #356***
The Compensation State and Ring Structures of Lunar Basins as Revealed by GRAIL Gravity **[#2823]**
We use GRAIL gravity to quantify the departures from isostasy of lunar basins, and investigate the subsurface nature of the basin rings.

Blair D. M. Johnson B. C. Freed A. M. Melosh H. J. Neumann G. A. et al. ***POSTER LOCATION #357***
Modeling the Origin of the Orientale Basin Mascon **[#2821]**
We model the formation of the Orientale basin mascon via a combination of hydrocode and finite-element methods, using GRAIL data as a constraint.

Baker D. M. H. Head J. W. Neumann G. A. Smith D. E. Zuber M. T. et al. ***POSTER LOCATION #358***
GRAIL Gravity Analysis of Peak-Ring Basins on the Moon: Implications for the Crater to Basin Transition **[#2662]**
We measure GRAIL gravity anomaly profiles of peak-ring basins on the Moon and compare these with their morphometries to better understand peak-ring formation.

Chappaz L. Melosh H. J. Howell K. C. ***POSTER LOCATION #359***
Strategies for Lava Tube Detection with GRAIL Data **[#2019]**
The high accuracy and resolution of the data collected by GRAIL potentially allows the detection of small-scale lunar features, specifically empty lava tubes.

Huang Q. Xiao L. ***POSTER LOCATION #360***
Density and Elastic Thickness Constraints at Lunar Volcanic Provinces: Implication for GRAIL **[#2645]**
Primary localized admittance spectrum analyses show that Marius Hills and Rümker Hills with high loading densities may be as original shield volcanic centers.

Ping J. Su X. Yan J. ***POSTER LOCATION #361***
Middle Size Lunar BGA Mascon Basins Identified by Using CE-1 LAM and Gravity Data **[#1326]**
Eight mid-sized lunar impact mascon basins were identified by using Chang'e-1 LAM and gravity data, four of the hidden topographic depressions were newly found.

Williams J. G. Boggs D. H. Ratcliff J. T. ***POSTER LOCATION #362***
Lunar Science from Lunar Laser Ranging **[#2377]**
Lunar Laser Ranging analysis compatible with GRAIL yields lunar GM, moment, CMB flattening, two dissipation sources, orientation, evidence of activity, and orbit.

Barker M. K. Mazarico E. Neumann G. A. Smith D. E. Zuber M. T. et al. ***POSTER LOCATION #363***
Searching for Lunar Tidal Deformations with LOLA **[#2394]**
We present preliminary results of efforts to use LOLA crossovers to detect the signature of tidal deformations on the Moon.

Qin C. Zhong S. Wahr J. M. ***POSTER LOCATION #364***
Tidal Response of a Laterally Varying Moon: An Application of Perturbation Theory **[#2459]**
We use analytic and numerical method together to explore the possibility of using GRAIL gravity field data to constrain the Moon's interior structure.

Currie D. G. Delle Monache G. O. Behr B. Dell'Agnello S. ***POSTER LOCATION #365***
Thermal Analysis of Lunar Corner Cube Retro-Reflectors **[#3111]**
Lunar laser retro-reflectors on the Moon must undergo extreme temperatures. Our thermal analysis program will be described.