SPECIAL SESSION: GRAIL EXPLORES THE MOON’S INTERIOR
1:30 p.m. Waterway Ballroom 6

Chairs: Maria Zuber
Walter Kiefer

1:30 p.m. Zuber M. T. * Smith D. E. Asmar S. W. Konopliv A. S. Lemoine F. G. et al. 
Gravity Recovery and Interior Laboratory (GRAIL): Extended Mission and Endgame Status [#1777]
The GRAIL extended mission has provided gravity models that are being used to map the upper crust of the Moon in unprecedented detail.

1:45 p.m. Wieczorek M. A. * Nimmo F. Kiefer W. S. Neumann G. A. Miljkovic K. et al. 
High-Resolution Estimates of Lunar Crustal Density and Porosity from the GRAIL Extended Mission [#1914]
GRAIL gravity data show that the crust of the Moon has been highly fractured by billions of years of impact cratering.

Theoretical and Observational Constraints on Lunar Mega-Regolith Thickness [#2463]
Thermal models predict lunar porosity extending to maximum depths of tens of kilometers. Admittance studies can detect layers of this thickness.

Revised Thickness of the Lunar Crust from GRAIL Data: Implications for Lunar Bulk Composition [#1783]
Analyses of GRAIL data indicate a relatively thin lunar crust, leading to the conclusion that the Moon is not enriched in refractory elements compared to Earth.

GRAIL Gravity Observations of Lunar Volcanic Complexes [#2030]
GRAIL gravity observations constrain the volume, thickness, compensation state, and magmatic plumbing of lunar volcanic fields.

2:45 p.m. Sori M. M. * Zuber M. T. Head J. W. III Kiefer W. S. 
GRAIL Search for Cryptomaria [#2755]
Using maps of the Moon’s Bouguer gravity anomaly derived from GRAIL data, we search for lunar deposits of cryptomaria.

Impact-Generated Loading and Lithospheric Stress Gradients at Lunar Impact Basins: Implications for Maria Emplacement Scenarios [#3055]
Impact-induced crustal thickening around lunar basins produces uplift that generates lithospheric stresses favorable to magma ascent and mare emplacement.

The Inventory of Lunar Impact Basins from LOLA and GRAIL [#2379]
The inventory of lunar basins revealed by GRAIL does not indicate a more extensive history of lunar impacts as has been previously suggested.

The Origin of Lunar Mascon Basins, Part I. Impact and Crater Collapse [#2043]
We use GRAIL data with hydrocode and finite-element modeling to explain the origin of lunar mascon basins. This is Part 1/2, covering hydrocode results.
*The Origin of Lunar Mascon Basins, Part I. Cooling and Isostatic Adjustment* [#2037]
We use GRAIL data with hydrocode and finite-element modeling to explain the origin of lunar mascon
basins. This is Part 2/2, covering FEM results.

4:00 p.m. Miljkovic K. * Wieczorek M. A. Collins G. S. Laneuville M. Neumann G. A. et al.  
*Asymmetric Distribution of Lunar Impact Basins Caused by Variations in Target Properties* [#1926]
GRAIL revealed more large impact basins on the lunar nearside than farside. Impact modeling shows
that variations in target properties affect the basin size.

*Properties of the Lunar Interior: Preliminary Results from the GRAIL Mission* [#3092]
GRAIL analyses provide lunar gravity field, Love number, and moment of inertia with
improved uncertainties.

4:30 p.m. Smith D. E. * Zuber M. T. Neumann G. A. Mazarico E. Head J. W. et al.  
*GRAIL Gravity Field of the Lunar South Polar Region* [#1749]
Gravity over the south pole is compared with other data, including Bouguer gravity, crustal thickness
and density, surface temperatures, and neutron results.