

Tuesday, March 19, 2013

[T627]

POSTER SESSION: LUNAR GEOPHYSICS AND TECTONICS**6:00 p.m. Town Center Exhibit Area**

Banks M. E. Watters T. R. Robinson M. S. Williams N. R. Walsh L. S. et al. **POSTER LOCATION #366**
[Displacement-Length Relationship of Thrust Faults Associated with Lobate Scarps on the Moon](#) [#3042]

Revised displacement-length relationship of thrust faults associated with lobate scarps on the Moon using data from the Lunar Reconnaissance Orbiter.

Molaro J. L. Byrne S. **POSTER LOCATION #367**
[Microphysical Modeling of Thermoelastic Stresses on Airless Surfaces](#) [#1790]

We model grain-scale stresses caused by thermal fatigue/shock on airless surfaces (Moon, Mercury, and NEAs) and explore implications for regolith production.

Schmerr N. C. Thorne M. S. Yao Y. **POSTER LOCATION #368**
[Seismic Properties of the Lunar Megaregolith](#) [#2438]

We study the seismic properties of lunar megaregolith by adapting a 3-D wave propagation code for lunar conditions and compare results to Apollo seismograms.

Blanchette-Guertin J.-F. Johnson C. L. Lawrence J. F. **POSTER LOCATION #369**
[Effect of Variable Scatterer Length-Scales and Frequency Dependent Attenuation on the Decay of Lunar Seismic Coda](#) [#1234]

The effects of various lunar scattering structures are investigated by studying the decay characteristics of synthetic signals generated with the phonon method.

Siegler M. A. Smrekar S. E. Paige D. A. Williams J.-P. **POSTER LOCATION #370**
[Crustal Effects on Lunar Heat Flow](#) [#2516]

We use new crustal thickness and radiogenic compositions models, combined with a 3-D thermal conduction model, to constrain heat flow from the lunar interior.

Wood S. E. **POSTER LOCATION #371**
[An Analytic Model for the Thermal Conductivity of Planetary Regolith: Uncemented, Non-Spherical Particulates](#) [#3077]

A new analytic model is presented for estimating the effective thermal conductivity of planetary regolith composed of angular particles in gas or vacuum.

Yu S. Fa W. **POSTER LOCATION #372**
[A Preliminary Estimation of Lunar Heat Flow From Chang'e-2 Microwave Radiometer Observations](#) [#1379]

This study focuses on inverting lunar heat flow based on microwave radiometer of Chang'e-2 spacecraft, which is an important issue in today's lunar exploration.

Gong X. Paige D. A. Siegler M. A. Jin Y. Q. **POSTER LOCATION #373**
[Lunar Regolith Dielectric Constant Inversion of Chang'e-1 Microwave Radiometer Results at Apollo 15](#) [#2831]

The observed CE-1 microwave data are fitted at the Apollo 15 site using a thermal model based on independently-derived surface and subsurface temperatures.

Kronrod E. V. Kuskov O. L. Kronrod V. A. **POSTER LOCATION #374**
[Analysis of Lunar Seismic and Temperature Profiles by Thermodynamic Modeling](#) [#1119]

The main problem in this work is estimation of seismic model confidence and determination of lunar model constraints by methods of physic-chemical modeling.

Dygert N. J. Meyers C. Hirth G. Liang Y. *POSTER LOCATION #375*
[*Weakness of Ilmenite Revealed by New Rheological Measurements with Implications for Lunar Cumulate Mantle Overturn*](#) [#1591]

We experimentally deformed ilmenite in dislocation creep and found it is much weaker than olivine. Implications for cumulate mantle overturn are significant.

Zhang N. Parmentier E. M. Liang Y. *POSTER LOCATION #376*
[*The Present-Day Thermal and Chemical Structure with Vs Profiles Predicted from the Lunar Overturn Model*](#) [#2702]

Overturn model predicts a 3-D asymmetric thermochemical structure and the 1-D Vs profiles for the present-day Moon. Predicted Vs is compared to the observation.

Khan A. Pommier A. Connolly J. A. D. *POSTER LOCATION #377*
[*On the Presence of a Titanium-Rich Melt-Layer in the Deep Lunar Interior*](#) [#1272]

We find strong evidence for a deep lunar melt-layer enriched in titanium from the inversion of a set of diverse geophysical data and thermochemical modeling.

Evans A. J. Zuber M. T. Weiss B. P. *POSTER LOCATION #378*
[*The Possible Role of Water in Sustaining a Lunar Core Dynamo*](#) [#2060]

We investigate the influence of water in the deep lunar interior and the possible impact on the thermal and early core dynamo evolution.

Yi J. Karato S. *POSTER LOCATION #379*
[*Evidence for the Presence of Water in the Lunar Interior from Electrical Conductivity*](#) [#1574]

The lunar conductivity is interpreted using mineral physics observations. The Al effect is small while hydrogen is needed to explain observed conductivity.

Wang X. Howes C. T. Horányi M. Robertson S. *POSTER LOCATION #380*
[*Electric Potentials in Magnetic Dipole Fields Normal and Oblique to a Surface in Plasma: Understanding the Solar Wind Interaction with Lunar Magnetic Anomalies*](#) [#1658]

We performed laboratory experiments to investigate the solar wind plasma interaction with moderate strength magnetic anomalies on the lunar surface.

Szalay J. R. Likhanskii A. Wang X. Horányi M. *POSTER LOCATION #381*
[*Modeling Solar Wind Interaction with Surface Dipole Magnetic Fields*](#) [#2622]

This research focuses on modeling the interaction of the solar wind with crustal magnetic fields on airless bodies.

Joyce C. J. Blake J. B. Case A. W. Golightly M. Kasper J. C. et al. *POSTER LOCATION #382*
[*Validation of PREDICCS Using LRO/CRaTER Observations During Three Major Solar Events in 2012*](#) [#2707]

We present a comparison between dose rates measured by the CRaTER instrument on the LRO spacecraft and predicted by the PREDICCS radiation system.

Cox R. G. Dunlop D. Clark P. E. *POSTER LOCATION #383*
[*An International Lunar Geophysical Year*](#) [#1564]

We discuss a proposed International Lunar Geophysical Year (ILGY) to both harness and promote a new phase of lunar surface scientific exploration.

Riofrio L. M. *POSTER LOCATION #384*
[*Calculating the Lunar Orbit Anomaly*](#) [#2436]

A large anomaly in lunar orbital evolution found by laser light ranging may be calculated using the speed of light.