

Tuesday, March 18, 2014

[T628]

**POSTER SESSION: CALIBRATING OUR DESTINATIONS:  
LABORATORY STUDIES OF TERRESTRIAL MATERIALS AS ANALOGS  
FOR PLANETARY ENVIRONMENTS AND MATERIALS  
6:00 p.m. Town Center Exhibit Area**

- Martone A. A. Glotch T. D. **POSTER LOCATION #383**  
[\*The Effect of Grain Size and Abundance on the Deconvolution of Mixtures Using the Shkuratov Model\*](#) [#2295]  
 We use the Shkuratov radiative transfer model to determine mineral optical constants and test the model's ability to deconvolve reflectance spectra of mixtures.
- Matsumoto T. Miyamoto H. Nishibori T. Manabe T. Ito T. et al. **POSTER LOCATION #384**  
[\*On the Heterogeneities of Electro-Magnetic Properties of Rocks\*](#) [#2089]  
 A technique for measuring the permittivity of heterogeneous materials.
- Carli C. Roush T. Capaccioni F. **POSTER LOCATION #385**  
[\*Retrieving Optical Constants and Grain Size of Glasses by Hapke Modeling\*](#) [#1840]  
 We retrieved the optical constants of synthetic volcanic glasses, and we investigated how those calculations are affected by grain size distribution.
- Rucks M. J. Glotch T. D. **POSTER LOCATION #386**  
[\*Mid-IR Optical Constants of Enstatite and Hypersthene\*](#) [#2333]  
 Optical constants are an essential input into scattering models used in remote sensing. This study determined the optical constants of two orthopyroxenes.
- Rhind T. R. Cloutis E. Mann P. **POSTER LOCATION #387**  
[\*Spectral Reflectance Properties of Garnets\*](#) [#2173]  
 Systematic study of the spectral properties of garnets to determine the presence of various optically-active cations for differentiation and identification.
- Serventi G. Carli C. Sgavetti M. **POSTER LOCATION #388**  
[\*The Effect of Very Fine Particle Sizes on Plagioclase-Mafic Mineral Mixtures\*](#) [#1339]  
 In this abstract, we analyze mixtures composed of plagioclase and mafic minerals at very fine particle sizes, comparable to those found on the lunar regolith.
- Rhind T. R. Cloutis E. Mertzman S. A. **POSTER LOCATION #389**  
[\*The Effects of Composition and Structure of Magnetites on Their Spectral Properties\*](#) [#2107]  
 Understanding mineral structure data from XRD analysis and chemical variation from XRF analysis and their effect on magnetite reflectance spectra.
- Patmore E. B. Strait M. M. Flynn G. J. Durda D. D. **POSTER LOCATION #390**  
[\*Compression Strength of Pumice\*](#) [#2429]  
 Analysis of the density and compression strength of pumice as a porous asteroid analog.
- Morlok A. Ahemdi M. Hiesinger H. **POSTER LOCATION #391**  
[\*MERTIS/IRIS: A Mid-Infrared Study of Red Suevite Impact Rocks for Planetary Applications\*](#) [#1888]  
 We studied the mid-infrared properties of red suevite impact melt rocks from the Nördlinger Ries impact crater for remote sensing applications.
- Jack S. J. Strait M. M. Flynn G. J. Durda D. D. **POSTER LOCATION #392**  
[\*Using Porous Material to Simulate Asteroid Disruption\*](#) [#2430]  
 Disruption characteristics of pumice as a highly porous asteroid analog.

Clayton A. N. Strait M. M. Flynn G. J. Durda D. D. **POSTER LOCATION #393**  
[Disruption Experiments with an Artificially Hydrated Ordinary Chondrite](#) [#2799]  
 Disruption experiments with artificially created hydrous meteorite analogs.

Cockell C. C. Changela H. G. Bryce C. Brearley A. J. **POSTER LOCATION #394**  
[SEM-TEM Study of Icelandic Palagonite: Application to Hydrated Silicate gel Interfaces in the Nakhlite Meteorites and Secondary Processes on Mars.](#) [#2890]  
 This SEM-TEM study compares the zoned gel-silicate assemblages in terrestrial Icelandic palagonite with those found in the martian meteorites.

Woods-Robinsin R. E. Paige D. A. **POSTER LOCATION #395**  
[Low Temperature Thermal Properties of Lunar Soil](#) [#2003]  
 Physically-based lunar soil thermal properties at 20–100K are derived from measurements of analog materials and theory for the lunar regions in permanent shadow.

Bell M. S. **POSTER LOCATION #396**  
[Experimental Alteration of Basalt to Support Interpretation of Remote Sensing and In Situ Measurements from Mars](#) [#2822]  
 Results of alteration experiments designed to provide the foundation for subsequent experiments on laboratory shocked basalt are described.

Jensen H. B. Sklute E. C. Rogers A. D. Reeder R. J. **POSTER LOCATION #397**  
[Synthesis Pathways and Spectral Discrimination of Amorphous Ferric Sulfates on Mars](#) [#2781]  
 Possible structural effects of formation pathways on spectral character using amorphous ferric sulfates were synthesized in four ways and observed via IR.

Sklute E. C. Jensen H. B. Rogers A. D. Reeder R. J. **POSTER LOCATION #398**  
[Visible and Infrared Spectral Characteristics and Morphology of Amorphous Iron Sulfates](#) [#2709]  
 The synthesis of amorphous Fe sulfates made through the dehydration of deliquesced Fe<sup>3+</sup> and crystalline Fe<sup>2+</sup> sulfates is described and products characterized.

Murphy N. W. Jakosky B. M. Mellon M. T. Budd D. A. **POSTER LOCATION #399**  
[Thermophysical Properties of Four Terrestrial Indurated Materials and Their Implications for Martian Duricrusts](#) [#2690]  
 From examining terrestrial indurated materials, we find that granular fabric has a significant effect on the bulk thermophysical properties of Mars duricrusts.

Brugman B. L. Culp L. Gibson J. Hicks L. Lecos K. et al. **POSTER LOCATION #400**  
[Grain Shape and Size Analysis of Sand- and Silt-Size Sediment in a Terrestrial Periglacial Landscape: A Possible Process Analog for Sand and Silt Imaged by the Phoenix Optical Microscope at the Phoenix Mars Lander Landing Site](#) [#2626]  
 Shape and size analysis of terrestrial sand and silt grains from a periglacial landscape geomorphically analogous to the site imaged by Phoenix Mars Lander.

Farrand W. H. Wright S. P. Glotch T. D. **POSTER LOCATION #401**  
[Determining the Provenance of Altered Basaltic Clastics Based on VNIR and TIR Spectroscopy: Relevance for Mars](#) [#1597]  
 Altered basaltic hydrovolcanic, glaciovolcanic, and explosive ashes are examined with VNIR, TIR, and XRD spectroscopy. Differences are linked to mode of origin.

Roush T. L. Brown A. Bishop J. L. Blake D. Bristow T. **POSTER LOCATION #402**  
[Optical Constants of Mars Candidate Materials Used to Model Laboratory Reflectance Spectra of Mixtures](#) [#1380]  
 End-member optical constants, estimated from different particle size distribution representations, are used to model measured lab spectra of their mixtures.

Parthasarathy G. Sarkar P. K.

**POSTER LOCATION #403**

[High Pressure Temperature Studies of Phyllosilicates from the Deccan Trap, India: Implications to Martian Mineralogy and Near Subsurface Processes](#) [#1326]

This is the first report on the high-pressure and high-temperature investigations on the natural phyllosilicates relevant to the martian near surface processes.

Greenberger R. N. Mustard J. F. Cloutis E. A. Mann P. Wilson J. H. et al.

**POSTER LOCATION #404**

[Remote Sensing of Volcano-Lacustrine Interactions: Implications for Mars](#) [#1543]

Mineralogic, chemical, and oxidative changes in hydrothermally altered basalts relate to degrees of water-rock interactions and are identified with spectroscopy.

Fraser S. A. Cloutis E. A. Mann P. Applin D.

**POSTER LOCATION #405**

[Long-Term Monitoring of Water-Bearing Minerals Exposed to Mars Surface Conditions](#) [#2083]

Observation of hydrated minerals exposed to Mars surface conditions provide insights to their detectability and the climatic and geologic history of the planet.

Socki R. A. Niles P. B. Sun T. Fu Q. Romanek C. S. et al.

**POSTER LOCATION #406**

[Martian Cryogenic Carbonate Formation: Stable Isotope Variations Observed in Laboratory Studies](#) [#2757]

Laboratory experiments were performed where calcium bicarbonate was frozen under Mars-like conditions to form calcium carbonate for stable-isotope analyses.