

**Thursday, March 13, 2008**  
**POSTER SESSION II: ANALOGS: REMOTE SENSING AND SPECTROSCOPY**  
**6:30 p.m. Fitness Center**

Pompilio L. Pedrazzi G. Craig M. A. Sgavetti M. Cloutis E. A.  
*Spectral Modeling of Planetary Analogues, Preliminary Results* [#1550]

We present the preliminary results of testing a new fitting technique for modeling VNIR spectra (Exponential Gaussian Optimization), including band saturation effects, overlapping absorptions and effects due to sample impurities and neutral phases.

Clenet H. Pinet P. C. Daydou Y. D. Heuripeau F. Rosemberg C. Ceuleneer G.  
*A Systematic Testing Approach Using the Modified Gaussian Model (MGM) for Mafic Mineralogy Mapping in Natural Conditions (Earth, Mars)* [#1918]

Utilisation of a systematic approach based on Modified Gaussian Model to deconvolve hyperspectral data in the case of Oman ophiolite. Dominated by mafic mineralogy, this area is a good Mars analogue from spectroscopy point of view.

Hansen G. B.  
*The Comparison of Single-scattering Albedos from Mie Calculations with Hapke Estimates* [#2104]

For modeling of remote sensing observations, a key parameter is the particle single scattering albedo. We compared the calculation of  $w$  for water ice using Mie theory and two Hapke estimations and found some large discrepancies.

Hapke B. W. Nelson R. M. Smythe W. Mannatt K.  
*Experimental Study of the Porosity Dependence of a Planetary Regolith Analog* [#1328]

The variation of reflectance with porosity of SiC abrasive powder was measured. Reflectance increased as filling factor  $f$  increased, until  $f$  became so large that coherent interactions caused the reflectance to decrease.

Craig M. A. Cloutis E. A. Reddy V. Bailey D. T. Gaffey M. J.  
*The Effects of Grain Size, <10  $\mu\text{m}$  – 4.75 mm, on the Reflectance Spectrum of Planetary Analogs from 0.35–2.5  $\mu\text{m}$*  [#2082]

A basalt and a pyroxene in 29 grain size splits have been added to our present study. Our hope is that this study will aid identification of materials in planetary/asteroidal spectra and aid in discerning the nature of the surface under investigation.

Johnson J. R. Shepard M. K. Grundy W.  
*Spectrogoniometric Measurements and Models of Lunar Analog Soils* [#1331]

Laboratory vis/near-IR multispectral data of seven lunar analog soils have been acquired using the Bloomsburg University Goniometer. Data were acquired at sufficient incidence, emission, and phase angles to provide constraints on Hapke models.

Wright S. P.  
*Intermediate (20–40 GPa) Shocked Basalt from Lonar Crater, India: Ejecta Locality and Spectroscopy of a Shergottite Analog* [#2330]

Given that are only hand samples of Mars are basalts shocked ~20–40 GPa, the sole known maskelynite-bearing terrestrial basalt is analyzed for insight into reconciling remote and sample data of Mars.

Ehlmann B. L. Mustard J. F. Kumar P. S.  
*Infrared Spectra of Impact Products from Lonar Crater: The Effects of Weathering and Implications for Mars* [#2437]

VNIR-MidIR spectra of Lonar crater basalt and impact glass were acquired. In samples subject to near-surface aqueous alteration, weathering products Fe/Mg smectite and hydroxylated glass create spectral features matching those observed on Mars.

Crowley J. K. Hook S. J. de Souza Filho C. R. de Pereira Silva G. Bridges N. T. Thomson B. J. Kargel J. S. Brown A. J. Ribeiro da Luz B. Baldwin A. Marion G. M.  
*Spectral Diversity of Terrestrial Banded Iron Formations and Associated Rocks: Implications for Mars Remote Sensing* [#1263]

This study examines spectra of well-preserved terrestrial banded iron formations and associated rocks to determine which characteristics might aid in their remote sensing detection on Earth and Mars.

Warner N. H. Farmer J. D.

*Laboratory and Remote Identification of Hydrothermal Alteration Materials Associated with Sub-Glacial Outflow Surfaces in Iceland* [#1477]

This study describes hydrothermally altered materials from Icelandic sandur plains. These surfaces are dominated by basaltic volcanics at various states of alteration and are potential terrestrial analogs for the deposits of martian outflow systems.

Ling Z. C. Wang A. Jollif B. L. Arvidson R. E. Xia H. R.

*A Systematic Raman, Mid-IR, and Vis-NIR Spectroscopic Study of Ferric Sulfates and Implications for Sulfates on Mars* [#1463]

Raman, mid-IR, Vis-NIR spectra were obtained from seven synthetic ferric sulfates whose structures were confirmed by XRD. Experiments on the stability field and phase transition pathway have started, using Raman for non-interruptive *in situ* phase ID.

Byrnes J. M. Ramsey M. S. Anderson S. W. Prade K. C. Finnegan D. C.

*Thermal Remote Sensing Analysis of Martian-Analog Volcanic Surfaces, Amboy Crater, Mojave Desert, California* [#1988]

Thermal remote sensing analysis of surficial materials in a volcanic flow field indicates that different materials are distinguishable, but that different methods of determining the nature of the surface produce different results.

Roush T. L. Helbert J. Hogan R. C. Maturilli A.

*Self-organizing Map Classification of the Berlin Emissivity Data Base* [#2042]

Self-Organizing Maps are used to cluster spectral emissivity data. Initial results show the ability to distinguish among major mineral classes and gross particle size fractions.