

**Tuesday, March 15, 2005**  
**POSTER SESSION I: MARS POTPOURRI**  
**7:00 p.m. Fitness Center**

Farrell W. M. Delory G. T. Atreya S. K. Wong A.-S. Renno N. O. Sentmann D. D. Marshall J. G. Cummer S. A. Rafkin S. Catling D.

*Mars Atmospheric Chemistry in Electrified Dust Devils and Storms* [#1104]

Martian dust devils and storms generate electricity, and this electricity alters the local chemistry to produce oxidants.

Brandenburg J. E.

*On the Possibility of a Persistent Greenhouse Regime on Mars* [#1763]

A model of a persistent greenhouse regime on Mars is presented. A conventional CO<sub>2</sub> greenhouse is stabilized against short term pressure instabilities by paleo-ocean to provide pressure and temperature buffering and by oxygen formed acids against long term chemical instability.

Johnson J. R. Staid M. I.

*Thermal Infrared Spectral Deconvolution of Experimentally Shocked Basaltic Rocks Using Experimentally Shocked Plagioclase Endmembers* [#1848]

Thermal infrared laboratory spectra of shocked bytownite feldspars were combined with standard mineral libraries to deconvolve spectra of shocked basaltic rocks to determine the accuracy with which pressures can be estimated in shocked basalts.

Maturilli A. Witzke A. Helbert J. Moroz L. Arnold G. Wagner C.

*Emissivity Spectral Measurements of Particulate Planetary Analog Materials* [#1770]

Emission spectra of planetary surfaces contain extensive information on the surface properties and in particular on mineralogical composition. We present here a device built at DLR (Berlin) that enables us to measure emissivity spectra of analog materials in the mid-infrared wavelength region.

Cushing G. Titus T. N.

*Thermal Inertia of the Arsia Mons Caldera: A Site for Nightly CO<sub>2</sub> Condensation* [#2135]

In this study of the Arsia Mons caldera, we compare MGS TES temperature observations with various thermal models. Homogeneous models are not adequate to explain the observations. Results from multi-layered cases are presented.

McDowell M. L. Hamilton V. E.

*Characteristics of Intracrater Thermal Anomalies in Southwestern Margaritifer Terra* [#1548]

We use thermophysical properties, albedo, short wavelength emissivity, composition, and geomorphology to understand the formation of anomalously warm intracrater deposits in southwestern Margaritifer Terra.

Glotch T. D. Rogers D. Christensen P. R.

*A Newly Discovered Hematite-rich Unit in Aureum Chaos: Comparison of Hematite and Associated Units with Those in Aram Chaos* [#2159]

A new hematite-rich deposit in Aureum Chaos has been discovered with data from the Thermal Emission Spectrometer. Additionally, a caprock unit resembling that in Aram Chaos is seen. A comparison of the units in Aram and Aureum Chaos is presented.

Baratoux D. Mangold N. Arnaud O. Gregoire M. Ceuleneer G. Van Ginneken M. Platevoët B.

Bardinzeff J. M. Chevrier V. Pinet P. Mathé P. E.

*Origins and Transport of Volcanic Sands in Iceland and Implications for the Evolution of Volcanic Material on Mars* [#1603]

The objective of this study is to know if we can obtain the nature of volcanic rocks for the hyperspectral observations of volcanic sands on Mars. We present a chemical and mineralogical analysis of volcanic material in Iceland as analogs of Martian volcanic sands.

Lee P. Boucher M. Desportes C. Glass B. J. Lim D. McKay C. P. Osinski G. R.  
Parnell J. Schutt J. W.

*Mars, Always Cold, Sometimes Wet: New Constraints on Mars Denudation Rates and Climate Evolution from Analog Studies at Haughton Crater, Devon Island, High Arctic* [#2270]

Analysis of crater modification on Mars and at Haughton Crater, Devon Island, High Arctic, recently found to be of Eocene age [1], suggest that Mars was never climatically wet and warm for geological lengths of time during or since the Late Noachian.

Boyce J. M. Mouginis-Mark P. J. Garbeil H. Soderblom L. A.  
*History of Major Degradational Events in the Highlands of Mars: Preliminary Results from Crater Depth/Diameter Measurements* [#1055]

We use depth/diameter data for 1,692 impact craters (diam. 6 to >100 km) to study the degradational history of the Martian highlands. We recognize a fluvial erosional event in the Late Noachian and subsequent eolian and infilling and erosion.

DeSoto G. E. Frey H. V.

*Relative Ages of the Highlands, Lowlands, and Transition Zone Along a Portion of the Mars Crustal Dichotomy from Densities of Visible and Buried Impact Craters* [#2383]

Using MOLA data, the relative ages of three types of terrains along a portion of the Mars crustal dichotomy were found with densities of buried and visible craters.

Wilson S. A. Howard A. D.

*Geomorphic and Stratigraphic Analysis of Layered Deposits in Terby Crater, Mars* [#2060]

The diversity of landforms in Terby Crater including ridges, layered deposits, mantled ramps, fans and viscous flow features are indicative of a dynamic geologic history, making this locality ideal for studying landform-climate relationships on Mars.

Moore J. M. Howard A. D.

*Layered Deposits and Pitted Terrain in the Circum Hellas Region* [#1512]

On the highlands surrounding Hellas are a number of craters with irregular depressions on their floor. This abstract describes these features and presents several working hypotheses for their origin.

Skinner J. A. Jr. Tanaka K. L. Rodriguez J. A. P. Kargel J. S.

*The Southern Utopia Highland-Lowland Boundary: Basin Structural Controls on Aquifer Development and Volatile-driven Resurfacing* [#2119]

We propose that the southern Utopia HLB plains units derived from sedimentary volcanism and aquifer collapse within a structurally isolated, sedimentary sequence related to the Utopia multi-ring impact structure.