Tuesday, March 13, 2007
POSTER SESSION I: PLANETARY ANALOGS: PHYSICAL
6:30 p.m. Fitness Center

Yingst R. A. Schmidt M. E. Lentz R. C. F. Christman M. J. Behnke R.
Understanding Mars at the Microscale by Imaging Terrestrial Analogs: The Handlens Atlas **[#1130]**
Here we report on preliminary efforts to create the first Mars-focused handlens image atlas by imaging, documenting and classifing the microscale characteristics of a variety of terrestrial materials as potential Mars analogs.

Haltigin T. W. Osinski G. R. Pollard W. H.
Using Spatial Point Patterns to Quantify Polar Desert Polygonal Geometry **[#1635]**
This paper compares geometrical patterns of polygonal terrain at various high arctic field sites, relates the spatial patterns to local sediment distribution, and compares the patterns to a selection of those found on MOC and HiRISE images.

Desportes C. Rice M. Lee P.
Periglacial Polygon Fields on Devon Island, High Arctic, as Possible Analogs for High-Latitude Polygonal Terrain on Mars: Implications for Phoenix **[#2341]**
A quantitative study of periglacial polygon fields, Devon Island, reveals a correlation between polygon relief and maximum particle size. If Phoenix candidate landing sites polygons are analoguous, blocky terrain might imply hazardous polygon relief.

Velbel M. A. Patino L. C. Wade J. A. Donatelle A. R. Price J. R.
Host-Mineral Weathering and REE Redistribution During Weathering of Volcanic Rocks in Sedentary Landscapes: Examples from Hawai'i and Guatemala **[#2217]**
During weathering Hawai'ian and Guatemalan basalts, REE are mobilized from extensively weathered regolith into incipiently weathered portions of the corestones, resulting in increased concentrations of these elements in minimally weathered basalts.

Ehlmann B. L. Viles H. A. Bourke M. C.
Quantifying Boulder Shape and Surface Texture: Using Morphology to Infer Environmental History at the Ephrata Fan, Channeled Scablands, Washington **[#1325]**
Boulder morphology records signatures of past environmental processes. We develop a parameter set to describe boulder shape and surface texture and test its utility in distinguishing boulder populations in the Channeled Scablands.

Burr D. M. Bruno B. C. Baloga S. M. Glaze L. S.
Spatial Analysis as a Discriminator: Results for Three Additional Types of Mesoscale Mound and Raised Rim Morphologies **[#2245]**
This abstract presents spatial analyses of terrestrial, 100-m-scale mounds and raised rim depressions (mud volcanoes, basaltic ring structures, and glaciofluvial kettle holes) as an aid for distinguishing such features on Mars.

Bourke M. C. Clarke J. Manga M. Nelson P. Williams K. Fonseca J. Fobar B.
Spring Mounds and Channels at Dalhousie, Central Australia **[#2174]**
Mound springs and associated deposits can persist in the landscape for extensive periods as domes, pitted cones, mesas or ridges.

Marchant D. R. Phillips W. M. Fastook J. L. Head J. W. III Schaefer J. M.
Shean D. E. Kowalewski D. E.
Dating the World's Oldest Debris-covered Glacier: Implications for Interpreting Viscous-Flow Features on Mars **[#1895]**
Four different dating methods (cosmogenic dating, satellite interferometry, Ar/Ar analysis of ash fall, and glaciological modeling) confirm a multi-million year old age for the Mullins Valley debris-covered glacier in the Antarctic Dry Valleys.

Bérczi Sz. Hudoba Gy. Hegyi S.
Mars Analog Fluvial and Desert Processes in the Pliocene Hungary Studied with Hunveyor **[#1068]**
With Hunveyors we studied sedimentary Mars analog sites in Hungary, at Galgahéviz and Vértesacsa, where fluvial deposites formed various cross-stratified bedrock layers of sand during the wet and desert-like Late-Miocene and Pliocene climate.

Whisner S. C. Moersch J. E. Hardgrove C. J.
Field Observations of Thermoclinometric Effects in Dumont Dunes, California **[#2371]**
The effect of slope and orientation on diurnal temperature cycles is quantified with data collected with a thermal infrared camera at Dumont Dunes, California. We compare this data to other remote sensing imagery to determine non-material effects on apparent thermal inertia measurements.

Kowalewski D. E. Marchant D. R. Head J. W. III Levy J. S.
Modeling Vapor Diffusion in Sublimation Tills of the Antarctic Dry Valleys: Implications for the Preservation of Near-Surface Ice on Mars **[#2143]**
Quantitative modeling in the Antarctic Dry Valleys suggests that ice may remain in the subsurface for millions of years and may help to provide insight into the interpretation of the Mars geological and climate record.

Gómez-Ortiz D. Fernández-Remolar D. C. Prieto-Ballesteros O. Gómez F.
Hydrogeological Processes and Structure of the Rio Tinto Mars Analog: Some Insights for Mars Underground Water Fluxes **[#1560]**
The tectonic pattern that controls Rio Tinto Mars analog aquifer has been studied. Faults that define the groundwater flow have been identified. Similar faults affecting to the Mars basement probably played an essential role in transporting underground fluids.

Schibler P. Heggy E. Lognonne P.
Mars Environmental and Soil Simulating Facility for Geophysical and Exobiological Studies **[#1684]**
Our team is involved in the development of geophysical instruments for martian missions. To achieve the optimal performance tests for the seismic experiment and to study the variation in the soil acoustic and electromagnetic properties, we developed a Mars Environmental and Soil Simulating Facility.

Le Gall A. Clifford S. M. Heggy E. Ciarletti V. Mukherjee D.
Electromagnetic Investigations of a Deep Water Table in the West Egyptian Desert: Lithologic and Geothermal Vapor Effects on Crustal Resistivity and GPR Performance, with Potential Implications for Mars **[#2101]**
An analysis of the impact of lithology and geothermal moisture transport on the detection, by GPR and other electromagnetic methods, of a deep aquifer in the West Egyptian Desert and its implications for Mars.

Wynne J. J. Titus T. N. Chapman M. G. Chong G. Drost C. A. Kargel J. S. Toomey R. S. III
Thermal Behavior of Earth Caves: A Proxy for Gaining Inference into Martian Cave Detection **[#2378]**
This study aims to increase our understanding of cave thermal behavior and to identify optimal times for detecting caves using thermal remote sensing. Techniques developed for Earth caves will ultimately be applied to locating subterranean cavities on the martian surface.