

Tuesday, March 19, 2013

[T642]

**POSTER SESSION: WHEN THE PLANETS COME TO EARTH:
 TERRESTRIAL ANALOGS FOR EXTRATERRESTRIAL ENVIRONMENTS
 6:00 p.m. Town Center Exhibit Area**

Carli C. Serrano L. M. Maturilli A. Massironi M. Capaccioni F. et al. **POSTER LOCATION #639**
[*VNIR AND TIR Spectra of Terrestrial Komatiites Possibly Analogues of some Hermean Terrain Compositions*](#) [#1923]

Spectra of terrestrial komatiite and komatiitic basalt are measured in the VNIR and TIR and their signatures will be discussed as comparison to Hermean terrains.

Cabrol N. A. Fountain A. G. Kargel J. S. Deglaciation Study Steering Group **POSTER LOCATION #640**
[*Impact and Signatures of Deglaciation on the Cryosphere, Landscape, and Habitability of Earth and Mars*](#) [#1295]

The very active effect of climate change on Earth's cryosphere may provide a proxy for what has cyclically happened on Mars.

Szynkiewicz A. Borrok D. M. Vaniman D. T. Goff F. **POSTER LOCATION #641**
[*Hydrological Sulfur Cycling in the Volcanic Complex of Valles Caldera, New Mexico — Geochemical Implications for Mars*](#) [#1144]

We have studied hydrological S cycle related to volcanic S emission and chemical weathering of terrestrial volcanic system to understand sulfate origin on Mars.

Farrand W. H. Wright S. P. Glotch T. D. Schroder C. **POSTER LOCATION #642**
[*Spectral, Chemical, and Petrographic Comparisons of Hydrovolcanic Tephra with Basaltic Impact Ejecta: Relevance for Mars*](#) [#2249]

Basaltic hydrovolcanic tephra and impact melt samples from Lonar Crater have been examined using instrumentation comparable to that on Mars rovers.

Bost N. Ramboz C. Foucher F. Westall F. **POSTER LOCATION #643**
[*The Skouriotissa Mine: A New Terrestrial Analogue for Hydrated Mineral Formation on Early Mars*](#) [#1400]

In this investigation, we present a mineralogical study of altered crustal basalts exposed at the Skouriotissa mine on Cyprus analog to martian surface.

Sansano A. Medina J. Rull F. **POSTER LOCATION #644**
[*Raman Profiling of Carbonates Layers from Hydrothermal Analogs of Mars*](#) [#2336]

Raman study of selected carbonated samples from Svalbard, a well known Mars analog. This study shows the differences in the cations precipitation.

Morgan A. M. Howard A. D. Hobbey D. E. J. Matsubara Y. Moore J. M. et al. **POSTER LOCATION #645**
[*Alluvial Fans of Northern Chile as an Analogue to Mars*](#) [#2833]

Alluvial fans in the Atacama may constitute a strong analog to those on Mars, with fans in both environments forming from hundreds of individual runoff events.

Head J. W. III Marchant D. R. **POSTER LOCATION #646**
[*Antarctic Dry Valley Streams and Lakes: Analogs for Noachian Mars?*](#) [#1583]

Mars fluvial/lacustrine processes suggest a "warm and wet" Noachian: Antarctic streams and lakes show how they might also form in "cold and icy" climates.

Lynch K. L. Munakata Marr J. Horgan B. Rey K. A. Schneider R. J. et al. **POSTER LOCATION #647**
[*Reflectance Spectra of Great Salt Lake Desert Sediments as Analogue Materials for Martian Paleolake Basins*](#) [#2973]

VNIR mineralogical identification of lacustrine sediments from the Pilot Valley, Utah, Mars analog environment are compared to in situ methods: XRD and QEMSCAN.

Schorghofer N. Hermalyn B. Yoshikawa K. **POSTER LOCATION #648**

[Permafrost Enabling Microclimates in Craters on Mauna Kea, Hawaii](#) [#1695]

We study the microclimate of a crater on Mauna Kea, Hawaii that harbors patches of permafrost and may serve as an analogue to tropical craters on Mars.

Hynek B. M. McCollom T. M. Marcucci E. C. Brugman K. K. Rogers K. L. **POSTER LOCATION #649**

[Assessing Environmental Controls on Acid-Sulfate Alteration at Active Volcanoes in Nicaragua: Applications to Relic Hydrothermal Systems on Mars](#) [#1633]

We studied active acidic volcanoes in Nicaragua to assess controls on secondary mineralogy and elucidate the paleoenvironments of martian hydrothermal systems.

Englert P. Bishop J. L. Gibson E. K. Koeberl C. **POSTER LOCATION #650**

[Subsurface Salts in Antarctic Dry Valley Soils](#) [#1804]

Sets of Antarctic Dry Valley sediment samples were analyzed by geochemical analysis methods. Similarities in chemical properties to Mars soils were found.

Kong F. J. Kong W. G. Hu B. Zheng M. P. **POSTER LOCATION #651**

[Meteorological Data, Surface Temperature and Moisture Conditions at the Dalangan Mars Analogous Site, in Qinghai Tibet Plateau, China](#) [#1743]

The meteorological data of Dalangan Playa for the past 30 years has been presented to serve environmental background for further Mars analogue studies.

Kong W. G. Zheng M. P. Kong F. J. Wang A. Chen W. X. et al. **POSTER LOCATION #652**

[Sedimentary Salts at Dalangan Playa and its Implication for the Formation and Preservation of Martian Salts](#) [#1336]

The occurrence of Mg-sulfates (e.g., kieserite) at DLT Playa, China, has been described and its implication for the martian Mg-sulfates was discussed.

Marcucci E. C. Hynek B. M. Kierein-Young K. S. Rogers K. L. **POSTER LOCATION #653**

[Visible to Near-Infrared Spectroscopy of Acid-Sulfate Weathering Sites in Nicaraguan Volcanic Systems: An Early Mars Analog](#) [#1677]

We compared the VIS-NIR spectroscopy of four Nicaraguan fieldsites to understand the controls of acid-sulfate weathering processes as related to early Mars.

Cannon K. M. Salvatore M. R. Mustard J. F. **POSTER LOCATION #654**

[Weathering Rinds on Basalts and Basaltic Sandstones in the Antarctic Climate: Spectroscopic Implications for Mars](#) [#1358]

Weathering in the Amazonian-like climate of Antarctica can produce surficial rinds on both igneous and sedimentary rocks that alter their VNIR and MIR spectra.

Wheatley D. F. Chan M. A. Okubo C. H. **POSTER LOCATION #655**

[Clastic Pipes and Deformation Features: Terrestrial Analogs to Candor Chasma](#) [#1561]

Comparisons of terrestrial pipes with massive circular features in west Candor Chasma suggest syndepositional deformation prior to lithification.

Pedersen G. B. M. Grosse P. **POSTER LOCATION #656**

[Topographic Fingerprint of Eruption Environment: Evidence from Reykjanes Peninsula, Iceland](#) [#2238]

Geomorphometric classification based on slope values proves successful in discriminating subaerial edifices from subglacial edifices based on DEMs.

White J. R. Webster K. D. Pratt L. M. **POSTER LOCATION #657**

[Methane Concentration Gradients Associated with Small, Thermokarst Lake on the Ice-Free Margin of Western Greenland](#) [#3105]

Methane concentrations from water column of shallow thermokarst lake, air, soils are used to interpret local effects on atmospheric methane concentrations.

Cadieux S. B. Pratt L. M. White J. R. **POSTER LOCATION #658**
[Methane Cycling in Small, Thermokarst Lakes in Southwestern Greenland as an Analog for Early, Wet Mars](#) [#2166]

Methane cycling in small, bedrock controlled, thermokarst lakes in SW Greenland as an analog for putative martian ecologies in seasonally ice-covered paleolakes.

Nikitczuk M. P. C. Schmidt M. E. Flemming R. L. **POSTER LOCATION #659**
[Altered Vesicular Basaltic Tuffs as Potential Habitable Environments: Implications for Mars](#) [#1680]

Textural features within coarse-grained basaltic pyroclasts suggest that vesicle micro-environments may be conducive to habitable conditions on Mars.

Greenberger R. N. Mustard J. F. Cloutis E. A. Mann P. Turner K. **POSTER LOCATION #660**
[Iron Oxidation State in Serpentes from Visible Imaging Spectroscopy: Implications for Planetary Exploration and Assessment of Astrobiological Potential](#) [#1296]

Determination of iron oxidation state, hydrogen production, and astrobiological potential of serpentines may be possible with hyperspectral visible imaging.

Schumann D. Andersen D. T. Kunzmann M. Sears S. K. Vali H. **POSTER LOCATION #661**
[Calcite Crystals and Concretions in Modern Conical Stromatolites from Lake Untersee, East Antarctica](#) [#2075]

This study investigated the mineralogy and formation of calcite crystals and concretions from modern conical stromatolites from Lake Untersee, East Antarctica.

Williams A. J. Sumner D. Y. **POSTER LOCATION #662**
[Development and Preservation of Filamentous Mineral Biosignatures: Implications for Detection with the Mars Science Laboratory](#) [#1741]

Surface gossan microbial community characterization and mineral filament preservation provides insight into biosignatures detectable by Mars Science Laboratory.

Sharma P. Heggy E. Farr T. G. Radebaugh J. **POSTER LOCATION #663**
[Exploring the Inner Structure of Titan's Dunes: Implications for Understanding Paleo-Wind Regimes](#) [#1821]

We analyze radar backscatter and elevation variation over linear dunes observed on Titan and Earth, to examine the inner structure of these features.

Schmidt B. E. Kim S. Greenbaum J. S. Soderlund K. M. Blankenship D. D. et al. **POSTER LOCATION #664**
[Living on the Edge: Understanding the Habitability of Europa's Ice-Ocean Interface with Help from Earth](#) [#3054]

We present the first results from NASA's SIMPLE project exploring beneath McMurdo Ice Shelf.

Walker C. C. Bassis J. N. **POSTER LOCATION #665**
[Fractures in Structurally-Compromised Ice: Observations of Rift Behavior at the Highly Fractured Amery Ice Shelf, East Antarctica and Implications for the Icy Shells of Enceladus and Europa](#) [#2139]

We study fracture arrays, and demonstrate that single rift models at the icy moons may significantly underestimate stresses required for propagation of rifts.

Williamson M. C. Garry W. B. Carey R. J. Shepherd J. Germain M. **POSTER LOCATION #666**
[Geologic Mapping of Askja Volcano, Iceland, Using WorldView-2 High Resolution Satellite Imagery](#) [#1779]

Geologic mapping of Askja Volcano using WorldView-2 images reveals that the area is an excellent environmental analog for volcanic regions of the Moon and Mars.