

Tuesday, March 20, 2018

[T305]

**POSTER SESSION I: ASTROBIOLOGY III:  
ANALOG ENVIRONMENTS, LIFE DETECTION, AND EXTREMOPHILES  
6:00 p.m. Town Center Exhibit Area**

Cook C. L. Williams A. J. Kautzman K. E. Floyd M. M. Emerson D. **POSTER LOCATION #39**  
[\*Spectral Characterization of Pterin Molecules: Implications for Detecting Life on Mars\*](#) [#2228]

A spectroscopic reference was created for the identification of pterin molecules, a putative class of biosignatures present in some iron-rich environments.

Weng M. Millan M. Zaikova E. Bevilacqua J. Johnson S. S. **POSTER LOCATION #40**  
[\*Biosignature Preservations in Gypsum Veins and Mineral Crust of the Atacama Desert as an Analog for Mars\*](#) [#2286]

Gypsum veins and mineral crust from the Atacama Desert, a Mars-analog site, are able to preserve biosignatures such as amino acids that are detectable via GCMS.

Stromberg J. M. Parkinson A. Morison M. Q. Cloutis E. A. Casson N. et al. **POSTER LOCATION #41**  
[\*Biosignature and Organic Carbon Detection by Reflectance and Raman Spectroscopy from Inverted Fluvial Channel Sediments\*](#) [#2505]

Detection of organic carbon and biosignatures with multiple rover equivalent techniques in samples from the CanMars MSRAD in Hanksville, Utah, USA.

Sklute E. C. Kashyap S. Wang P. Tague T. J. Jr Dyar M. D. et al. **POSTER LOCATION #42**  
[\*FTIR and Raman Spectroscopic Analysis of Nanophase Iron \(Oxyhydr\)oxides Bioreduced by Hyperthermophilic Archaea\*](#) [#1153]

Bioreduced nanophase iron (oxyhydr)oxide products vary by organism, starting mineral, and preparation method. Some spectral features could be biosignatures.

Ewing R. C. Tice M. M. Neal C. Patel H. Coker M. et al. **POSTER LOCATION #43**  
[\*Distribution of Mat Biosignatures in a Wet Aeolian System\*](#) [#1590]

The geomorphic and stratigraphic distribution of biosignatures is examined in a modern, wet aeolian system at Padre Island, TX.

Huang T. Xiao L. Wang H. Escudero C. Martínez J. M. et al. **POSTER LOCATION #44**  
[\*Microbial Analysis of Dalangtan Playa: A Mars Analogue and Its Astrobiological Significance\*](#) [#1412]

Mineralogical and microbial analysis (using culture-independent and -dependent methods) of a Mars analog: Dalangtan Playa for astrobiological consideration.

Glamoclija M. Steele A. Fogel M.-L. Sirisena K. Ramirez S. et al. **POSTER LOCATION #45**  
[\*Subsurface Microbial Diversity and Ecology of Playa Sediments at White Sands National Monument \(New Mexico\)\*](#) [#2864]

Evaporitic playa sequences are excellent analogs to martian sulfate and here we are presenting in-depth ecological study of White Sands Playas.

Pentescio J. T. Schmidt M. E. Flemming R. L. Tait K. **POSTER LOCATION #46**  
[\*Habitability of Continental Hydrothermally Altered Basaltic Tuff: Environmental Constraints from Pluvial Lake Volcanism in Carson Desert, NV\*](#) [#2423]

Fresh glass in warm brine / Microbes find conditions fine / Might be on Mars too.

Knuth J. M. Potter-McIntyre S. L. **POSTER LOCATION #47**  
[\*Preservation of Biosignatures in the Ten Mile Graben Cold Springs, Utah\*](#) [#1327]

This study investigates the biogeochemistry and preservation of microorganisms found at an active cold spring deposit, Utah as analog to Mars.

Moreras-Marti A. Fox-Powell M. Zerkle A. Cousins C. **POSTER LOCATION #48**

[Characterisation of Two Mars-Analogue Geothermal Environments in Iceland](#) [#1342]

This study will help constrain the water chemistry, sediment mineralogy, and  $\delta^{13}\text{C}$  values on an early martian hydrothermal analogues in Iceland.

Gentry D. Amador E. Cable M. L. Cantrell T. Chaudry N. et al. **POSTER LOCATION #49**

[Field Exploration and Life Detection for Sampling Analogue Research \(FELDSPAR\): Variability and Correlation in Biomarker and Mineralogy Measurements from Icelandic Mars Analogues](#) [#1825]

Biomarkers have high spatial variability in Mars analogue environments, even at small scales. Can easier-to-obtain geochemical data improve sample strategy?

Holme E. A. Hurowitz J. A. Henkes G. A. Rasbury E. T. **POSTER LOCATION #50**

[Covariation of Fe and B in Paleoproterozoic Fe-Carbonates: Insights into the Precambrian Ocean and Martian Habitability](#) [#2333]

Gunflint carbonates / Show high B with high Fe / Meaning for pH?

Murphy A. E. Glamoclija M. **POSTER LOCATION #51**

[Dolomitization of Cambrian Stromatolites and Implications for Interpreting Martian Carbonate Diagenesis](#) [#2420]

We aim to interpret the dolomitization of biosignatures in Cambrian stromatolites to better interpret microbial Mg-carbonates on future missions to Mars.

Miyake N. Ishimaru R. Komatsu G. Kawai K. Kobayashi M. et al. **POSTER LOCATION #52**

[Isolation of Extremophilic Microorganisms from the Acidic, High-Temperature System of the Goshogake Mud Volcano Field, Tohoku, Northern Japan](#) [#2017]

Introduction of a unique Goshogake mud volcano in Japan associated with magmatic volcanism. Extremophiles isolated are thermophilic and utilize molecular  $\text{H}_2$ .

Silver M. M. W. Mora S. Ivey D. M. Chevrier V. **POSTER LOCATION #53**

[Microbe Survival in Sulfate Brines of Varied Concentrations, Characterized via OD590](#) [#2896]

Cellular growth and reproduction of sulfate-reducing bacteria in sulfate brines of varied composition and concentration.

Silver M. M. W. Berger E. L. Regberg A. B. **POSTER LOCATION #54**

[Impact Shock Effects on Sulfate-Reducing Bacteria in Marine Sediments](#) [#2850]

Sulfate-reducing bacteria were harvested from Galveston Bay, Texas marine sediments and subjected to ~10 GPa of impact-shock pressure in sediment and medium.

Rymer A. M. Hurley D. Mandt K. Bradburne C. Mandt K. et al. **POSTER LOCATION #55**

[Magnetofossil Chains and Cellular Size on Earth and Expectations for Other Planets](#) [#2552]

A line of crystals / Displays the magnetic propulsion / Of life gone by.