

Monday, April 24, 2017
POSTER SESSION I:
SOLAR SYSTEM SITES: MARS:
MODERN AND ANCIENT BIOSIGNATURES AND THE SEARCH FOR LIFE ON MARS
7:00 p.m. Main Hall

Czaja A. D. Osterhout J. T.

[Experimental Evidence for Mineralogical Control on Thermal Alteration of Organic Matter as Measured by Raman Spectroscopy: Implications for Biosignature Preservation](#) [#3298]

This paper discusses the potential for mineralogy to control the molecular structure of kerogen and thus the apparent peak temperature of thermal alteration.

Hickman-Lewis K. Garwood R. J. Withers P. J. Wacey D.

[X-Ray Microtomography: A Potential Tool for Precambrian Palaeobiology](#) [#3238]

We present the first test of X-ray tomography on the Precambrian fossil record. X-ray CT visualizes diverse biosignatures according to their preservation mode.

Varnali T.

[Novel Iron Complexing Structures for Scytonemin Family Molecules](#) [#3292]

Iron complexes of two scytonemin molecules (Fe sandwiched) are proposed aiming to add to the previous diagnostic Raman spectral database for scytonemin and its derivatives.

Xu H.

[Catalytic Roles of Microbes and Polysaccharides in Dolomite Crystallization at Low-Temperature](#) [#3058]

Low-temperature dolomite and magnesite were also discovered in martian meteorite.

Gaboyer F. Le Milibeau C. Bohmeier M. Schwendner P. Vannier P. Beblo-Vranesevic K. Rabbow E. Foucher F. Gautret P. Guégan R. Richard A. Sauldubois A. Richmann P. Perras A. Moissl-Eichinger C. Cockell C. Rettberg P. Marteinson V. Monaghan E. Ehrenfreund P. Garcia-Descalzo L. Gomez F. Malki M. Amils R. Cabezas P. Walter N. Westall F.

[Mineralisation of an Extremotolerant Bacterium Isolated from an Early Mars Analog Environment](#) [#3249]

Artificial mineralization of a bacteria in Mars-common minerals and with exposure or not to Mars-related stresses (desiccation/radiation) is here reported.

Archer R. Ralat A.

[\$\delta^{13}\text{C}\$ and \$\delta^{15}\text{N}\$ Stable Isotope Evidence for Dynamic Diagenetic Climate Coupling in a Rosickyte Mars Analogue Microbial Community](#) [#3041]

Isotopic $\delta^{15}\text{N}$ and $\delta^{13}\text{C}$ suggest local ecosystem oscillation to external forcing, possibly due to hydrological reorganization associated with both PDO and ENSO.

Schuler C. G. Havig J. R. Hamilton T. L.

[Microbial Community Composition and Function to Morphology: Implications for Interpreting the Rock Record](#) [#3325]

The formation of stromatolites and mats in hydrothermal systems may be linked to the presence of photoautotrophs.

Havig J. R. Hamilton T. L.

[Cryptic Photosynthesis: A Possible Terrestrial Analog for Early Earth and Mars](#) [#3172]

New data collected from hydrothermal sites that provide a link to types of photoautotrophic microbial communities may have been present in the Archean.

Harris R. L. Huang J. Salvatore M. Edwards C. Christensen P. Xiao L. Xu Y.

[Assessing the Astrobiological Potential of a Unique Martian Evaporitic Fluviolacustrine Deposit](#) [#3726]

We discuss the astrobiological prospects of Fe-Mg smectite clays overlying a chloride unit in a Noachian fluviolacustrine deposit west of Knobel Crater.

Keszthelyi L. Dundas C. Hamilton C. Scheidt S. P. Sori M. Lev E. Rumpf M. Duhamel S. Thordarson T. Bjornsdottir S. Keske A.

[*An Exceptional Active Icelandic Analog for Recent Habitable Environments on Mars Created by Lava-Water Interaction*](#) [#3350]

The 2014-2015 eruption in Iceland can teach us how to look for organisms brought up from the deep interior of Mars.

Perras A. K. Wink L. Duller S. Monaghan E. Schwendner P. Cockell C. S. Rettberg P. Beblo-Vranesevic K. Bohmeier M. Gaboyer F. Westall F. Walter N. Cabezas P. Garcia-Descalzo L. Gomez F. Malki M. Amils R. Ehrenfreund P. Vannier P. Marteinson V. Erlacher A. Mahner A. Bashir M. Moissl-Eichinger C.

[*Mars Exploration Begins on Earth: Systematic Comparison of the Anaerobic, Intact and Cultivable Microbiome of Extreme, Anoxic, Mars-Analogue Environments*](#) [#3237]

Within the frame of the MASE project, the anaerobic and viable microbiological diversity of numerous terrestrial Mars analogue settings assessed.

Adcock C. T. Hausrath E. M.

[*Assessing Habitability on Mars Using Orbiter Data and a Habitability Index*](#) [#3144]

Determining locations of high habitability probability on Mars is a challenge. A habitability index which can incorporate orbiter data may be the answer.

Shotwell R. Hays L. E. Beaty D. W. Mellon M. T. Kieft T. Moridis G. Spycher N.

[*Could the Impact of the Mars 2020 Power System into Martian Regolith Create an Artificial Special Region?*](#) [#3630]

This presentation will be about the possibility of an off-nominal landing of the Mars 2020 mission creating an artificial special region.