Monday, May 16, 2016
POSTER SESSION: INSTRUMENTS, SIMULATED MISSIONS AND LIFE DETECTION STRATEGIES
5:30 p.m. Regency C

Osinski G. R. Sapers H. M. Francis R. Pontefract A. Tornabene L. L. Haltigin T. ***POSTER LOCATION #11***
Defining Analytical Strategies for Mars Sample Return with Analogue Missions **[#2062]**
The characterization of biosignatures in MSR samples will require integrated, cross-platform laboratory analyses carefully correlated and calibrated with Rover-based technologies. Analogue missions provide context for implementation and assessment.

Kelly H. S. Boston P. J. Parness A. J. ***POSTER LOCATION #12***
Distinctive Biopatterns for Detection and Characterization from a Robotic Platform **[#2069]**
Mars-analog environment biosignature detection via a novel robot design.

Glass B. Davila A. Parro V. Quinn R. Willis P. Brinckerhoff W. DiRuggiero J. Williams M. Bergman D. Stoker C. ***POSTER LOCATION #13***
Atacama Rover Astrobiology Drilling Studies: Roving to Find Subsurface Preserved Biomarkers **[#2061]**
The ARADS project is a NASA PSTAR that will drill into a Mars analog site in search of biomarkers. Leading to a field test of an integrated rover-drill system with four prototype in-situ instruments for biomarker detection and analysis.

García-Descalzo L. Gómez F. MASE Team ***POSTER LOCATION #14***
Biomarkers Detection In Mars Analogue Sites Within Mase Project **[#2027]**
In MASE project (Mars Analogues for Space Exploration) we work to improve approaches and methods for biomarker detection in samples with low biomass from Mars analogue sites.

Dartnell L. R. ***POSTER LOCATION #15***
Martian Analogue Samples, Their Spectroscopic Biosignatures, and Degradation by the Cosmic Radiation Environment **[#2008]**
Here we discuss the use of Raman and FTIR spectroscopy for the detection and characterisation of biosignatures in martian analogue samples, and their degradation by the cosmic ray environment in the martian near-subsurface.

Szopa C. Coll P. Stalport F. Poch O. Jaber M. Lambert J. F. Rouquette L. Lasne J. ***POSTER LOCATION #16***
Fate of Organic Molecules in the Mars Regolith Under UV Radiation Deduced from the MOMIE Laboratory Experiment **[#2018]**
From laboratory experiments simulating the Mars surface conditions including pressure, temperature, and UV radiation, the fate of organic molecules alone or mixed with minerals is studied.

Steele A. ***POSTER LOCATION #17***
Life Detection with Minimal Assumptions — Setting an Abiotic Background for Mars **[#2038]**
I set out a strategy for life detection on Mars with minimal assumptions and review the state of knowledge of martian organic carbon in Martian meteorites. Analyses of martian meteorites represents an invaluable “analogue” suite of samples for study.

Gaboyer F. Bohmeier M. Foucher F. Le Milbeau C. Gautret P. Richard A. Sauldubois A. Guegan R. Westall F. ***POSTER LOCATION #18***
Mineralization and Potential for Fossilization of an Extremotolerant Bacterium Isolated from a Past Mars Analog Environment **[#2039]**
To better characterize the preservation of biomarkers during microbial fossilization, we mineralized a bacterial strain isolated from a cold-acidic-oligotrophic lake in SiO_2 and $CaSO_4$ and studied it using SEM, TEM, FT-IR, Raman, GC-MS or Rock-Eval.

Sobron P. Andersen D. T. Pollard W. H. ***POSTER LOCATION #19***
In-Situ Exploration of Habitable Environments and Biosignatures in Arctic Cold Springs and Antarctic Paleolakes **[#2064]**
We have characterized Artic cold springs and Antarctic paleolakes as high-fidelity analogs to putative inhabited/habitable environments on Mars, using in-situ techniques relevant to the ExoMars 2018 and Mars 2020 missions.

DasSarma S. DasSarma P. Laye V. Harvey J. Reid C. Shultz J. ***POSTER LOCATION #20***
Yarborough A. Lamb A. Koske-Phillips A. Herbst A.
Molina F. Grah O. Phillips T.
Survival of Halophilic Archaea in the Stratosphere as a Mars Analog: A Transcriptomic Approach **[#2044]**
On Earth, halophilic Archaea tolerate multiple extreme conditions similar to those on Mars. In order to study their survival, we launched live cultures into Earth's stratosphere on helium balloons. The effects on survival and transcriptomes were interrogated in the lab.

Monaghan E. P. Ehrenfreund P. Cockell C. S. Schwendner P. ***POSTER LOCATION #21***
Rettberg P. Belbo-Vranesevic K. Bohmeier M. Rabbow E. Westall F.
Gaboyer F. Walter N. Moissil-Eichinger M. Perras A. Gomez F.
Amils R. Garcia L. Marteinsson V. Vannier P.
MASE Mars Analogue Sites: Physicochemical Context Synthesis and Organic Inventory **[#2058]**
A discussion of the MASE (Mars Analogues for Space Exploration) project fieldwork, the process of organics extraction from field samples, their quantification, and an initial habitability assessment.

Stevens A. H. Amador E. S. Cable M. L. Cantrell T. Chaudry N. ***POSTER LOCATION #22***
Cullen T. Duca Z. Gentry D. M. Jacobsen M. B. McCraig H.
Murukesan G. Rennie V. Schwieterman E. W. Tan G. Yin C.
Stockton A. M. Cullen D. C. Geppert W.
Spatial Variability and Correlation of Multiple Biomarkers in Icelandic Mars Analogue Environments and the Implications for Life Detection Missions **[#2010]**
We describe fieldwork to Icelandic Mars analogues that investigated the spatial variation and correlation of three separate candidate biomarkers.

Gómez F. Garcia-Descalzo L. Cockell C. S. Schwendner P. Rettberg P. ***POSTER LOCATION #23***
Beblo-Vranesevic K. Bohmeier M. Rabbow E. Westall F. Gaboyer F.
Walter N. Moissl-Eichinger M. Perras A. Amils R. Malki M.
Ehrenfreund P. Monaghan E. Marteinsson V. Vannier P.
Life Detection System DTIVA for Monitoring Parameter in Fossilization Process **[#2033]**
Using Life Detection System LDS we followed the physicochemical parameter in a growth culture under fossilization/mineralization-induced process with the objectives of biomarkers detection. Biomarkers study is crucial for the search for life on Mars.

Bywaters K. F. McKay C. P. Davila A. F. Quinn R. C. ***POSTER LOCATION #24***
In Situ Life and Biosignature Detection at Mars Analog Sites Using the Oxford Nanopore Minion Sequencer **[#2014]**
A proof-of-concept study is being performed to conduct in situ field analysis of biopolymers contained in samples from Mars analog sites using the Oxford Nanopore MinION.

Beegle L. W. Bhartia R. DeFlores L. Abbey W. Carrier B. Asher S. ***POSTER LOCATION #25***
Burton A. Conrad P. Clegg S. Edgett K. S. Ehlmann B. Fries M. Hug W.
Reid R. Kah L. Nealson K. Minitti M. Popp J. Langenhorst F. Orphan V.
Sorbon P. Steele A. Tarcea N. Wanger G. Wiens R. Williford K. Yingst R. A.
SHERLOC: An Investigation for Mars 2020 **[#2022]**
The Scanning Habitable Environments with Raman and Luminescence for Organics and Chemicals (SHERLOC) investigation consists of a Deep UV (DUV) native fluorescence and resonance Raman spectrometer with MAHLI like imaging capabilities.

Carrier B. L. Beegle L. W. Bhartia R. Abbey W. J. ***POSTER LOCATION #26***
Measurement of UV Fluorescence and Raman Signatures of Subsurface Organics in Mars Relevant Minerals to Constrain Detection Depth for the SHERLOC Mars 2020 Instrument **[#2043]**
Using UV fluorescence and Raman spectroscopy to detect subsurface organics in various minerals to determine detection depths for the SHERLOC Mars 2020 instrument.

Duca Z. Tan G. Cantrell T. Van Enige M. Dorn M. Cato M. Foreman S. Putman P. Kim J. Mathies R. Stockton A. ***POSTER LOCATION #27***
Development of an Extraterrestrial Organic Analyzer (EOA) for Highly Sensitive Organic Detection on a Kinetic Penetrator **[#2067]**
Development of an Extraterrestrial Organic Analyzer (EOA) for Highly Sensitive Organic Detection on a Kinetic Penetrator.

Riedo A. Tulej M. Neuland M. B. Wurz P. ***POSTER LOCATION #28***
Miniature LIMS System for In Situ Detection of Biosignatures **[#2030]**
The current measurement capabilities of our miniature Laser Ablation Ionization Mass Spectrometer for sensitive and quantitative in situ chemical analyses (element, isotope and molecular) of solids on planetary surfaces will be presented.