

Thursday, March 10, 2011
EXO BIOLOGY II: BIOMARKERS, BUILDING BLOCKS, AND BACTERIA
10:30 a.m. Waterway Ballroom 1

Chairs: George Cooper
John Parnell

- 10:30 a.m. Cooper G. * Reed C. Nguyen D. Carter M. Wang Y.
[*Citric Acid, Pyruvic Acid, Homologs, and Related Compounds in Carbonaceous Meteorites*](#) [#1279]
We report three new classes of meteoritic organic compounds: keto acids, hydroxy tricarboxylic acids, and tricarboxylic acids. Some of the compounds, such as pyruvic acid and citric acid, are at the core of intermediary metabolism.
- 10:45 a.m. Zellner N. E. B. * McCaffrey V. P. Bennett E. Gudipati M.
[*Chemistry and Astrochemistry of Simple Sugars: Implications for Asteroid, Meteorite, or Comet Delivery*](#) [#1586]
We are presenting results of our studies of simple two- and three-carbon molecules and how their chemistry may be affected by impact events.
- 11:00 a.m. Burton A. S. * Glavin D. P. Callahan M. P. Dworkin J. P. Jenniskens P. Shaddad M. H.
[*Extraterrestrial Amino Acids in Ureilites Including Almahata Sitta*](#) [#2815]
Extraterrestrial amino acids were detected in meteorites.
- 11:15 a.m. Dyar M. D. * Sklute E. C. Knutson J. K. Glotch T. D. Che C. Zelin S. L. Lin T. J. Holden J. F.
[*Spectroscopy of Mineral Reaction Products from Bioreduction by Hyperthermophiles: Potential for Remote-Sensing Biomarkers*](#) [#1375]
We report here results of Mössbauer and infrared spectroscopies and X-ray diffraction (XRD) studies of oxide reaction products of hyperthermophilic archaea *Pyrobaculum islandicum*, *Hyperthermus butylicus*, and *Hyperthermus* strain Ro04.
- 11:30 a.m. Marnocha C. L. * Dixon J. C.
[*Bacterial Diversity of Sulfate Rock Coatings in Kärkevagge, Swedish Lapland: A Potential Mars Analog*](#) [#1598]
We have analyzed the bacterial diversity of sulfate rock coatings from a possible martian analog in order to examine the microbe-mineral interactions of rock coatings and their potential as biosignatures.
- 11:45 a.m. Parnell J. * Boyce A. J. Osinski G. R. Izawa M. Lee P.
[*Searching for Life in the Sulfur Isotopic Analysis of Surface Sulfates on Mars*](#) [#1023]
Sulfur isotopic measurements on Mars are likely to be limited to sulfates due to oxidation of sulfides. We show that evidence for life can be determined from sulfate data alone, using an analogue for a robotic traverse.