Thursday, March 4, 2010
POSTER SESSION II: ENVIRONMENTS FOR LIFE AND ITS PRESERVATION, FOSSILS, AND LOOK-ALIKES
7:00 p.m. Town Center Exhibit Area

Dohm J. M. Miyamoto H. Ori G. G. Komatsu G. Pondrelli M. Kim K. J. Anderson R. C. Fairén A. G. Hare T. M. Williams P. Ruiz J. Davila A. F. McGuire P. C. Mahaney W. C. Schulze-Makuch D. Fink W. Boston P. Di Achille G. Glamoclija M. Allen C. Oehler D. Baker V. R. Maruyama S. Ip F. Wheelock S. J.
Linkage Among Geology, Hydrology, Climate, and Life on Earth Point to Possible Life-containing Environments on Mars **[#2360]**
On Earth, biology, hydrology, and geology are often interwoven such that certain types of life are often linked with specific geologic, hydrologic, and climatic conditions. Through Earth, we discuss potential life-containing environments on Mars.

Marnocha C. L. Chevrier V. F. Ivey D. M.
Sulfate-reducing Bacteria as a Model for Life in the Martian Subsurface **[#1536]**
We suggest sulfate-reducing bacteria as a model for life in the martian subsurface. This study seeks to determine the survival of sulfate-reducing bacteria in Mars-like conditions and to identify potential biosignatures produced in these conditions.

Glamoclija M. Fogel M. L. Kish A. Steele A.
Microbial Signatures from the Dune Field at White Sands National Monument, New Mexico **[#2527]**
White Sands National Monument (New Mexico) is studied as a terrestrial analog to gypsum rich dunes from Mars. Microbial signatures from the dune field are investigated to assess a variety and distribution of available habitats.

Ziegler K. Coleman M. L. Mielke R. E. Young E. D.
Sources and Contributions of Oxygen During Microbial Pyrite Oxidation: The Triple Oxygen Isotopes of Sulfate as a Biosignature **[#2245]**
Microbial pyrite oxidation experiments in spiked water and the triple oxygen isotopes of resulting sulfate suggest that $\Delta^{17}O_{SO4}$ signatures can trace microbial vs. inorganic sulfate formation, and, therefore, have the potential as biosignature.

Blanco A. Zavala F. J. Hernández-Ávila J. Maurrasse F. Duque-Botero F. Ramírez-Cardona M.
Microbial Preservation in Sedimentary Pyrite from Cretaceous Organic-Matter-rich Carbonate Mudstone: A Preliminary Report **[#2487]**
The main purpose of this work is to provide a general description of these fossil microorganisms in order to increase its documentation in the stratigraphic record, for further comparisons with both terrestrial and/or extraterrestrial biomorphic structures.

Krestina N. Petaev M. I. Jacobsen S.
Search for Microfossils in Carbonaceous Chondrites **[#1949]**
We present the preliminary results of FESEM and NanoSIMS studies of extraterrestrial "fossils" aimed at the development of a technique for distinguishing biotic from abiotic objects.

Miura Yas.
Characteristics of Fine Bacteria-like Texture Formed by Iron Meteorite by Atmosphere Reaction **[#2489]**
Spherule-chained texture of nano-grains with Fe, Ni, C and Cl is found in the Kuga iron meteorite, which are greatly different than the martian meteorite. Fine texture of the Kuga meteorite is example of fossil-like texture.

Schieber J.
Progressive Silicification of Iron Microbes — Preliminary Observations from a Two Year Experiment **[#1106]**
Iron microbe mats were stored at 50°C in a silica-rich solution for two years and intermittently examined by SEM. The results suggest a high potential for morphological preservation of iron microbes in silica precipitating environments.

Delano J. W. Tailby N. D. Aldersley M. F. Watson E. B. Joshi P. C. Ferris J. P.
Could Montmorrillonites Have Played a Role in the Formation of Prebiotic Molecules on the Early Earth? **[#2425]**
Montmorillonite may have served as a mineral catalyst for building complex, prebiotic molecules on the early Earth. Only a subset of all montmorillonites that have been investigated are observed to be catalytic.

Glavin D. P. Aubrey A. D. Callahan M. P. Dworkin J. P. Elsila J. E. Parker E. T. Bada J. L.
Extraterrestrial Amino Acids in the Almahata Sitta Meteorite **[#1042]**
An unusual distribution of two- to six-carbon aliphatic amino acids was identified in the Almahata Sitta meteorite. The amino acid enantiomeric ratios were racemic, suggesting that these compounds are indigenous to the meteorite.