

Brown Bag Seminar

Microbial Fossils from the Early Earth and Their Implications for Recognizing Life on Mars

Dorothy Oehler, Ph.D.

USRA DSLS Consultant

Astrobiology Laboratory, NASA Johnson Space Center

An important element in the search for life on Mars involves efforts to detect evidence of past life – life that may have arisen more than 2.5 billion years ago, when the Martian surface was wetter and warmer than it is today. Since surface conditions on early Mars are thought to have been somewhat similar to those on early Earth, it is reasonable to use terrestrial, Precambrian-aged microfossils as analogues for remains of potential ancient life on Mars.

To illustrate such efforts, Dr. Oehler will review knowledge of preserved remains of Precambrian life on Earth. Hundreds of deposits are now known that contain Precambrian microfossils; they tell us of an early Earth inhabited exclusively by microscopic organisms, mainly algae and bacteria. While uncertainty exists regarding biogenicity of some of the oldest structures, many Proterozoic assemblages are well preserved and indisputably biogenic. She will use clear-cut examples of both organically preserved and mineralized microbes to illustrate typical ancient biosignatures. These biosignatures can be used to formulate criteria for assessment of biogenicity, thus providing insight into evolutionary significance of ancient organic materials, both on Earth and on Mars.

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Noon - 1:00 p.m.

Hess Room

USRA's Division of Space Life Sciences

Center for Advanced Space Studies

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