Tuesday, March 14, 2006

ASTROBIOLOGY: MARS, EARTH ANALOGS, AND THE SEARCH FOR LIFE
3:30 p.m. Crystal Ballroom B

Chairs: J. L. Vago
        J. Parnell

The Search for Subsurface Life on Mars: Results from the MARTE Analog Drill Experiment in
Rio Tinto, Spain [#1537]
The Mars Analog Research and Technology (MARTE) experiment has developed an automated drilling system
on a simulated Mars lander platform including drilling, sample handling, core analysis and down-hole
instruments relevant to searching for life in the Martian subsurface.

3:45 p.m. Vago J. L. * Gardini B. Baglioni P. Kminek G. Gianfiglio G. ExoMars Project Team
ExoMars: ESA’s Mission to Search for Signs of Life on the Red Planet [#1871]
ExoMars is a newly approved ESA mission scheduled to be launched in 2011. Its goal will be to land a rover on
Mars to search for signs of past and present life, on the shallow subsurface and in exposed bedrock formations.

4:00 p.m. Parnell J. * Bowden S. A. Cockell C. S. Osinski G. R. Lee P.
Surface Mineral Crusts: A Priority Target in Search for Life on Mars [#1049]
Mineral crusts are strong candidates in the search for evidence of life during planetary exploration, and
should be an important target for examination in impact craters. Crusts in the Haughton crater readily yield
a biological signature.

4:15 p.m. Weinstein S. Pane D. Ernst L. A. Minkley E. Lanni F. Wettergreen D. S. Wagner M. Heys S.
Teza J. Waggoner A. S. *
Autonomous Daylight Detection of Life by Fluorescence Imaging [#2462]
An integrated fluorescence imaging system was used to detect biomarkers from extant microbial colonies and
biofilms during autonomous rover exploration. Chlorophyll and other biomarkers were visualized
autonomously.

4:30 p.m. Smith T. * Thompson D. R. Weinstein S. Wettergreen D.
Autonomous Rover Detection and Response Applied to the Search for Life Via Chlorophyll Fluorescence
in the Atacama Desert [#2072]
We describe autonomous rover detection and response capabilities applied to the search for Atacama Desert
life. The rover could detect chlorophyll fluorescence and respond with more in-depth study, including
application of fluorescent dyes.

4:45 p.m. Skelley A. M. * Aubrey A. D. Willis P. Amashkukeli X. Ponce A. Ehrenfreund P. Grunthaner F. J.
Bada J. L. Mathies R. A.
Detection of Trace Biomarkers in the Atacama Desert with a Novel In Situ Organic Compound
Analysis System [#2270]
Detection of trace biomarkers in the Atacama Desert with a novel in situ organic compound analysis system.