Tuesday, March 14, 2006
POSTER SESSION I: ROVERS AND ROVER INSTRUMENTS
7:00 p.m. Fitness Center

Curtis S. A. Clark P. E. Rilee M. L. Cheung C. Y. Wesenberg R. Dorband J. Lunsford A.
TET Rovers: An Approach for Exploring Rugged Terrains with Addressable Reconfigurable Technology **[#1129]**
We are in the process of developing extremely mobile TET Rovers with the reconfigurable architecture essential in the crossing or exploration of rugged terrains of great potential interest, including volcanic terrains which could harbor life on Mars.

Kanik I. Beegle L. W. Kounaves S. Cooks R. G. Hecht M. Johnson P. V.
Wet Chemistry Experiment at Mars (WETCHEM) **[#2154]**
We describe a novel field experiment utilizing wet chemistry combined with mass spectroscopy called "Wet Chemistry Experiment at Mars (WetChem)."

Lognonne Ph. Spohn T. Mimoun D. Ulamec S. Biele J.
GEP-ExoMars: A Geophysics and Environment Observatory on Mars **[#1982]**
The Geophysics Package (GEP) onboard the ESA's ExoMars 2011 mission intends to initiate the setup of a permanent network of geophysics stations on Mars, for several years of operation. We review scientific objectives and main characteristics of the GEP.

Herman J. Zacny K. Morris R. Davis K.
Development of Crushing and Sieving Technologies for Use in Sample Preparation in Mars Exploration **[#2332]**
This paper investigates potential crushing and sieving technologies for Mars exploration. The use of these technologies can increase the amount of data that can be extracted from surface and subsurface samples.

Glass B. Cannon H. Hanagud S. Lee P. Paulsen G.
Drilling Automation Tests at a Lunar/Mars Analog Site **[#2300]**
The Drilling Automation for Mars Exploration (DAME) project is developing drilling automation and robotics for use in 2011–16 lunar/martian missions. This has been tested recently, drilling in permafrost at a lunar/martian analog site (Haughton Crater, Devon Island, Canada).

Paulsen G. L. Mumm E. Kennedy T. Chu P. Davis K. Frader-Thompson S. Petrich K. Glass B.
Development of Autonomous Drills for Planetary Exploration **[#2358]**
Honeybee Robotics has developed science driven drill systems to allow scientific instruments direct access to the subsurface. Embedded drill segment electronics accommodate sensors and actuators for high rate data transmission to the surface.

Stoker C. R. Lemke L. G. Gonzales A. A.
Applications of Burrowing Moles for Planetary and Lunar Subsurface Access **[#1542]**
The Mars Underground Mole (MUM) can efficiently provide methods for planetary and lunar subsurface access in regolith using compact, light-weight, low-power devices while addressing objectives such as mineralogy assaying, water content determination, definition of engineering properties, and others.

Chen A. Meyer J. Carlos C. I. Linell B. Buhler C. R. Clements S. Mazumder M. K.
Numerical and Analytical Model of an Electrodynamic Dust Shield for Solar Panels on Mars **[#1873]**
Analytical and numerical calculations are presented for a multi-phase Voltage and Electric Field over the electrodynamic dust shield parallel electrodes under Mars environment.

Johnson P. V. Tang K. Beegle L. W. Smith R. D.
Laser Ablation-Electrodynamic Ion Funnel for In Situ Mass Spectrometry on Mars **[#1429]**
The laser ablation-ion funnel (LAIF) is being developed to ionize rock samples in the ambient Martian environment. The LAIF will then efficiently capture, transport and inject the product ions into a mass spectrometer for *in situ* analysis.

Brinckerhoff W. B. Corrigan C. M. Cornish T. J. Ganesan A. L. Ecelberger S. A.
Progress in Laser Desorption Mass Spectrometry for In Situ Analysis **[#2015]**
We present details of our ongoing development of laser desorption time-of-flight mass spectrometers for *in situ* analysis on planetary missions.

Castano R. Estlin T. Gaines D. Castano A. Bornstein B. Chouinard C. Anderson R. C. Judd M.
Automated Target Selection for Opportunistic Rover Science **[#2434]**
A number of rover remote sensing instruments require selection of specific focused targets for sampling. In this work we describe a system that can identify opportunistic targets and collect data on these targets.

Bergstralh J. T. Zawodny J. M. Tolson R. H.
Landing Massive Payloads, Accurately, on Mars: A 25-Year Roadmap **[#1040]**
Progress in exploring Mars's surface demands precise delivery of massive payloads to locations anywhere on the planet. This requires new entry/descent/landing (EDL) technologies. Characterization of Mars' atmospheric dynamics are needed to support development of these technologies.