Friday, March 19, 2004
THE FUTURE OF MARS SURFACE EXPLORATION
1:30 p.m. Salon B

Chairs: N. T. Bridges
V. C. Gulick

1:30 p.m. Bridges N. T. * Razdan A. Greeley R. Laity J. E.
High Resolution Laser Scanning Techniques for Rock Abrasion and Texture Analyses on Mars and Earth **[#1897]**
We are incorporating a laser scanning and shape analysis technique that can determine changes caused by abrasion at the sub-mm scale. We discuss the basic technique, initial results, and upcoming plans.

1:45 p.m. Blake D. F. * Sarrazin P. Bish D. L. Feldman S. Chipera S. J. Vaniman D. T. Collins S.
Definitive Mineralogical Analysis of Mars Analog Rocks Using the CheMin XRD/XRF Instrument **[#1373]**
Mineralogical data from CheMin, an XRD/XRF instrument intended for Mars, are quantifiable via Rietveld refinement. Instrument design improvements have yielded simplified sample preparation and relaxed temperature constraints for CheMin operation.

2:00 p.m. Bish D. L. * Sarrazin P. Chipera S. J. Vaniman D. T. Blake D.
Quantitative Mineralogical Analysis of Mars Analogues Using CHEMIN Data and Rietveld Refinement **[#1404]**
The third generation CHEMIN XRD/XRF instrument produces well-resolved diffraction data that can be used to great advantage with Rietveld refinement methods as a critical component of mineralogical analysis in planetary surface exploration.

2:15 p.m. Marshall J. * Martin J. P. Mason L. W. Williamson D. L.
In Situ Analytical Strategy for Mars Combining X-Ray and Optical Techniques **[#1224]**
The "MICA" instrument combines XRD, XRF, and optical analytical methods for in situ analysis of Martian rocks. Optical analysis is critical in rock identification since neither XRD mineralogy nor XRF chemistry can be guaranteed to define lithology.

2:30 p.m. Blair M. W. * Kalchgruber R. Yukihara E. G. Bulur E. Kim S. S. McKeever S. W. S.
In-Situ Dating on Mars: The Potential of OSL Dating **[#1046]**
In-situ absolute dating of young features on Mars will be necessary in future exploration of the planet. This presentation outlines the possibility of using optically stimulated luminescence dating techniques to accomplish this goal.

2:45 p.m. Litvak M. L. * Mitrofanov I. G. Kozyrev A. S. Sanin A. B. Tretyakov V. I. Ryzhkov V. I. Shvetsov V. N.
Experiment of Dynamic Albedo of Neutrons (DAN): Searching for Water-rich Spots from the Rover on the Surface of Mars **[#1651]**
The concept of the experiment of Dynamic Albedo of Neutrons (DAN) on the Mars rover is presented. The main goal of experiment is search for subsurface water ice using active neutron measurements.

3:00 p.m. Gulick V. C. * Hart S. D. Shi X. Siegel V. L.
Developing an Automated Science Analysis System for Mars Surface Exploration for MSL and Beyond **[#2121]**
This abstract summarizes our progress on developing an automated science analysis system for future Mars surface missions.