Tuesday, March 24, 2009
POSTER SESSION I: SEEING IS BELIEVING:
UV, VIS, IR, X- AND GAMMA-RAY CAMERA AND SPECTROMETER INSTRUMENTS
6:30 p.m. Town Center Exhibit Area

Nuñez J. I. Farmer J. D. Sellar R. G. Gardner P. B.
The Multispectral Microscopic Imager (MMI) with Improved Spectral Range and Resolution **[#1830]**
The MMI advances the capabilities of current and planned microimagers, such as Phoenix' Robotic Arm Camera and Mars Science Laboratory's Mars Hand Lens Imager, by extending the spectral range into the infrared and increasing the number of spectral bands.

Michael G. Neukum G.
Image Enhancement of the Super Resolution Channel (SRC) of the Mars Express HRSC Experiment **[#1851]**
The poster describes and shows the application of the Richardson-Lucy algorithm to recover degraded images from the super resolution channel (SRC) of Mars Express HRSC.

Weinberg J. D. Dissly R. Nicks D. Miller K. L.
Applications and Field Testing of a Flash LIDAR System for Future Planetary Missions **[#2078]**
A flash LIDAR instrument is being developed by Ball Aerospace. This instrument enables multiple applications for planetary missions such as topographic mapping, ranging, surface mobility, autonomous rendezvous and docking, and descent and landing.

Istenes Z. Hargitai H. Tepliczky I.
The Information System of the HUNVEYOR-10 on the MDRS **[#2435]**
We created a portable and autonomous meteorological station, called HUME/HUNVEYOR-10, for the 71st. mission of the Mars Desert Research Station (MDRS), to measure continuously meteorological data, to take videos and to transmit them.

Bramall N. E. Stoker C. R. Price P. B. Allamandola L. J.
Detecting Organics In Situ Using Fluorescence **[#2470]**
Fluorescence spectroscopy is a powerful tool for the detection of a wide class of organics. We will discuss instruments we have developed and are developing.

Sharma S. K. Misra A. K. Acosta T. Bates D. Lucey P. G.
Compact Portable Remote Raman System for Planetary Exploration and Rapid Detection of Water and Hydrous Minerals **[#2398]**
We present a compact remote Raman system utilizing only a 85 mm Nikon camera lens for measuring good quality Raman spectra of various minerals, water, water-ice, CO_2-ice, organic and inorganic chemicals to a distance of 9-m with 1-s integration.

Vance S.
Mars Analog Tunable Laser Spectroscopy at a Site of Active Serpentinization **[#2005]**
We discuss measurements of isotope compositionsfrom spring samples collected at The Cedars, a site of active serpentinization and possibly an analog for the Nili Fossae, using tunable laser spectroscopy withinstrumentation similar to TLS on MSL.

Helbert J. Maturilli A. D'Amore M.
Mercury in a Box — In the Planetary Emissivity Laboratory (PEL) at DLR Berlin **[#1560]**
Analyzing the surface composition of Mercury is a challenging task. In support of MESSENGER and BepiColombo the upgraded Planetary Emissivity Laboratory can obtain emissivity measurement for fine grain sizes and at temperatures typical for Mercury's low-latitude dayside.

Bowles N. E. Calcutt S. Reininger F. Green S. F. Mortimer H.
The Asteroid Thermal Mapping Spectrometer: An Imaging Mid-IR Spectrometer for the Marco Polo NEO Sample Return Cosmic Vision Candidate Mission **[#1591]**
We describe the Asteroid Thermal Mapping Spectrometer (ATMS) instrument, a compact imaging mid-IR Fourier transform spectrometer currently being developed at the University of Oxford for NEO remote sensing applications.

Sobron P. Freeman J. J. Wang A.
Field Test of the Water-Wheel IR (WIR) Spectrometer on Evaporative Salt Deposits at Tibetan Plateau **[#2372]**
A new NIR reflectance spectrometer (WIR) was tested at the field sites on the Tibetan Plateau, a potential analog for the precipitation sequence and subsequent dehydration/degeneration of martian salts. Hydrated sulfates were identified.

Kozyrev A. S. Litvak M. L. Malakhov A. A. Mokrousov M. I. Mitrofanov I. G. Rogozhin A. A. Sanin A. B. Schulz R. Schvetsov V. N. Tretyakov V. I. Vostrukhin A. V.
Gamma-Rays and Neutron Spectrometers NS HEND — Tool for Study of Phobos Surface Composition **[#1865]**
NS HEND instrument, as the part of "Phobos-Grunt" mission, will be able to provide observational data for composition of Phobos regolith and content of natural radioactive elements K, U and Th, and also for content of hydrogen or water ice in the Phobos subsurface.

Elam W. T. Kelliher W. C. Shuler R. L. McLennan S. M. Carlberg I. A.
Improvements in X-ray Spectrometry for Planetary Surface Exploration **[#1820]**
There have been dramatic advances in X-ray spectrometry (XRS) hardware in recent years. Together they permit construction of XRS units with very low mass, power, and size yet have performance comparable to that of terrestrial laboratory units.

Grunthaner P. J. Bryson C. Gill D. Grunthaner F. Kelly M. DeFlores L. White V. Quinn R.
Ambient-Pressure X-Ray Photoemission Spectrometer for Surface Analysis of Planetary Surfaces **[#2294]**
Ambient-pressure X-ray photoemission offers the possibility of probing the surface chemistry of martian soils, rocks, and ices, including the atmospheric species interacting with these surfaces, to study geochemical surface processes.

Chemtob S. M. Yen A. Blake D. F.
The X-Ray Fluorescence Capabilities of CheMin IV: Data Reduction and Calibration **[#2171]**
CheMin, the primary instrument on the MSL rover for determining mineralogy, also features XRF capabilities. Here we present data reduction and calibration methods for determining composition of geologically relevant materials from CheMin XRF spectra.

Flemming R. L. McCausland P. J. A. Gellert R.
In Situ X-Ray Diffraction on the Moon, Mars and Asteroids **[#1888]**
In situ XRD can directly determine mineralogy of samples on planetary surfaces via crystal structural information, to compliment chemical data (e.g. APXS), with no need for sample extraction/pulverization. Lab-based e.g. are given using meteorites.

Sarrazin P. Dera P. Downs R. T. Blake D. F. Bish D. Gailhanou M.
Hybrid X-ray Diffraction for Planetary Mineralogical Analysis of Unprepared Samples **[#1496]**
A new type of X-ray diffraction (XRD) planetary instrument is being developed based on an innovative hybrid concept that allows performing both powder and single-crystal XRD measurements, making it possible to analyze minerals with limited or no sample preparation.