Tuesday, March 14, 2006
POSTER SESSION I: MARS EXPRESS: PROBING THE DEPTHS
7:00 p.m. Fitness Center

Thompson T. W. Horttor R. L. Acton C. H. Jr. Zamani P. Johnson W. T. K. Plaut J. J. Holmes D. P. No S. Asmar S. Goltz G.
The Mars Express/NASA Project at JPL **[#1083]**
The Mars Express/NASA Project at JPL supports much of the U.S. involvement in ESA's Mars Express mission. Mars Express has just completed its prime mission in late 2005 and has embarked on its first extended mission cycle.

Pischel R. Zegers T. Jansen F. Chicarro A. Martin P. Walker H. Denis M. Moorhouse A. Rabenau E. Peschke S. Schulster J. McCarthy C.
One Martian Year of Mars Express Science Operations Planning **[#1734]**
Europe's Mars Express mission has achieved the milestone of 1 martian year in orbit. This paper describes the science operations for Mars Express throughout the nominal mission, including special operations such as the MEX-MER link demo tests.

Zender J. Heather D. Diaz del Rio J. Ortiz I. Dowson J. Arviset C. Zegers T. E.
Mars Express Scientific Data Distribution Via ESA's Planetary Science Archive **[#1631]**
This poster explains the use of ESA's Planetary Science Archive for Mars Express data.

Safaeinili A. Kofman W. Herique A. Gim Y. Hagfors T. Kirchner D. Gurnett D. Nilesen E. Plaut J. J. Picardi G.
Estimation of Mars Ionosphere Total Electron Content Using MARSIS Radar Surface Echo **[#1736]**
We use MARSIS subsurface data to derive Mars ionosphere's total electron content (TEC). Our estimation technique provides a high resolution behavior of TEC versus solar zenith angle and shows potential dependence of the TEC on local Mars magnetic field.

Carley R. A. Heggy E.
Characterization of the Density Dependent Dielectric Properties of Mars-like Soils: Implications for Mars Radar Studies **[#1261]**
We present laboratory measurements of the complex dielectric permittivity of a variety of synthesized and Mars analog soils with varying iron oxide content, over the frequency range 1 MHz–1 GHz and density range 0.8–2.4 gcm^{-3}.

Nunes D. C. Phillips R. J. Picardi G. Plaut J. J. Safaeinili A. Seu R. Egan A.
Resolving Stratigraphy of the Polar Layered Deposits with MARSIS and SHARAD **[#1450]**
We contrast radar sounding profiles of the Martian polar caps obtained by MARSIS with wave propagation models in order to understand how both MARSIS and SHARAD responses define our ability to map the internal stratigraphy of the Martian polar caps.

Murray J. B. Balme M. R. Muller J.-P. Kim J-R. Morley J. Neukum G. HRSC Co-Investigator Team
Preliminary Observations on New Images of the Elysium Frozen Sea Deposits from HRSC Mars Express **[#2293]**
A series of new HRSC Mars Express images have provided new information on the extent, age, development and formation of the equatorial frozen sea deposits in Elysium.

Murray J. B. Iliffe J. C. Muller J.-P. A. L. Neukum G. Werner S. Balme M.
New Evidence on the Origin of Phobos' Parallel Grooves from HRSC Mars Express **[#2195]**
New HRSC images of Phobos indicate that the groove pattern is independent of Stickney crater, and favour an origin for the grooves quite unconnected with it: that they are chains of secondary impact craters from primary impacts on Mars.

Kreslavsky M. A. Bondarenko N. V. Pinet P. C. Raitala J. Foing B. H. Neukum G.
Mars Express HRSC Co-Investigator Team
Mapping of Photometric Anomaly of Martian Surface with HRSC Data **[#2211]**
We propose a practical method for mapping photometric anomaly of Mars surface from five panchromatic HRSC channels. The method tolerates atmospheric effect and calibration errors. We show examples of interpretation in terms of the surface structure.

Balme M. Mangold N. Baratoux D. Costard F. Gosselin M. Masson P. Pinet P.
Neukum G. HRSC Co-I Team
Orientation and Distribution of Recent Gullies in the Southern Hemisphere of Mars: Observations from HRSC/MEX and MOC/MGS Data **[#1610]**
MOC and HRSC data reveal martian gullies form most commonly on pole facing slopes in the mid latitudes. Impact crater walls are the most common setting for gullies but many are found on isolated knobs and hills. Lengths up to ~7 km have been observed.

Kirk R. L. Howington-Kraus E. Galuszka D. Redding B. Hare T. M. Heipke C. Oberst J.
Neukum G. HRSC Co-Investigator Team
Mapping Mars with HRSC, ISIS, and SOCET SET **[#2050]**
HRSC images of Mars can be processed in ISIS, and used to make digital topographic models (DTMs) in commercial software. The HRSC team will evaluate and compare our DTMs and those of other team members who use a variety of software and techniques.

Quantin C. Gendrin A. Mangold N. Bibring J. -P. Hauber E. Allemand P. OMEGA Team
Stratigraphy and Elevation Distribution of Sulfate Deposits in Valles Marineris **[#2046]**
Sulfates have been detected by OMEGA in Valles Marineris in association with layered deposits. We studied the repartition and the elevation distribution of sulfate signatures for each canyon of Valles Marineris.

Loizeau D. Mangold N. Poulet F. Bibring J.-P. Gendrin A. Gomez C. Langevin Y. Gondet B. Ansan V.
Masson P. Neukum G. OMEGA Team HRSC Team
Phyllosilicates Rich Terrains in Mawrth Vallis Region, Mars, as Seen by OMEGA and HRSC/Mars Epress **[#1658]**
Phyllosilicates have been detected by OMEGA on bright outcrops of a massive layered unit in the Mawrth Vallis region. Theses minerals are due to a specific alteration of rocks during the Noachian, indicating a different environment than today.

Zhu M. Xie H. Guan G. Smith R. K.
Mineral and Lithologic Mapping of Martian Low Albedo Regions Using OMEGA Data **[#2173]**
This paper used the OMEGA data to produce a geologic endmember map, and to estimate possible minerals and lithology for each endmember for three selected low albedo areas: Meridiani Planum, Ophir-Candor Chasma, and Syrtis Major.

Le Mouélic S. Sotin C. Combe J.-P. Ledeit L. Gendrin A. Mustard J. Bibring J-P Langevin Y.
Gondet B. Pinet P.
Composition of the Dust on Mars Derived from OMEGA Hyperspectral Images **[#1409]**
The spectral signatures of bright units of Mars are investigated with OMEGA/Mars Express in order to study the composition of the dust. Spectra are consistent with ferric oxides, and possibly a very minor orthopyroxene component.

Gendrin A. Bibring J.-P. Mustard J. Kanner L. Mangold N. Gondet B. Langevin Y. Poulet F. Baratoux D.
Sotin C. Le Mouelic S.
Strong Pyroxene Absorption Bands on Mars Identified by OMEGA: Geological Counterpart **[#1858]**
We describe the global high and low calcium pyroxene distribution on Mars as seen by OMEGA and their geological counterpart.

Costard F. Poulet F. Bibring J.-P. Baratoux D. Mangold N. Meresse S. Pinet P. OMEGA Team
Detection of Hydrated Minerals on Fluidized Ejecta Lobes from Omega Observations: Implications in the History of Mars **[#1288]**
The Omega data acquired during the first two years of the Mars Express mission already reveal a few examples of lobate ejecta with hydrated minerals. Here we discuss their geological context and their implications for Martian climate and subsurface volatiles.

Combe J.-Ph. Le Mouélic S. Sotin C. Gendrin A. Le Deit L. Mustard J. F. Bibring J.-P. Gondet B. Langevin Y. OMEGA Science Team
Analysis of OMEGA/Mars Express Hyperspectral Data Using a Linear Unmixing Model: Methods and Preliminary Results **[#2010]**
The mineralogy of the Martian surface is analysed with the OMEGA hyperspectral data set. An iterative linear spectral unmixing algorithm provides maps that are consistent with previous studies. Further investigations will be performed by this way.

Brown A. J.
Spectral Absorption Band Mapping at Cerberus Fossae Using Mars Express OMEGA Data **[#1477]**
A spectral absorption band mapping algorithm is applied to a set of data produced by the hyperspectral Mars orbiting OMEGA instrument. Weak absorption bands are detected in the Cerberus Fossae region that may be indicative of hydrothermal alteration minerals in this region.

Gondet B. Bibring J.-P. Langevin Y. Poulet F.
Composition of White Rock Formation Within Pollack Crater as Inferred from the OMEGA/MEX Data **[#1592]**
The surface composition of White Rock (Pollack crater, Arabia, Mars) will be presented from OMEGA/MEX observations.

Mangold N. Poulet F. Mustard J. F. Bibring J.-P. Langevin Y. Gondet B. Ansan V. Masson P. Hoffman H. Neukum G. HRSC Co-I Team OMEGA Co-I Team
Correlation Between Phyllosilicates, Olivine and Landforms in Nili Fossae Region, Mars **[#1791]**
Clay minerals are found in Nili Fossae region in connection with Noachian bedrock exposures, impact crater ejectas and, locally, olivine rich deposits. This suggests the alteration of the primitive crust by liquid water including the olivine rich rocks.

Jouglet D. Poulet F. Mustard J. F. Milliken R. E. Bibring J.-P. Langevin Y. Gondet B.
Observation of 3 µm Hydration Feature on Mars from OMEGA-MEx Data **[#1741]**
OMEGA data has been used to study Mars surface hydration through the 3 µm absorption band. The results will be presented and discussed.

Vincendon M. Langevin Y. Poulet F. Bibring J.-P. Gondet B. Schmitt B. Douté S.
Surface Water Ice and Aerosols Evolution of 77°N, 90°E Mars Crater During Early Summer by OMEGA/MEx **[#1769]**
OMEGA spectral data have been used to study aerosols and surface ice properties changes of a water ice rich northern crater during early 2004 summer.

Schmidt F. Douté S. Schmitt B. Bibring J.-P. Langevin Y.
Automatic Detection of H_2O and CO_2 Ices in OMEGA/MEX Images for the Monitoring of the South Polar Cap Recession **[#1979]**
The martian seasonal polar ice deposit is a major annual climatic signal observed by OMEGA/MEX. We will use an algorithm, wavanglet, for the automatic detection of the spectral signatures of H_2O and CO_2 ices during martian spring and summer of 2005.

Guan H. Xie H. Zhu M.
Development of an Alternative Martian Atmospheric Correction Algorithm for OMEGA/Mars Express Imagery **[#1934]**
A new martian atmospheric correction algorithm for hyperspectral imaginary is presented. This algorithm directly removes CO_2 absorptions based on the target image. It does not require reference spectra at the Olympus Mons.