

Tuesday, March 15, 2005
POSTER SESSION I: OMEGA@MARS:
NEW INSIGHTS INTO SURFACE COMPOSITION
7:00 p.m. Fitness Center

Bonello G. Berthet P. d'Hendecourt L.

Identification of Magnesium Sulfate Hydration State Derived from NIR Reflectance Spectroscopy [#1996]

The present work is a first step in making a comprehensive analysis of NIR reflectance spectral features related to hydration state (water content) of magnesium sulfates which is essential for remote sensing analysis of such materials at the surface of Mars.

Cloutis E. A.

Diagnostic Absorption Features in Sulfate Reflectance Spectra Across OMEGA Wavelength Range [#1323]

Sulfates exhibit a number of diagnostic spectral properties across the 0.3 to 5.2 μm wavelength range. These features allow sulfate minerals to be detected and individual species uniquely identified even in the presence of accessory phases.

Milliken R. E. Mustard J. F. Poulet F. Bibring J.-P. Langevin Y. Gondet B.

Pelkey S. Mars Express OMEGA Team

Mapping the Water Content of the Martian Surface Using Mars Express OMEGA Data [#1370]

A laboratory-based model is applied to the 3 μm water band present in MEX-OMEGA data to estimate absolute water content of the surface.

Bishop J. L. Schiffman P. Lane M. D. Dyar M. D.

Solfataric Alteration in Hawaii as a Mechanism for Formation of the Sulfates Observed on Mars by OMEGA and the MER Instruments [#1456]

Solfataric alteration in the Kilauea caldera, HI, forms sulfates and hydrated phases from volcanic ash. Spectral analyses are presented for detection of these minerals/phases on Mars by OMEGA and for groundtruthing the OMEGA spectra with MER data.

Langevin Y. Poulet F. Bibring J.-P. Schmitt B. Douté S. Gondet B.

Observations of the North Permanent Cap of Mars in Mid-Summer by OMEGA/MEX at km per Pixel Resolutions [#1650]

The OMEGA VIS/IR imaging spectrometer on board Mars Express performed observations of permanent surface ice at high northern latitudes at resolutions of 1 km/pixel or less in December 2004.

Gendrin A. Bibring J.-P. Mustard J. F. Mangold N. Quantin C. Gondet B. Langevin Y. Poulet F.

Sotin C. Le Mouélic S. Combe J.-P. Hutchison L. OMEGA Team

Identification of Predominant Ferric Signatures in Association to the Martian Sulfate Deposits [#1378]

We identify predominant ferric signatures in association to the sulfate deposits mapped by OMEGA. These signatures could suggest that geological processes similar to what happened in Terra Meridiani could have taken place in Valles Marineris as well.

Ansan V. Mangold N. Lucas A. Gendrin A. Le Mouélic S. Poulet F.

Bibring J.-P. OMEGA Co-Investigator Team

Analysis of Layered Deposits in Terby Crater (Hellas Region, Mars) Using Multiple Datasets MOC, THEMIS and OMEGA/MEX Data [#1324]

Terby crater displays thick layered deposits with interesting characteristics such as unconformities visible on MOC images and hydrated minerals detected on OMEGA/MEX spectral data.

Quantin C. Gendrin A. Mangold N. Bibring J.-P. Poulet F. Allemand P. OMEGA Team

Sulfate Deposits Identified by OMEGA in Melas Chasma [#1789]

The study of the distribution of sulfate signatures detected by OMEGA in Melas Chasma reveals that the signatures are correlated to layered deposits over widespread area in space and in elevation.

Hutchison L. Mustard J. F. Gendrin A. Bibring J.-P. Langevin Y. Gondet B.
Mangold N. OMEGA Science Team

Mafic Polyhydrated Sulfates and Kieserite in Capri Chasma [#1404]

OMEGA spectra of interior layered deposits in Capri-Eos Chasma show signatures consistent with kieserite and polyhydrated sulfates. OMEGA parameter maps identifying sulfates in Capri Chasma will be shown together with spectra from Rio Tinto, Spain.

Mustard J. F. Poulet F. Gendrin A. Mangold N. Bibring J.-P. Langevin Y. Gondet B.
Belluci G. Altieri F. OMEGA Science Team

Compositional Diversity of the Martian Crust from OMEGA Observations [#1316]

OMEGA data of exposed crust identify low-Ca pyroxene rich regions in Noachian-aged terrain, high-Ca pyroxene-rich regions in more recent volcanics and dune deposits, and olivine in ancient rocks through to recent volcanic and crater floor deposits.

Kanner L. C. Mustard J. F. Bibring J.-P. Gendrin A. Langevin Y. Gondet B.
Pelkey S. OMEGA Science Team

Analysis of Martian Pyroxene Compositions in Syrtis Major: Full MGM Application to OMEGA [#1730]

Spectra from the OMEGA spectrometer of the Syrtis Major region of Mars are analyzed for pyroxene compositions. MGM results indicate the presence of two pyroxenes and a compositional variation between the Noachian terrain and Hesperian volcanics.

Pelkey S. M. Mustard J. F. Bibring J.-P. Milliken R. E. Langevin Y. Gondet B. Gendrin A. Poulet F.
Erard S. Murchie S. Arvidson R. E. OMEGA Science Team CRISM Team

Global Spectral and Compositional Diversity of Mars: A Test of CRISM Global Mapping with Mars Express OMEGA Data [#1458]

The OMEGA data set provides us with an ideal opportunity to evaluate and refine the multispectral mapping strategy set forth for CRISM operations.

Poulet F. Mangold N. Mustard J. Bibring J.-P. Gendrin A. Langevin Y. Gondet B. Masson Ph.
Head J. W. III Neukum G. OMEGA Team HRSC Team

Spectral and Morphologic Properties of Nili Fossae [#1819]

OMEGA-MEx has detected the largest and the highest concentration of olivine on Mars in Nili Fossae. Of specific interest is the presence of hydrated minerals in this very rich olivine-bearing region. We examine the geomorphology of this complex region with HRSC image.

Pinet P. C. Daydou Y. Cord A. Chevrel S. C. Poulet F. Erard S. Bibring J.-P. Langevin Y.
Melchiorri R. Bellucci G. Altieri F. Arvidson R. E. OMEGA Co-Investigator Team

Derivation of Mars Surface Scattering Properties from OMEGA Spot Pointing Observations [#1694]

OMEGA emission phase function (EPF) observation shows that one may access from orbit to geology-driven surface scattering properties such as surface roughness. It has implications for spectroscopic interpretation and for CRISM observations to come.

Combe J.-P. Sotin C. Le Mouélic S. Launeau P. Mustard J. F. Gendrin A. Bibring J.-P.
Gondet B. Langevin Y. OMEGA Science Team

Methodology of Hyperspectral Reflectance Data Analysis for Mineralogical Mapping of Planetary Surfaces : Application to OMEGA/Mars-Express Images [#1633]

Methodology of hyperspectral data analysis is investigated to interpret OMEGA/Mars-Express images. Results of the Modified Gaussian Model (MGM) and a recursive linear unmixing algorithm are compared with previous detection of minerals like hematite.