

Thursday, March 16, 2006
MARTIAN MINERALOGY
1:30 p.m. Crystal Ballroom B

Chairs: M. E. Minitti
W. C. Koeppen

- 1:30 p.m. Gomez C. * Poulet F. Bibring J.-P. Langevin Y. Gondet B. Pelkey S. M. Mustard J. F. Bellucci G. C. OMEGA Science Team
Global Mineral Maps on Mars [#1405]
 Global mineral maps are realized from spectral parameters using the Visible/NIR domains of the OMEGA imaging spectrometer on-board Mars Express. These maps highlight unique as well as familiar processes that have occurred during Mars' history.
- 1:45 p.m. Koeppen W. C. * Hamilton V. E.
The Distribution and Composition of Olivine on Mars [#1964]
 We use spectral index mapping and deconvolution to analyze the distribution of multiple compositions of olivine on Mars.
- 2:00 p.m. Tornabene L. L. * Moersch J. E. McSween H. Y. Jr. Hamilton V. E. Piatek J. L. Milam K. A. Christensen P. R.
The Subsurface Geology of Mars: Remote Sensing of Impact Craters Using THEMIS, TES, MOC and MOLA [#1739]
 Impact craters provide natural exposures of subsurface composition, stratigraphy and, in some cases, geologic features that are not otherwise exposed at the surface. Here we present results from a THEMIS-based remote sensing study of martian impact craters that expose subsurface materials.
- 2:15 p.m. Baratoux D. * Gendrin A. Pinet P. Mustard J. Kanner L. Heuripeau F. Clenet H. Daydou Y. Vaucher J. Chevrel S. Bibring J.-P. OMEGA Co-Investigator Team
Toward a 3-D View of the Mineralogy of Syrtis Major Through Impact Cratering from OMEGA Data [#1376]
 Impact ejecta at Syrtis Major are enriched in high-calcium pyroxene. Using a model of excavation flow we interpret this observation as an enrichment in high-calcium pyroxene at a few hundred meters depth.
- 2:30 p.m. Kanner L. C. * Mustard J. F. Gendrin A. Bibring J.-P.
Joint OMEGA-THEMIS Investigation of TES Type II Deposits and Local Terrain, Nili Patera, Syrtis Major, Mars [#1648]
 An integrated OMEGA-THEMIS dataset offers enhanced understanding of TES Type II deposits in the context of local spectral diversity. The spectral similarity of Type II to the surrounding terrain at OMEGA wavelengths presents new interpretations.
- 2:45 p.m. Dunn T. L. * McSween H. Y. Jr.
New Linear Deconvolutions of Martian Surface Types 1 and 2 Using Alkalic Mineral Endmembers [#1291]
 An overview of deconvolutions of surface types 1 and 2 using endmember sets tailored for alkalic rocks.
- 3:00 p.m. Milliken R. E. * Mustard J. F. Poulet F. Bibring J.-P. Langevin Y. Gondet B. Pelkey S.
The H₂O Content of the Martian Surface as Seen by Mars Express OMEGA [#1987]
 The absolute H₂O content of the Martian surface is derived from MEX OMEGA data by comparing several methods. Hydration increases poleward of 60 degrees latitude in both hemispheres, up to 12 wt% H₂O, whereas equatorial regions have 2–4 wt% H₂O.
- 3:15 p.m. Wang A. * Freeman J. F. Jolliff B. L. Arvidson R. E.
Conversion of Crystalline MgSO₄·XH₂O to the Hydrated Amorphous Phase — A Raman, NIR, and XRD Study [#2168]
 Amorphous MgSO₄·2H₂O was made by vacuum dehydration of epsomite/hexahydrite. Kieserite and starkeyite were unaffected under the same conditions. Kieserite shows the best match to OMEGA NIR spectra obtained from dark etched terrain at Meridiani Planum.

- 3:30 p.m. Mustard J. F. * Poulet F. Head J. W. Mangold N. Bibring J.-P. Fassett C. Langevin Y. Neukum G. *Ancient Crust, Aqueous Alteration, and Impact Melt Preserved in the Isidis Basin, Mars* [#1683]
The Nili Fossae region preserves a critical record of early Mars: Noachian basement enriched in low-Ca pyroxene, a deep and pervasive aqueous alteration, on which rests olivine-rich deposits interpreted to be impact melt from the Isidis event.
- 3:45 p.m. Wright S. P. * Christensen P. R. Sharp T. G. *Thermal Emission Spectroscopy of Shocked Basalt from the Earth and Mars: A Review Plus New Insights* [#1786]
Thermal emission spectra of shocked minerals and martian basalts are reviewed for constraints on laboratory spectra of shocked basalt from Lonar Crater, India and Mini-TES data of Bounce Rock.
- 4:00 p.m. Minitti M. E. * Hamilton V. E. Wyatt M. B. *Investigation of the Role of New Glass Compositions in Remotely-sensed Martian Lithologies* [#2101]
We investigated the role of a new suite of glasses with basaltic to dacitic compositions in deconvolutions of martian thermal emission spectra. Our results suggest an andesitic glass might be an important component of martian surface lithologies.
- 4:15 p.m. Schaefer M. W. * Dyar M. D. Agresti D. G. *Comparison of Mössbauer Spectra of Soils from Gusev Crater and Meridiani Planum* [#2111]
Mössbauer spectra of selected soils from Gusev Crater and Meridiani Planum are analyzed and compared. Variations in ferrous/total Fe ratio are found, and evidence for variations in Fe³⁺ mineralogy.
- 4:30 p.m. Bishop J. L. * Schiffman P. Dyar M. D. Lane M. D. Murad E. Drief A. *Soil-forming Processes on Mars as Determined by Mineralogy: Analysis of Recent Martian Spectral, Chemical and Magnetic Data and Comparison with Altered Tephra from Haleakala, Maui* [#1423]
Integrated analyses of recent mission data and Haleakala tephra is applied to soil formation processes on Mars. This altered tephra contains silica, jarosite, FeOx, clays, magnetic phases, and a mid-IR doublet like that observed for the Martian soil.