

Monday, July 9, 2007
GEOLOGY OF THE MARTIAN SURFACE:
LITHOLOGIC VARIATION, COMPOSITION, AND STRUCTURE
2:00 p.m. Beckman Auditorium

Chairs: H. Y. McSween
J. L. Bishop

- 2:00 p.m. INTRODUCTORY THEMES – FRAMING THE SESSION
- 2:05 p.m. Arvidson R. E. * Squyres S. W. Murchie S. L. McEwen A. S. Athena Science Team
CRISM Science Team HiRISE Science Team
Spirit's Winter and Spring Campaigns in the Inner Basin, Columbia Hills, Gusev Crater [#3142]
This abstract focuses on observations and results from Spirit's Winter and Spring Campaigns and associated coordinated orbital observations with the CRISM and HiRISE instruments on the Mars Reconnaissance Orbiter.
- 2:20 p.m. McSween H. Y. * Athena Science Team
Mineralogy, Geochemistry, and Petrogenesis of Alkaline Volcanic Rocks at the Gusev Crater MER Landing Site [#3018]
Gusev is now the most thoroughly characterized igneous province on Mars. Extrusive rocks analyzed by the Spirit rover are alkaline basalts and tephrites, probably related through fractionation of a common primitive magma at various depths.
- 2:35 p.m. Edwards C. S. * Christensen P. R. Hamilton V. E.
Evidence for Extensive Olivine-rich Basalt Bedrock Outcrops in Ganges and Eos Chasma on Mars [#3280]
Extensive olivine-rich bedrock outcrops have been found in Ganges and Eos Chasma using TES and THEMIS data. The objective of this study was to understand the extent of this unit and better understand its mode of origin.
- 2:50 p.m. Rogers A. D. * Christensen P. R. Bandfield J. L.
Global Compositional Heterogeneity on the Martian Surface and Key Geologic Interpretations Using MGS-TES and Complementary Data Sets [#3303]
New analyses of TES data show that compositional variations exist regionally within TES Types 1 and 2. Results are compared with GRS, OMEGA, THEMIS and MER observations; implications for global surface alteration and crustal development are presented.
- 3:05 p.m. Ruff S. W. * Christensen P. R. Athena Science Team
New Clues to the Origin of TES Surface Type 2 Material [#3367]
The origin of TES surface type 2 (ST2) remains enigmatic. New analyses strongly implicate amorphous silica, either primary or secondary, as the main phase of ST2. New maps reveal a clear association of ST2 with dunes in the high southern latitudes.
- 3:20 p.m. BREAK
- 3:40 p.m. Rampe E. B. * Kraft M. D. Sharp T. G. Michalski J. R.
The Influence of Chemical Alteration on Thermal Infrared Spectroscopy and Interpretations of Igneous Mineralogy of Mars [#3242]
We investigate the effects of small amounts of secondary silicates on TIR spectroscopy and spectral models of mixtures of primary and secondary phases. Modeled primary mineral abundances are dependent on the secondary phase present in the mixtures.

- 3:55 p.m. Wrobel K. E. * Schultz P. H.
The Significant Contribution of Impact Glass to the Martian Surface Record [#3093]
Hydrocode models of melt generation coupled with ballistic flight calculations yield maps of accumulated distal impact products that reveal distinct correlations between impact glass concentrations and prominent low-albedo surface deposits.
- 4:10 p.m. Bishop J. L. * Murchie S. L. Tornabene L. L. Pelkey S. M. Gulick V. C. Ehlmann B. L. Mustard J. F. Brown A. J. MRO CRISM Team
Characterization of Phyllosilicates in Libya Montes and the Southern Isidis Planitia Region Using CRISM and HiRISE Images [#3294]
Phyllosilicates and olivine are characterized in CRISM and HiRISE images of Libya Montes. Phyllosilicates are identified in the central uplift of Hashir crater surrounded by an olivine-rich deposit including layers that may be in situ bedrock.
- 4:25 p.m. Loizeau D. * Mangold N. Poulet F. Bibring J.-P. Langevin Y. Ansan V. Masson P. Neukum G. OMEGA Team HRSC Team
Stratigraphic Correlation Between the Clays of the Region of Mawrth Vallis as Detected by OMEGA, and HRSC Color Images and DTM [#3131]
The Al- and Mg/Fe-smectites discovered by OMEGA in the Mawrth Vallis region may be mapped with HRSC color imagery. This higher resolution mapping might lead to a better understanding of the formation of the clay-rich unit.
- 4:40 p.m. Farrand W. H. * Rice J. W. Glotch T. D. Hurowitz J. A.
Hyperspectral, Multispectral, and Textural Analysis of the Mawrth Vallis Layered Terrain [#3304]
Hyperspectral data from OMEGA, multispectral data from HRSC, and textural data from HiRISE are used in conjunction with other datasets to characterize phyllosilicate-bearing layered rocks near Mawrth Vallis.
- 4:55 p.m. Wray J. J. * Squyres S. W. Ehlmann B. L. Mustard J. F. HiRISE Team
Meter-Scale Morphology and Stratigraphy of Phyllosilicate-rich Outcrops in Mawrth Vallis [#3119]
HiRISE and CRISM data are combined to study the morphology and chemical stratigraphy of the clay-rich layered deposits near Mawrth Vallis at meter-to-decameter scales. Likely formation processes and environments are inferred from the observations.
- 5:10 p.m. MODERATED DISCUSSION