

Wednesday, March 14, 2007
MARS SEDIMENTS AND GEOCHEMISTRY: VIEW FROM THE SURFACE
8:30 a.m. Crystal Ballroom A

Chairs: J. M. Dohm
A. D. Howard

- 8:30 a.m. Squyres S. W. * Athena Science Team
Opportunity Results at Victoria Crater, Meridiani Planum [#1437]
This talk will summarize recent observations made by the Opportunity rover at Victoria Crater.
- 8:45 a.m. Metz J. M. * Grotzinger J. P. Arvidson R. E. Bell J. F. III Golombek M. Parker T.
Squyres S. W. Sullivan R.
Structure and Sedimentology of the Western Margin of Erebus Crater, Meridiani Planum, Mars [#2235]
The structure, stratigraphy and sedimentology of two outcrops along the western margin of Erebus crater were examined and found to characterize both dune and interdune environments, with more evidence for wet interdune facies than outcrops exposed in Eagle and Endurance Craters.
- 9:00 a.m. Arvidson R. E. * Squyres S. W. Murchie S. L. McEwen A. S.
Athena, CRISM, and HiRISE Science Teams
Spirit's Winter Campaign in the Inner Basin, Columbia Hills, Gusev Crater [#1122]
This abstract focuses on the observations and results from Spirit's Winter Campaign and associated coordinated orbital observations with the CRISM and HiRISE instruments on the Mars Reconnaissance Orbiter.
- 9:15 a.m. Lewis K. W. * Aharonson O. Schmidt M. E. Athena Science Team
Stratigraphy and Structure of Inner Basin Outcrops in the Columbia Hills from the Spirit Rover [#2393]
The Spirit rover has been exploring several layered outcrops in the inner basin of the Columbia Hills. This study focuses primarily on the stratigraphy of low ridge and physical relationships between inner basin outcrops.
- 9:30 a.m. Ruff S. W. * McEwen A. S. Athena Science Team
An Emerging View of the Stratigraphy of the Columbia Hills in Gusev Crater from HiRISE and Mini-TES Data [#2063]
The combination of HiRISE imaging with spectral and image data from the Spirit rover serves to elucidate the stratigraphy of the Columbia Hills and the broader Gusev Crater floor.
- 9:45 a.m. Yen A. S. * Morris R. V. Gellert R. Clark B. C. Ming D. W. Klingelhöfer G. McCoy T. J.
Schmidt M. E. Athena Science Team
Composition and Formation of the "Paso Robles" Class Soils at Gusev Crater [#2030]
Ferric sulfates have been discovered at Gusev Crater by the Mars Exploration Rovers. These deposits may represent effluorescent salt accumulations, precipitates from aqueous solution, and/or vapor condensates.
- 10:00 a.m. Lane M. D. * Bishop J. L. Dyar M. D. Parente M. King P. L. Hyde B. C.
Identifying the Phosphate and Ferric Sulfate Minerals in the Paso Robles Soils (Gusev Crater, Mars) Using an Integrated Spectral Approach [#2176]
We will present our current interpretation of the PR bright soil using our library suites of ferric (and other) sulfates and our recently acquired laboratory spectra of ferric (and other) phosphates acquired using VNIR reflectance, thermal IR emission, and Mössbauer spectroscopic techniques.

- 10:15 a.m. Parente M. * Bishop J. L. Bell J. F. III
Spectral Unmixing for Sulfate Identification in Pancam Images [#1934]
Spectral unmixing has enabled us to map components due to sulfate, dust, a ferric phase, and shade in several unusual bright soils uncovered by the rover tracks in Gusev Crater. Coquimbite, kornelite and fibroferrite best match our sulfate estimates.
- 10:30 a.m. Dreibus G. * Brückner J. Gellert R. Jagoutz E. Klingelhöfer G.
Schmidt M. E. Athena Science Team
Algonquin Class Rocks of Columbia Hills in the Gusev Crater, Mars, and Their Relationship to SNC Meteorites [#1649]
The first ultramafic rocks on Mars were discovered in the Columbia Hills. Among the SNC meteorites no such rock type is found. However, there is a close similarity of these Algonquin class rocks to the SNCs except for high Ni concentrations.
- 10:45 a.m. Mittlefehldt D. W. * Gellert R. Yen A. Athena Science Team
Chemistry of Martian Soils from the Mars Exploration Rover APXS Instruments [#2042]
Chemical data for soils from Gusev Crater and Meridiani Planum are evaluated to provide constraints on soil formation and transport processes.
- 11:00 a.m. Hausrath E. M. * Navarre-Sitchler A. K. Sak P. B. Brantley S. L.
What Can We Learn from Depth Profiles on Mars? [#2075]
Weathering profiles record information about dissolution rates, transport, duration of weathering, erosion, and aeolian deposition. These profiles and the pH-dependence of relative mineral weathering rates may help constrain weathering on Mars.
- 11:15 a.m. McCollom T. M. * Hynek B. M. Nahm A. L.
Could Erosion of Meridiani Planum Represent a Significant Contributor to Global Sulfate-rich Martian Soils? [#2151]
Estimates of the amount of material eroded from Terra Meridiani indicates that weathering and transport of sulfate minerals from this and other layered sulfate deposits could account for most or all of the sulfur enrichment observed in shallow martian soils globally.
- 11:30 a.m. Knauth L. P. * Bryan S. Burt D. M. Wohletz K. H.
Impact Surge on Mars [#1757]
The sedimentary structures, chemistry, and mineralogy of strata at both MER landing sites can be plausibly interpreted in terms of impact processes on Mars. Many layered sequences imaged from orbit may also have an impacto-clastic origin.