

Friday, July 13, 2007
MARTIAN STRATIGRAPHY AND SEDIMENTOLOGY:
READING THE SEDIMENTARY RECORD
8:30 a.m. Beckman Auditorium

Chairs: O. Aharonson
S. McLennan

- 8:30 a.m. INTRODUCTORY THEMES – FRAMING THE SESSION
- 8:35 a.m. Aharonson O. * Lewis K. Grotzinger J. P. Squyres S. W.
Stratigraphy and Sedimentology of Home Plate and Associated Inner Basin Outcrops [#3366]
 Imagery taken by Spirit presents a quantitative way to assess the internal structure of Home Plate and associated ridges. Sedimentological and structural measurements support a volcanoclastic origin for the deposits which drape underlying topography.
- 8:50 a.m. McLennan S. M. * Arvidson R. E. Clark B. C. Golombek M. P. Grotzinger J. P. Jolliff B. L. Knoll A. H. Squyres S. W. Tosca N. J. Athena Science Team
Geochemistry, Mineralogy and Diagenesis of the Burns Formation at Meridiani Planum: Insights into the Sedimentary Rock Cycle on Mars [#3231]
 The Burns formation consists of sulfate-rich sandstones that experienced an extended history of groundwater diagenesis. Sulfates appear common on Mars and provide insight into a martian sedimentary rock cycle strongly influenced by the sulfur cycle.
- 9:05 a.m. McCollom T. M. * Hynek B. M.
A Geochemical Model for Formation of Meridiani Planum Layered Sulfate Deposits by Volcanic Processes [#3257]
 The bulk chemical compositions of bedrocks at Meridiani Planum are evaluated to provide constraints on their origin, and the proposed sedimentary/evaporite and volcanic scenarios for formation of the deposits are assessed in terms of how they explain the observed chemical composition.
- 9:20 a.m. Morris R. V. * Ming D. W. Yen A. Arvidson R. E. Gruener J. Humm D. Klingelhöfer G. Murchie S. Schröder C. Seelos F. IV Squyres S. Wiseman S. Wolff M. MER Science Team CRISM Science Team
Possible Evidence for Iron Sulfates, Iron Sulfides, and Elemental Sulfur at Gusev Crater, Mars, from MER, CRISM, and Analog Data [#3393]
 Iron sulfates, iron sulfides, and elemental sulfur are markers for aqueous process on Mars.
- 9:35 a.m. Wiseman S. M. * Griffes J. L. Arvidson R. E. Murchie S. Poulet F. Knudson A. T. Seelos F. P. Tosca N. CRISM Science Team
New Analyses of MRO CRISM, HiRISE, and CTX Data over Layered Sedimentary Deposits in Meridiani [#3111]
 We examine the sedimentary sulfate deposits in Meridiani using CRISM spectral data in concert with morphologic information derived from HiRISE and CTX. New sulfate identifications and the lack of sulfate detection over Victoria crater are discussed.
- 9:50 a.m. Jolliff B. L. * Clark B. C. Mittlefehldt D. W. Gellert R. Athena Science Team
Compositions of Spherules and Rock Surfaces at Meridiani [#3374]
 Modeling differential X-ray transparency according to energy for thin dust/soil layers (1–3 μm) on Meridiani hematite spherules and sulfate-rich outcrop rock surfaces reproduces many of the observed compositional variations in MER-B APXS data.

- 10:05 a.m. Andrews-Hanna J. C. * Zuber M. T. Phillips R. J.
Meridiani Planum: Implications for the Hydrologic and Climatic Evolution of Mars [#3173]
Formation of the Meridiani Planum evaporites suggests a shift in the hydrologic regime of Mars driven by a decrease in the global water inventory or an increase in the aquifer storage capacity, consistent with geomorphic and geochemical evidence.
- 10:20 a.m. Squyres S. W. * Athena Science Team
Recent Results from the Mars Exploration Rover Opportunity at Victoria Crater [#3030]
The Mars Exploration Rover Opportunity has explored the rim of Victoria Crater, including well preserved ejecta facies and large-scale eolian cross stratification in the crater walls.
- 10:35 a.m. Farrand W. H. * Bell J. F. III Johnson J. R. Grotzinger J. P. Squyres S. W. Jolliff B. L.
Spectral Stratigraphy of Victoria Crater, Meridiani Planum, Mars [#3250]
A set of consistent spectrostratigraphic units have been observed within the rim of Victoria Crater by Opportunity's Pancam. Spectral and textural characteristics of these units are described and placed in a geologic context.
- 10:50 a.m. Neukum G. Basilevsky A. T. Chapman M. G. Werner S. C. van Gasselt S.
Jaumann R. Hauber E. Hoffmann H. Wolf U. Head J. W. Greeley R.
McCord T. B. HRSC Co-Investigator Team
Episodicity in the Geological Evolution of Mars: Resurfacing Events and Ages from Cratering Analysis of Image Data and Correlation with Radiometric Ages of Martian Meteorites [#3015]
Cratering age analyses show that the martian surface was resurfaced episodically from >4 Ga ago until today. The resurfacing events are coincident in time with age groups found in the martian meteorites.
- 11:05 a.m. MODERATED DISCUSSION