

Thursday, March 17, 2005
POSTER SESSION II: MER AND MOC RESULTS
7:00 p.m. Fitness Center

Golombek M. P. Arvidson R. E. Bell J. F. III Christensen P. R. Crisp J. Ehlmann B. L. Fergason R. L. Grant J. A. Haldemann A. F. C. Parker T. J. Squyres S. W. Athena Science Team
Assessment of Mars Exploration Rover Landing Site Predictions [#1542]
 Assessment of Mars Exploration Rover landing site predictions made in the evaluation of remote sensing data during selection indicates most of the important surface characteristics were correctly predicted.

Schwochert M. A. Maki J. N.
The Mars Exploration Rover Cameras: A Status Report [#1793]
 With more than 68,000 images returned from the surface of Mars, the Mars Exploration Rover camera suite continues to perform extremely well. Image SNRs are greater than 200:1, flat fields remain stable, and single-pixel degradation is negligible.

Fergason R. L. Christensen P. R.
Thermophysics at the MER Spirit and Opportunity Landing Sites: Perspectives from the Surface and from Orbit [#1265]
 Understanding thermophysical properties of MER landing site surfaces is important for identifying recent processes effecting these regions. We developed a technique to calculate thermal inertia values from Mini-TES spectra and present our results.

Bertelsen P. Bell J. F. III Goetz W. Gunnlaugsson H. P. Herkenhoff K. E. Hviid S. F. Johnson J. R. Kinch K. M. Knudsen J. M. Madsen M. B. McCartney E. Merrison J. Ming D. M. Morris R. V. Olsen M. Proton J. B. Sims M. Squyres S. W. Yen A. S.
Dynamic Dust Accumulation and Dust Removal Observed on the Mars Exploration Rover Magnets [#2250]
 The Mars Exploration Rovers carry a set of Magnetic Properties Experiments designed to investigate the properties of the airborne dust in the Martian atmosphere. This abstract will focus on dust deposition and dust removal on some of the magnets.

Li R. Squyres S. W. Arvidson R. E. Bell J. F. III Crumpler L. S. Des Marais D. J. Di K. Golombek M. P. Grant J. Guinn J. Greeley R. Kirk R. L. Maimone M. Matthies L. H. Malin M. C. Parker T. Sims M. Soderblom L. A. Wang J. Watters W. A. Whelley P. Xu F. Athena Science Team
Results of Rover Localization and Topographic Mapping for the 2003 Mars Exploration Rover Mission [#1349]
 This paper presents the results of rover localization and topographic mapping for the 2003 MER mission. Topographic maps, rover traverse maps, and updated rover locations have been routinely produced to support tactical and strategic operations.

Seelos F. P. Arvidson R. E. Guinness E. A. Wolff M. J.
Radiative Transfer Photometric Analyses at the Mars Exploration Rover Landing Sites [#2054]
 MER Pancam radiance data is inverted to optimize bidirectional reflectance model parameters for the Martian surface.

Blaney D. L. Bell J. F. III Cabrol N. A. Christensen P. R. Farand W. Ming D. W. Moersch J. E. Ruff S. Athena Science Team
Spectral Diversity at Gusev Crater from Coordinated Mini-TES and Pancam Observations [#2064]
 Spirit has explored Gusev crater with Pancam and Mini-TES. Coordinated and targeted observations were used to determine the spectral diversity. Three classes of rocks were identified spectrally. Natural and brushed surfaces can be spectrally similar.

Ruff S. W. Christensen P. R. Blaney D. L. Athena Science Team
The Rocks of Gusev Crater as Viewed by Mini-TES [#2155]
 Mini-TES on the Spirit rover has documented three different classes of rocks in Gusev Crater that represent a diverse geological history.

Cabrol N. A. Greeley R. Athena Science Team

Characterization of Non-Organized Soils at Gusev Crater with the Spirit Rover Data [#2328]

We surveyed the characteristic of non-organized soils at Gusev crater at microscale and macroscale in four main traverse regions: (1) Landing site to Bonneville crater; (2) Bonneville to West Spur; (3) the West Spur region; and (4) the Columbia Hills up to sol 363.

Wang A. Haskin L. A. Korotev R. L. Jolliff B. L. de Souza P. A. Jr. Kusack A. G. Athena Team

Evidence of Phyllosilicate in Woolly Patch — an Altered Rock Encountered on the Spirit Rover Traverse [#2327]

Rock Woolly Patch on West Spur has several specific physical and chemical features. Based on our analyses, phyllosilicates of kaolinite, serpentine, and chlorite types, plus some feldspar and pyroxene are prime candidates to constitute this rock.

Metzger S. M.

Evidence of Dust Devil Scour at the MER Spirit Gusev Site [#2397]

Using MOC and MER, this report examines at broadly different scales the effects of dust devil vortices on the surface in Gusev crater. Results include a rare occurrence of proper meteorological and geological formation conditions, and the removal of substantial volumes of dust from the surface.

Edgett K. S. Malin M. C.

The Sedimentary Rocks of Meridiani Planum, in Context [#1171]

Sedimentary rocks at the MER-B site are part of a stratigraphic section more than 1 km thick. The rocks are not superimposed on heavily cratered terrain, they are part of it, and they record a rich, diverse history.

Weitz C. M. Anderson R. C. Bell J. F. III Cabrol N. A. Calvin W. M. Ehlmann B. L. Farrand W. H.

Greeley R. Herkenhoff K. E. Johnson J. R. Jolliff B. L. Morris R. V. Soderblom L. A.

Squyres S. W. Sullivan R. J.

Seeing the Soils of Meridiani Planum Through the Eyes of Pancam and Microscopic Imager [#1362]

We are using data from the Pancam and Microscopic Imager (MI) on the Opportunity rover to characterize soil grains at Meridiani Planum greater than 0.3 mm in size. In general, the size of most grains within Eagle crater falls between 1.5–3.5 mm, and they are very circular in cross section.

King P. L. Lescinsky D. T. Nesbitt H. W.

Comparison of Predicted Salt Precipitation Sequences with Mars Exploration Rover Data [#2300]

We compare predicted salt precipitation sequences with Mars Exploration Rover data.

Kargel J. S.

Aqueous Chemistry, Physical Chemistry, and Sedimentology of Rocks at the Mars Rover Landing Sites [#2149]

Observations at Meridiani Planum indicate layer-by-layer aqueous deposition in a highly acidic and hypersaline sea that was very cold, but not as cold as current prevalent conditions. A huge debris flow is likely at Gusev Crater.

Schaefer M. W. Dyar M. D. Agresti D. G. Schaefer B. E.

Error Analysis of Remotely-Acquired Mössbauer Spectra [#2047]

Mössbauer spectroscopy is being used to assist in mineral identification on Mars. We discuss the major sources of error associated with peak positions in remotely-acquired spectra, and speculate on their magnitude and influence on interpretation.

Seda T. Irving A. J.

Thin Wafer Transmission Mössbauer Spectra of Four Shergottites: Implications for Mineralogy of Rocks at Mars Exploration Rover Sites [#2204]

Mössbauer spectra were obtained on thin wafers of four shergottite meteorites for comparison with data for rocks at the Spirit and Opportunity sites.

Bérczi Sz.

Possibility of Karst Morphology on the Martian Surface at the Meridiani Landing Site from Comparison with Terrestrial Analogs [#1051]

On Opportunity images of the 70–74 sols chains of pits forming a trench pattern can be interpreted as dolines, the whole trench pattern as a solution groove, both belonging to counterpart terrestrial karst morphology.

Jolliff B. L. Athena Science Team

Composition of Meridiani Hematite-rich Spherules: A Mass-Balance Mixing-Model Approach [#2269]

A mass-balance model using APXS data and microscopic images indicates that the composition of spherules (“blueberries”), found at the Meridiani site by the Mars Exploration Rover Opportunity and thought to be concretions, contain ~45–60 wt% hematite.

Gánti T. Pocs T. Bérczi Sz. Ditroi-Pukas Z. Gal-Solymos K. Horváth A. Nagy M. Kubovics I.

Morphological Investigations of Martian Spherules, Comparisons to Collected Terrestrial Counterparts [#2026]

We studied the morphology of the Martian spherules and compared them with their terrestrial counterparts with hematite crust, collected in Venezuela and West Australian deserts, and discussed their possible formation processes.

Stein T. C. Arvidson R. E.

MER Analyst’s Notebook: Integrating Data and Documentation for Mission Playback [#1246]

The MER Analyst’s Notebook provides access to the MER mission data archives by integrating sequence information, engineering and science data, and documentation into Web-accessible pages to facilitate mission “replay.”

Malin M. C. Edgett K. S.

MGS MOC: First Views of Mars at Sub-Meter Resolution from Orbit [#1172]

Since 2003, MGS MOC has been acquiring images of Mars at sub-meter resolution, revealing new details and testing hypotheses regarding the planet’s geology and geomorphology.