

**Tuesday, March 8, 2011**  
**POSTER SESSION I: MARS ROVERS AND LANDERS**  
**6:00 p.m. Town Center Exhibit Area**

Shaw A. Arvidson R. E. Wolff M. Seelos F. P. Cull S. Johnson J. R. Wiseman S. Guinness E.  
[CRISM-Derived Scattering Parameters for Surfaces in the Vicinity of Opportunity Mars Rover Traverses](#) [#2410]

We use CRISM spectrophotometric observations to derive surface single-scattering albedos and phase functions near Opportunity by modeling atmospheric and surface scattering and absorption via Discrete Ordinate Radiative Transfer and the Hapke model.

Fraeman A. A. Arvidson R. E. Murchie S. L. Seelos F. P. McGovern J. A.  
[Testable Hypotheses for Opportunity's Traverse from Santa Maria to the Rim of Endeavour Crater](#) [#2199]

The purpose of this abstract is to present working hypotheses to help guide the acquisition and analysis of continued MRO coverage and Opportunity observations as the rover departs Santa Maria, traverses across the plains, and ascends Endeavour's rim.

Arvidson R. E. van Dyke L. Bennett K. Zhou F. Iagnemma K. Senatore C. Lindemann R. Trease B. Maxwell S. Bellutta P. Stroupe A. Hartman F. Verma V. Ali K.  
[Mars Exploration Rover Opportunity Terramechanics Across Ripple Covered Bedrock in Meridiani Planum](#) [#1503]

This abstract summarizes Opportunity's drives since leaving Victoria crater, issues associated with high slippage and sinkage during traverses, and soil and terrain properties retrieved from modeling the drives and the wheel-soil interactions.

Herkenhoff K. E. Ashley J. W. Cabrol N. A. Yingst R. A. Arvidson R. E. Athena Science Team  
[Recent Athena Microscopic Imager Results](#) [#2282]

Recent results of the Microscopic Imager investigation on the Mars exploration rovers "Spirit" and "Opportunity" will be presented.

Velbel M. A. Graham E. E. Foote K. R. Tang H. S. Pecchia A. G. Smith J. H. Letchford J. K. Hampton B. A.  
[Grain Shape Analysis of Sand- and Silt-Size Sediments at the Phoenix Mars Lander Site from Images Acquired by the Phoenix Optical Microscope](#) [#1516]

Differences in grain roundness between Phoenix samples suggest differences in grain accumulation, abrasion, fracturing, or aggregation in the trough adjacent to the periglacial polygon relative to the other periglacial geomorphic settings examined.

Golombek M. Huertas A. Kipp D.  
[Rocks and Rock Size-Frequency Distributions at the Mars Science Laboratory Landing Sites](#) [#1547]

Improvements to the rock-counting software that segments shadows in HiRISE images and correctly predicted the distributions later found by the Phoenix lander have been made and results at the four Mars Science Laboratory landing sites are presented.

Kirk R. L. Howington-Kraus E. Galuszka D. Redding B. Antonsen J. Coker K. Foster E.  
Hopkins M. Licht A. Fennema A. Calef F. Nuti S. Parker T. J. Golombek M. P.

[Wall-to-Wall 1-m Topographic Coverage of the Mars Science Laboratory Candidate Landing Sites](#) [#2407]

Nearly complete 1 m/post-topographic models of the MSL landing ellipses contain more height points than the MOLA global dataset, supporting site safety validation, rover traverse planning, and assessment of the accuracy of HiRISE stereo mapping.

Wilson R. Schieber J. Howald T. V.

[Experimental Eolian Erosion of Soft Sedimentary Rocks with a Variety of Abrasives — Observed Features and Potential Applications for Mars Rover Geology](#) [#2176]

Soft sediments (shales and evaporites) were wind-abraded with various media to study resulting surface textures for use in future rover missions. Shales/mudstones differentiate from evaporite rocks, details of sedimentary features are revealed.