

Thursday, March 13, 2008
POSTER SESSION II: MARS, REMOTELY
6:30 p.m. Fitness Center

De Angelis G. Badavi F. F. Blattnig S. R. Cloudsley M. S. Singleterry R. C. Jr. Wilson J. W.
Models for the Radiation Environment of Planet Mars [#1670]

Models for the Mars radiation environment have been developed. Primary particles are transported through the atmosphere down to the surface, with backscattering taken into account. These results will be tested with spacecraft data in the near future.

Mouginot J. Kofman W. Safaeinili A. Herique A. Plaut J. J. Picardi G.
Calibration of MARSIS Surface Echoes [#1716]

We present here a method to calibrate surface echoes extracted from MARSIS data. The surface echo amplitude are principally controlled by ionospheric absorption. This calibration allows us to build the first reflectivity map of martian surface at 4 MHz.

Grimm R. E. Stillman D. E.
On the Origin of Widespread Subsurface Radar Attenuation at Mars [#2251]

The dielectric relaxation due to the adsorbed water on a few percent smectites in the crust can severely restrict radar penetration. Background levels of magnetite can also contribute to radar absorption.

Vincendon M. Langevin Y. Pommerol A. Wolff M. J. Bibring J.-P. Gondet B. Jouglet D. Poulet F.
Time Variations of Low Albedo Regions of Mars in the OMEGA/MEX Dataset [#1931]

We have studied the apparent variations of near-IR OMEGA observations of dark terrains situated at mid-latitudes (40°S–40°N) from early 2004 to late 2007. Both surface and aerosols changes with time and lightening conditions are considered.

Pinet P. C. Jehl A. Daydou Y. D. Chevrel S. Baratoux D. Heuripeau F. Manaud N. Cord A. Hoffmann H. Gwinner K. Scholten F. Roatsch T. Neukum G. Mars-Express HRSC Co-I Team
Gusev Photometric Variability as Seen from the Orbit by HRSC/Mars-Express: Contribution of the Opposition Effect [#1552]

The multi-angular HRSC dataset generated with the nadir-looking, stereo and photometric channels, is used to derive the surface photometric characteristics for mapping the variation of the soil/bedrock physical properties within Gusev crater.

Martinez-Alonso S. Mellon M. T. Rafkin S. C. R. Zurek R. W. McEwen A. S. Putzig N. E. Searls M. L. HiRISE Team
HiRISE Characterization of Thermophysical Units at Acidalia Planitia, Mars [#2266]

As part of an ongoing effort to characterize with HiRISE data the global thermophysical units in Mars, we report results regarding a region of Acidalia Planitia, which includes the largest outcrop of thermophysical unit F (rocks, bedrock, duricrust) on the planet.

Cushing G. E. Titus T. N.
Diurnally Variable Conductivity in Mars High-Elevation Particulate Surfaces [#2397]

In high-elevation granular surfaces on Mars, contributions to thermal conductivity from radiative transfer and from gas-molecule collisions with grain walls are temperature dependent. Bulk conductivity may vary diurnally in low-pressure environments.

Diez B. Maurice S. Gasnault O. d'Uston C. Feldman W. C. Baratoux D. Mangold N.
Mars Odyssey GRS Results at the Cerberus Plains [#1642]

The neutron currents measured by the Neutron Spectrometer are correlated to the local geology at the Cerberus Plains. We confront the derived chemical constraints to the elemental abundances measured by the Gamma Subsystem.

Hahn B. C. McLennan S. M.

Martian Surface Heat Production and Crustal Heat Flow from Mars Odyssey Gamma-Ray Spectrometry [#2032]
Using Mars Odyssey GRS global abundance datasets for the heat producing elements (K, Th, and U), we calculate crustal heat production on global and regional scales and model the crustal component of heat flow through martian history.

Taylor G. J. Martel L. M. V. Rogers A. D. Karunatillake S. Gasnault O. Boynton W. V.

Chemically and Mineralogically Distinct Regions on Mars Derived from GRS and TES Data [#1757]
Mars Odyssey GRS and TES data show that the martian surface contains compositionally distinct regions. TES and GRS regions do not correspond exactly, suggesting that mineral abundance is not always correlated with chemical composition.

Kuzmin R. O. Zabalueva E. V. Christensen P. R.

Estimation and Mapping of the Winter-Time Increase of the Water Ice Amount in the Martian Surface Soil Based on the TES TI Seasonal Variations Analysis [#1565]
In the work we presents the preliminary results of new method for estimation and global mapping of the winter-time increase of the water ice in the martian surface soil based on the TES TI data analysis.

Beitia E. A. Titus T. N. Seelos K. D. Seelos F. P. Colaprete A. Murchie S. L.

Christensen P. R. CRISM Team

Martian H₂O Ice Outliers may Result from Wintertime Near-Surface CO₂ Snows [#1422]

The presence of summer “ice patches” suggests winter near-surface CO₂ snow formation from orographic lifting. This CO₂ snow becomes a cold trap for H₂O. We test this hypothesis using data from MGS, ODY, MEX, and MRO.

Hughes C. G. Ramsey M. S.

Initial Results of Super-Resolving THEMIS Data [#2530]

The current study investigates the applicability of super-resolution to enhance the THEMIS thermal infrared (TIR) data using the instrument’s visible (VIS) instrument, providing radiometrically accurate data improvement from 100 to 36 m/pixel.