

Tuesday, March 8, 2011
POSTER SESSION I: MERCURY
6:00 p.m. Town Center Exhibit Area

Anderson B. J. Perry M. E. Choo T. H. Steele R. J. Ngyuen L. Lucks M. Prockter L. M.
McNutt R. L. Jr. Solomon S. C. MESSENGER Team

[MESSENGER Science Observation Planning for Orbital Operations at Mercury](#) [#1862]

MESSENGER science observations in Mercury orbit require coordination between all investigations. The SciBox suite of software tools enable year-long mission simulations yielding detailed science commanding and is used to ensure completion of all mission objectives.

Braden S. E. Robinson M. S. Murchie S. L. Seelos F. P.

[Preliminary MDIS-WAC Scattered Light Correction](#) [#2394]

We describe a preliminary wavelength-dependent correction for the dominant component of Mercury Dual Imaging System Wide Angle Camera scattered light using an empirically derived model of the point spread function for each filter.

Izenberg N. R. Holsclaw G. M. Murchie S. L. Domingue D. L. McClintock W. E. Solomon S. C.

[Detector Temperature Dependence for MESSENGER Surface Reflectance Measurements and Implications for Mercury Surface Science](#) [#2391]

We present a temperature-based detector response variation refinement of the MESSENGER MASCS spectrometer calibration in a critical wavelength range for mineralogical and compositional interpretation of Mercury's surface.

Moldovan R. Johnson C. L. Ritzer J. A. Purucker M. E. Solomon S. C. Anderson B. J.
Denevi B. W. Korth H.

[Detecting Crustal Magnetic Fields on Mercury with MESSENGER](#) [#2481]

We investigate conditions under which crustal remanent magnetization can produce magnetic fields detectable by the MESSENGER spacecraft from orbit around Mercury.

Herrick R. R. Curran L. L. Baer A. T.

[A Mariner/MESSENGER Global Catalog of Mercurian Craters](#) [#1706]

Initial results from a global compilation of impact craters on Mercury with $D > 10$ km.

Bauch K. E. Hiesinger H. Helbert J.

[Insolation and Resulting Surface Temperatures of Study Regions on Mercury](#) [#2257]

The imaging spectrometer MERTIS is part of the payload of ESA's BepiColombo mission, scheduled for launch in 2014. In preparation of the MERTIS experiment, we performed detailed thermal models of the lunar surface, which we extrapolated to Mercury.

Riner M. A. Lucey P. G.

[The Abundance of Space Weathering Derived Submicroscopic Metal on Mercury: Constraints from MESSENGER MDIS Multispectral Images](#) [#1309]

Using MESSENGER multispectral images, we apply a new space weathering model to explore the cause of Mercury's low albedo. We show that space weathering-derived submicroscopic metal particles are larger and more abundant on Mercury than on the Moon.

Brown S. M. Elkins-Tanton L. T.

[An Experimental Approach to Thermal and Solar Weathering of Mercury's Crust](#) [#2050]

We present experiments that simulate space weathering on Mercury by irradiating and heating likely mercurian crustal minerals. We analyze our experiments compositionally, structurally, and spectrally and we discuss implications for the exosphere.

Molaro J. L. Byrne S.

[*Thermal Stress Weathering on Mercury and Other Airless Bodies*](#) [#1494]

We will discuss the implications of thermal stress weathering on bodies lacking atmospheres, and a relative sense of efficacy and importance of this process for various inner-solar-system bodies.

Lawrence D. J. Harmon J. K. Feldman W. C. Paige D. A. Peplowski P. N. Rhodes E. A.
Selby C. M. Solomon S. C.

[*Predictions of MESSENGER Neutron Spectrometer Measurements for Mercury's Polar Regions*](#) [#1955]

Using Earth-based radar and MESSENGER flyby data, we present predicted neutron counting rates for three Mercury polar water ice scenarios. Statistically significant signals should be detected for high abundances of hydrogen (>50 wt.% H₂O equiv.).

Kameda S. Kagitani M. Okano S.

[*Source Process of Exospheric Sodium on Mercury and Temporal Variability of Sodium Density*](#) [#1654]

The source process of exospheric sodium atoms is still unclear though many observations have been done since its discovery. In this paper, we show the past results of ground-based observations and discuss its source process.