Tuesday, March 11, 2008
POSTER SESSION I: MESSENGER AND MERCURY
6:30 p.m. Fitness Center

Andre S. L. Watters T. R.
Depth to Diameter Studies of Mercurian Mature Complex Craters Using Mariner 10 Stereo Topography **[#2066]**
We report additional depth/diameter crater measurements from digital elevation models derived from Mariner 10 stereo images, and investigate potential correlations between the d/D ratios with latitude and with terrain type.

Wilson L. Head J. W. III
Volcanism on Mercury: The Importance of Crust/Mantle Density Contrasts and the Evolution of Compressive Stress **[#1677]**
We explore the controls of planetary density structure and compressive stress in the crust on the ability of magma to reach the surface in continuously open dikes. The fine balance between these factors will have changed during Mercury's history.

Sasaki S. Hiroi T.
How Does Space Weathering Depend on the Surface Condition of Airless Bodies (Asteroids, the Moon, and Mercury)? **[#1625]**
Itokawa suggested that the rocky small asteroids should be weathered although they lack regolith. On Mercury, surface mixing probably caused by impacts would have weakened the weathering although it is covered with regolith.

Vilas F.
Predictions for Future X-Ray Fluorescence Measurements of Mercury's Surface from Apollo Orbital XRF Data **[#2448]**
Apollo orbital X-ray fluorescence Al/Si and Mg/Si intensity ratios of lunar surface areas having spectral reflectance data that indicate very low amounts of FeO are used to predict what X-ray fluorescence could find at Mercury.

Denevi B. W. Robinson M. S.
Albedo of Immature Mercurian Crustal Materials: Evidence for the Presence of Ferrous Iron **[#1750]**
We present a photometrically normalized mosaic of Mariner 10 clear filter images of Mercury. A comparison of immature mercurian and lunar materials indicates Mercury's crust contains a significant darkening agent, most likely FeO.

Brown S. Elkins-Tanton L. T.
Predicting Mercury's Ancient Crustal Composition **[#1281]**
By modeling solidification of a Mercury magma ocean, it is possible to predict the composition of the planet's initial crust, which may remain today. Three possible starting compositions produce three distinct and measurable predictions.

Chen B. Li J. Hauck S. A. II
Experimental Constraints on the State of Mercury's Core **[#1486]**
Experimental data on Fe-S alloys reveal non-ideal solution behavior at 14 GPa, resulting in a negative liquidus temperature gradient under conditions found at shallow depths in Mercury's core. Currently, the core is probably precipitating solid iron in the form of snow.

Barkin Yu. V. Ferrandiz J. M.
Dynamic Role of Liquid Core of Mercury in its Rotation **[#1206]**
New approach to the study of Mercury dynamics and the construction of analytical theory of its resonant rotation is developed. Within this approach Mercury is considered as a system of two non-spherical interacting bodies: a liquid core and a rigid mantle.

Sprague A. L. Donaldson Hanna K. L. Kozlowski R. W. H. Helbert J. Maturelli A. Izenberg N. R.
Mercury: Mg-rich Mineralogy with K-spar and Garnet **[#1320]**
Mg-rich pyroxene and olivine, orthoclase and/or sanadine K-spars, labradorite plagioclase, and Mg- and Ca-rich garnet have been identified by spectral deconvolution of Mercury surface spectra at regions near the footprint of the first MESSENGER flyby.

Freed A. M. Solomon S. C. Kennedy P. J.
Mechanisms of Faulting In and Around Caloris Basin, Mercury **[#1189]**
Finite element models of lithospheric loading can account for the sequence and pattern of faulting within and exterior to the Caloris basin, Mercury, and lead to predictions of what MESSENGER may observe.

Mohit P. S. Johnson C. L.
Viscous Relaxation on Mercury? **[#1442]**
We evaluate the possibility that mercurian impact basins have relaxed by viscous flow and discuss the implications for the crustal thickness of the planet.

Carli C. Sgavetti M. Pompilio L. Trua T.
Terrestrial Norite-Anorthosite Suites as Analogues for Mercury's Surface **[#1564]**
Rocks from two terrestrial intrusions are proposed. Linear relationships are observed between pyroxene band I centers vs. mineral chemistry and pyroxene band I depths vs. modal composition. Lunar rocks match the terrestrial sample regression curves.