

Monday, March 10, 2008
SPECIAL SESSION: MESSENGER AT MERCURY I
8:30 a.m. Crystal Ballroom A

Chairs: S. C. Solomon
M. S. Robinson

- 8:30 a.m. Solomon S. C. * McNutt R. L. Jr. Bedini P. D. Finnegan E. J.
Grant D. G. MESSENGER Team
The Return to Mercury: An Overview of MESSENGER's First Mercury Flyby [#1712]
MESSENGER's first flyby of Mercury provided color images of areas not seen by Mariner 10, spectra of the surface and exosphere, and measurements of the near-equatorial magnetic and gravity fields, topography, and charged particle environment.
- 8:45 a.m. Smith D. E. * Zuber M. T. Phillips R. J. Solomon S. C. Peale S. J. Margot J.-L.
Lemoine F. G. Neumann G. A. Perry M. E. Srinivasan D. K. Torrence M. H.
Mercury Gravity Observations During the MESSENGER Flyby of January 2008 [#1285]
On January 14, 2008, the MESSENGER spacecraft flew by the planet Mercury and Doppler tracking measurements provided important information on the low-degree gravity field of the planet last measured by Mariner 10 in 1974–75.
- 9:00 a.m. Zuber M. T. * Smith D. E. Solomon S. C. Phillips R. J. Head J. W. III Oberst J. Peale S. J.
Johnson C. L. Neumann G. A. Lemoine F. G. Sun X. Barnouin-Jha O. S. Harmon J. K.
Laser Altimeter Observations from MESSENGER's First Mercury Flyby [#1223]
During the first MESSENGER flyby on January 14, 2008, the Mercury Laser Altimeter ranged to Mercury's surface and is expected to collect a long (>1000 km) topographic profile in the equatorial region of the planet.
- 9:15 a.m. Prockter L. M. * Murchie S. L. Robinson M. S. Laslo N. R. Kang H. K.
Hawkins S. E. III Harch A. P. Vaughan R. M. Blewett D. T. Head J. W. III
Solomon S. C. MESSENGER Team
MESSENGER Imaging of Regions of Mercury Not Seen by Mariner 10 [#1211]
On January 14, 2008, the MESSENGER spacecraft flew by the planet Mercury, primarily imaging the hemisphere that was not seen by the Mariner 10 spacecraft. Here we discuss the general characteristics of the regions not previously seen by Mariner 10.
- 9:30 a.m. Watters T. R. * Solomon S. C. Robinson M. S. Prockter L. M. Strom R. G. Head J. W. III
Chapman C. R. Murchie S. L.
The Tectonics of Mercury: A New View from MESSENGER [#1300]
The first flyby of Mercury by the MESSENGER spacecraft allowed a near-global assessment of the tectonics of the planet and provided new constraints on the magnitude and timing of deformation.
- 9:45 a.m. Robinson M. S. * Chapman C. R. Domingue D. L. Hawkins S. E. III Head J. W. III
Holsclaw G. M. McClintock W. E. McNutt R. L. Jr. Murchie S. L.
Prockter L. M. Strom R. G. Watters T. R. Blewett D. T. Gillis-Davis J. J.
Solomon S. C. MESSENGER Team
Mercury Color and Albedo: New Insights from MESSENGER [#1187]
An overview of MESSENGER color and albedo observations of Mercury obtained 14 January 2008.
- 10:00 a.m. Head J. W. III* Chapman C. R. Domingue D. L. Hawkins S. E. III McClintock W. E.
Murchie S. L. Prockter L. M. Robinson M. S. Strom R. G. Watters T. R. Blewett D. T.
Gillis-Davis J. J. Solomon S. C. MESSENGER Team
Origin of Plains on Mercury: Insights from MESSENGER's First Mercury Flyby [#2161]
The origin of smooth and intercrater plains on Mercury is controversial, with volcanism and impact ejecta emplacement as key candidates. The instrument complement onboard the MESSENGER spacecraft provided critical information during the first flyby.

- 10:15 a.m. McClintock W. E. * Holsclaw G. M. Robinson M. S. Blewett D. T. Domingue D. L. Head J. W. III Izenberg N. R. Jensen E. A. Kochte M. C. Lankton M. R. Murchie S. L. Sprague A. L. Vilas F.
Spectroscopic Observations of Mercury's Surface by the Mercury Atmospheric and Surface Composition Spectrometer During the First MESSENGER Flyby [#1330]
During the first MESSENGER flyby of Mercury, the Mercury Atmospheric and Surface Composition Spectrometer (MASCS) measured reflectance spectra from Mercury's surface. These are the first high-spatial-resolution (<10 km) spectra at any wavelength.
- 10:30 a.m. Vilas F. * Sprague A. L. Izenberg N. R. McClintock W. E. Domingue D. L. Holsclaw G. M. Bradley E. T. Blewett D. T. Robinson M. S. Kochte M. C. Lankton M. R. Murchie S. L. Donaldson Hanna K. L. Jensen E. A.
Ultraviolet Reflectance Spectra of Mercury's Surface Acquired with the UltraViolet and Visible Spectrometer During the First MESSENGER Flyby [#1212]
During the first MESSENGER flyby of Mercury, the Mercury Atmospheric and Surface Composition Spectrometer UltraViolet and Visible Spectrometer was used to obtain reflectance spectra from 116.85 to 320.2 nm of Mercury's surface.
- 10:45 a.m. Nittler L. R. * Evans L. G. McCoy T. J. Sprague A. L. Boynton W. V. Donaldson Hanna K. L. Goldsten J. O. Rhodes E. A. Schlemm C. E. II Solomon S. C. Starr R. D.
X-Ray and Gamma-Ray Spectrometer Observations of the Elemental Composition of the Equatorial Region of Mercury: Testing Formation Models [#1205]
We present a plausible range of composition models for Mercury's crust. Modeling suggests that abundance data from the first MESSENGER flyby should allow discrimination among the models and hence constrain the origin of this enigmatic planet.
- 11:00 a.m. McClintock W. E. * Bradley E. T. Izenberg N. R. Killen R. M. Kochte M. C. Lankton M. R. Mouawad N. Sprague A. L. Vervack R. J. Jr.
Observations of Mercury's Exosphere by the Mercury Atmospheric and Surface Composition Spectrometer During the First MESSENGER Flyby [#1353]
During the first MESSENGER flyby of Mercury, the UltraViolet and Visible Spectrometer channel of the Mercury Atmospheric and Surface Composition Spectrometer observed Mercury's sodium tail and exosphere. Flybys provide opportunities for extended tail observations.
- 11:15 a.m. McNutt R. L. Jr.* Ho G. C. Krimigis S. M. Andrews G. B. Baker D. N. Gold R. E. Livi S. A. Mauk B. H. Slavin J. A. Solomon S. C. MESSENGER Team
Energetic Particle Measurements in Mercury's Magnetosphere: First Results from MESSENGER [#1192]
Observations of energetic ions and electrons by the Energetic Particle Spectrometer (EPS) in Mercury's magnetosphere are presented. These observations from the MESSENGER Mercury Flyby 1 are the first such observations since those of Mariner 10.
- 11:30 a.m. Zurbuchen T. H. * Raines J. M. Gloeckler G. Kabin K. Krimigis S. M. Andrews G. B. Slavin J. A. Koehn P. L. MESSENGER Team
First Ion Plasma Measurements in the Mercury Magnetosphere [#1383]
We present first plasma ion observations from MESSENGER-FIPS at Mercury. These observations will characterize Mercury's heliospheric environment, its magnetosphere, and, potentially, pick-up ions from surface sputtering and atmospheric processes.
- 11:45 a.m. Anderson B. J. * Acuña M. H. Slavin J. A. Korth H. Purucker M. E. Benna M. Johnson C. L. Schriver D. Boardsen S. A. Solomon S. C. MESSENGER Team
The Magnetic Field of Mercury: Insights After the First MESSENGER Flyby [#1363]
The 14 January 2008 MESSENGER flyby of Mercury provided magnetic field data at 20 samples/s with 0.047 nT resolution on a trajectory complementing the Mariner 10 flyby providing tighter constraints on the intrinsic field than previously possible.