

**Friday, March 24, 2017**  
**MERCURY: FROM CRUST TO CORE**  
**8:30 a.m. Waterway Ballroom 1**

[F701]

**Chairs: Deborah Domingue**  
**David Rothery**

- 8:30 a.m. Domingue D. L. \* D'Amore M. Ferrari S. Helbert J. Izenberg N.  
[\*Spectrophotometric Properties of Mercury's Surface Derived from the MESSENGER MASCS Observations\*](#) [#1637]  
 Varying angles / MASCS spectra are darkly seen / One view to compare.
- 8:45 a.m. Maturilli A. \* Helbert J. Varatharajan I. Hiesinger H.  
[\*Emissivity Spectra of Analogue Materials at Mercury P-T Conditions\*](#) [#1427]  
 Emissivity spectra in vacuum (0.7 mbar) for Mercury surface analogues in the MERTIS spectral range (7–14  $\mu\text{m}$ ) for sample temperatures from 100°C to above 400°C.
- 9:00 a.m. McEwen A. S. \* Robbins S. J. Bierhaus E. B.  
[\*Why Are There Many More Large Secondary Craters on Mercury Than on the Moon or Mars?\*](#) [#2028]  
 The greater abundance of large secondary craters on Mercury is best explained by its unique geologic history.
- 9:15 a.m. Ostrach L. R. \* Dundas C. M.  
[\*Topographic Assessment of Hollows on Mercury: Distinguishing Among Formation Hypotheses\*](#) [#1656]  
 Mercury hollows / Many formation ideas / Topography helps.
- 9:30 a.m. Peplowski P. N. \* Gleyzer S. V.  
[\*Analytical Identification of Major Geochemical Terranes in Mercury's Northern Hemisphere\*](#) [#1592]  
 MESSENGER-measured maps of Mercury's elemental composition are used to characterize the major geochemical terranes of Mercury's surface.
- 9:45 a.m. Rothery D. A. \* Mancinelli P. Guzzetta L. Wright J.  
[\*Mercury's Caloris Plains: Continuity Between Interior and Exterior Plains?\*](#) [#1432]  
 Using the highest resolution MESSENGER imagery, we can find no basis for distinguishing the plains inside and outside the Caloris Basin.
- 10:00 a.m. Wright J. \* Rothery D. A. Balme M. R. Conway S. J.  
[\*Volcanic Shields on Mercury Identified At Last?\*](#) [#1871]  
 Check out these (maybe) / Volcanoes on Mercury / BepiColombo!
- 10:15 a.m. Charlier B. \* Namur O.  
[\*Mineralogical Variations at the Surface of Mercury\*](#) [#1173]  
 Crystallization experiments on Mercury lavas constrain the silicate mineralogy at the surface of the planet and show the role of mantle secular cooling.
- 10:30 a.m. McCubbin F. M. \* Vander Kaaden K. E. Peplowski P. N. Bell A. S. Evans L. G. et al.  
[\*Oxygen Depletion on the Surface of Mercury: Evidence of Silicon Smelting?\*](#) [#1742]  
 Oxygen is scarce / Silicon smelting ensues / Keep Mercury weird.
- 10:45 a.m. Namur O. \* Collinet M. Grove T. L. Charlier B.  
[\*Thermal Evolution of Mercury's Mantle as Recorded by Lava Compositions\*](#) [#1807]  
 We investigate the thermal evolution of Mercury's mantle using experiments that constrain the conditions of mantle melting and the formation of lavas.

- 11:00 a.m. Putter R. \* Steenstra E. S. Seegers A. X. Lin Y. H. Matveev S. et al.  
[Effects of  \$fO\_2\$  and Si on Metal-Silicate Partitioning of Refractory and Moderately Volatile Siderophile Elements: Implications for the Si Content of Mercury's Core](#) [#1055]  
Silicon in metal significantly affects the activities of many siderophile elements. Results suggest Mercury's core is Si-rich, independent of bulk composition.
- 11:15 a.m. Knibbe J. S. \* van Westrenen W.  
[Mercury's Thermal Evolution and Magnetic Field Generation with an Fe-Si Core](#) [#1094]  
We show that an Fe-Si core of Mercury, instead of an Fe-S core, is consistent with the partially liquid core and the proposed mechanism for dynamo generation.
- 11:30 a.m. Vander Kaaden K. E. \* McCubbin F. M. Ross D. K. Draper D. S.  
[The Role of Carbon in Core Formation Under Highly Reducing Conditions with Implications for the Planet Mercury](#) [#1099]  
If Mercury's volatile-rich nature holds true for C, a substantial proportion of the C in Mercury would have been excluded from the core of the planet.