Tuesday, May 1, 2018
MERCURY:
ORIGIN, GEOLOGIC HISTORY, AND VOLCANISM
3:20 p.m. USRA Conference Center

Chairs:
David Rothery
Christopher Malliband

3:20 p.m. Invited: Kamata S. * Kuramoto K.
Mercury as a Probe for the Early Inner Solar System [#6068]
Surface chemistry of Mercury infers the early solar system environment not only at its inner edge but also at an outer region including the Earth and asteroids.

3:35 p.m. Boukare C.-E. Parman S. W. * Parmentier E. M. Anzures B. A.
Production and Preservation of Sulfide Layering in Mercury’s Magma Ocean [#6105]
Mercury’s magma ocean (MMO) would have been sulfur-rich. At some point during MMO solidification, it likely became sulfide saturated. Here we present physiochemical models exploring sulfide layer formation and stability.

3:47 p.m. Anzures B. A. * Parman S. W. Milliken R. E.
Effect of Sulfur Speciation on Chemical and Physical Properties of Reduced Mercurian Melts [#6017]
Changes in sulfide speciation (FeS, MgS, CaS, Na2S) influence activities, stability of phases, polymerization, and viscosity.

3:59 p.m. Malliband C. C. * Rothery D. A. Balme M. R. Conway S. J.
Small Smooth Units (‘Young’ Lavas?) Abutting Lobate Scarps on Mercury [#6092]
We have identified small units abutting, and so stratigraphy younger than, lobate scarps. This post dates the end of large scale smooth plains formation at the onset of global contraction. This elaborates the history of volcanism on Mercury.

4:11 p.m. Head J. W. * Wilson L.
Magmatic Ascent and Eruption Processes on Mercury [#6102]
MESSENGER volcanic landform data and information on crustal composition allow us to model the generation, ascent, and eruption of magma; Mercury explosive and effusive eruption processes differ significantly from other terrestrial planetary bodies.

4:23 p.m. Besse S. * Dorresoundiram A. Griton L.
Analysis of Pyroclastic Deposits Using MESSENGER MASCS Observations [#6063]
Pyroclastic Deposits on the surface of Mercury are analysed using MASCS observations and an optimised calibration procedure. Pyroclastic Deposits show similar spectral properties that is explained by isotropic distribution of the ashes.

4:35 p.m. Jozwiak L. M. * Izenberg N. R. Olson C. L. Head J. W.
Investigating the Age of Mercury’s Pyroclastic Deposits [#6089]
We use a combination of stratigraphic and comparative spectral analysis to investigate the ages of Mercury’s pyroclastic deposits. We find that pyroclastic deposits have continued to form into Mercury’s recent geologic history.

4:50 p.m. Kinczyk M. J. * Byrne P. K. Proctor L. P. Susorney H. C. M. Barnouin O. S.
Crater Degradation on Mercury: A Global Perspective [#6116]
Results from a global catalog of crater degradation are explored and implications for our understanding of Mercury’s geological history are discussed.
5:02 p.m.  Banks M. E. *  Xiao Z.  Marchi S.  Chapman C. R.  Barlow N. G.  Fassett C. I.  
*Revised Age Constraints for Mercury’s Kuiperian and Mansurian Stratigraphic Systems [6124]*
Crater statistics constrain the onset of Mercury’s two most recent periods. The Kuiperian likely began ~280 ± 60 Ma and the Mansurian ~1.7 ± 0.2 Ga. Results indicate younger Kuiperian and Mansurian periods than previously assumed.

5:14 p.m.  Invited:  Denevi B. W. *  Ernst C. M.  Klima R. L.  Robinson M. S.  
*Mercury’s Early Geologic History [6055]*
A combination of geologic mapping, compositional information, and geochemical models are providing a better understanding of Mercury’s early geologic history, and allow us to place it in the context of the Moon and the terrestrial planets.