Thursday, March 20, 2014

PLANETARY VOLCANISM: MERCURY, MOON, AND MARS
8:30 a.m. Waterway Ballroom 6

Chairs: Christopher Hamilton
Gareth Morgan

Sulfur-Depleted Composition of Mercury's Largest Pyroclastic Deposit: Implications for Explosive
Volcanism and Surface Reflectance on the Innermost Planet [#1391]
A large pyroclastic deposit on Mercury is strongly depleted in S. Sulfur is a key volatile for explosive
volcanism and sulfides play a role in darkening the surface.

8:45 a.m. Wilson L. * Head J. W. III Tye A. R.
Lunar Regional Pyroclastic Deposits: Evidence for Eruption from Dikes Emplaced into the
Near-Surface Crust [#1223]
We show that gas concentration in foam layers at the top of the magma in dikes intruded to shallow
depth can explain the observed dispersal of lunar pyroclasts.

9:00 a.m. Sunshine J. M. * Petro N. E. Besse S. Gaddis L. R.
Widespread Exposures of Small Scale Spinel-Rich Pyroclastic Deposits in Sinus Aestuum [#2297]
Small-scale exposures of spinel-rich deposits are far more expansive than previously reported,
suggesting longer-lived volcanism sustained by enhanced Th.

Magma Ascent at Lunar Impact Basins: Effects of Lithospheric Tectonic Stress Gradients,
Brittle Failure, and Volatile Generation [#2771]
We combine models of lithospheric stress, melt buoyancy, and volatile generation to determine regions
of enhanced magma ascent around lunar impact basins.

9:30 a.m. Pasckert J. H. * Hiesinger H. van der Bogert C. H.
Lunar Mare Basalts In- and Outside of the South Pole-Aitken Basin [#1968]
We mapped 103 mare deposits in and outside the South Pole-Aitken Basin and derived absolute model
ages for 50 of those mare basalts.

9:45 a.m. Edwards C. S. * Asimow P. D. Ehlmann B. L. Stewart-Mukhopadhyay S.
Testing the Impact-Induced Decompression Melting Hypothesis for Rocky, Mafic Infilled
Crater Floors on Mars [#2644]
Mafic, lava-filled rocky craters are pervasive on Mars. We present two models to test the conditions
needed for impact-induced decompression melting to occur.

10:00 a.m. Lillis R. J. * Dufek J. Kiefer W. S. Bleacher J. E. Manga M.
Mystery of Intrusion History at Syrtis Major: Clues from Multiple Data Sets [#2135]
Gravity, magnetic field, and mineralogical data imply a complex eruptive history of Syrtis involving
different styles of magmatism.

Amazonian Volcanic Activity at the Syrtis Major Volcanic Province, Mars [#2524]
The Syrtis Major volcanic province was also volcanically active in the Amazonian Period. Here we
show first results of its eruption frequency record.

10:30 a.m. Skok J. R. * Mustard J. F.
Glaciation and Volcanic Interaction to form the Modern Northeast Syrtis Region of Mars [#1924]
An examination of a channel and basins system in Northeast Syrtis to investigate the geologic and
climatic history of this key region of stratigraphic exposure.
10:45 a.m. Hamilton C. W. * Bleacher J. E. Irwin R. P. Mazarico E. M.  
Sinuous Channels East of Olympus Mons, Mars: Implications for Volcanic and Fluvial Processes [1555]
Geomorphological mapping of channels east of Olympus Mons reveals episodes of aqueous flooding and erosion interspersed with Late Amazonian effusive volcanism.

11:00 a.m. Dundas C. M. * Keszthelyi L. P.  
Emplacement and Erosive Effects of a Turbulent Lava Flow in Kasei Valles, Mars [2211]
Turbulent flood lava in Kasei Valles caused locally significant erosion, but the scale indicates that similar flows did not erode major outflow channels.

11:15 a.m. Morgan G. A. * Campbell B. A. Carter L. M. Plaut J. J.  
Tomographic Reconstruction of a Sequence of Eruptive Events in Elysium Planitia, Mars [2377]
We will present 3-D visualizations of multiple buried flow units derived from SHARAD data and assess the volume of lava associated with each eruption.

11:30 a.m. Rhodes N. * Hurtado J. M. Jr.  
A GPR Survey of Kilbourne Hole, Southern New Mexico: Implications for Near Surface Geophysical Exploration of Mars and the Moon [2912]
We conduct an analysis of pyroclast size distribution using ground penetrating radar (GPR) to make a quantitative estimate of the presence of past groundwater.