

Thursday, March 22, 2018

[R613]

POSTER SESSION II: PLANETARY VOLCANISM II: FIRE, ICE, AND FRAGMENTATION
6:00 p.m. Town Center Exhibit Area

Evans A. J. Andrews-Hanna J. C. **POSTER LOCATION #216**
[*Mars Habitability and the Significance of Obliquity-Driven Coupling of Magmatism and Ice Deposition: A Case Study at Olympus Mons*](#) [#2733]

Obliquity-driven ice deposition on Mars may modulate volcanism and systematically replenish water, enabling past periods of long-term habitability.

Farrand W. H. Rice J. W. Jr. **POSTER LOCATION #217**
[*Associations of Ice and Magma in the Formation of Domes in Western Arcadia Planitia*](#) [#2592]

Examination of CRISM and THEMIS data indicates the presence of ferrous silicates and sparse alteration minerals associated with domes in west Arcadia Planitia.

Robinson D. M. Helm C. A. Hughes C. G. **POSTER LOCATION #218**
[*Searching for Maars on Mars: Ravi Valles, Xanthe Terra, and Arena Colles*](#) [#2462]

If martian maars exist, they could tell us about Mars' geologic history.

Cassanelli J. P. Head J. W. **POSTER LOCATION #219**
[*Evaluating the Role of Large-Scale Lava-Ice Interactions During Elysium Planitia Volcanism and the Formation of Athabasca Valles*](#) [#1125]

We explore the potential occurrence and implications of large-scale lava-ice interactions during volcanism in the Elysium Planitia region on Mars.

Palumbo A. Head J. Wordsworth R. **POSTER LOCATION #220**
[*Exploring the Influence of Volcanism-Induced Heating on the Early Climate of Mars*](#) [#2169]

We consider the heating associated with volcanic SO₂ and H₂S in the martian atmosphere and estimate the amount of meltwater produced through summertime melting.

Head J. W. III Wilson L. Palumbo A. Cassanelli J. **POSTER LOCATION #221**
[*Volcanic Ash \(Tephra\) Deposition as a Mechanism for Melting Snow and Ice in a Late Noachian Icy Highlands Climate*](#) [#2246]

Climate models predict a cold and icy early Mars, but have difficulty producing observed melting; we assess volcanic ash emplacement as a candidate mechanism.

Glaze L. S. Baloga S. M. Fagents S. A. **POSTER LOCATION #222**
[*Comparison of Volcanic Ash Settling Rates on Earth, Mars, and Venus*](#) [#2165]

The influences of gravity and atmospheric density on volcanic ash settling rates are compared for Earth, Mars, and Venus.

Dunning I. T. Gregg T. K. P. Zimbelman J. R. **POSTER LOCATION #223**
[*How Big Was It? The Former Extent of the Medusae Fossae Formation, Mars*](#) [#2418]

We present a description of Medusae Fossae Formation (MFF) outcrops, and use that description to identify previously unknown MFF outliers.

Horvath D. G. Andrews-Hanna J. C. **POSTER LOCATION #224**
[*The Thickness and Morphology of a Young Pyroclastic Deposit in Cerberus Palus, Mars: Implications for the Formation Sequence*](#) [#2435]

The thickness and morphology of the youngest known volcanic eruption on Mars are presented and we propose a possible formation sequence.

Fawdon P. Rogers D. Skok J. R. Balme M. Vye-Brown C. et al. **POSTER LOCATION #225**
[*Evolved and Explosive Volcanism in Meroe Patera and Syrtis Major Central Caldera Complex*](#) [#2865]

Thermally-distinct materials in the Syrtis Major caldera complex are an extrusive high silica lava and possible further outcrops associated with an ignimbrite.

Bates A. Karunatillake S. Hood D. R. Susko D. Carnes L. et al. **POSTER LOCATION #226**
[*The Putative Martian Paterae Within Northwest Arabia Terra Compared with Contemporaneous Volcanic Provinces*](#) [#3010]

Northwest Arabia Terra has relict volcanic structures (paterae) which could represent an ancient form of volcanism, analogous to terrestrial supervolcanoes.

Guzewich S. D. Richardson J. Whelly P. Abshire J. B. Arney G. et al. **POSTER LOCATION #227**
[*Volcanic Impacts on Planetary Atmospheres: Research and Reconnaissance Strategies \(VIPARRS\)*](#) [#2231]

VIPARRS is an interdisciplinary research group at NASA GSFC studying the role that volcanism has played in shaping planetary atmospheres and climates.

Slezak T. J. Radebaugh J. Christiansen E. H. **POSTER LOCATION #228**
[*Quantitative Morphological Classification of Craterforms Using Multivariate Outline-Based Shape Analysis*](#) [#2640]

Craterforms produced by different processes are quantitatively classified by morphology using outline-based shape analysis and multivariate statistical methods.

Gutierrez S. de Kleer K. de Pater I. Rathbun J. **POSTER LOCATION #229**
[*Occultation Light Curves of Io's Hot Spots in 2014*](#) [#2954]

We present ground-based observations of Io during Spring 2014, contributing to decadal timelines of individual hot spots' volcanic activity.

Davies A. G. Davies R. L. Veeder G. J. de Kleer K. de Pater I. et al. **POSTER LOCATION #230**
[*Identification of a Short-Lived Strombolian-Like Thermal Event in Galileo NIMS Data of Marduk Fluctus, Io*](#) [#1466]

Rapid changes in thermal emission suggest a powerful, transient, strombolian-like explosion which generated a myriad of small clasts that cooled rapidly.

Ackley P. C. Hoey W. A. Goldstein D. B. Trafton L. M. Varghese P. L. **POSTER LOCATION #231**
[*Interpreting Observations of Volcanic Plume Structure in the Absence of an Atmosphere: Example of Tvashtar*](#) [#2932]

A novel method of simulating volcanic plumes in the absence of an atmosphere is presented and used to draw conclusions about vent processes from plume images.

Vaughan R. G. Keszthelyi L. P. Davies A. G. **POSTER LOCATION #232**
[*A High-Speed Multispectral VNIR Camera Calibrated for Remotely Retrieving Incandescent Lava Temperatures: Implications for Studying Volcanism on Earth and Io*](#) [#2602]

Exploring the challenges of remotely measuring reliable lava flow temperatures has yielded a better understanding of the kind of instruments and methods needed.