

Tuesday, March 20, 2018

[T321]

**POSTER SESSION I: PLANETARY VOLCANISM AND IGNEOUS PROCESSES:
ENDLESS LAVA**

6:00 p.m. Town Center Exhibit Area

Dyar M. D. McCanta M. C. Lanzirotti A. Gunter M. Steven C. et al. **POSTER LOCATION #225**
[Orientation Dependence of Vanadium Absorption Spectra: Implications for Studies of V Valence and Resultant Fugacity](#) [#1067]

This project presents V K-edge XANES data from oriented single crystals of pyroxene that may be used to determine fO_2 of crystallization.

McCanta M. C. Dyar M. D. Steven C. Gunter M. Lanzirotti A. **POSTER LOCATION #226**
[In Situ Measurements of Fe³⁺ in Pyroxene Using X-Ray Absorption Spectroscopy: Using an Oriented Crystal Calibration to Refine Geothermobarometric Calculations](#) [#1074]

We present the challenges of measuring ferric iron in anisotropic minerals using XAS and present a new calibration for pyroxene using oriented, single crystals.

Boyce J. W. Baker M. B. Guan Y. Macris C. A. **POSTER LOCATION #227**
[Hydrogen Diffusion in Apatite](#) [#2492]

Diffusion of H / Multiple mechanisms / Isotope exchange!

Tolometti G. D. Flemming R. L. Neish C. D. Osinski G. R. **POSTER LOCATION #228**
[Redox Conditions and the Surface Roughness of Lava Flows](#) [#1382]

Discussing the redox conditions of lava flows from Craters of the Moon and how it can influence their surface roughness.

Sehlke A. Sears D. W. G. Sears H. Hughes S. S. **POSTER LOCATION #229**
[Induced Thermoluminescence as a Method for Dating Recent Volcanism: Variabilities Within the Blue Dragon Flow at Craters of the Moon, Idaho, USA](#) [#1833]

Induced thermoluminescence was determined for lava belonging to a single lava flow to investigate and isolate the scatter in TL signatures of basalts.

Sehlke A. Hofmeister A. M. Whittington A. G. **POSTER LOCATION #230**
[Thermal Properties of Glassy and Molten Planetary Tholeiites](#) [#1826]

Thermal conductivity of planetary tholeiites varies greatly. Models of igneous processes should use composition-specific thermal conductivity data.

Riu L. Poulet F. Bibring J.-P. Gondet B. **POSTER LOCATION #231**
[Statistical Classification of the Composition of Mafic-Rich Martian Terrains from Orbital Observations](#) [#1568]

We present here a classification map of the martian surface based on the global abundances of mafic minerals derived from OMEGA/MEx using the Shkuratov theory.

Cataldo V. Williams D. A. Schmeckle M. W. **POSTER LOCATION #232**
[Using the OpenFOAM C++ Library of Applications to Simulate Flow of Turbulent Lava at Raglan, Cape Smith Belt, New Québec, Canada](#) [#1658]

We created a 3-D model of thermal erosion by turbulent lava and derived an erosion rate expression, at the channel bed and banks, at two rectangular channels.

Golder K. B. Burr D. M. Tran L. T. **POSTER LOCATION #233**
[Constraining Controls on the Emplacement of Long Lava Flows on Earth and Mars Through Modeling in ArcGIS](#) [#1515]

We present initial results of our new lava flow model, used to investigate the controlling parameters on the development of long lava flows on Earth and Mars.

Connor C. B. Connor L. J. Richardson J. A. Gallant E. Miller D. **POSTER LOCATION #234**
[Using MOLASSES, a Lava Flow Simulation Code, to Interpret the Morphology of Volcanoes: Example of Olympus Mons \(Mars\) \[#2080\]](#)

MOLASSES is a new lava flow simulator that helps infer eruptive processes from the topography of remotely observed volcano landforms, like Olympus Mons volcano.

Buban H. C. Skinner J. A. Jr. Skinner L. A. **POSTER LOCATION #235**
[Building a Martian Volcano Database: Criteria, Process, and Status \[#2382\]](#)

To date, a global database of all volcanoes on Mars does not yet exist. We present progress on compiling such a database of volcanoes on Mars using THEMIS IR.

Bharti R, R. Smith I. B. **POSTER LOCATION #236**
[Investigating Multiple Lava Flows Near Mangala Fossa with SHARAD \[#1550\]](#)

We present new evidences from the SHARAD sounding experiment on MRO that lava played an important role in formation of the Mangala out flow channel on Mars.

Ganesh I. Carter L. M. Smith I. **POSTER LOCATION #237**
[Subsurface Interfaces in the Arsia Mons Caldera — Observations from SHARAD \[#2807\]](#)

We use SHARAD data to map subsurface reflectors in the Arsia Mons caldera and explore the causes for radar reflection from below the surface in Tharsis calderas.

Meng X. Xu Y. Xiao L. Xiao Z. Y. **POSTER LOCATION #238**
[Characterization of Lava Flows in the Elysium-Utopia Region of Mars Using SHARAD Data \[#1381\]](#)

The value of permittivity of the surface layer in Elysium-Utopia region is 8.2 with a standard deviation of 2.2. Long-time erosion may contribute the low value.

Richardson J. A. Bleacher J. E. Connor C. B. Glaze L. S. **POSTER LOCATION #239**
[Trends in Distributed Volcanism Across Tharsis Province, Mars \[#2045\]](#)

Small volcanoes are windows through which we view magmatic and tectonic processes of Mars' largest volcanic center.

Mohr K. J. Williams D. A. Garry W. B. Bleacher J. E. **POSTER LOCATION #240**
[Preliminary Volcanic Feature Analysis of Olympus and Ascraeus Mons, Mars \[#2407\]](#)

Comparison analysis of volcanic features observed and mapped on Olympus and Ascraeus Mons, Mars.

Simurda C. M. Ramsey M. S. Crown D. A. **POSTER LOCATION #241**
[Modeling Particle Size Distributions that Cause the Unique Thermophysical Variations in Daedalia Planum, Mars \[#1792\]](#)

A two-component thermophysical model is used to define the particle size distributions that causes significant thermophysical variation in Daedalia Planum.

Quantin-Nataf C. Dromart G. Mandon L. **POSTER LOCATION #242**
[Noachian to Amazonian Volcanic Activity in NE Syrtis Region \[#2591\]](#)

NE syrtis exposes several volcanic capping units. These units are Noachian, Hesperian, and Amazonian in age.

Voigt J. R. C. Hamilton C. W. Fanara L. Steinbrügge G. **POSTER LOCATION #243**
[A Revised Geologic History for the Major Flow Units in Eastern Elysium Planitia, Mars \[#1493\]](#)

The work refines the overall emplacement chronology for the major flood basalt units and aqueous flooding events in Eastern Elysium Planitia.

Hamilton C. W. Mouginiis-Mark P. J. Sori M. M. Scheidt S. P. Bramson A. M. **POSTER LOCATION #244**

[Evidence of Lava Flow Inflation Near Hrad Vallis, Mars \[#2313\]](#)

The Hrad Vallis region includes evidence of aqueous flooding and effusive volcanism, implying that martian outflow channels have complex geologic histories.

Scheidt S. P. Crown D. A. Berman D. C.

POSTER LOCATION #245

[Topographic Analyses of Valley Networks and Volcanic Ridges on the Flanks of Alba Mons, Mars](#) [#1570]

This research employs morphometric analyses within a broader investigation of the geologic evolution of the northernmost Tharsis volcano, Alba Mons.

Bell E. Jr. Schmerr N. Young K. Whelley P. Garry W. et al.

POSTER LOCATION #246

[Characterization of Lava Tubes with Magnetometry](#) [#2412]

This study aims to correlate terrestrial lava tube magnetic signatures to morphologic characteristics, and use the results in the search for lunar lava tubes.

Sulcanese D. Komatsu G. Ori G. G. Rodriguez J. A. P.

POSTER LOCATION #247

[Discovery of Potential Cave Skylights in Hebrus Valles and Hephaestus Fossae, Mars](#) [#1218]

In this work we present the discovery of potential skylights connected to an extensive cave system in the area of Hebrus Valles and Hephaestus Fossae, Mars.

Peters S. I. Christensen P. R. Clarke A. B.

POSTER LOCATION #248

[Constraining Lava Flow Eruption Rates on Mars Using Laboratory Analogue Wax Experiments](#) [#3002]

Using laboratory wax experiments, we have attempted to constrain the eruption rates of lava flows on Mars.