Tuesday, March 20, 2018

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
fO2 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.

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. Schmeeckle 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.
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.

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.

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 outflow channel on Mars.

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.

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.

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.

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.

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.

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.

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.

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.