Thursday, March 19, 2015 **[R711]**
POSTER SESSION II: PLANETARY VOLCANISM:
IF YOU CAN'T STAND THE HEAT, GET OUT OF THE MANTLE
6:00 p.m. Town Center Exhibit Area

Whelley P. L. Garry W. B. Bleacher J. E. ***POSTER LOCATION #121***
LiDAR Signatures of Lava Flow Textures: Applications to Planetary Volcanism **[#2140]**
We differentiate lava flow textures based on patterns in surface roughness on Earth, and identify the data necessary to similarly do so, on Mars.

Scheidt S. P. Hamilton C. W. ***POSTER LOCATION #122***
Generation of Ultrahigh Spatial Resolution Digital Terrain Models for a Martian Lava Flow Analog from Kilauea Volcano, Hawaii **[#1055]**
Very-high-resolution topographic data were created using photogrammetry of a lava flow at Kilauea, Hawaii for Cerberus Fossae 2 unit, Elysium Planitia, Mars.

Henderson A. O. Christiansen E. H. Radebaugh J. ***POSTER LOCATION #123***
Low-Shield Volcanism: A Comparison of Volcanoes on Syria Planum, Mars and Snake River Plain, Idaho **[#2685]**
Low-shield volcanos on Syria Planum are compared to shields on Snake River Plain, Idaho. Syria Planum shields have lower slopes and larger diameters and volumes.

Garry W. B. Hughes S. S. Kobs-Nawotniak S. E.
Neish C. D. Haberle C. W. et al. ***POSTER LOCATION #124***
The Geology of Inferno Chasm, Idaho: A Terrestrial Analog for Lunar Rilles **[#1009]**
We will compare field observations of Inferno Chasm, a low-shield with a sinuous channel in Idaho to Isis, a small lunar rille we argue formed by construction.

Keszthelyi L. Baker L. Dundas C. Milazzo M. Abramov O. et al. ***POSTER LOCATION #125***
Testing Models of Lava-Water Interaction with Field Data **[#2363]**
We test numerical models of lava water interaction against field observations of a sill that intruded lake sediments. Simple models fail, and more work is needed.

Hughes S. S. Kobs Nawotniak S. E. Sears D. W. G.
Garry W. B. Haberle C. W. et al. ***POSTER LOCATION #126***
King's Bowl, Idaho — A Volcanic Analog for Fissure Eruptions, Pit Craters and Dike Injection Along Rima Hyginus, Moon, and Cyane Fossae, Mars **[#2846]**
King's Bowl eruptive fissure on the Snake River Plain is recognized as an analog to volcanic graben Cyane Fossae on Mars and Hyginus Rille on the Moon.

De Hon R. A. ***POSTER LOCATION #127***
What Lies Beneath: Lava Inflation Plateaus on Earth and Mars **[#1146]**
On Mars and Earth smooth surfaces of lava inflation plateaus indicate a smooth buried surface. Pitted inflation plateaus indicate a more rugged buried surface.

Pedersen G. B. M. Höskuldsson A. Riishuus M. S.
Jónsdóttir I. Gudmundsson M. T. et al. ***POSTER LOCATION #128***
Nornahraun Lava Morphology and Emplacement: A New Terrestrial Analogue for Planetary Lava Flows **[#1845]**
The Nornahraun eruption is the largest effusive eruption in Iceland since the Laki eruption and is an exquisite analog to large lava flows seen on Mars and Io.

Black S. R. Hynek B. M. Alvarado G. E. ***POSTER LOCATION #129***
Spectral Identification of Acid Sulfate Alteration Products in Costa Rica Volcanoes: Implications for Early Mars **[#2260]**
Spectral identification of hydrothermal alteration products in Costa Rica yields further insight into early Mars and the potential for habitability.

Saavedra F. ***POSTER LOCATION #130***
Topographic Analysis of Cryovolcanic Structures on Enceladus and Titan Compared to Terrestrial Landforms **[#2973]**
Cryovolcanic features on Enceladus and Titan are compared with some landforms on Earth using topographic data.

Mouginis-Mark P. J. Hawke B. R. Kastner E. ***POSTER LOCATION #131***
A New "Planetary Volcanology Analogs" Web Site at the Pacific Regional Planetary Data Center **[#1203]**
We describe a new planetary volcanism web site that is being implemented at the Pacific Regional Planetary Data Center, University of Hawaii.

Baum F. Zanetti M. ***POSTER LOCATION #132***
Streamlined Generalization Tool for Planetary Surface Mapping Using ArcGIS ModelBuilder Software on Multispectral Datasets **[#1233]**
We have developed an ArcGIS ModelBuilder tool that produces polygon features of individual planetary map units derived from classified raster images.

Riu L. Poulet F. Carter J. Audouard J. Bibring J.-P. et al. ***POSTER LOCATION #133***
Global Hyperspectral Cube of the Martian Surface **[#1177]**
A hyperspectral cube of the martian surface has been built with the OMEGA data. Its applications: mineral, modal mineralogy, and chemistry composition mapping.

Dapremont A. M. Garry W. B. Williams D. A. ***POSTER LOCATION #134***
Geologic Mapping of the Arsia Mons Fan Shaped Deposit, Mars **[#1605]**
We mapped the fan-shaped deposit facies of Arsia Mons to examine possible interaction between glaciers and geologically recent volcanic activity.

Garry W. B. Williams D. A. Bleacher J. E. Dapremont A. M. ***POSTER LOCATION #135***
Geologic Mapping of Olympus Mons and the Tharsis Montes, Mars **[#1008]**
We will present results from geologic mapping efforts for Olympus Mons and the Tharsis Montes volcanoes on Mars.

Montesi R. C. Zimbelman J. R. ***POSTER LOCATION #136***
Inflated Pahoehoe in CTX Images in Tharsis Region **[#1639]**
We searched for, and likely found, inflated pahoehoe lava flows in CTX images in and around the Tharsis Region of Mars.

Crown D. A. Berman D. C. Ramsey M. S. ***POSTER LOCATION #137***
Lava Flow Fields of Southern Tharsis, Mars: Flow Types, Interactions, and Ages **[#1439]**
Analyses of flow morphology, surface texture, superposition relationships, and ages of lava flows document the development of southern Tharsis flow fields.

Richardson J. A. Wilson J. A. Connor C. B. Bleacher J. E. ***POSTER LOCATION #138***
Recurrence Rate Estimation of Distributed Volcanism in Arsia Caldera, Mars **[#2801]**
Small volcanic vents are used to constrain the recurrence rate of volcanism within the caldera of Arsia Mons, Mars.

Simurda C. M. Ramsey M. S. Crown D. A. ***POSTER LOCATION #139***
Thermophysical Characteristics of Lava Flows South of Arsia Mons **[#2332]**
This work examines thermophysical properties of lava flows in Daedlia Planum and mantle thickness variations to interpret flow types and emplacement processes.

Hiesinger H. Bartel N. Boas T. Reiss D. Pasckert J. H. et al. ***POSTER LOCATION #140***
Lava Flows on Arsia and Pavonis Mons, Mars: Rheology and Ages **[#2037]**
We determined rheologic properties and absolute model ages of lava flows on Arsia and Pavonis Mons and compared them to results for Elysium Mons.

Peters S. I. Christensen P. R. ***POSTER LOCATION #141***
The Distribution and Implications of Flank Vents on Olympus Mons **[#2008]**
This abstract highlights our efforts to understand the evolution and eruptive history of Olympus Mons using the distribution and characteristics of flank vents.

Zhao J. Huang J. Xiao L. ***POSTER LOCATION #142***
Characteristics and Origin of Sinuous Ridges in Solis Planum, Mars **[#1897]**
We identified more than 50 sinuous ridges in Solis Planum, Mars, and conclude that they are most likely lava tubes in origin.

Zuschneid W. van Gasselt S. ***POSTER LOCATION #143***
Evidence for Volcanism on the Western Hellas Basin Floor **[#1858]**
On the floor of Hellas Basin, a number of features of probable volcanic origin have been detected. We present two of these features in detail.

Brož P. Hauber E. Platz T. Balme M. ***POSTER LOCATION #144***
Evidence for Amazonian Highly Viscous Lavas in the Southern Highlands on Mars **[#2708]**
We have identified small-scale volcanic edifices (domes and cones) in the southern highlands of Mars that have a relatively young Amazonian age.

Brož P. Čadek O. Hauber E. Rossi A. P. ***POSTER LOCATION #145***
The Shapes of Scoria Cones on Mars: Detailed Investigation of Their Morphometry Based on HiRISE and CTX DTMs **[#1753]**
By using high-resolution DTMs we investigated shapes of scoria cones within three hypothesized volcanic fields with aim to prove/disprove their volcanic origin.

Thomas R. J. Rothery D. A. Conway S. J. Anand M. ***POSTER LOCATION #146***
Pyroclastic Volcanism Within Lunar Floor-Fractured Craters **[#1354]**
The Moon's fair craters/Welcome magma to their hearts/By cold magma seas.

Trang D. Gillis-Davis J. J. Lemelin M. Cahill J. T. S. Ghent R. R. et al. ***POSTER LOCATION #147***
The Compositional and Physical Properties of Localized Pyroclastic Deposits **[#1699]**
We observed relationships between the glass proportion, surface rock abundance, CPR, and maximum deposit thickness among localized pyroclastic deposits.

Jawin E. R. Besse S. Gaddis L. R. Sunshine J. M. Head J. W. et al. ***POSTER LOCATION #148***
Examining Spectral Variations in Localized Lunar Dark Mantle Deposits **[#1398]**
Spectra of localized lunar DMDs (in Alphonsus, J. Herschel, Oppenheimer craters) were analyzed for variations in mineralogy and crystallinity relative to mare.

Gustafson J. O. Hawke B. R. Sato H. Gaddis L. R. Giguere T. A. ***POSTER LOCATION #149***
Analysis of Dark Mantle Deposits on the Southeastern Limb of the Moon Incorporating LROC WAC and M3 Multispectral Data Sets **[#2714]**
Previous analysis of DMDs on the southeast limb of the Moon has been extended using topographic data and multispectral data to constrain composition and mineralogy.

Prissel T. C. Whitten J. L. Parman S. W. Head J. W. ***POSTER LOCATION #150***
Buoyancy Driven Magmatic Ascent of Mg-Suite Parental Melts **[#1158]**
Rise, rise, rise against/The impeding ancient crust/Erupt or at depth?

Ishiyama K. Kumamoto A. Nakamura N. ***POSTER LOCATION #151***
Determination of Stratigraphic Age of the Lunar Mare Subsurface Boundary Identified from the SELENE Radar Sounder Data **[#2557]**
The lunar subsurface boundaries are investigated from the SELENE radar sounder data, and these stratigraphic ages are infered from the surface lava unit age.

Cataldo V. Williams D. A. Garry W. B. ***POSTER LOCATION #152***
Erosion by Lava on the Moon: Application to the Rille of Vallis Schröteri **[#1582]**
Thermal erosion by lava produces erosion depths far smaller than the depth of Vallis Schröteri rille. It hardly played an important role in the rille formation.

Wilson L. Head J. W. ***POSTER LOCATION #153***
Explosive Volcanism on Atmosphere-Less Bodies — A Comparison of the Moon, Mercury and Io **[#1154]**
Small pyroclast deposits on the Moon, Mercury, and Io are produced by magma volatile exsolution; large deposits require gas concentration in shallow intrusions.

Sears D. W. G. Hughes S. S. Kobs-Nawotniak S.
Borg C. Kim K. J. et al. ***POSTER LOCATION #154***
A Study of the King's Bowl Phreatic Explosion Crater as a Planetary Analog **[#1601]**
The King's Bowl phreatic crater in Idaho, formed when lava encountered water, is explored as a planetary analog using the distribution of ejecta blocks.

Gallinger C. Ghent R. ***POSTER LOCATION #155***
A Pyroclastic Origin for Cones in Isidis Planitia: 1. Physical Modeling and Constraints **[#2502]**
In Isidis thumbprint terrain is laid out in many cone chains. We modeled a flow and found that it showed that PDCs might be to blame.

Craft K. L. Lowell R. P. Potter-McIntyre S. ***POSTER LOCATION #156***
Aromatum Chaos: Heating Up, Melting Ice, and Letting It Flow — A Preliminary Analysis **[#2999]**
We investigate fluid flow from a dike-driven hydrothermal system and convecting permafrost melt layer through scale analysis at Aromatum Chaos, Mars.

Goldman R. T. Albright J. A. Grosfils E. B. ***POSTER LOCATION #157***
Ring Fault and Caldera Formation: Insights Provided by Three-Dimensional Elastic Finite Element Models **[#1026]**
We developed three-dimensional numerical models of ring fault initiation and caldera formation beneath a flat surface via COMSOL Multiphysics.

Barry E. E. Deurlington A. Yin S. Wucher M. J. Grosfils E. B. ***POSTER LOCATION #158***
Using Map-Derived Hoop Strain and Elastic Models of Reservoir Inflation to Quantify the Degree of Dike Emplacement at Giant Radial Lineament Systems on Venus **[#1090]**
The study of giant radial lineament systems on Venus shows when uplift assists in formation of topography, dike injection is needed to produce observed hoop strain.

Santos A. R. McCubbin F. M. Bell A. S. Whitson E. S. ***POSTER LOCATION #159***
An Assessment of Current Predictive Models for Phosphate Saturation in Silicate Liquids **[#1998]**
Three phosphate saturation models were unable to reproduce numerous experimental results, indicating further work is needed to understand phosphate saturation.

Anderson L. Young E. Colson R. O. ***POSTER LOCATION #160***
Modeling NiO Activities in Silicate Melts Considering Separate Contributions from Ni^{2+} and O^{2-}: Dependence of O^{2-} on Melt Polymerization **[#1358]**
We propose a model for trace element oxide activities successful for NiO. The activity of the oxide ion varies according to the polymerization of the melt.

Robinson K. L. Hellebrand E. Taylor G. J. ***POSTER LOCATION #161***
The Physical Setting for Felsite Formation **[#1623]**
We estimate the crustal depths, the cooling rates, and sizes of the felsites' parental intrusions.

McCanta M. C. Dyar M. D. Rutherford M. J. Lanzirotti A. Sutton S. ***POSTER LOCATION #162***
In Situ Measurement of Ferric Iron in Lunar Glasses Using Fe-XAS: Implications for Lunar Eruption Mechanisms **[#1500]**
We present new measurements of Fe^{3+} contents of lunar orange and green glass beads. The range observed may be the result of late-ascent oxidation processes.