

Thursday, March 23, 2017

[R557]

## UNVEILING VENUS: NEW SCIENCE FROM EARTH'S SISTER PLANET

1:30 p.m. Montgomery Ballroom

**Chairs:** Martha Gilmore  
Joseph O'Rourke

- 1:30 p.m. Tsang C. C. C. \* Encrenaz T. Richter M. Irwin P. G. J. Bullock M. A.  
[Observing the Venus Atmosphere with NASA's SOFIA Airborne Telescope: Measurements of Cloud-Top H<sub>2</sub>O, HDO, and SO<sub>2</sub>](#) [#1509]  
Flying high catch the star / Venus once wet but now so dry / Understand it's history through D/H.
- 1:45 p.m. Port S. T. \* Kohler E. Chevrier V.  
[Bismuth Tellurides and Sulfide Mixtures and Their Relation to Metal Frost on Venus](#) [#1081]  
Venus metal frost / Bismuth and tellurium / Maybe sulfur too?
- 2:00 p.m. Cathala A. \* Berger G. Pokrovski G. S.  
[Atmosphere-Surface Interactions at the Venus Conditions: Experiments and Modeling](#) [#1529]  
We present experimental and modeling results on chemical and mineral reactions between basaltic materials and a Venus-like atmosphere (470°C, 90 bar).
- 2:15 p.m. Radoman-Shaw B. G. \* Harvey R. P. Costa G. C. C. Jacobson N. S. Avishai A. et al.  
[The Stability of Calcium Silicates and Calcium Carbonate on the Surface of Venus](#) [#2701]  
We exposed calcium silicates and calcium carbonate for 42 days to Venus surface conditions using the Glenn Extreme Environment Rig (GEER) at NASA-GRC.
- 2:30 p.m. Gilmore M. S. \* Stein A. J.  
[Variability of Tessera Radar Emissivity on Venus](#) [#2523]  
Fresh craters in the tessera indicate the tesserae may have an intrinsically lower density or different composition than the plains.
- 2:45 p.m. Filiberto J. \* Treiman A. H.  
[Geochemistry of Venus Basalts with Constraints on Magma Genesis](#) [#1148]  
Venus' basalts / MORB or OIB style melting? / Error bars too large!
- 3:00 p.m. Treiman A. H. \*  
[Recent Volcanism on Venus: A Possible Volcanic Plume Deposit on Nissaba Corona, Eistla Regio](#) [#1978]  
Dark streak on Venus / Windswept volcanic airfall? / Impact crater spray?
- 3:15 p.m. Malliband C. C. \* Martin P. McCaffrey K. J. W. Macpherson C. G. Stofan E. R.  
[The Geological History of Aleksota Mons, Venus](#) [#1395]  
We establish timing of volcanism and tectonism using stratigraphy and a statistical method. This shows a link between emplacement of a shield field and rifting.
- 3:30 p.m. Byrne P. K. \* Ghail R. C. Şengör A. M. C. Klimczak C. Solomon S. C.  
[Lateral Motion of Crustal Blocks Has Been Widespread on Venus](#) [#2708]  
You won't believe what these scientists are saying about crustal block movement on Venus! #8 will shock you.
- 3:45 p.m. Martone A. A. Montesi L. G. J. \*  
[Rift Stability on Venus: Importance of Weakening Processes and Strain Rate](#) [#1802]  
Strain rate (therefore stress level) and weakening processes control rift stability on Venus, unlike on Earth, where crustal thickness and heat flux matter.

- 4:00 p.m. O'Rourke J. G. \* Smrekar S. E. Moresi L.-N.  
[Constraints on Lithospheric Rheology and Volatile Content from Observations of Coronae on Venus](#) [#2388]  
Newly available stereo topography for Venus enables a search for flexural signatures at small coronae, which provide new constraints on lithospheric properties.
- 4:15 p.m. Ghail R. C. \* Byrne P. K. Mikhail S. Gordon C.  
[Subcrustal Lid Drives Continental-Like Tectonics on Venus](#) [#2275]  
A fragmented, partially detached crust, jostling constantly with neighbors, explains much of the observed geological complexity and crater record of Venus.
- 4:30 p.m. Weller M. B. \* Kiefer W. S.  
[Physics of Transitions in Global Tectonic Regimes: A New Paradigm for Venus?](#) [#1663]  
Surface once mobile / Ceases, sputters melt in fits / Little retained.