

**Tuesday, March 8, 2011**  
**POSTER SESSION I: VENUS**  
**6:00 p.m. Town Center Exhibit Area**

Johnson N. M. Wegel D. C.

[\*Venus Pressure Chamber: A Small Testing Facility Available to the Community\*](#) [#1434]

A small, high-pressure chamber that simulates Venus' surface conditions is available for testing small components and/or running short-term experiments. This poster provides details about the chamber's specifications and accessibility.

Clegg S. M. Sharma S. K. Misra A. K. Dyar M. D. Hecht M. H. Lambert J. Feldman S.  
 Dallmann N. Wiens R. C. Humphries S. D. Vaniman D. T. Speicher E. A. Carosino M. L.  
 Smrekar S. E. Treiman A. Wang A. Maurice S. Esposito L.

[\*Remote Raman-Laser Induced Breakdown Spectroscopy \(LIBS\) Geochemical Investigation Under Venus Atmospheric Conditions\*](#) [#1568]

The Surface and Atmosphere Geochemical Explorer, one of the New Frontiers candidate missions, includes a remote Raman-LIBS instrument to determine both chemistry and mineralogy. We present Raman and LIBS data acquired under Venus-analog conditions.

Sharma S. K. Misra A. K. Acosta T. E. Dyar M. D. Speicher E. A. Clegg S. M.  
 Wiens R. C. Treiman A. H.

[\*Raman Spectroscopy of Low Concentration of Minerals in Basaltic Glass Analog Matrix Applicable to Planetary Exploration\*](#) [#1250]

One of the goals of this project was to determine stand-off Raman detection limits at 2 m distance for mixed minerals in a glass matrix, analogous to phenocrysts in a magma or alteration materials mixed into a weathered rock on Venus' surface.

Aveline D. C. Abbey W. J. Choukroun M. Treiman A. H. Dyar M. D. Smrekar S. E. Feldman S. M.

[\*Rock and Mineral Weathering Experiments Under Model Venus Conditions\*](#) [#2165]

We exposed key rocks and minerals to a high T, high P, SO<sub>2</sub>-rich atmosphere to simulate almost five years of surface weathering under model Venus conditions. Our preliminary results are consistent with theoretical models (ex., calcite → anhydrite).

Bondarenko N. V. Kreslavsky M. A.

[\*Semitransparent Volcanic Materials on Radar Images of Venus\*](#) [#2034]

Possible observational effects due to semitransparent lava flows on Venus were analyzed and illustrated. Numerous examples show that interpretation of Magellan radar images requires consideration of subsurface scattering.

Bondarenko N. V. Head J. W.

[\*Mantle Deposits on Venus: The Role of Surface Structure\*](#) [#1578]

We found a strong similarity between enhanced linear polarization and apparent decrease in observed surface emissivity for mantles examined, suggesting that both effects result from the same processes and that a smooth mantle interface exists.

Kumar P. S. Head J. W.

[\*Geological Evolution of Lada Terra, Venus\*](#) [#1090]

This paper presents geologic history of Lada Terra of Venus. Geological mapping revealed formation of large-scale extensional belts, coronae, and volcanogenic plains. The sequence of geologic events provides clues to deeper geodynamic processes.

James P. B. Zuber M. T. Phillips R. J.

[\*Global Maps of Crustal Thickness and Mantle Mass Anomalies on Venus\*](#) [#2456]

By separating the deep and shallow components of topographic compensation, we have produced a global crustal thickness map of Venus. We have also mapped mass anomalies in the mantle and provided bounds on the mean crustal thickness.

King S. D.

[\*High Resolution Calculations of 3D Spherical Shell Convection and Venus Gravity, Topography, and Recent Volcanism\*](#) [#1467]

The mechanism responsible for the observed age of the venusian surface continues to be debated. I will show that venusian gravity, topography, and emissivity can be reconciled with a uniform viscosity, favoring the progressive resurfacing mechanism.

Galgana G. A. McGovern P. J. Grosfils E. B.

[\*The Development of Giant Radiating Dike Swarms on Venus from Coupled Mechanical Models\*](#) [#2783]

Coupled numerical models of flexure-causing uplift and magma pressurization predict reservoir failure modes and magma intrusion patterns, explaining the formation of radial and ring fractures on the surface of Venus, related to the development of dikes.

Stofan E. R. Glaze L. S. Grinspoon D. H.

[\*Characterizing Volcanic Eruptions on Venus: Some Realistic \(?\) Scenarios\*](#) [#2525]

We constrain the atmospheric contributions of explosive volcanic eruptions on Venus, advancing beyond previous studies by linking improved data on the distribution and nature of volcanic features to plume modeling and atmospheric dynamics.

Verner K. R. Galgana G. A. McGovern P. J. Herrick R. R.

[\*Insights into the Structure and Evolution of Large Volcanoes on Venus from High-Resolution Stereo-Derived Topography\*](#) [#2712]

Our research utilizes a new data set to study surficial strain patterns in order to understand volcanic processes on Venus.

Miller D. M. Gregg T. K. P.

[\*Characteristics and Geologic Relationships of Shield Fields Versus Shield Plains on Venus\*](#) [#1550]

This project analyzes the morphological characteristics of two types of small shield volcano clusters on Venus, quantifies shield cluster morphologies, and examines the contribution shield clusters have to resurfacing processes.

Leach J. H. J.

[\*The Flat Topped Volcanoes of Venus: Processes and Possible Analogues\*](#) [#1278]

This paper looks at the type of process that could form the flat topped volcanoes on Venus by examining possible terrestrial analogues.

Guseva E. N. Basilevsky A. T. Head J. W.

[\*Geological Mapping of the Eastern Part of Quadrangle V-36: Thetis Regio, Venus\*](#) [#1350]

This work is a continuation of the 1:5M geologic mapping of the V-36 quadrangle of Venus that is a part of the USGS planetary mapping project. We present the results of the mapping of the eastern part of the quadrangle.

Gilmore M. S. Resor P. G. Ghent R. Senske D. A. Herrick R. R.

[\*Constraints on Tessera Composition from Modeling of Tellus Regio, Venus\*](#) [#2053]

Fold wavelengths in a collision zone in Tellus Regio are used to constrain tessera lithospheric parameters including composition. Dry mafic and felsic rheologies are reasonable, as well as some wet mafic and felsic rheologies under high strain rate.

Bleamaster L. F. III

[\*Comparing Volcanic Resurfacing Styles on Venus: Results of Geologic Mapping Studies of the Isabella \(V-50\) and Devana Chasma \(V-29\) Quadrangles\*](#) [#2835]

The BAT (Beta-Atla-Themis) region on Venus is of particular interest with respect to evaluating global paradigms regarding Venus' geologic history, tectonic and thermal evolution.

McGowan E. M. McGill G. E.

[\*Geology of the Lachesis Tessera V18 Quadrangle, Venus\*](#) [#1300]

Summary of the geology of the Lachesis Tessera, focusing on a linear grouping of structural features that includes Breksta Linea. This grouping includes an unnamed corona that is obscured by a large gore.

Crown D. A. Stofan E. R. Bleamaster L. F. III

[\*Geologic Map of the Guinevere Planitia Quadrangle of Venus\*](#) [#1448]

Geologic mapping of the Guinevere Planitia Quadrangle of Venus shows a general progression from upland terrain to volcanic plains and then to shield volcanoes and flow fields but also reveals a complex interplay between volcanic and tectonic processes.

Ivanov M. A. Head J. W.

[\*The Formation and Evolution of Tessera and Insights into the Beginning of the Recorded History on Venus: Geology of the Fortuna Tessera Quadrangle \(V-2\)\*](#) [#1058]

The Fortuna Tessera quadrangle (V-2, 50°–75°N, 0°–60°E) allows approaching of the problem of the transition from latent to exposed periods of evolution of Venus. Here we present the first results of mapping of the V-2 quadrangle.