Wednesday, March 9, 2011
VENUS: ATMOSPHERE, SURFACE, AND INTERIOR
1:30 p.m. Montgomery Ballroom

Chairs: **Suzanne Smrekar**
Martha Gilmore

1:30 p.m. McCanta M. C. * Dyar M. D. Elkins-Tanton L. T. Treiman A. H.
Weathering of Hawaiian Basalts Under Sulfur-Rich Conditions: Applications to Understanding Surface-Atmosphere Interactions on Venus **[#1396]**
We present data on basalts weathered under high-SO_2 conditions from Hawaii as a terrestrial analog for surface conditions on Venus. The chemistry of these samples is used as a demonstration of how basalt alteration may proceed in an SO_2-rich atmosphere.

1:45 p.m. Berger G. * Aigouy T.
Experimental Rocks Alteration Under Venus-Like Conditions **[#1660]**
Reactions between volcanic rocks and 95 bars CO_2 were experimented at 470°. H_2O were added to model a wet volcanic event. Results suggest that secondary hydrated minerals, even metastable, can easily form and may persist at Venus surface.

2:00 p.m. Treiman A. H. * Bullock M. A.
Atmospheres of Venus-like Planets: Stability Constraints on Mineral Reaction Buffers **[#2146]**
The composition of Venus' atmospphere (and those of similar exoplanets) might be buffered by chemical reactions with surface materials. However, many such reactions cannot act as buffers in an atmosphere that follows a dry adiabatic lapse rate.

2:15 p.m. Smrekar S. E. * Sotin C.
Numerical Simulations of Mantle Plumes on Venus: Implications for Mantle Viscosity, Water Content, and Melting **[#2689]**
We simulate the number of hot mantle plumes in a three-dimensional cubed sphere geometry. We find a relatively low viscosity mantle, with only wet melting, is most consistent with the number of deep plumes, lithospheric thickness, and estimated internal heating.

2:30 p.m. Höink T. * O'Neill C. Lenardic A.
Tectonic Modes and Atmospheric Argon on Venus and Earth **[#2177]**
Differences in tectonic histories of Venus and Earth result from different convective stresses and can be understood with melting and degassing models constrained by the atmospheric abundance of radiogenic argon.

2:45 p.m. Basilevsky A. T. * Shalygin E. V. Titov D. V. Markiewicz W. J. Scholten F. Roatsch Th. Fiethe B. Osterloh B. Michalik H. Kreslavsky M. A. Moroz L. V.
Analysis of the Venus Surface Thermal Emission Images Taken by the VMC Camera, Venus Express **[#1280]**
Chimon-mana Tessera and Tuulikki Mons volcano summit may have higher IR emissivity in comparison to surrounding regional plains, which can be interpreted in different ways.

3:00 p.m. Gilmore M. S. * Mueller N. Helbert J.
VIRTIS Emissivity of Alpha Regio Tessera, Venus **[#1498]**
One-micrometer emissivity of Alpha tessera is less than that of the undeformed and deformed volcanic plains. The tessera emissivity values are consistent with felsic mineralogies or mafic mineralogies that have undergone a different geologic history.