Tuesday, March 20, 2012
POSTER SESSION I: IO: VOLCANISM, GLOBAL SHAPE, AND ATMOSPHERE
6:00 p.m. Town Center Exhibit Area

Spencer J. R. Jessup K. L. Tsang C. C. C. Cunningham N. Retherford K.
Evidence for Volcanic Support of Io's Jupiter-Facing Atmosphere from Constraints on Post-Eclipse Atmospheric Changes **[#2420]**
New Hubble observations of Io's atmosphere show minimal changes in atmospheric density as Io warms after Jupiter eclipse. The simplest explanation of this surprising result is that the atmosphere on the this side of Io is volcanically supported.

Tsang C. C. C. Spencer J. R. Jessup K. L.
Io's Atmosphere in 2010: Synergistic Observations of Longitudinal Distribution in the Near-Ultraviolet and the Mid-Infrared **[#2789]**
Here, we present a unique analysis of quasi-simultaneous observations of Io's atmosphere in 2010, from the near-ultraviolet HST-COS and the mid-infrared, IRTF-TEXES, concerning the longitudinal variability of Io's atmosphere.

Hamilton C. W. Beggan C. D. Still S. Beuthe M. Lopes R. M. C. Williams D. A. Radebaugh J. Wright W.
Cluster Analysis of Volcanoes on Io: Implications for Tidal Heating and Magma Ascent **[#1041]**
Distance-based clustering of volcanoes on Io supports asthenospheric-dominated tidal heating models but reveals a significant eastward offset between volcano concentrations and the tidal axis that may imply lateral advection in a global magma ocean.

Nadezhdina I. Oberst J. Patraty V. Shishkina L. Zubarev A.
New Control Point Network and Global Shape Estimates for Io **[#1039]**
We have analyzed Galileo and Voyager images of Io to derive a new geodetic control point network for this innermost jovian satellite. Also we determined best-fit spheres, spheroids, and triaxial ellipsoids.

White O. L. Schenk P. M. Hoogenboom T.
New Topographic Maps of Io Using Voyager and Galileo Stereo Imaging and Photoclinometry **[#2429]**
Stereo and photoclinometry processing have been applied to Voyager and Galileo images of Io in order to derive regional- and local-scale topographic maps of 20% of the moon's surface to date. We present initial mapping results.

Davies A. G. White O. L. Schenk P. Radebaugh J.
Ionian Paterae Volumes and Slopes Derived from New Photoclinometry and Stereo Products **[#2112]**
Measurements of 18 ionian paterae depths (~1 km) and relatively shallow wall slopes yield estimates of volumes of material removed, ranging from ~2000 km^3 to over 10,000 km^3. These numbers will allow the testing of formation models.

Veeder G. J. Davies A. G. Matson D. L. Johnson T. V. Williams D. A. Radebaugh J.
Distribution of Io's Volcanic Thermal Emission from Galileo and Ground-Based Data **[#2085]**
We have estimated thermal emission from 240 individual Io thermal sources. These include many dark areas seen by Galileo that did not exhibit obvious anomalous thermal emission, yet their low albedo suggests that these features are at least warm.

Bunte M. K. Lin Y. Saripalli S. Greeley R.
Autonomous Detection of Transient Phenomena on Planetary Bodies **[#2180]**
Autonomous supervised classification techniques detect 73–95% of transient geophysical phenomena such as volcanic plumes on Io and Enceladus and outgassing on Comet 103/P Hartley 2 and differentiate features such as mountain slopes and plumes.