

**Wednesday, March 19, 2003**  
**IO AND BEYOND**  
**8:30 a.m. Salon A**

**Chairs: P. M. Schenk**  
**R. M. C. Lopes**

McKinnon W. B. \* Desai S.

*Internal Structures of the Galilean Satellites: What Can We Really Tell? [#2104]*

Solar composition (in terms of the rock + metal) structural models for the Galilean satellites can be constructed.

Keszthelyi L. \* Jaeger W. L. McEwen A. S. Turtle E. P.

*Io's Interior: A Synthesis View at the End of the Galileo Era [#1760]*

Galileo has collected its last data from Io. We present a model for the interior of Io that is consistent with the available observations.

Geissler P. E. \* McEwen A. S. Phillips C. B. Keszthelyi L. P. Spencer J.

*Surface Changes on Io During the Galileo Mission [#1596]*

A careful survey of Galileo global monitoring images revealed more than 80 apparent surface changes that took place on Io during the five-year period of observation, ranging from giant plume deposits to subtle changes in the color or albedo of patera surfaces.

Rathbun J. A. \* Spencer J. R. Tampari L. K. Martin T. Z. Barnard L. Travis L. D.

*Galileo PPR at Io: High Resolution Scans Taken in Conjunction with SSA and NIMS Data [#1385]*

The Galileo Photopolarimeter Radiometer (PPR) is used at Io primarily two ways. First, two-dimensional images can be made by raster scans. Second, one-dimensional scans can be obtained when SSI or NIMS is the primary instrument. PPR data taken simultaneously with these instruments will be discussed.

Lopes R. \* Kamp L. Smythe W. D. Carlson R. Radebaugh J. Gregg T. K.

*Paterae on Io: Volcanic Activity Observed by Galileo's NIMS and SSI [#1837]*

Paterae are the most ubiquitous volcanic construct on Io's surface. High resolution Galileo observations in infrared and visible wavelengths are used to study the thermal emission from Ionian paterae.

Davies A. G. \*

*The Pulse of the Volcano: Discovery of Episodic Activity at Prometheus on Io [#1455]*

The 5-micron variability of Io volcanoes Prometheus and Amirani is determined from Galileo NIMS data. Prometheus is found to exhibit episodic activity. The eruption volume per cycle of activity and eruption mass fluxes have been calculated.

Veeder G. J. Matson D. L. \* Johnson T. V. Davies A. G. Blaney D. L.

*Polar Heat Flow on Io [#1448]*

We use a 'Three Component' background model for Io to address unexpected night temperatures of 90–95 K at high latitudes. A 'Polar' active region results in an additional heat flow of  $\sim 0.6 \text{ W m}^{-2}$  which increases Io's total heat flow from  $2.5$  to  $\sim 3 \text{ W m}^{-2}$ .

Williams D. A. \* Turtle E. P. Keszthelyi L. P. Jaeger W. L. Radebaugh J. Milazzo M. P. McEwen A. S.

Moore J. M. Schenk P. M. Lopes R. M. C. Greeley R.

*Mapping of the Culann-Tohil Region of Io [#1176]*

This presentation will discuss our latest results from geomorphologic mapping of Io using Galileo imaging data.

Bills B. G. \* Aharonson O.

*Spatial and Temporal Patterns of Tidal Dissipation in Synchronous Satellites [#1465]*

Spatial patterns of tidal dissipation in synchronous satellites are quite insensitive to internal structure, contrary to widely held perceptions.

Bruesch L. S. \* Asphaug E.

*Modeling Global Impact Effects on Middle-Sized Saturnian Satellites* [#2010]

Using a 3D smooth particle hydrodynamics code, we are modeling giant impact events and their global effects on the middle-sized Saturnian satellites. In particular, we are investigating whether such impacts could cause antipodal terrain disruption.

Schenk P. M. \* Moore J. M. McKinnon W. B.

*Large Impact Features on Saturn's Middle-sized Icy Satellites: Global Image Mosaics and Topography* [#2094]

New topographic maps of Saturn's middle-sized icy satellites derived from stereo imaging and 2D photogrammetry provide a sneak peak at the surprises in store when Cassini arrives at Saturn. We reexamine the morphology of large impact craters and describe their relaxation state.

Bottke W. F. \* Stern S. A. Levison H. F.

*An Exploration of Charon's Putative Eccentricity Around Pluto* [#2113]

We investigate whether Charon's putative eccentricity (between 0.003–0.008) could be a by-product of gravitational perturbations by Kuiper Belt object (KBO) flybys through the Pluto-Charon system and KBO impacts directly onto Pluto/Charon.

Stern S. A. \*

*Does the Pluto System Contain Additional Satellites?* [#1106]

The large solar-tidal stability radius of Pluto ( $\sim 2 \times 10^6$  km;  $\sim 90$  arcsec from Pluto), the detections of KBO satellites, and the development of a Pluto-KB mission, serve to motivate satellite searches. I review the best constraints on satellites and describe a new search effort.