

Tuesday, March 24, 2009
**POSTER SESSION I: ICY SATELLITES:
 COOL CHEMISTRY AND SPECTACULAR SPECTROSCOPY**
 6:30 p.m. Town Center Exhibit Area

Hansen G. B. Apple S. K. Shin-White E.-J. Z.

[*Water Ice Abundance and Grain Sizes, and Non-Ice Materials on the Saturnian Satellite Phoebe from Cassini/VIMS Observations*](#) [#2227]

We are modeling Cassini-VIMS spectra from an observation of the Saturn satellite Phoebe with water ice and non-ice components, assuming linear mixing, to find abundances and grain sizes.

Stephan K. Jaumann R. Wagner R. Clark R. Cruikshank D. P. Hibbitts C. A. Roatsch T. Brown R. H. Buratti B. J. Filacchione G. Hansen G. B. McCord T. B. Baines K. H. Nicholson P. D.

[*VIMS Coverage of Saturn's Icy Satellite Rhea*](#) [#1377]

The present status of observing Saturn's satellite Rhea by the Cassini VIMS spectrometer will be presented showing that the derived spatial variations of Rhea's spectral properties appear to be similar to the neighboring satellite Dione.

Filacchione G. Cuzzi J. N. Clark R. N. Buratti B. J. Capaccioni F. Tosi F. Coradini A. Cerroni P. Adriani A. Cruikshank D. P. Jaumann R. Stephan K. Brown R. H. Nicholson P. D. Baines K. H. Nelson R. M. McCord T. B.

[*Revised Full-Disk Spectra by Cassini-VIMS of the Saturnian Minor Icy Moons*](#) [#1780]

This abstract concern with a detailed re-analysis of the disk-integrated spectra of the minor moons of Saturn (Atlas, Prometheus, Pandora, Janus, Epimetheus, Calypso and Telesto) obtained by Cassini-VIMS.

Hendrix A. R. Buratti B. J.

[*Multi-Wavelength Photometry of the Icy Saturnian Satellites: A First Look*](#) [#2438]

We present results from analyses of phase curves of Enceladus and Dione made using data from Cassini UVIS and VIMS. The investigation provides critical insight into the evolution of the moon regoliths and an understanding of their current environments.

Phillips C. B. Dalton J. B.

[*Combining Galileo SSI and NIMS Spectra for Europa*](#) [#1367]

We are combining spectral information from visible-wavelength color Galileo SSI images of Europa with multi-spectral near-infrared data from Galileo NIMS. These combination spectra will help us understand the composition of Europa's surface.

Collins G. C. Hibbitts C. A. Hansen G. B.

[*Investigation of Carbon Dioxide Distributions on Saturnian and Galilean Satellites Through Fusion of Spectrometer Data with Geological Maps*](#) [#2327]

We have converted spectrometer data from Cassini VIMS and Galileo NIMS into GIS layers that can be queried along with geological map data. This presentation shows examples from CO₂ band depth mapping on Dione and Ganymede.

Dupire C. Le Menn E. Grasset O. Le Mouélic S.

[*In Situ Infrared Studies of Water and CO₂ Frost Between 1 and 5 \$\mu\$ m: From the Grain to the Icy Surfaces Signatures*](#) [#1242]

In situ infrared spectra and images of well controlled water and carbon dioxide ice grains have been experimentally acquired in the laboratory. The spectral influence of gaseous CO₂ in an icy matrix is discussed.

Palmer E. E. Brown R. H.

[*Carbon Dioxide on the Surface of Iapetus, Its Stability and Production*](#) [#2442]

CO₂ has been found on Iapetus, where it should be thermally unstable. We generate CO₂ using water ice and carbon grains using UV light as a source for Iapetus. We evaluate how CO₂ can be trapped on the surface.

Cook J. C. Olkin C. B. Desch S. J. Mastrapa R. M. Roush T. L. Verbiscer A. J.

[*Examination of the K-Band Spectrum of Charon: Possible Evidence for Multiple Ammonia Ices*](#) [#2222]

We present a new K-band (1.9–2.4 microns) spectrum of Charon and show there is evidence that the surface has different forms of ammonia ice.

Peeters Z. Hudson R. Moore M.

[*Carbonic Acid Stability in Solar System Ices*](#) [#2561]

We have investigated spectral properties and the stability of carbonic acid (H_2CO_3) at different temperatures upon irradiation with MeV protons. The results are extrapolated to life times in outer solar system bodies.

Choukroun M. Barmatz M. Castillo-Rogez J. C. Sotin C.

[*New Growth Setup of Planetary Clathrate Hydrate Analogs for Physical Properties Measurements*](#) [#2313]

We present a new high pressure – low temperature setup for the synthesis of large clathrate hydrate samples. We are ready to grow CO_2 clathrates, and to conduct initial measurements of their mechanical properties, with applications to Enceladus.

Dougherty A. J. Hogenboom D. L. Kargel J. S.

[*Volumetric and Optical Studies of High Pressure Phases of \$\text{Na}_2\text{SO}_4\$ - \$^{10}\text{H}_2\text{O}\$ with Applications to Europa*](#) [#2033]

We use optical images of high-pressure phases of the Na_2SO_4 - H_2O system, coupled with measurements of pressure, temperature, and volume changes, to report eutectic transitions for pressures up to 325MPa, with implications for modeling Europa's ocean.