

Tuesday, March 19, 2013

[T205]

## LICENSE TO CHILL: ICY SATELLITE INTERIORS AND SURFACE PROCESSES

8:30 a.m. Montgomery Ballroom

**Chairs:** Steven Vance  
Robert Pappalardo

- 8:30 a.m. Hammond N. P. \* Barr A. C.  
[Determining Ice Shell Conditions Conducive to Convection-Driven Grooved Terrain Formation on Ganymede](#) [#1771]  
We determine the likely range of ice shell thicknesses necessary for grooved terrain on Ganymede to form by convective driven resurfacing.
- 8:45 a.m. Vance S. \* Bouffard M. Choukroun M. Sotin C.  
[Aqueous and Solid-Phase Equations of State for the H<sub>2</sub>O-MgSO<sub>4</sub> System: Prediction of Ocean and Ice Thicknesses for Ganymede and Other Icy Worlds](#) [#1872]  
Pressure, heat, and salt make sometimes a great ocean, new data reveal.
- 9:00 a.m. Singer K. N. \* McKinnon W. B. Schenk P. M.  
[Ice Lithosphere Thickness on Europa from Impact Basin Ring-Graben](#) [#2197]  
We measure graben widths, depths, and spacing around Tyre and Callanish to produce radial strain profiles and estimate ice shell brittle-ductile transitions.
- 9:15 a.m. Soderlund K. M. \* Schmidt B. E. Blankenship D. D. Wicht J.  
[Dynamics of Europa's Ocean and Sensitivity to Water Properties](#) [#3009]  
We use numerical simulations of thermal convection to investigate European ocean dynamics and to constrain how the ocean may influence the overlying ice shell.
- 9:30 a.m. Hogley D. E. J. \* Moore J. M. Howard A. D.  
[How Rough is the Surface of Europa at Lander Scale?](#) [#2432]  
Europa girdled / By jagged blades of ice. Are / Returns polarized?
- 9:45 a.m. Dalton J. B. III \* Shirley J. H. Prockter L. M. Phillips C. B. Kamp L. W. et al.  
[Surface Composition near the Trailing Hemisphere Apex on Europa](#) [#3011]  
Surface deposits near Europa's trailing hemisphere apex include several terrain types and reveal a complex interplay between endogenic and exogenic processes.
- 10:00 a.m. Scipioni F. \* Tosi F. Ciarniello M. Capaccioni F. Filacchione G. et al.  
[Spectroscopic Identification and Classification of Terrain Units on Dione's and Rhea's Surfaces Based on Cassini/Vims Data](#) [#1995]  
We identified nine and eight terrain units on Dione's and Rhea's surface respectively, correlated to specific surface morphologies, analyzing Cassini/VIMS-IR cubes.
- 10:15 a.m. Howett C. J. A. \* Spencer J. R. Paranicas C. Schenk P. M.  
[Surface Alteration of Saturn's Icy Satellite Surface by High-Energy Electron Bombardment](#) [#2824]  
A comparison and interpretation of the characteristics of thermally anomalous regions discovered on Mimas, Tethys, and most recently Dione.
- 10:30 a.m. Mitchell K. L. \* Khankhoje U. K. Castillo-Rogez J. C. Wall S. D.  
[Enceladus' Brilliant Surface: Cassini RADAR Observations and Interpretation](#) [#2902]  
Cold Enceladus / Ice and weathered snow reflect / To dazzle radar.

- 10:45 a.m. Yin A. \* Pappalardo R. T.  
[\*Left-Slip Faulting Along the Tiger Stripe Fractures: Implications for the Tectonic Evolution of the South Polar Terrain, Enceladus\*](#) [#1145]  
We present a model that the development of the Tiger Stripe fractures was a result of bookshelf faulting due to clockwise rotation of the South Polar Terrain.
- 11:00 a.m. Porco C. \* DiNino D. Nimmo F.  
[\*How the Jets, Heat and Tidal Stresses Across the South Polar Terrain of Enceladus are Related\*](#) [#1775]  
Data from Cassini and models of tidal stresses, energy transport and crack propagation yield a consistent explanation for Enceladus' south polar activity.
- 11:15 a.m. Weiss J. W. \* Porco C. P. Mitchell C. J.  
[\*The Identification of Non-Axisymmetric Features in Cassini Low-Resolution, High-Phase Images of Saturn's E Ring\*](#) [#2989]  
Report on efforts to match tendrils features in Saturn's E ring with jets of Enceladus.
- 11:30 a.m. Pappalardo R. T. \* Schubert G.  
[\*Enceladus and Miranda: Similar Histories of Low-Order Convection and Reorientation During Differentiation\*](#) [#2808]  
We propose antipodal leading and trailing tectonized regions on Miranda and Enceladus were formed simultaneously by degree-2 convection during differentiation.