

Tuesday, March 21, 2017

[T253]

## SKATING ON THIN ICE: EUROPA AND ENCELADUS

1:30 p.m. Waterway Ballroom 5

**Chairs:** Lynnae Quick  
Laurent Montesi

- 1:30 p.m. Kinczyk M. J. \* Patterson G. W. Perkins R. P. Collins G. C. Borrelli M. et al.  
[Evaluation of Impact Crater Distributions for Geological Terrains on Enceladus](#) [#2926]  
Icy moon's craters / They tell about the surface / How old is it now?
- 1:45 p.m. Roberts J. H. \* Stickle A. M.  
[Break the World's Shell: An Impact on Enceladus: Bringing the Ocean to the Surface](#) [#1955]  
Nice-looking ice shell / Be a shame if anything / Should happen to it.
- 2:00 p.m. Leonard E. J. \* Yin A. Pappalardo R. T.  
[Constraining the Viscosity of Enceladus's Ice Shell Through the Crater Islands](#) [#2336]  
Cratered blocks rotate / Enceladus resurfaced / Partially, at least.
- 2:15 p.m. Kay J. P. \* Dombard A. J.  
[Simulating Spatial Variations of Lithospheric Folding in the South Polar Terrain of Enceladus](#) [#2580]  
A warmer center / So folds are tighter there and / Longer on the edge.
- 2:30 p.m. Montesi L. G. J. \* Johnston S. A.  
[Is Tectonic Activity at the Surface of Enceladus Consistent with Pressurization of a Global Ocean or a Regional Sea?](#) [#2013]  
A pressurization sea or ocean forms cracks at the south pole of Enceladus but cracking at the north pole requires that the ice shell slides against the core.
- 2:45 p.m. Hedman M. M. \* Nicholson P. D. Dhingra D. Hansen C. J.  
[Evidence for Spatial Variations in the Dust-to-Gas Ratio of Enceladus' Plume from Solar Occultation Data](#) [#1570]  
A solar occultation by Enceladus' plume observed by instruments onboard Cassini reveals that the dust-to-gas ratio varies across the plume.
- 3:00 p.m. Hendrix A. R. \* Hansen C. J. Royer E. M. Cassidy T. A. Esposito L. W. et al.  
[Enceladus: Using UV Data to Study Plume Fallout](#) [#2131]  
We use Cassini UVIS data to study the surface properties of Enceladus. We study the photometric and spectral characteristics of plume fallout regions.
- 3:15 p.m. Portyankina G. \* Hedmann M. M. Hansen C. J. Esposito L. W. Aye K.-M. et al.  
[Simultaneous Cassini UVIS and VIMS Solar Occultation Observations: Modeling Insights](#) [#2418]  
The DSMC-modelled distribution of jets fitting VIMS and UVIS data indicates different icy grains mass fraction across the active south polar region of Enceladus.
- 3:30 p.m. Phillips C. B. \* Molaro J. L.  
[Europa's Surface Properties and Processes](#) [#1745]  
Processes affect / Europa's ice regolith / Making landing hard.
- 3:45 p.m. Hibbitts C. A. \* Stockstill K. Wing B. R. Shusterman M. L. Paranicas C.  
[Irradiated Salts and the Color of the Nonice Material on Europa](#) [#2456]  
The spectrum of the trailing hemisphere of Europa is well matched by that of electron irradiated magnesium sulfate but not by other irradiated salts.

- 4:00 p.m. Allu Peddinti D. \* McNamara A. K.  
[Formation of Ice-Shell: Geodynamical Modeling of Temporal Variation of Shell Thickness in Two-Phase Systems](#) [#2001]  
We use numerical models to determine the effect of tidal heating on the growth rate of ice-shell in two-phase ice-ocean systems with implications for Europa.
- 4:15 p.m. Quick L. C. \* Fagents S. A. Glaze L. S. Hurford T. A. Prockter L. M.  
[A Volume Flux Approach to Cryolava Dome Emplacement on Europa](#) [#2539]  
We apply a volume flux approach to the emplacement of cryolava domes on Europa, considering eruption at the vent and the formation of low-albedo moats.
- 4:30 p.m. Walker C. C. \* Schmidt B. E.  
[Active Chaos Regions as the Source of Water Vapor Plumes on Europa](#) [#2824]  
We propose that the recently-observed transient water vapor plumes on Europa are associated with the dynamics involved in chaos terrain formation.