

Monday, March 17, 2014

[M105]

**SPRINGTIME FOR TITAN'S LAKE DISTRICT:  
GEOGRAPHY, CHEMISTRY, AND DYNAMICS  
8:30 a.m. Waterway Ballroom 6**

**Chairs:** Mathieu Choukroun  
Alexander Hayes

- 8:30 a.m. Hayes A. G. \* Michaelides R. J. Turtle E. P. Barnes J. W. Soderblom J. M. et al.  
[\*The Distribution and Volume of Titan's Hydrocarbon Lakes and Seas\*](#) [#2341]  
We present a map of the distribution and liquid volume in lakes/seas using a combination of images acquired using the Cassini RADAR, VIMS, and ISS instruments.
- 8:45 a.m. Vixie G. \* Barnes J. W. Rodriguez S. Sotin C.  
[\*Northern Temperate Lakes on Titan\*](#) [#2572]  
Several small lake candidates have been observed in Titan's northern temperate latitudes and could have implications for GCMs and topography there.
- 9:00 a.m. Barnes J. W. \* Sotin C. Soderblom J. M. Hayes A. G. Donelan M. et al.  
[\*Specular Reflections from Titan's Punga Mare Seen by Cassini/VIMS Indicate Surface Roughness: Waves?\*](#) [#1947]  
Cassini/VIMS T85 observations of Titan's north pole show significant specular return from parts of Punga Mare consistent with 6°-slope waves.
- 9:15 a.m. Horvath D. G. \* Andrews-Hanna J. C. Newman C. E. Mitchell K. L. Stiles B. W.  
[\*Subsurface Control of Lakes at Low North Polar Latitudes on Titan: Implications for Fluvial Processes and Lake Morphology\*](#) [#2633]  
Lakes observed at arid latitudes on Titan are dependent on equatorward subsurface flow driven by high recharge rates at less arid polar latitudes.
- 9:30 a.m. Michaelides R. J. \* Hayes A. G.  
[\*Determining Physical Properties of Titan's Empty Lake Basins Through Radar Backscatter Modeling\*](#) [#1321]  
We use repeat SAR observations to study the scattering properties of Titan's paleo-lake basins by constructing backscatter models of individual features.
- 9:45 a.m. Singh S. \* Chevrier V. F. Wagner A. Leitner M. Gainor M. et al.  
[\*Solubility of Acetylene in Liquid Hydrocarbons Under Titan Surface Conditions\*](#) [#2850]  
We present the solubility of acetylene in liquid hydrocarbons under simulated Titan surface conditions.
- 10:00 a.m. Malaska M. \* Hodyss R.  
[\*Determination of the Solubilities of Aromatic Molecules in Cryogenic Ethane at 94 K — Application to Titan Lake Fluids\*](#) [#1170]  
One ring, many rings / How much of it will dissolve? / The rest becomes sludge.
- 10:15 a.m. Mitchell K. L. \* Barmatz M. Jamieson C. S. Lorenz R. D.  
[\*Composition of Ligeia Mare, Titan, from Cryogenic Laboratory Measurements and Bathymetry\*](#) [#2434]  
Ligeia Mare / RADAR and cold lab unveil / Deep sea of methane!
- 10:30 a.m. Cable M. L. Vu T. Choukroun M. Hodyss R. Beauchamp P. \*  
[\*Hydrocarbon Trapping in Titan Surface Materials\*](#) [#2873]  
Solid benzene forms a co-crystal with ethane under Titan surface conditions. This co-crystal may be an important component of Titan evaporite deposits.

- 10:45 a.m. Mousis O. \* Choukroun M. Lunine J. I. Sotin C.  
[\*The Possible Interplay Between Liquid and Clathrate Reservoirs on Titan\*](#) [#1241]  
We investigate the interplay between a reservoir of hydrocarbons in Titan's subsurface and a clathrate reservoir forming when the liquid diffuses throughout.
- 11:00 a.m. Luspay-Kuti A. \* Chevrier V. F. Singh S. Rivera-Valentin E. G. Wagner A. et al.  
[\*Composition and Dynamics of Titan's Lakes\*](#) [#1882]  
Evaporation rates of CH<sub>4</sub>-C<sub>2</sub>H<sub>6</sub> liquid mixtures are experimentally determined under Titan conditions. The results are used to estimate polar lake composition.
- 11:15 a.m. Lorenz R. D. \*  
[\*The Throat of Kraken: Tidal Dissipation and Mixing Timescales in Titan's Largest Sea\*](#) [#1476]  
Tight strait splits Kraken / Titan's sea has tidal race / Like Corryvreckan.
- 11:30 a.m. Hofgartner J. D. \* Hayes A. G. Lunine J. I. Zebker H. Stiles B. et al.  
[\*The Case of Titan's Mysterious New Island: Analysis of Anomalously Bright Features Observed in the Cassini T92 SAR Pass Over Titan's Ligeia Mare\*](#) [#1841]  
Anomalous features were detected in Ligeia Mare that were not in any preceding nor subsequent observations. They are unique on Titan or transient in nature.