

**Thursday, March 13, 2008**  
**POSTER SESSION II: TITAN**  
**6:30 p.m. Fitness Center**

Le Mouélic S. Barnes J. W. Sotin C. Le Corre L. Brown R. H. Baines K. H. Buratti B. J.  
 Clark R. N. Nicholson P. D.

*Global Mapping of Titan in the Infrared Using an Empirical Decorrelation Between Atmosphere and Surface* [#1730]

We present an empirical approach to decorrelate surface and atmospheric (additive and multiplicative) contributions in VIMS infrared spectral images of Titan. The aim is to produce homogenized global mosaics of the main surface units of Titan.

Le Mouélic S. Rannou P. Sotin C. Le Corre L. Barnes J. W. Brown R. H. Baines K. H. Buratti B. J.  
 Clark R. N. Drossart P. Griffith C. Hirtzig M. Nicholson P. D. Rodriguez S.

*Imaging of the North Polar Cloud on Titan by the VIMS Imaging Spectrometer Onboard Cassini* [#1649]

We report in this presentation on the processing and analysis of the observations made by the VIMS infrared mapping spectrometer onboard Cassini spacecraft of a giant north cloud system covering the north pole of Titan.

Pitman K. M. Buratti B. J. West R. A. Dumont P. J. Baines K. H. Wolff M. J. Brown R. H.  
 Cassini VIMS Team

*Titan Surface-Atmospheric Separation Models For Cassini VIMS: Spherical-Shell Radiative Transfer Models* [#1911]

We explore the utility of 2D spherical-shell radiative transfer codes for Cassini Visual and Infrared Mapping Spectrometer I/F data that cover a range of latitude and longitude coordinates and incorporate recently released Titan atmospheric structure data from Huygens DISR.

Tosi F. Orosei R. Seu R. Filacchione G. Coradini A. Lunine J. I. Capaccioni F. Cerroni P. Adriani A.  
 Moriconi M. L. Cassini VIMS Team Cassini RADAR Team

*Analysis of Selected Cassini VIMS and RADAR Data over the Surface of Titan Through Multivariate Statistical Methods* [#1357]

In this work, a multivariate statistical method has been used to automatically look for taxonomic units over the surface of Titan by combining both the infrared VIMS data and the microwave RADAR data acquired during the Cassini nominal mission.

Kirk R. L. Howington-Kraus E. Stiles B. Hensley S. Cassini RADAR Team

*Digital Topographic Models of Titan Produced by Radargrammetry with a Rigorous Sensor Model* [#2320]

Teaching a commercial stereo software package to understand the geometry of Cassini RADAR images has given us a tool to make high resolution digital topographic models of Titan, opening the door for future quantitative modeling of many topics.

Sharma P. Byrne S.

*Constraints on Titan's Topography Through Fractal Analysis of Shorelines* [#2145]

This analysis is aimed at studying the fractal nature of the lakes imaged at the North Pole of Titan and obtaining information about local topography using public domain observations from the Cassini RADAR instrument.

Turtle E. P. Perry J. E. McEwen A. S. West R. A. DelGenio A. D. Barbara J.  
 Dawson D. D. Porco C. C.

*Cassini Imaging Observations of Titan's High-Latitude Lakes* [#1952]

ISS observations suggest that Titan's South Pole harbors surface reservoirs of liquid hydrocarbons, as have also been observed at high northern latitudes. The images provide information on the size and spatial distributions of Titan's lakes and seas.

Mitri G. Showman A. P. Lunine J. I. Lopes R. M. C.

*Cryovolcanism and Methane Outgassing on Titan* [#1451]

Cassini RADAR has observed flow-like features interpreted as cryovolcanic in origin. We show that cryovolcanism by ammonia-water magma can occur on Titan. Methane outgassing during cryovolcanic events can resupply the methane abundance in the atmosphere.

Derenne S. Quirico E. Szopa C. Cernogora G. Schmidt B. Less V. McMillan P. F.

*New Insights in Tholin Chemical Structure Using Solid State  $^{13}\text{C}$  and  $^{15}\text{N}$  NMR Spectroscopy* [#1840]

Tholins enriched in  $^{13}\text{C}$  and  $^{15}\text{N}$  were analysed through solid state  $^{13}\text{C}$  and  $^{15}\text{N}$  NMR, thus bringing new insights on their chemical structure.

Mitchell K. L. Zhong F. Hays C. C. Barmatz M. Hodyss R. Castillo J. C. Robshaw L. E.

*Preliminary Cryoviscometry of Methanol-Water and a Titan Cryomagma Analogue* [#2131]

We present the first results from a program to determine the rheological properties of icy slurries, relevant to cryovolcanism in the outer solar system.

Campbell D. B. Black G. J. Carter L. M. Nolan M.

*Titan: 13 cm Arecibo Radar Observations and Comparisons with Cassini Radar Imagery* [#1598]

Arecibo 13 cm radar observations planned for February 2008 will have sub-Earth locations in the T8 and T13 Cassini radar swaths allowing the first detailed comparison of 13 cm normal incident radar properties with terrain types from the Cassini radar imagery.

Korycansky D. G. Zahnle K.

*Titan Impacts and Escape* [#1925]

We present simulations of impacts on Titan as a means of generating escaping material that may have caused the hemispheric dichotomy of Iapetus.

Adams K. Jurdy D. M.

*Pit Distribution in Titan's Equatorial Region* [#1941]

We will be examining the distribution of pits in the equatorial region of Titan by using  $X^2$  and fractal analyses. This could lead to the development of a model for pit formation.

Robshaw L. E. Kargel J. S. Lopes R. M. C. Mitchell K. L. Wilson L. Cassini RADAR Team

*Evidence of Possible Glacial Features on Titan* [#2087]

Previous authors have suggested that glacial processes may occur on Titan. We present evidence in support of this from photogeologic interpretation of Cassini RADAR data and comparison with terrestrial satellite images.

Wye L. C. Zebker H. A. West R. D. Cassini RADAR Team

*A Comprehensive Backscatter Map of Titan from the Cassini RADAR* [#2204]

We present the entire collection of real-aperture results from the five active modes of the Cassini RADAR. We also develop a method for combining the data into a cohesive global backscatter map, achieving close to global coverage of Titan's surface.

Kay J. P. Collins G. C.

*Using Discharge and Precipitation to Estimate Runoff Coefficients on Titan* [#2203]

Using estimated rainfall rates and stream discharge rates we are attempting to narrow down the value for surface runoff coefficients on Titan at the Huygens landing site.