Thursday, March 17, 2005
POSTER SESSION II: CASSINI AT SATURN: TITAN, SATURN, RINGS, ICY SATELLITES
7:00 p.m. Fitness Center

Fussner S. McEwen A. S. Perry J. Turtle E. Dawson D. D. Porco C. West R. Cassini ISS Team
Dependence of Surface Contrast on Emission Angle in Cassini ISS 938-nm Images of Titan **[#2278]**
In 938-nm images of Titan obtained by Cassini ISS, contrast is seen to depend strongly on emission angle. This dependence is explored and quantified.

Perry J. McEwen A. S. Fussner S. Turtle E. West R. Porco C. Knowles B.
Dawson D. D. Cassini ISS Team
Processing ISS Images of Titan's Surface **[#2312]**
Procedure for bringing out surface details in ISS images of Titan.

Kirk R. L. Callahan P. Seu R. Lorenz R. D. Paganelli F. Lopes R. M. Elachi C. Cassini RADAR Team
RADAR Reveals Titan Topography **[#2227]**
The first Cassini RADAR images and altimetry of Titan contain evidence for several relatively subdued topographic features including hills and possible flows with amplitudes of one to several hundred meters.

Schaller E. L. Brown M. E. Roe H. G. Bouchez A. H. Trujillo C. A.
Cloud Activity on Titan During the Cassini Mission **[#1989]**
Nightly small telescope photometry combined with numerous Keck and Gemini adaptive optics images of Titan allow us to provide context for the interpretation of high resolution images of Titan's clouds taken during Cassini flybys.

Lunine J. Artemieva N. A. Lorenz R. D. Flamini E.
Numerical Modeling of Impact Cratering on Titan with Implications for the Age of Titan's Surface **[#1504]**
Results reported from the first two Cassini flybys of Titan reveal few if any impact craters, suggesting that geological or atmospheric processes, or both, have worked to prevent the formation of craters or to hide or erase them after formation. Here we quantify some of these processes.

Garry J. R. C. Shettle T.
Experiments on the Acoustic Properties of Titan-like Atmospheres **[#1924]**
A laboratory apparatus has been built to examine the post-flight data of the Huygens' probes acoustic sensors, as well as to provide more data on attenuation in cryogenic gas mixes.

Estrada P. R. Mosqueira I.
A Gas-poor Planetesimal Feeding Model for the Formation of Giant Planet Satellite Systems: Consequences for the Atmosphere of Titan **[#2053]**
We develop a gas-poor planetesimal collisional capture which may be consistent with the mass and angular momentum of the Galilean satellites and Titan. We investigate this model's implications for the origin of Titan's atmosphere.

Fortes A. D. Stofan E. R.
Clathrate Formation in the Near-Surface Environment of Titan **[#1123]**
We discuss the possible formation of sinks for atmospheric and surface volatiles through the formation of clathrate hydrates in the upper crust of Titan.

Burr D. M. Emery J. P. Lorenz R. D.
Theoretical Calculations on Sediment Transport on Titan, and the Possible Production of Streamlined Forms **[#2044]**
We present theoretical calculations to assess the possibility of various types of sediment transport for likely conditions on Titan.

Bernard J.-M. Quirico E. Montagnac G. Reynard B. Mc Millan P. Bonal L. Rouzaud J.-N.
Coll P. Schmitt B.
Which Tholins for Simulating Titan's Aerosols? **[#2183]**
The exploration of Titan by the Cassini-Huygens mission includes different spectrometers covering the visible and infrared ranges which will probe the atmosphere and the surface (DISR/CIRS).

Sekine Y. Imanaka H. Khare B. N. Bakes E. L. O. McKay C. P. Sugita S. Matsui T.
Experimental Study on Interactions Between H Atoms and Organic Haze **[#1414]**
Our experimental results indicate that interactions between H atoms and Titan tholin occur and form H_2 molecules. This may result in low concentration of reactive H atoms and high concentration of unsaturated hydrocarbons in Titan's stratosphere.

Moses J. I. Greathouse T. K.
The Variation of Hydrocarbon Abundances with Latitude and Season in Saturn's Stratosphere **[#1342]**
We will present results from a time-variable, 1-D model for stratospheric photochemistry on Saturn that accounts for variations in UV flux due to orbital position, solar-cycle variations, and ring-shadowing effects.

Greathouse T. K. Roe H. G. Richter M. J.
Changes in the Temperature of Saturn's Stratosphere from 2002 to 2004 and Direct Evidence of a Mesopause **[#1365]**
We have inferred the temporal and latitudinal variations of temperature in Saturn's stratosphere due to seasonal processes from data taken in 2002 and 2004. The 2004 data show distinct self-absorption cores indicative of a mesopause in Saturn's atmosphere.

Willis M. J. Ahrens T. J. Heinrich M. Beauchamp J. L.
Mass Spectrometer Calibration of the Cassini Cosmic Dust Analyzer for H_2O and D_2O Ices Via Laser Ablation **[#2228]**
We present results of experiments in which time of flight mass spectrometry of H_2O and D_2O ices was performed via laser ablation of ice layers generated on a cryogenically cooled Cu target to simulate ice impacts on the Cassini Cosmic Dust Analyzer.

Leisner J. S. Russell C. T. Dougherty M. K. Blanco-Cano X. Smith E. J. Tsurutani B. T.
Loss of Water from Saturn's E-Ring Through Ion Pick-Up **[#1935]**
With recent Cassini data, we study loss from Saturn's E-ring through ion pick-up by the ion cyclotron waves produced. Using Pioneer 11 and Voyager 1 observations, we map the variations due to latitude, local time, and ring inclination to the Sun.

Denk T. Neukum G. Helfenstein P. Thomas P. C. Turtle E. P. McEwen A. S. Roatsch T. Veverka J.
Johnson T. V. Perry J. E. Owen W. M. Wagner R. J. Porco C. C. Cassini ISS Team
The First Six Months of Iapetus Observations by the Cassini ISS Camera **[#2262]**
Since arrival at Saturn, Iapetus has been studied intensively by the Cassini ISS camera. The results of the first half year of observations until before the New Year's Eve flyby are described.

Hendrix A. R. Hansen C. J.
An Overview of Cassini UVIS Icy Satellite Results So Far **[#2384]**
We present Cassini Ultraviolet Imaging Spectrograph results from Phoebe, Tethys, Dione, Iapetus, Mimas, Rhea and Enceladus.

Castillo J. C.
Expected Constraints on Rhea's Interior from Cassini **[#2243]**
We present degree-two gravity field computed for models of Rhea's interior in order to assess which properties of the interior are likely to be inferred from Cassini radio science measurements scheduled on November 26, 2005.

Mosqueira I. Estrada P. R.
On the Origin of the Saturnian Satellite System: Did Iapetus Form In-Situ? **[#1951]**
We construct two end-member models of regular satellite formation that are not dependent on specific choices for the turbulence parameter α. We find that the origin for the icy satellite Iapetus may serve to discriminate between the two.

Prentice A. J. R.
Saturn's Icy Moons: A Model for Their Origin and Bulk Chemical Composition **[#2378]**
Preliminary results of a new model for the formation of Saturn's family of mid-sized icy moons, namely Mimas, Enceladus, Tethys, Dione, Rhea and Iapetus, are reported. Predictions are made for the bulk chemical composition and mean uncompressed density of each satellite.