

**Monday, March 19, 2012**  
**SPECIAL SESSION: A SEASON IN THE SATURN SYSTEM I**  
**8:30 a.m. Waterway Ballroom 1**

**Chairs: Dennis Matson**  
**David Blackburn**

- 8:30 a.m. Spilker L. J. \*  
[\*Cassini: Science Highlights from the Equinox and Solstice Missions\*](#) [#1358]  
 The Cassini exploration of the Saturn system has returned a wealth of scientific data. Even after more than seven years of close study, the Cassini spacecraft still unveils new scientific discoveries that continue to captivate us.
- 9:00 a.m. West R. A. \* Ovanessian A. Turtle E. P. Ray T. Balloch J. Dumont P. Lavvas P. Lorenz R. Rannou P.  
[\*Titan's Detached Haze and Polar Vortex: Large-Amplitude Seasonal Variations\*](#) [#2897]  
 We present observations of Titan's detached haze showing large-amplitude seasonal variations. These observations and future observations from Cassini provide strong tests of dynamical and microphysical processes in Titan's atmosphere.
- 9:15 a.m. Teanby N. A. \* Irwin P. G. J. Nixon C. A. de Kok R.  
[\*Seasonal Change at Titan's Poles\*](#) [#1500]  
 We use seven years of data from Cassini to look for seasonal changes in the atmosphere of Saturn's largest moon — Titan. In particular we focus on the implications for atmospheric circulation as Titan moves from northern winter to northern summer.
- 9:30 a.m. Turtle E. P. \* Perry J. E. Barnes J. W. McEwen A. S. Barbara J. M. Del Genio A. D. Hayes A. G. West R. A. Lorenz R. D. Schaller E. L. Lunine J. I. Ray T. L. Lopes R. M. C. Stofan E. R.  
[\*Evolution of Titan's Weather Patterns and Accompanying Surface Changes in the Wake of the Seasonal Shift of the Intertropical Convergence Zone\*](#) [#2555]  
 After springtime rain / Titan's weather's quiet as / Northern summer looms.
- 9:45 a.m. Barnes J. W. \* Buratti B. J. Turtle E. P. Bow J. Dalba P. A. Perry J. Rodriguez S. LeMouelic S. Baines K. H. Sotin C. Lorenz R. D. Malaska M. J. McCord T. B. Brown R. H. Clark R. N. Jaumann R. Hayne P. Nicholson P. D. Soderblom J. M. Soderblom L. A.  
[\*Cassini/VIMS Spectra and Time-Evolution of Precipitation-Associated Surface Brightenings on Titan\*](#) [#2762]  
 Large areas of Titan's surface brightened at all wavelengths as seen from Cassini/VIMS for several months, then faded. The brightenings occurred after a large storm and rainfall event, and may relate to volatile refreezing due to evaporative cooling.
- 10:00 a.m. Mitchell K. L. \* West R. D. Stiles B. W. Pappalardo R. T. Anderson Y. Lopes R. M. C. Wall S. D. Janssen M. A. Cassini Radar Team  
[\*The First High-Resolution SAR Observation of Enceladus by Cassini Radar\*](#) [#2760]  
 We present SAR imagery and initial interpretations from the Cassini E16 fly-by of Enceladus. Different tectonic/radiometric domains are interpreted as the result of tectonic resurfacing and partial obfuscation by cryovolcanic plume deposition.
- 10:15 a.m. Hurford T. A. \* Helfenstein P. Spitale J. N.  
[\*Tidal Control of Jet Eruptions Observed by Cassini ISS\*](#) [#2154]  
 We examine the stresses on the Tiger Stripe active source regions to see how well diurnal tidal stress caused by Enceladus' orbital eccentricity may possibly correlate with and thus control the observed eruptions.

- 10:30 a.m. Buratti B. J. \* Schenk P. M. Khurana K. Moore J. M.  
[Dione: The Evidence for Activity](#) [#1713]  
Several lines of evidence suggest that Dione is currently geologically active or has been recently.
- 10:45 a.m. Teolis B. D. \* Waite J. H.  
[Cassini Measurements Show Seasonal O<sub>2</sub>—CO<sub>2</sub> Exospheres and Possible Seasonal CO<sub>2</sub> Frosts at Rhea and Dione](#) [#2923]  
We will present the recent finding of an O<sub>2</sub>-CO<sub>2</sub> Dione exosphere by Cassini, and discuss modeling of the different north-south CO<sub>2</sub> density at Rhea, and the CO<sub>2</sub> abundance at Dione, indicating strongly seasonal CO<sub>2</sub> exospheres and polar frosts.
- 11:00 a.m. Esposito L. W. \* Meinke B. K. Albers N. Sremcevic M.  
[A Season in Saturn's Rings: Cycling, Recycling and Ring History](#) [#2904]  
Cassini observations of Saturn's rings show a complex geophysical system. Recycling can allow the rings to be as ancient as the solar system.
- 11:15 a.m. Ferrari C. \* Reffet E.  
[Temperature Gradients in Saturn's B Ring: Clue to its Thickness](#) [#2177]  
How vertical temperature gradients in very opaque rings can reveal their thickness and density.