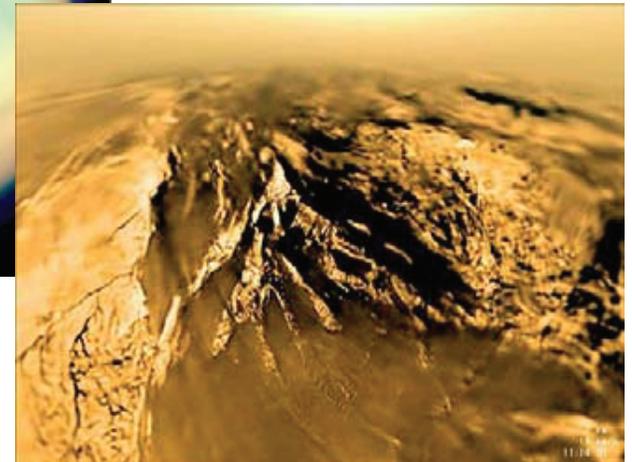
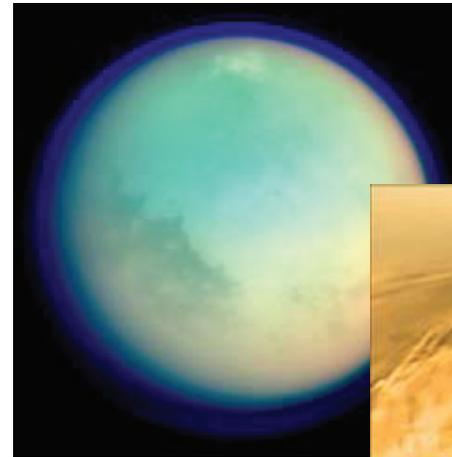


Unveiling Titan: Results from the Cassini-Huygens Mission to Saturn and its Moons



Rosaly M. C. Lopes

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AAAS Fellow, 2005 Carl Sagan Medalist

This talk will review data captured by radar, imaging camera and spectrometers that reveal for the first time surface features of the “earth of the outer solar system.”

3:00 pm, Monday, March 19, 2012

Sloan Auditorium, Goergen 101

Refreshments provided.

Unveiling Titan: Results from the Cassini-Huygens Mission to Saturn and its Moons

Dr. Rosaly M. C. Lopes

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Abstract: The mysterious surface of Saturn's haze-covered moon Titan has been revealed for the first time by the Cassini-Huygens mission. The mission carries aboard a Radar which is able to penetrate the atmosphere and haze to reveal geologic features in detail. Other instruments, such as the imaging camera and the visual and infrared spectrometer, also reveal some of the mysteries of this bizarre moon using near infrared wavelengths to penetrate the haze. Titan has shown itself to be one of the solar system's most intriguing objects for study, with a variety of unusual candidate materials on its surface, such as water-ammonia and other ices, hydrocarbons, and tholins. Titan is very geologically complex, and features found include large craters, cryovolcanoes, mountains, flowing channels, vast fields of dunes, and giant lakes and seas of liquid hydrocarbons. Titan appears to be very Earthlike in its geology, despite the very different surface conditions and composition, and has become known as "the Earth of the outer solar system".

Biography: Rosaly Lopes is a Senior Research Scientist at NASA's Jet Propulsion Laboratory, where she is also Deputy Manager for the Planetary Science Section. An expert on planetary volcanism, she worked on the Galileo mission to Jupiter and is currently on the science team of the Cassini mission to Saturn. Her research expertise is volcanoes in the solar system, particularly the active volcanoes of Jupiter's moon Io and the ice volcanoes of Saturn's icy moons. She is a Fellow of the American Association for the Advancement of Science, the Vice-Chair of the Division for Planetary Sciences of the American Astronomical Society and the winner of that society's 2005 Carl Sagan Medal. She has published five books and nearly one hundred peer-reviewed publications.