



## **Analysis of Titan Ontario Lacus' region from Cassini/VIMS observations**

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Liquid hydrocarbons on Titan's surface were long predicted before the radar instrument onboard Cassini detected lakes poleward of 70°N on July 2006. Before that the Cassini Imaging Science Subsystem (ISS) observed a lake-like feature in the south pole, named Ontario Lacus, on June 2005.

Here we analyze observations of Ontario Lacus taken by the Visual and Infrared Mapping Spectrometer (VIMS) on 2007 December 4, during the T38 flyby. These are the best spatially resolved images of a Titan lake to date, and were previously reported in Brown et al. (2008).

We analyze images taken in the 5 micron, 2.75 micron and 2 micron methane windows. The observing geometry and our data processing (the methodology and its limitations) will be explained, followed by a discussion of the main characteristics of these images.

These reproduce a portion of Ontario Lacus, supposedly filled with liquid hydrocarbons. Only part of it is visible on Titan's sunlit side. These images also show what appears to be a "beach", brighter than the lake's core but also brighter than the surrounding area of the lake. The morphology and composition of this beach is investigated and possible scenarios for its formation are explored. This yield constrains to geomorphologic models of Titan's surface.

Reference: Brown, R. et al. 2008. The identification of liquid ethane in Titan's Ontario Lacus, *Nature* 454, 607-610.