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# Erosion and Stratigraphic Relations on Titan

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During Cassini's 47th Titan flyby on 19 November 2008 the Visual and Infrared Mapping Spectrometer (VIMS) observed the Huygens Landing Site (HLS) at 192.4°W and 10.2°S with spatial resolutions better than 500 m/pixel. This provides the opportunity to compare surface units at the landing site with similar surface features at 30°W and 7°S observed by VIMS at similar spatial resolution during Cassini's 20th Titan flyby on 24 October 2006. In this Quivira-Aztlan region a deep incision called Bohai Sinus is one of the most prominent disintegration areas between bright and dark materials indicating both erosion and deposition and thus provides insight into exogenic processes on Titan. Based on the spectral signature in the infrared methane windows - expressed as VIMS wavelengths ratios and composed to a color image (RGB) - three major units can be distinguished: whitish material which is mainly distributed in the topographically high areas indicating equal reflectivity in all atmospheric windows; bluish material exhibits a higher reflectivity at the longer atmospheric wavelength windows implying a clear spectral separation from the whitish material, and brownish material characterized by a higher reflectivity in the shorter wavelength atmospheric windows correlates with dunes. Both areas exhibit distinct relationship between overall bright, bluish and brownish materials, with bluish material dissecting and surrounding the bright areas, and bluish areas finally transforming into brownish dune like features. The brownish dune-like material, however, contacts or overlays both bright and even blue areas, indicating its high mobility. At the HLS the bluish material is identical with the dark plains suggesting a fluvial origin and a depositional evolution.