

## **Titan's Visible Haze Structure: 2004-2010**

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The combination of limb and disk views of Titan's haze acquired by the Cassini Imaging Science Subsystem from 2004 to the present reveals a variety of structures which evolve over many time scales. Titan's haze structure was significantly reduced in Voyager times relative to what ISS observed early in the mission. This feature may be an indication of long-term secular change rather than seasonal change. Images in the 890-nm methane absorption band reveal a polar structure which is offset from the rotational pole (Roman et al., *Icarus* 203, 242-249, 2009). Here we compile observations of haze structure at many wavelengths from the near-UV to the near-IR including three methane bands. We describe few-km-scale structure in the vertical haze profiles and albedo changes as a function of latitude with time sampling of several months. Multiple haze layers at or above 510 km altitude are seen at most latitudes. Preliminary evidence suggests the altitudes of the outer visible layers are decreasing with time. The region poleward of the polar vortex boundary near latitude 55 degrees is quite complex. These and future observations will constrain aerosol microphysical models and reveal detail on how seasonal change takes place. Our radiative transfer models make use of a multi-scatter code with spherical shell symmetry. This work was performed by the Jet Propulsion Lab, California Institute of Technology