



Titan Observations with Adaptive Optics

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Our team has studied Titan's surface and atmosphere from 2000 to 2005 with adaptive optics systems resolving the satellite disk and unveiling some of its mysteries in the near Infrared at the CFHT (with PUEO/KIR or PUEO/OASIS), at the VLT (NAOS/CONICA), or at the WHT (NAOMI).

We concentrate here on the analysis of the surface appearance and chemical composition. We built maps at different wavelengths corresponding to several methane windows (1.08, 1.24, 1.68 and 2.0 micron) which could help determine the chemical composition of the bright and dark areas, along with the recent Cassini-Huygens findings.

We will also underline evolution of Titan's atmosphere, through the presence of a very bright feature near Titan's South Pole visible at very specific wavelengths, in particular at 2.12 micron. We will finally discuss the time evolution of Titan's North-South Asymmetry, noting the changes in aerosol distribution with the solar insolation: Titan is reverting to the situation witnessed by Voyager in the 80's, with a northern hemisphere enhanced in haze and gas, and thus brighter in the infrared than the southern hemisphere; we could measure the advent of all these changes between 2000 and nowadays.