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Recent Results of Titan achieved by Huygens DISR

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The combination of spectrometers and photometers that analyse the physical properties of the atmosphere and of spectrometers and cameras observing the surface provides a powerful data set. The considerable stronger than anticipated scattering of the aerosols prevented locking of the sun sensor below about 40 km altitude well before surface details could be observed by the cameras. Pointing of the cameras and matching with spectrometer data will depend on reconstruction of the altitude and attitude parameters of the Huygens probe from radio signals. Once the surface was observable (below about 30 km), matching of images will help the trajectory reconstruction. Good knowledge of the atmospheric parameters is required to derive the reflection properties of the surface. The observed total optical depth in the visible wavelength range was estimated to be between 4 and 5. Test calculations show that the plane parallel approximation of the radiation transfer yields inaccurate results therefore a 3 D code will be applied.