

Electric Field Observations during the Descent of the HUYGENS Probe: Evidence of Lightning in the Atmosphere of Titan

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The CASSINI/HUYGENS mission provided for the first time the opportunity to in-

investigate in-situ electrical and acoustic phenomena in the atmosphere of Titan. During the descent of the HUYGENS probe the electric and acoustic sensors of the Permittivity, Wave and Altimetry experiment (PWA) as part of the Huygens Atmospheric Structure Instrument (HASI) observed fluctuations of the electric field up to 10 kHz and acoustic noise up to 6 kHz. The observed events below 140 km have been compared with the electric and acoustic parameters of terrestrial lightning phenomena and with the result calculated with a numerical model.