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# Cassini's first radio occultation of Titan's atmosphere

P. J. Schinder (1), F. M. Flasar (2), A. J. Kliore (3), R. G. French (4), E. A. Marouf (5), A. Nagy (6), N. Rappaport (3), A. Anabtawi (3), C. A. McGhee (4), and the Cassini Radio Science Support Team

(1) Cornell University, USA, (2) NASA Goddard Space Flight Center, USA, (3) Jet Propulsion Laboratory, USA, (4) Wellesley College, USA, (5) San Jose State University, USA, (6) University of Michigan, USA, (f.m.flasar@nasa.gov)

We report initial results on Titan's neutral atmosphere from the March 19, 2006, earth occultation, which sounds 29 S on ingress and 49 S on egress. The Cassini radio science experiment is unique, in that it has three frequencies that can operate simultaneously: S-band (2.3 GHz), X-band (8.4 GHz), and Ka-band (32 GHz). In particular Ka-band has never been used before to probe Titan's atmosphere. Radio occultation is the only Cassini orbiter experiment that can retrieve temperatures in the lowest 25 km of Titan's atmosphere. The Huygens Atmosphere Structure Instrument on the probe did so, but only at the descent latitude (10 S). The previous radio occultation soundings of Titan, by Voyager, were at equatorial latitudes.