

# GUVI Level 2 Data Products



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## Electron Density Profiles

### Overview

The Level-2 Electron Density Profiles data product contains F region electron density as a function of altitude and latitude derived from the GUVI limb data. Summaries of estimated peak electron density and total electron content are also given as Level 3 products.

The profiles are derived from the 135.6 nm channel of the GUVI limb data. The 135.6 nm emission at night is due almost exclusively to recombination of O<sup>+</sup> ions. Since O<sup>+</sup> is the primary ion in the F region, the 135.6 nm volume emission rate is closely related to the square of the electron density.

Details of the procedure of producing the electron densities are given in:  
DeMajistre, R., L.J. Paxton, D. Morrison, J-H. Yee, L.P. Goncharenko and A.B. Christensen, Retrievals of nighttime electron density from Thermosphere Ionosphere Mesosphere and Dynamics (TIMED) mission Global Ultraviolet Imager (GUVI) Measurements, *J. Geophys Res.*, 109, A05305, doi:10.1029/20003JA010296.

**Data Files** – Available for in both NetCDF and IDLsave files. On-line access for download.