

A novel method to separate ionosphere and thermosphere contribution in TIMED/GUVI data

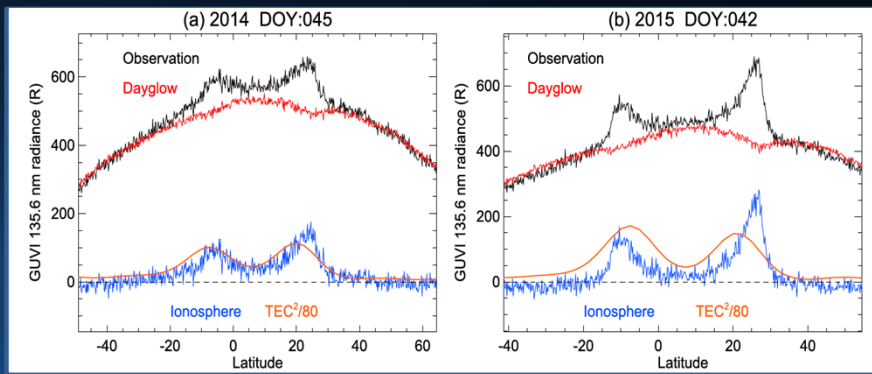


Figure 1. thermospheric (red line), ionospheric (blue line) contribution. In TIMED/GUVI O 135.6 nm data (black line), Coincident TEC (orange line)

TA new, selfconsistent and databased method is developed to remove ionospheric and thermospheric contribution in O 135.6 nm radiance. This method not only cleans the thermospheric O/N2 data product, but also generates a new ionospheric product.

- Observed O135.6 nm radiance (black line in Figure 1) is contributed by thermospheric (red line) and ionospheric (blue line) sources.
- The estimated ionospheric contribution (blue line) agrees with coincident ionospheric TEC data (orange line in Figure 1).
- The method results in clean O/N2 map and net ionosphere radiance, Figure 2)

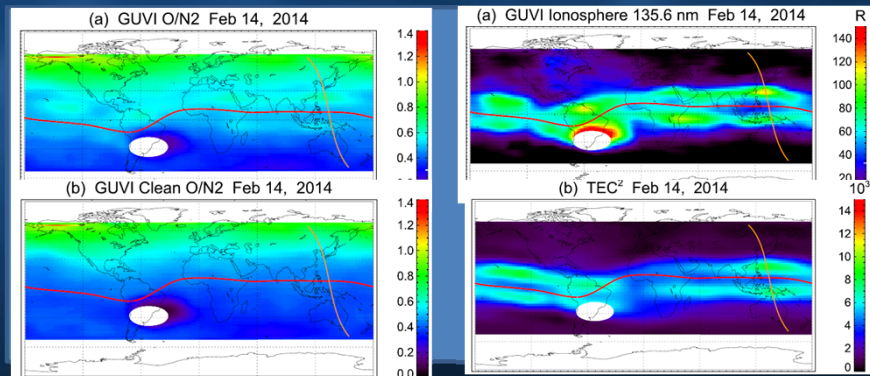


Figure 2. Left panels: original and cleaned O/N2 ratio. Right panel: Net ionospheric 135.6 nm radiance and coincident TEC