

Venera 15/16 Ionospheric Profiles

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Background

- Very few ionospheric $N(z)$ profiles archived at PDS or PSA
- ESTEC Comparative Planetology conference in May 2009, Anatoly Gavrik presents re-analysis of Venera 15/16 profiles
- I encourage him to archive them at PDS
- Slow progress is made...

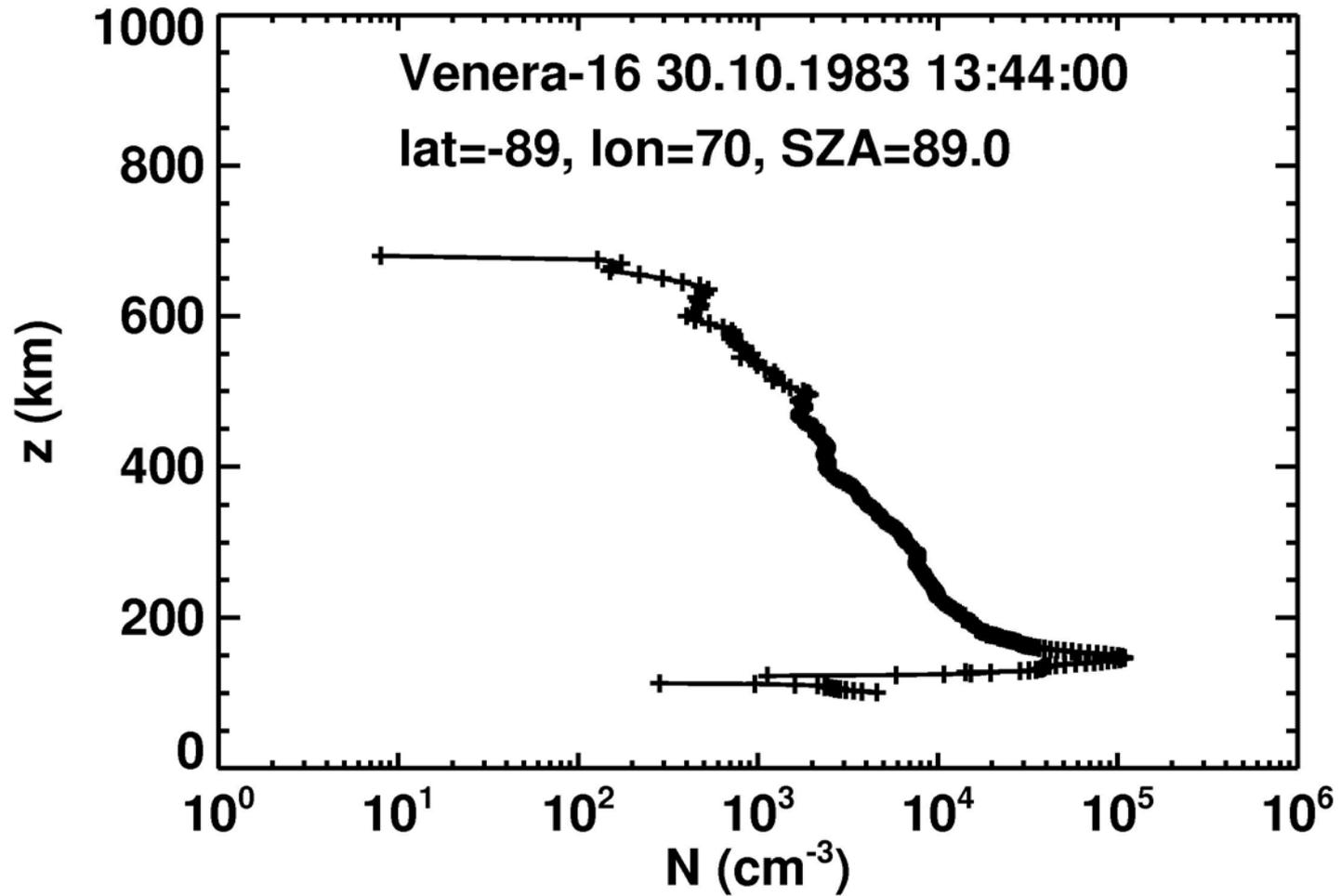
Current Status

- 29 sample profiles from October 1983 sent from Gavrik to me
- Total of 155 available
- Need minor reformatting and some documentation, but requirements are lax for old missions
- Steve Joy at PPI node of PDS has officially asked to receive entire set
- Steve and I will take care of reformatting and cut-and-paste documentation

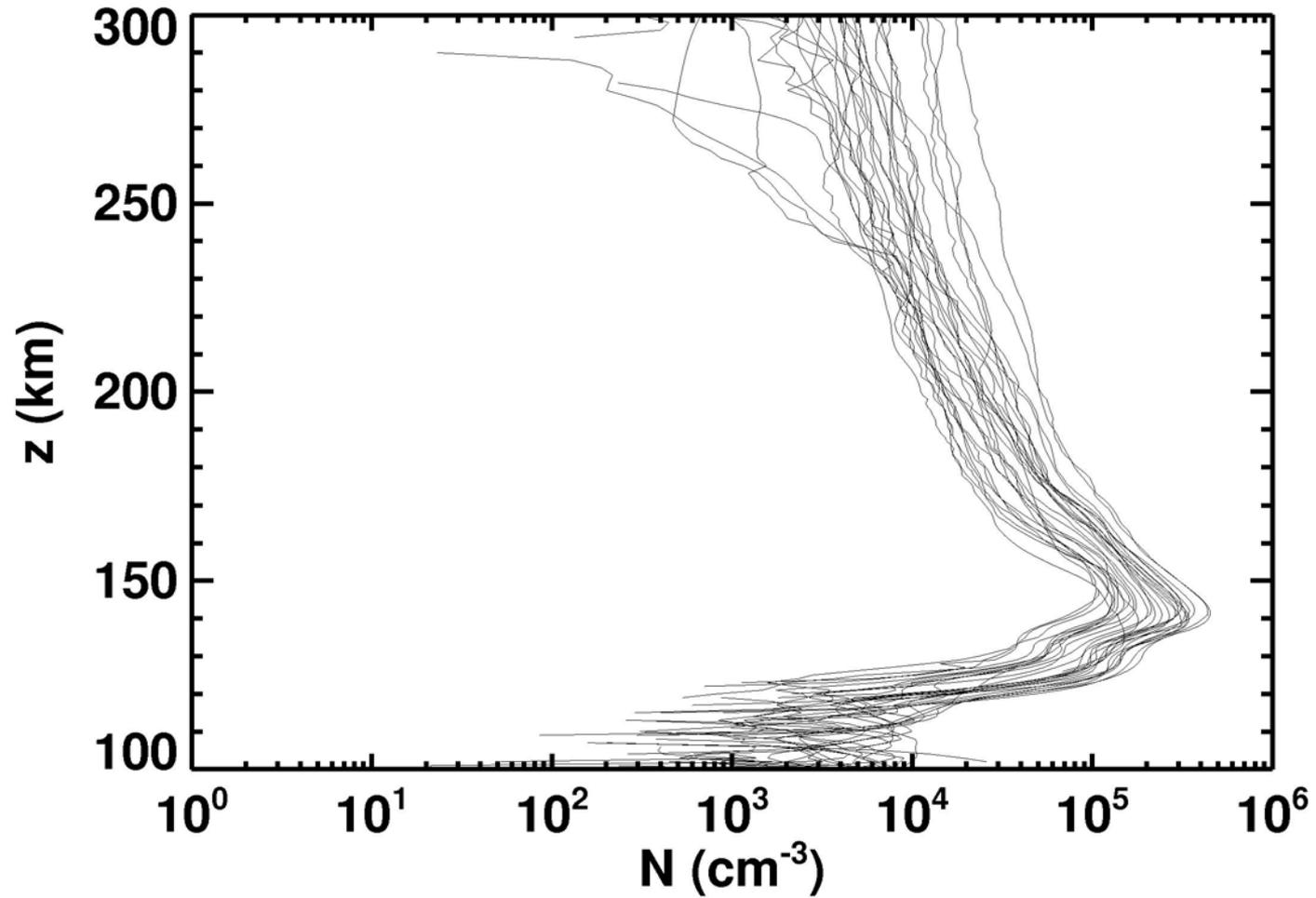
What have we got so far?

- $N(z)$ from (80-100) km to (400-800) at ~ 2 km resolution
- SZA = 55 to 90 degrees
- Longitude ~ 300 (E? W?)
- Latitude poleward of 50S or poleward of 80N
- Peak $N \sim 4E5 \text{ cm}^{-3}$
- Uncertainties?
- Labelled with V15/V16, date, time(?), lat, lon(?), SZA

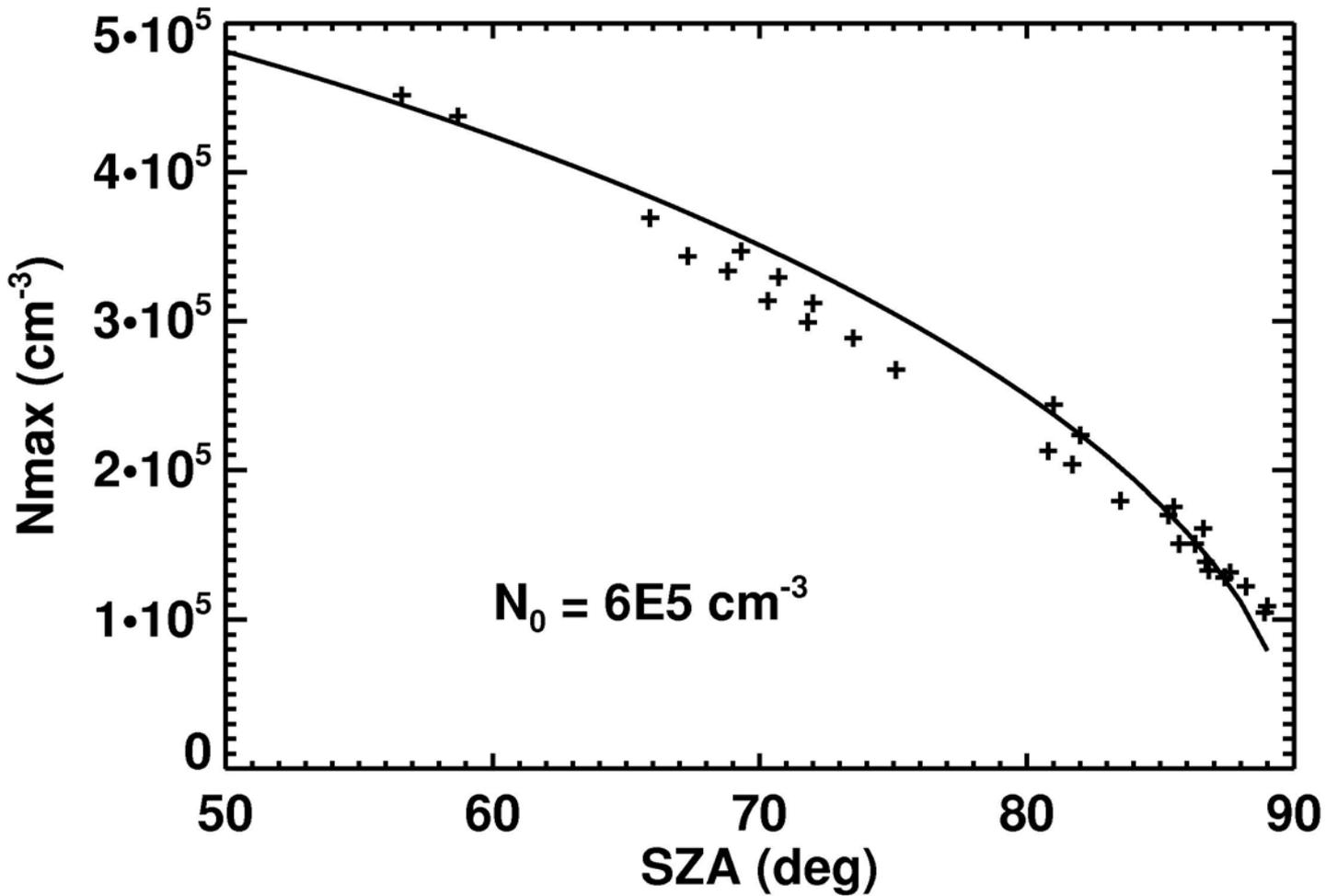
Sample profile



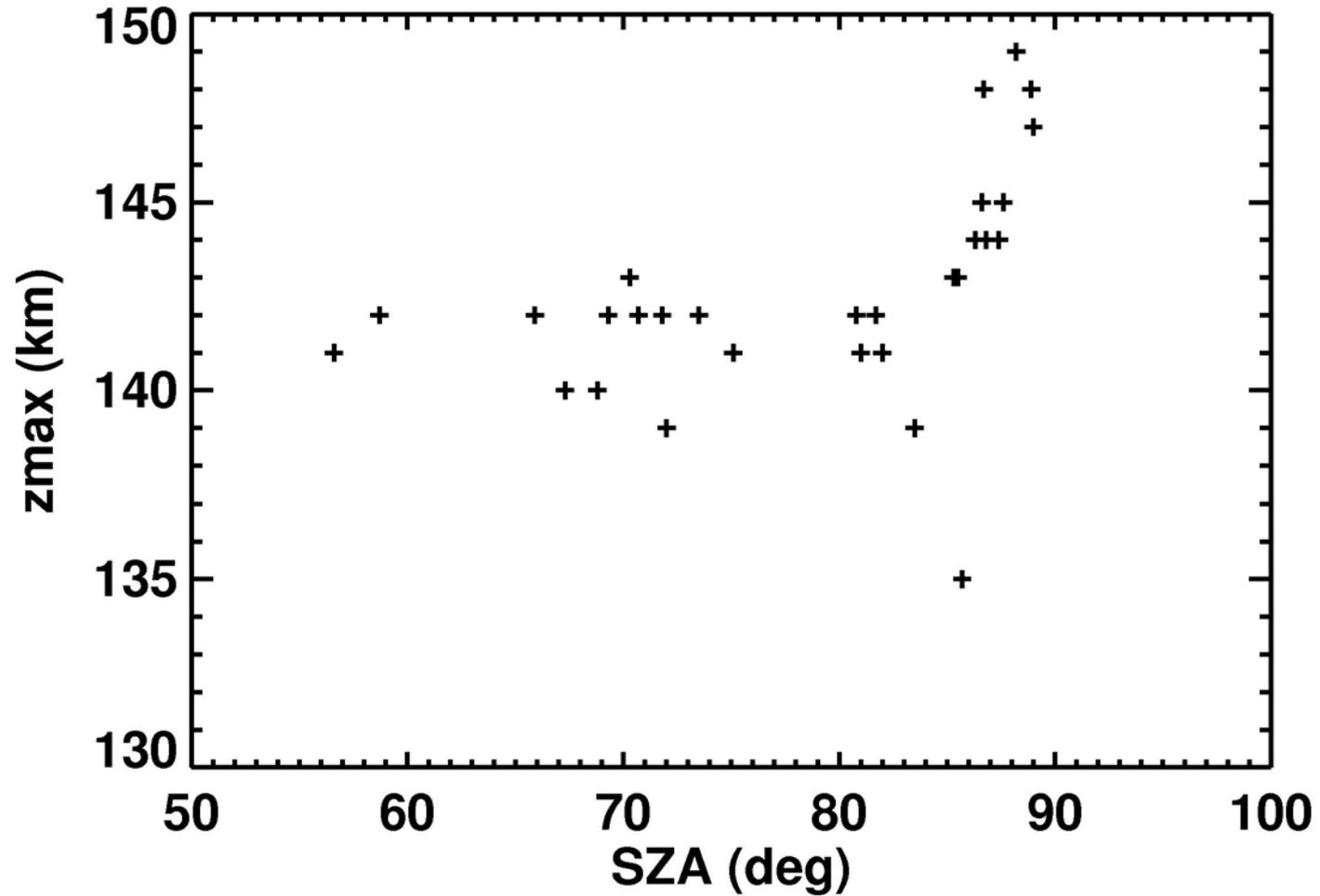
Many profiles (zoom)



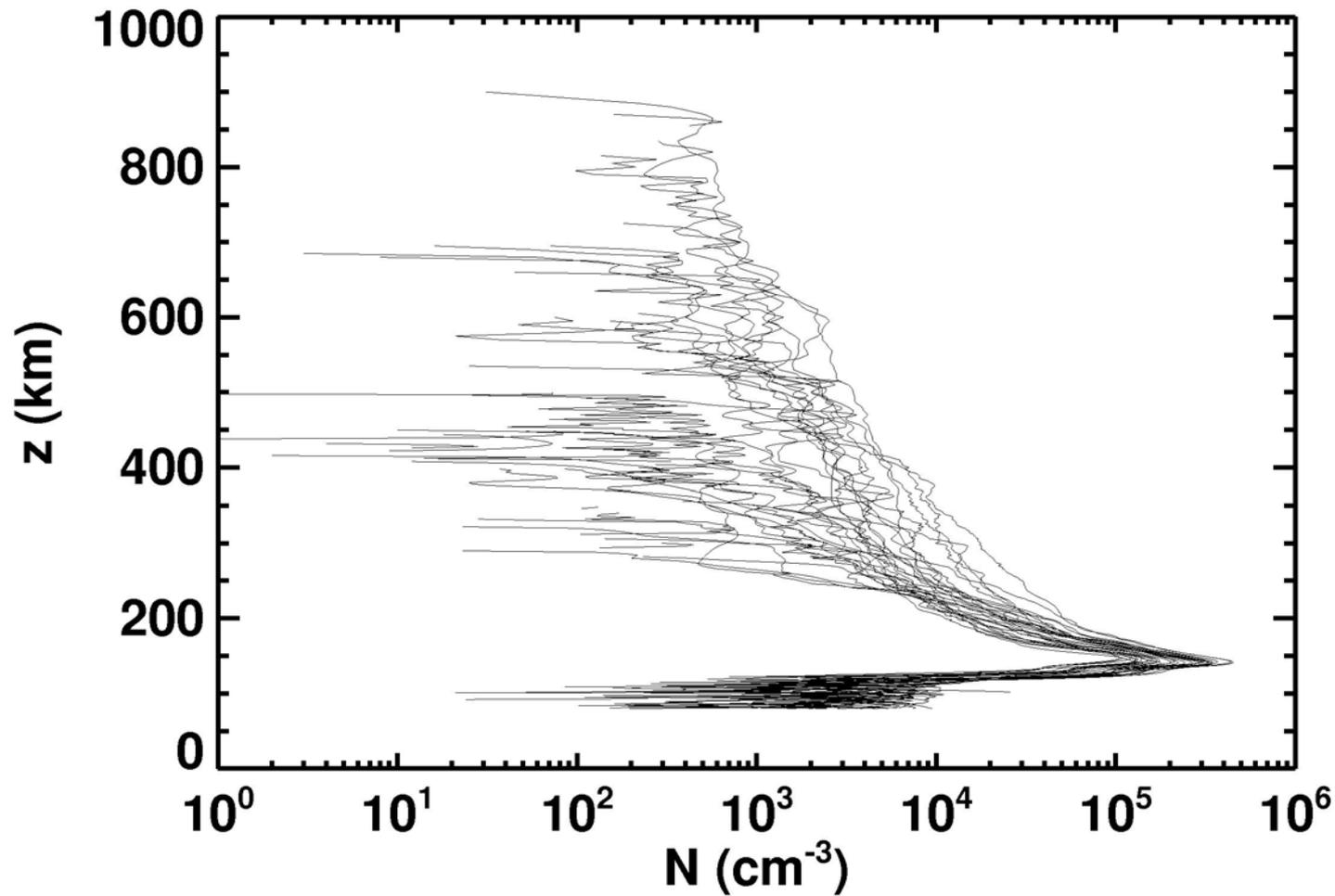
Nmax and SZA



Zmax and SZA



All profiles



Next steps

- Wait for Gavrik to deliver full dataset
- Identify z reference, time zone, other potentially ambiguous details
- Work with Steve Joy to make dataset tidy
- PDS review process
- Potential science! I think Gavrik would be interested in collaborating on Venera/VEX analysis projects