Venera 15/16
Ionospheric Profiles

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MEX/VEX Radio Science Meeting
2010.03.18-19
Bonn, Germany
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 $N$ ~ $4E5$ cm$^{-3}$
- Uncertainties?
- Labelled with V15/V16, date, time(?), lat, lon(?), SZA
Sample profile

Venera-16 30.10.1983 13:44:00
lat=-89, lon=70, SZA=89.0
Many profiles (zoom)
$N_{\text{max}}$ and SZA

N$_0 = 6E5 \text{ cm}^{-3}$
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