GOMOS High Resolution Temperature

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Summary

- Comparison with POAM/NMC
- Comparison with SAOZ balloon flights
- Conclusion

POAM III/NMC – High latitudes

- POAM Low Resolution Temperature from NMC
- Both hemispheres: 60°-70°N and 62°-87°S
- Period: August 2002 to February 2003

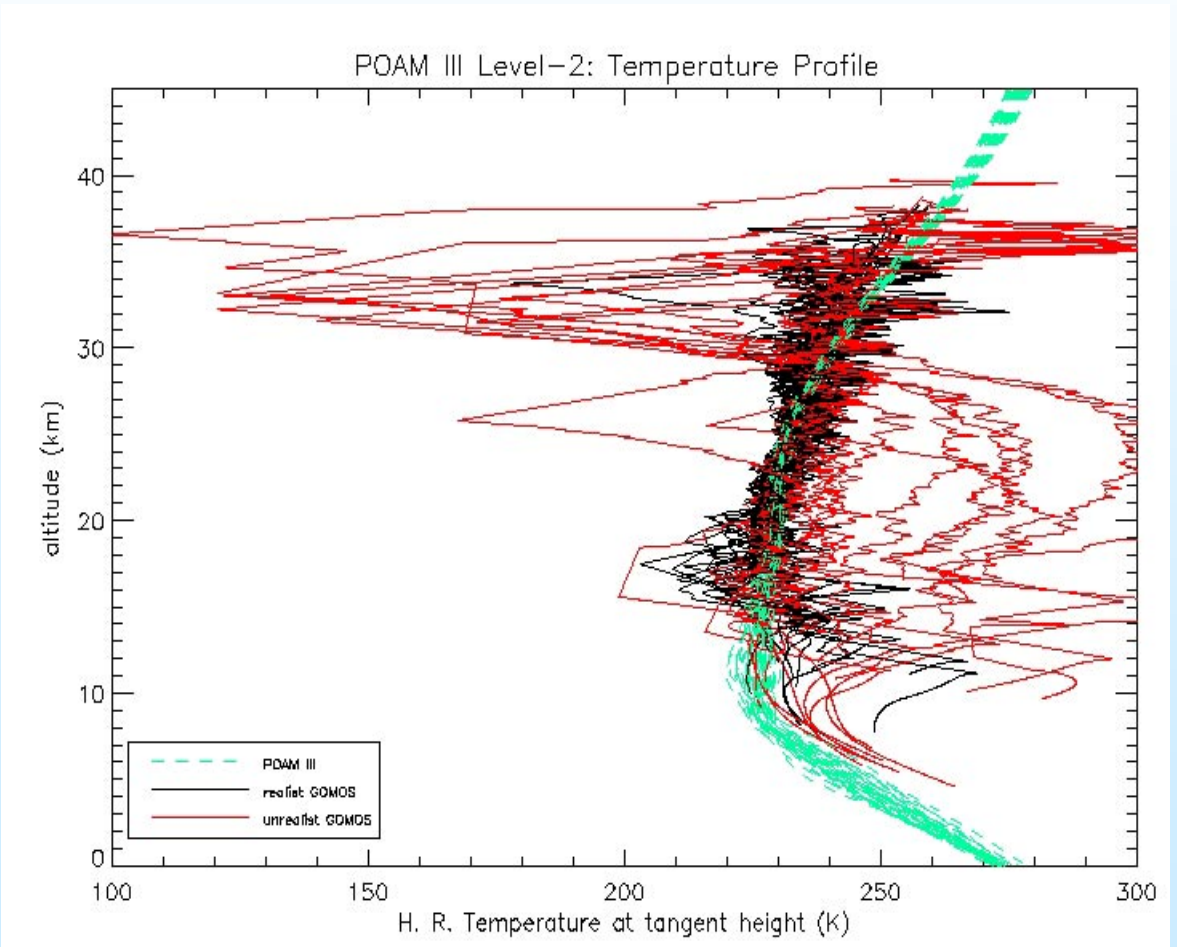
Selection criterion : 4 hours in time and 600 km in distance

- Twilight observation conditions :
  338 coincidences in Northern Hemisphere
  41 coincidences in Southern Hemisphere

- Dark observation conditions : No coincidences found …
- Daylight observation conditions : Not taken into consideration.

GOMOS/NMC – Southern Hemisphere

- 41 profiles in coincidence between 62°-87°S
- Red: 11 Unrealistic profiles
- Black: 30 Realistic profiles
  however
  large oscillations
  below 22 km
  and
  above 30 km



GOMOS/NMC – Southern Hemisphere

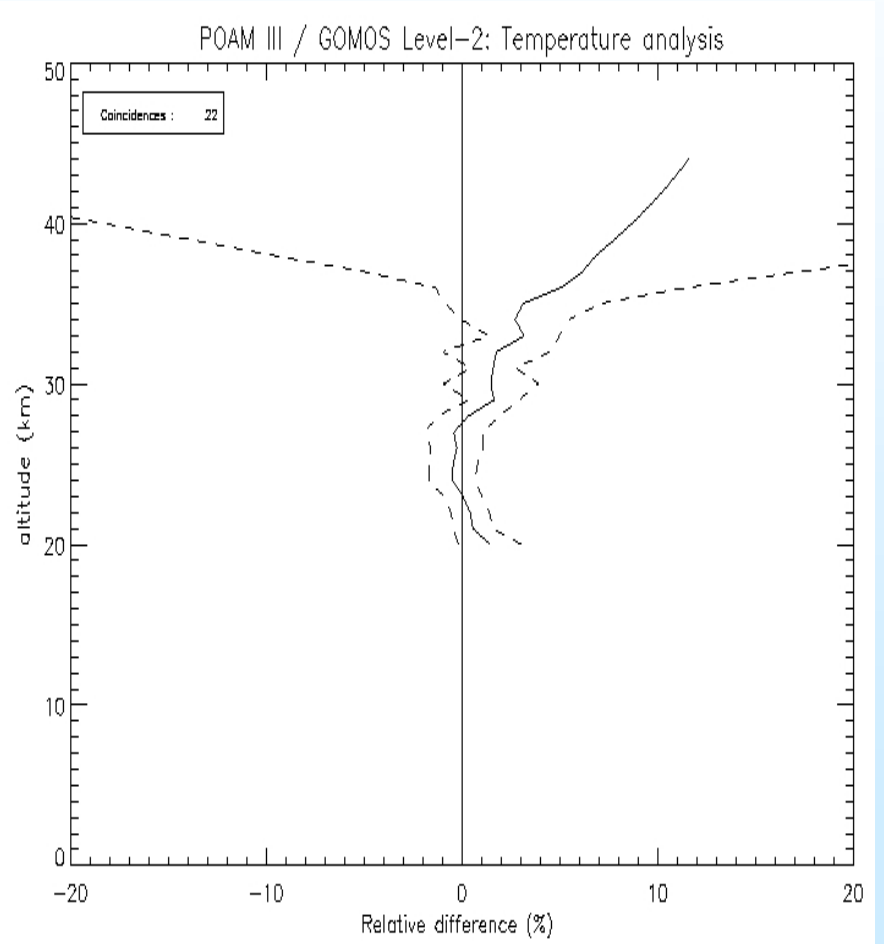
- Latitude 62-87 S

- 30 Realistic profiles only

Precision:

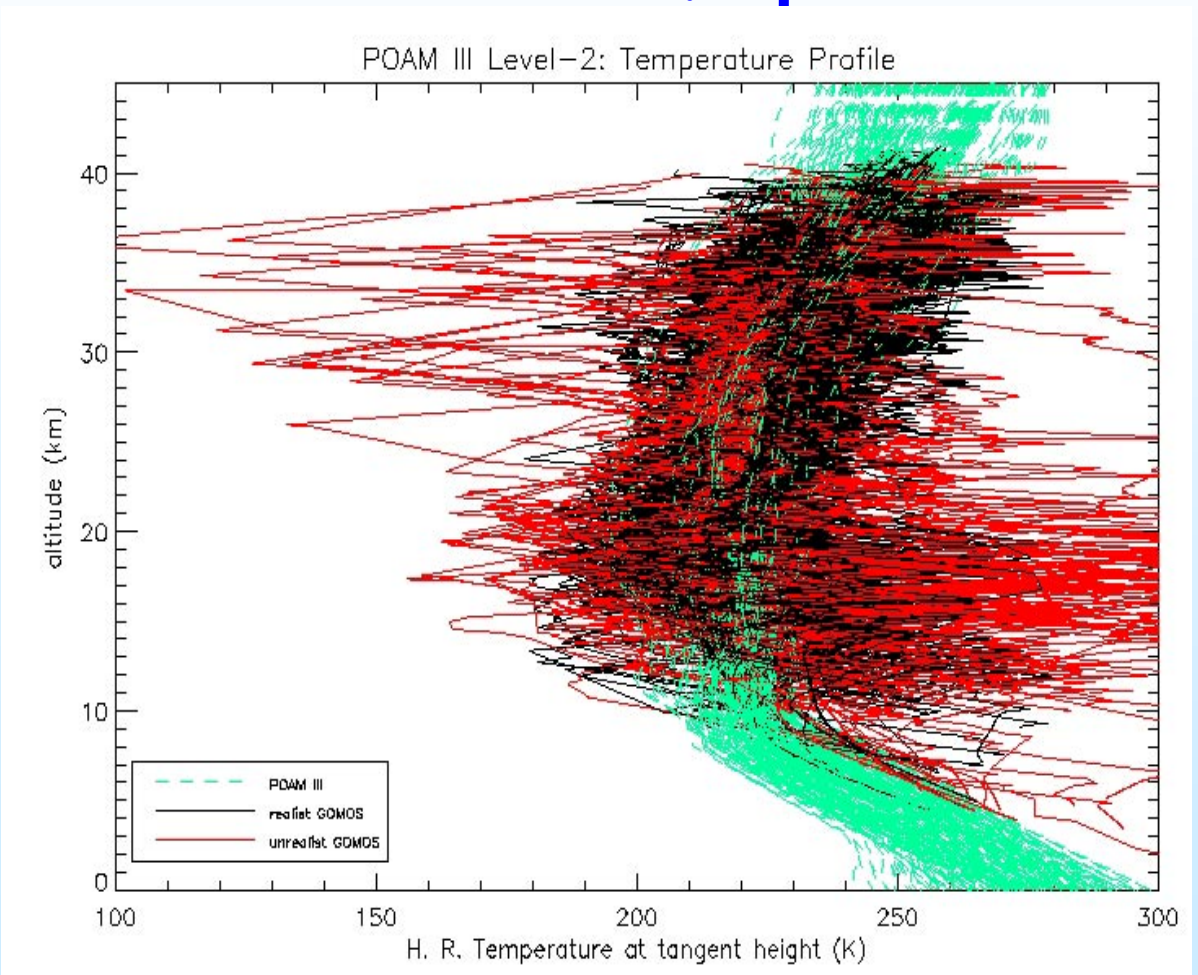
above 35 km	**degrading with altitude**
30-35 km	**± 5K**
20-30 km	**± 3 K**

Accuracy: depending on NMC



GOMOS/NMC – Northern Hemisphere

- 338 profiles in coincidence between 60°-70°N
- Red: 122 Unrealistic profiles
- Black: 216 Realistic profiles
  large oscillations
  below 22 km
  and
  above 30 km,



GOMOS/NMC – Northern Hemisphere

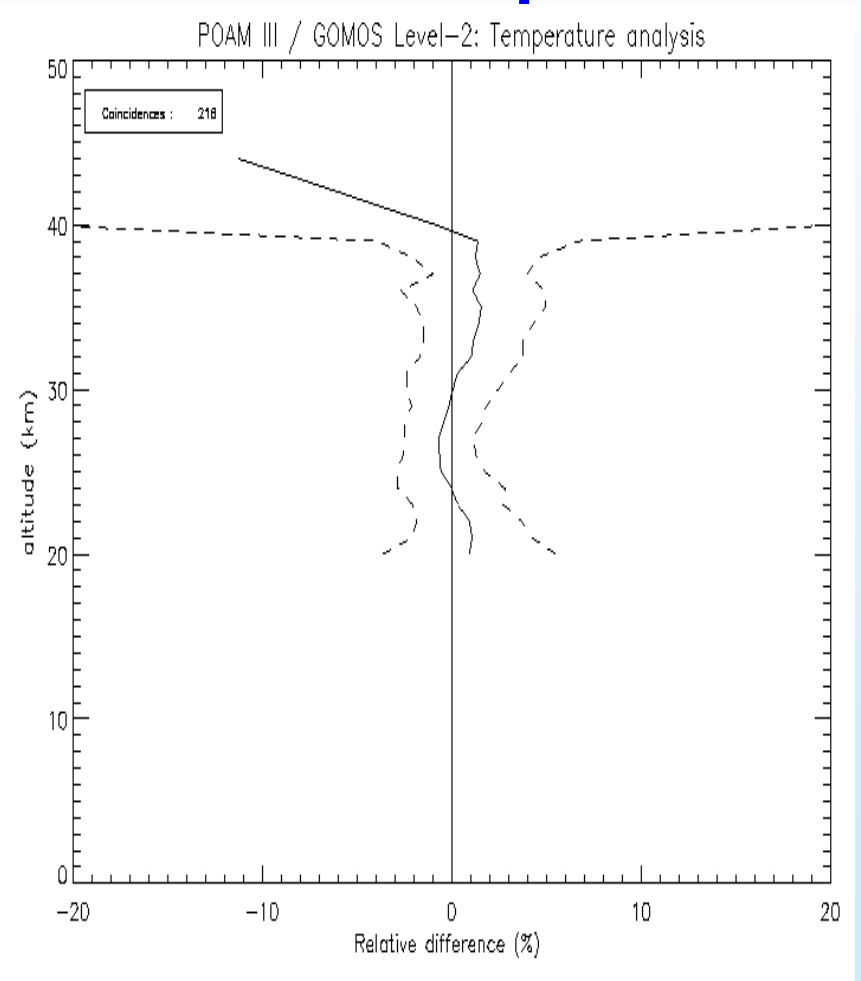
- Between 60-70N

- 216 Realistic profiles

Precision:

above 40 km	**not reliable**
30-35 km	**± 8K**
20-30 km	**± 4K**

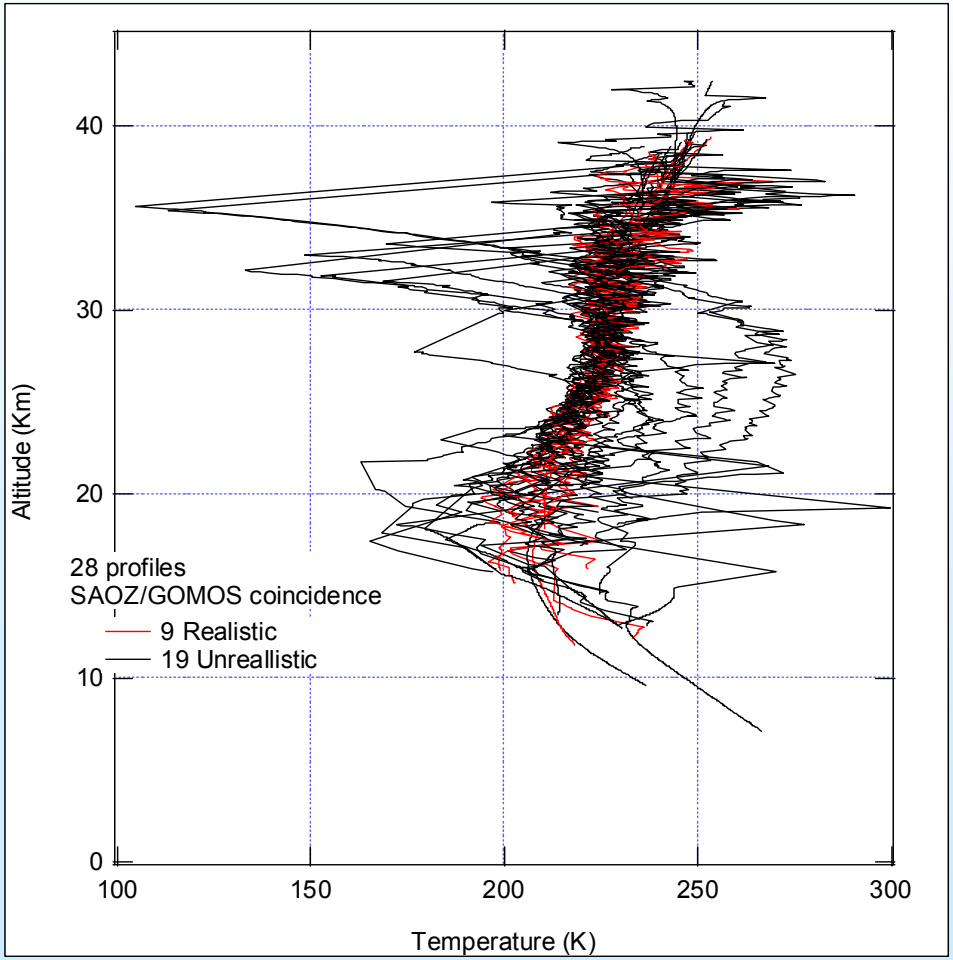
Accuracy: depending on NMC



GOMOS/SAOZ coincidences– All profiles

-SAOZ Uv-Visible spectrometer
  -Balloon-borne instrument
  -Flown at 3 latitudes
    -Arctic summer and winter
    -Mid-latitudes summer and autumn
    -Tropics summer

-28 profiles in coincidence with SAOZ
-Red: 9 Realistic profiles
-Black: 19 Unrealistic profiles



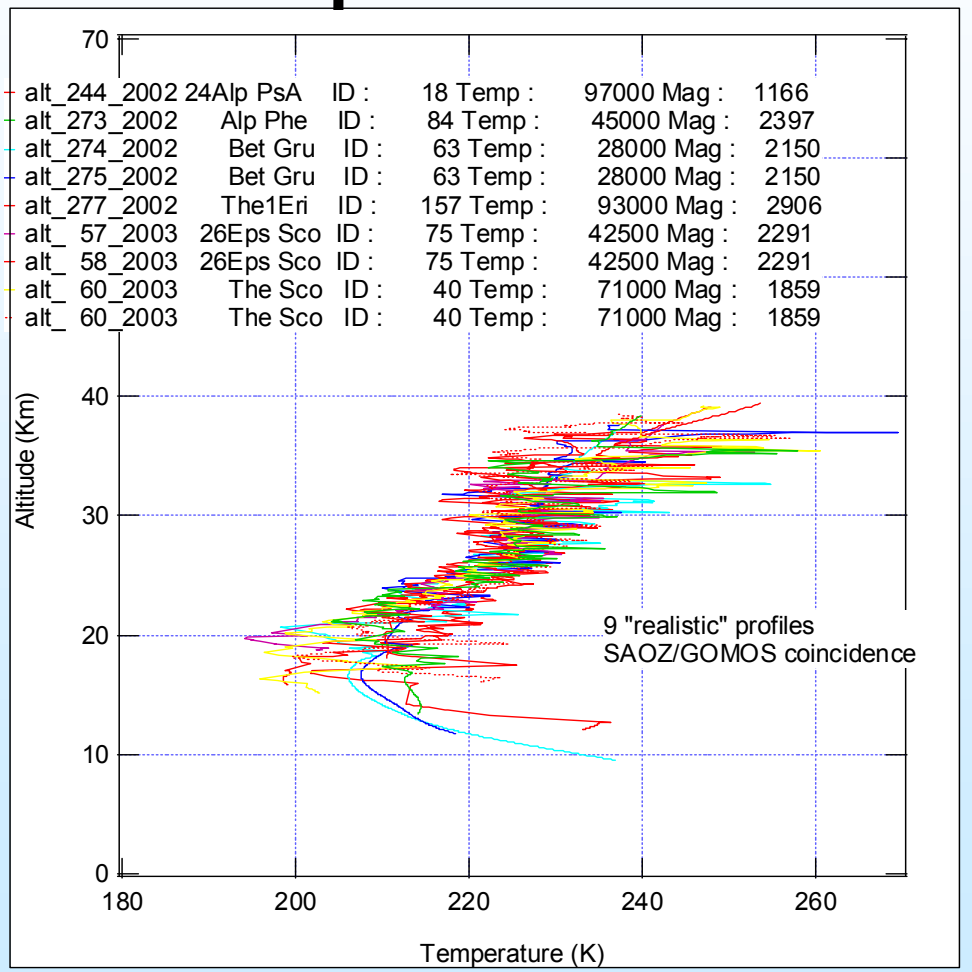
GOMOS/SAOZ selected profiles

-9 realistic profiles

-Various stars: 24 Alp Psa
Alp Phe
Bet Gru
26 Eps Sco
The Sco

-Various temperature
2800 → 9700

-Various Magnitude
1.1 → 2.4



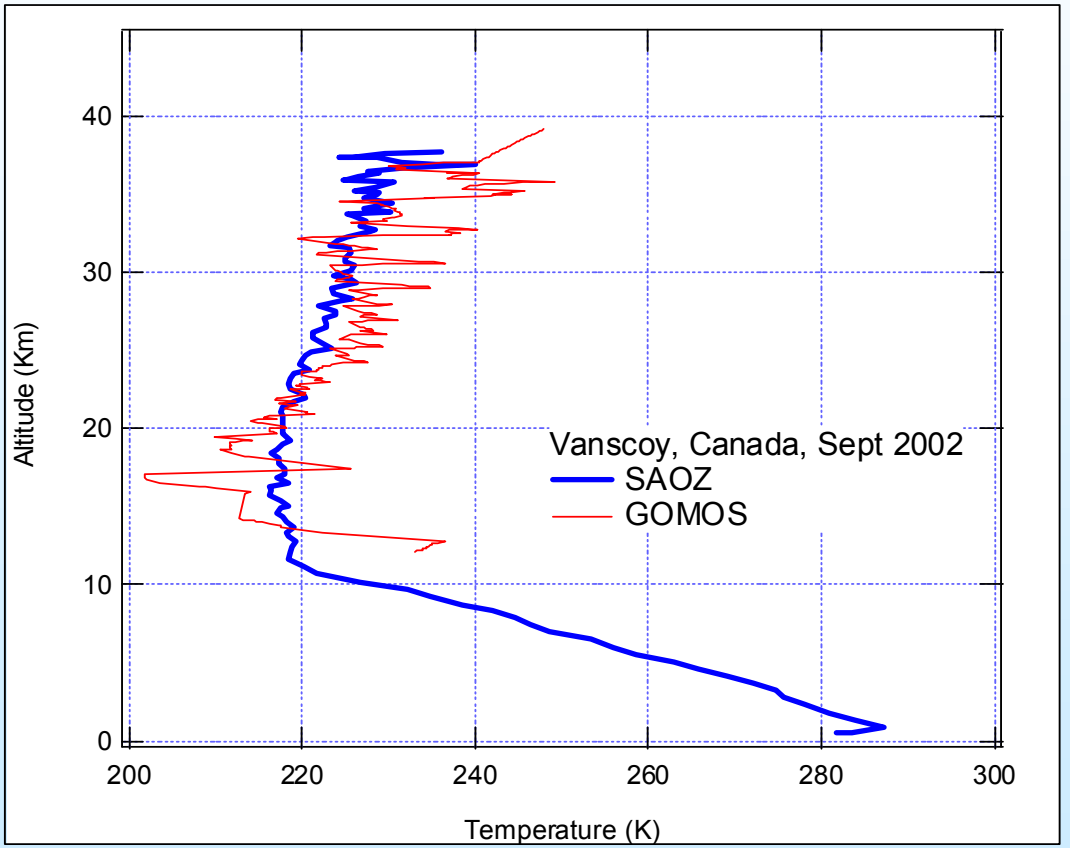
GOMOS/SAOZ Mid-latitude Summer

-Vanscoy, Canada
Mantra 2002

Accuracy SAOZ: ± 0.5K

Precision:

30-40 km	± 15K
20-30 km	± 4K
10-20 km	± 15K



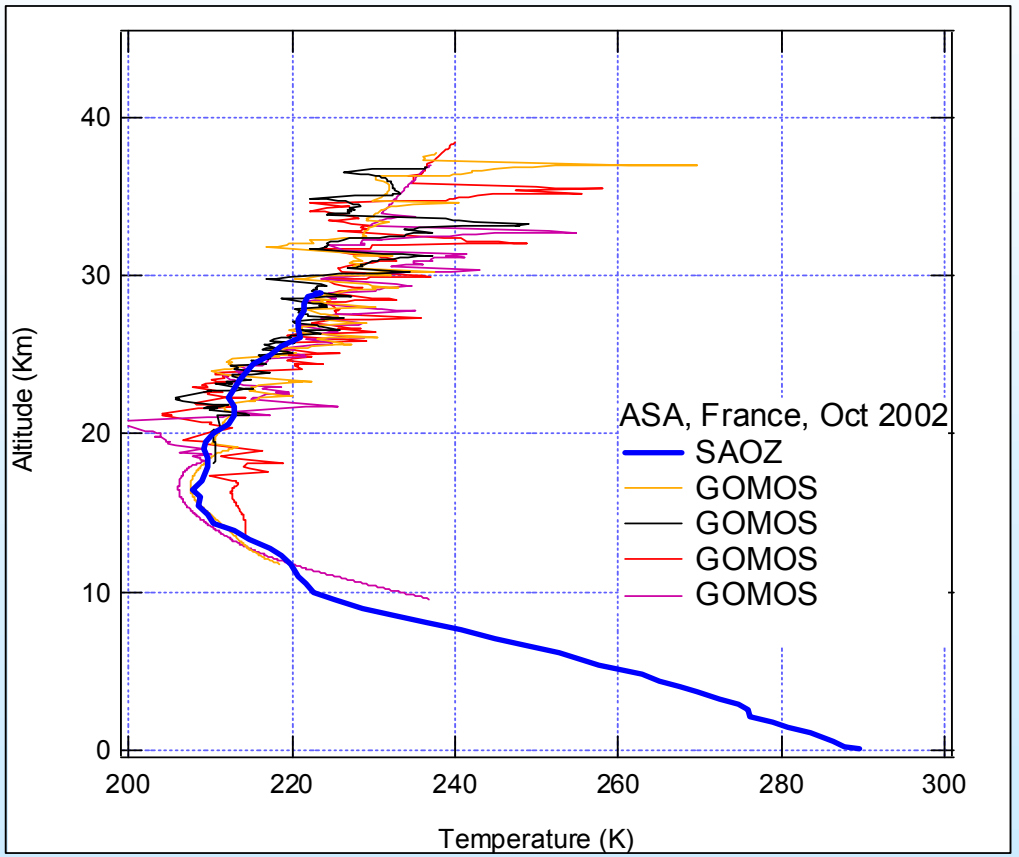
GOMOS/SAOZ Mid-latitudes Autumn

-ASA, France
ESABC
Accuracy SAOZ: ± 0.5K

Precision:
-30-40 km
± 15K

-20-30 km
± 8K

-10-20 km
± 10K



GOMOS/SAOZ Southern Tropics

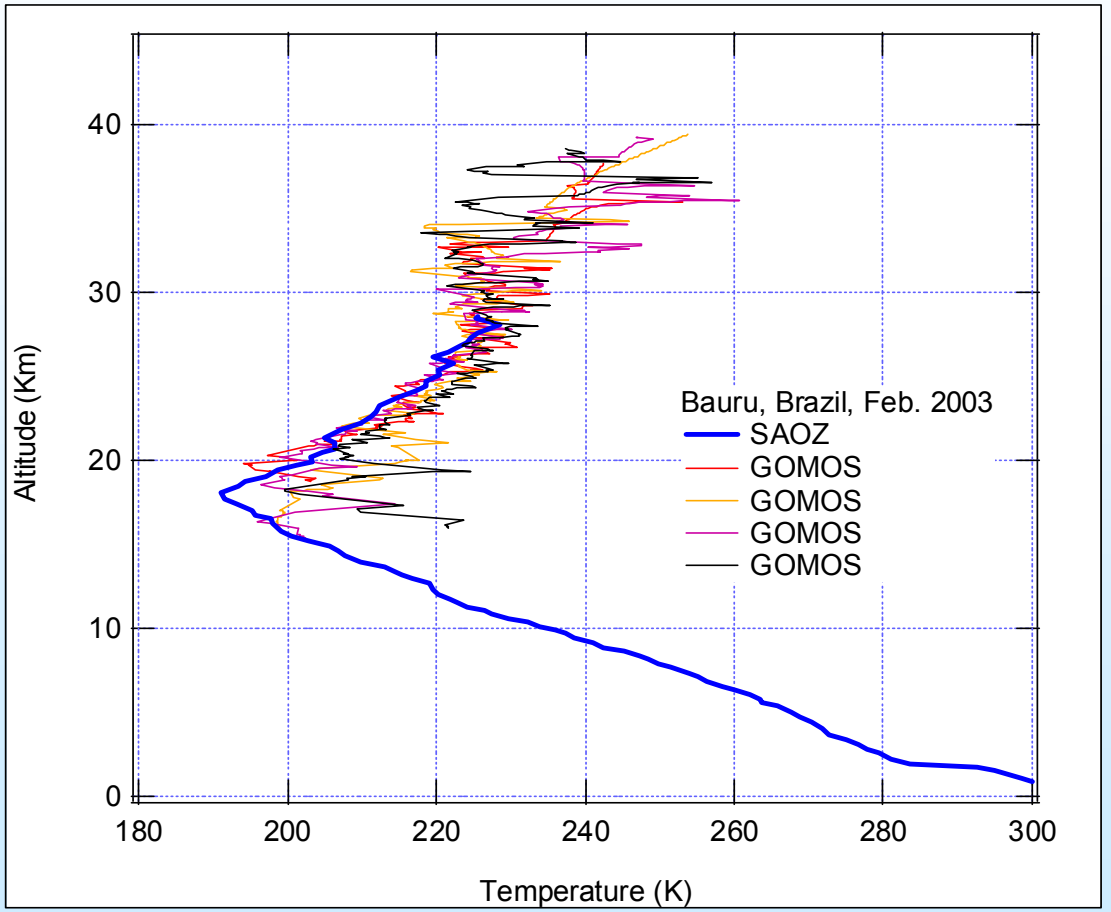
-Bauru, Brazil
ESABC, Pre-Hibiscus

Accuracy SAOZ: ± 0.5K

Precision:
30-40 km ± 15K

20-30 km ± 2K

10-20 km ± 12K



Conclusion

Only "selected" profiles taken into account

- Precision of GOMOS High Resolution Temperature
  - Below 20 km 10-12 K
  - 20-30 km 2-4 K
  - 30-40 km 15 K

- Algorithm to be corrected?