

# Early Results from Stratospheric Aerosol and Gas Experiment III (SAGE III)

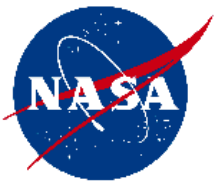
Ghassan Taha

*University of Arizona*

*and*

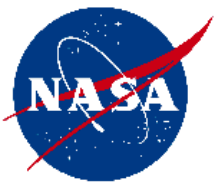
*NASA Langley Research Center*



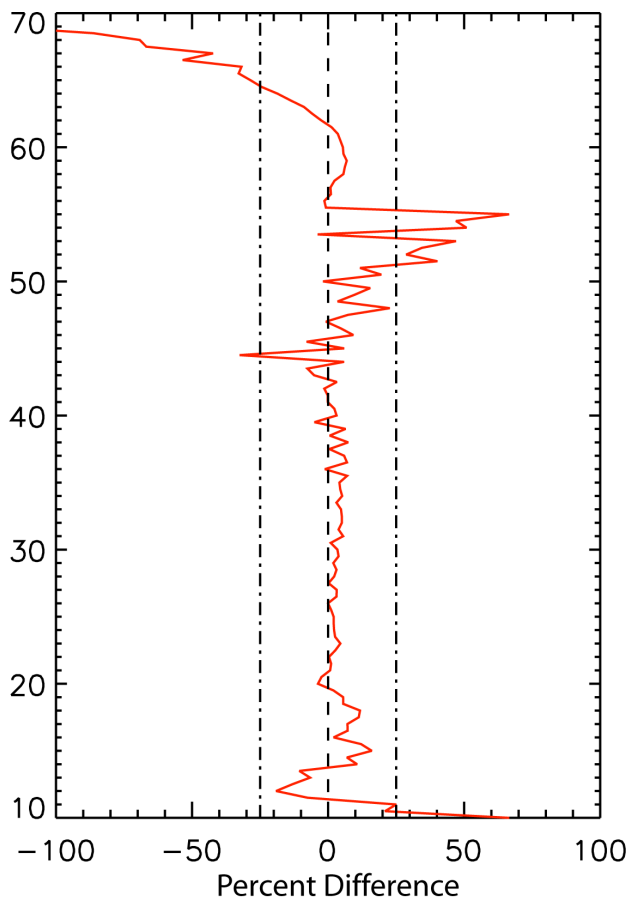
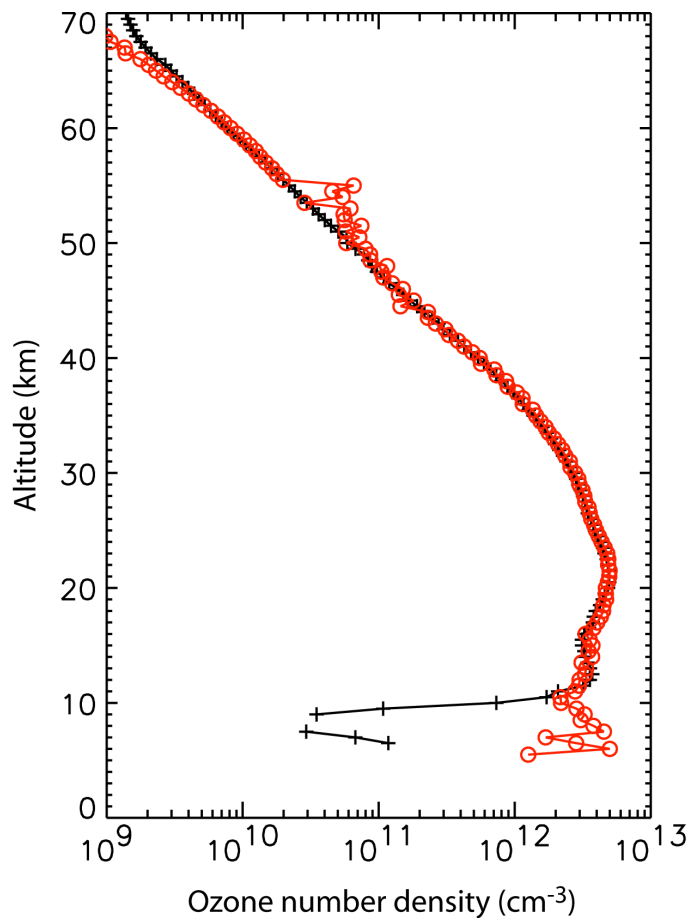


# Science Data Products

<i>Product</i>	<i>Estimated Precision</i>	<i>Altitude Range (km)</i>
Aerosol Extinction (@385, 448, 521, 676, 756, 869, 1020, 1540 nm)	5%	0-40
Aerosol Optical Depth (@ 521nm and longer)	5%	N/A
Ozone Number Density	5% (Solar) 10%(Lunar)	6-85 16-35(Lunar)
NO2 Number Density	15% (Solar) 15%(Lunar)	10-50 19-37
H2O Number Density	15%	0-50
OCIO Number Density	25% (Lunar)	15-25
NO3 Number Density	10% (Lunar)	10-55
Temperature and Pressure	2K 2%	0-85
Cloud Presence	N/A	6-30



# Ozone SAGE III vs. SAGE II

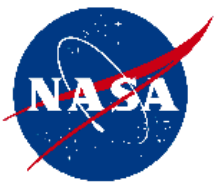


**SAGE III (V1.05):**  
9-May-02 – 10-May-02  
Lat: 50.04°N to 50.56°N  
21 Profiles

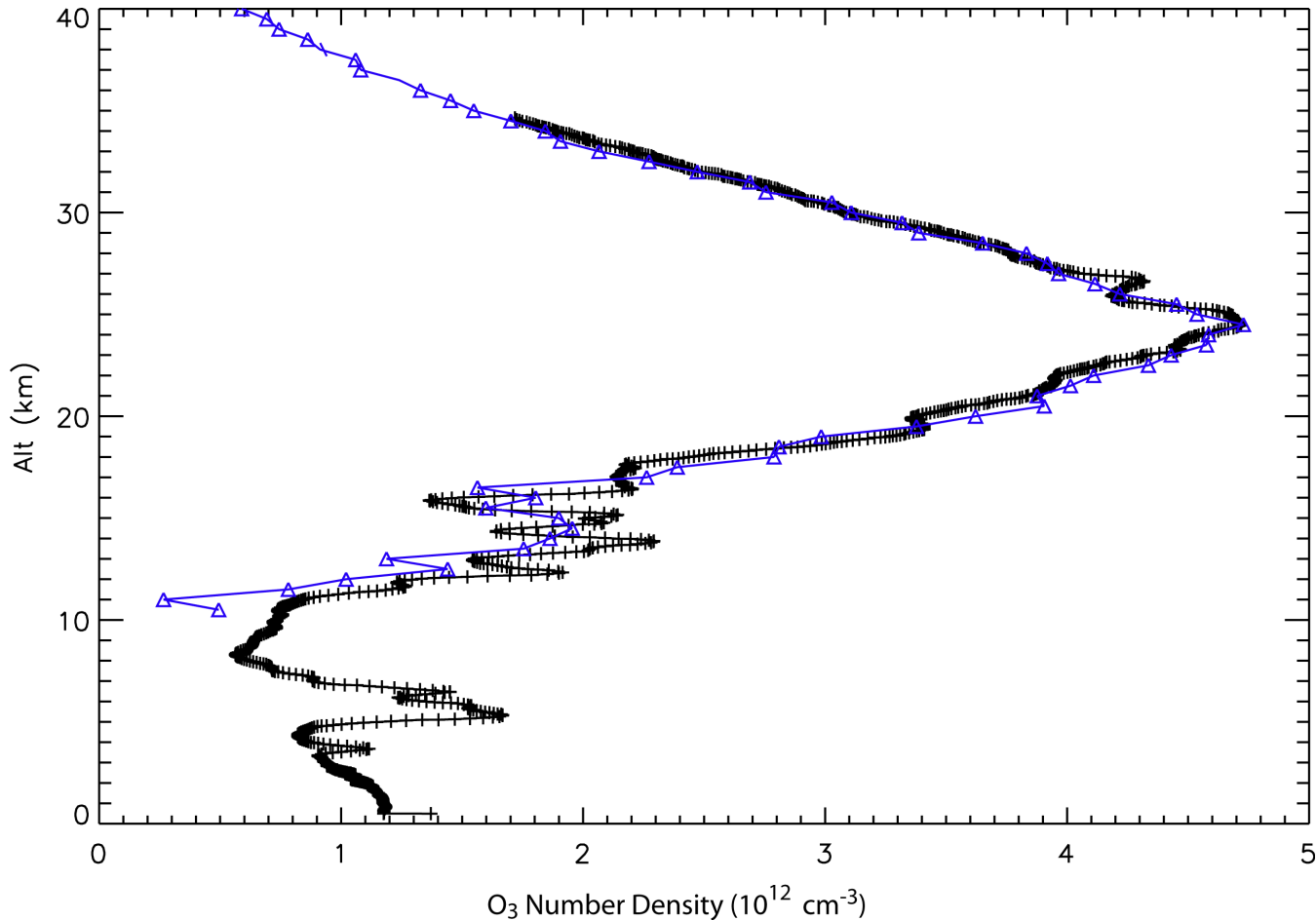
**SAGE II:**  
9-May-02  
Lat: 52.11°N to 52.84°N  
5 Profiles

9/20/02

Preliminary Data



# SAGE III vs. Ozonesonde



## SAGE III (V1.05):

22-Jul-02

Lat: 45.43°N

Lon: 6.3°E

Distance: 171.45 km

## Ozonesonde (Payern):

22-Jul-02

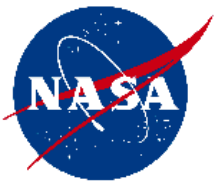
Lat: 46.8°N

Lon: 7°E

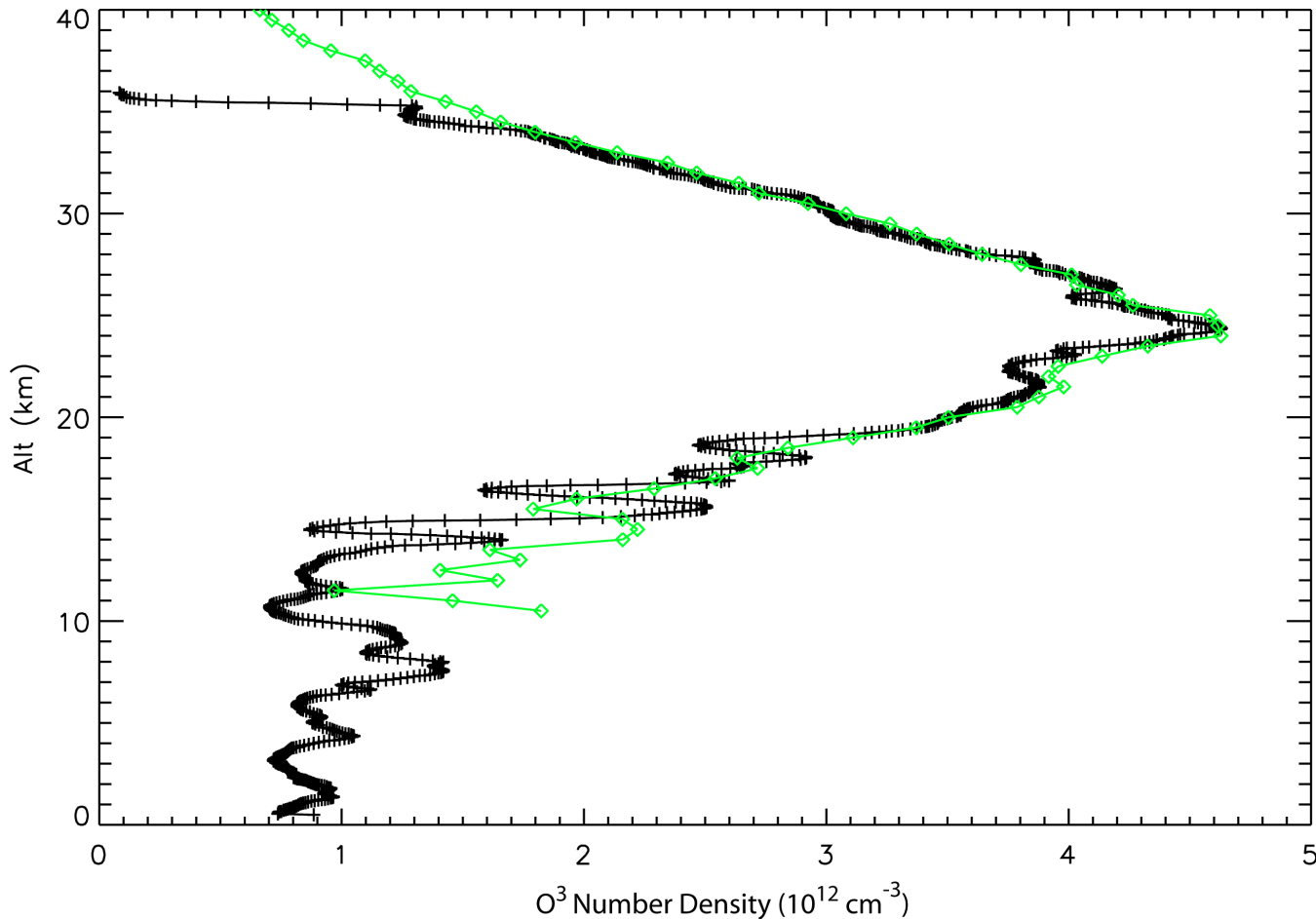
\*Ozonesonde data provided by  
Rene Stubi, Swiss Meteorological  
Institute, MCH

9/20/02

Preliminary Data



# SAGE III vs. Ozonesonde



## SAGE III (V1.05):

24-Jul-02

Lat: 45.79°N

Lon: 10.9°W

Distance: 1394.93 km

## Ozonesonde (Payern):

24-Jul-02

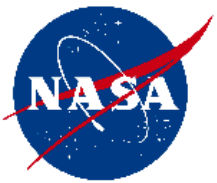
Lat: 46.8°N

Lon: 7°E

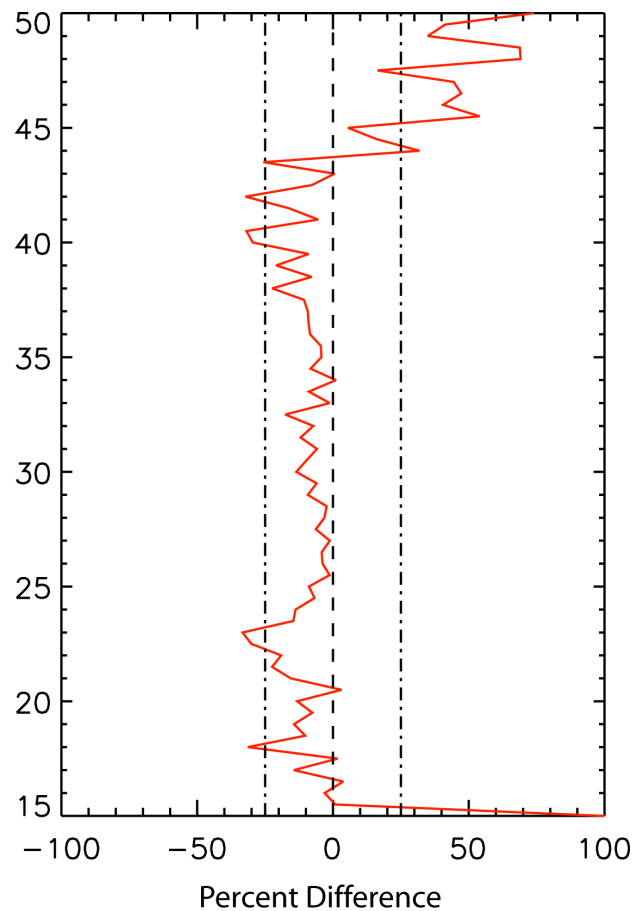
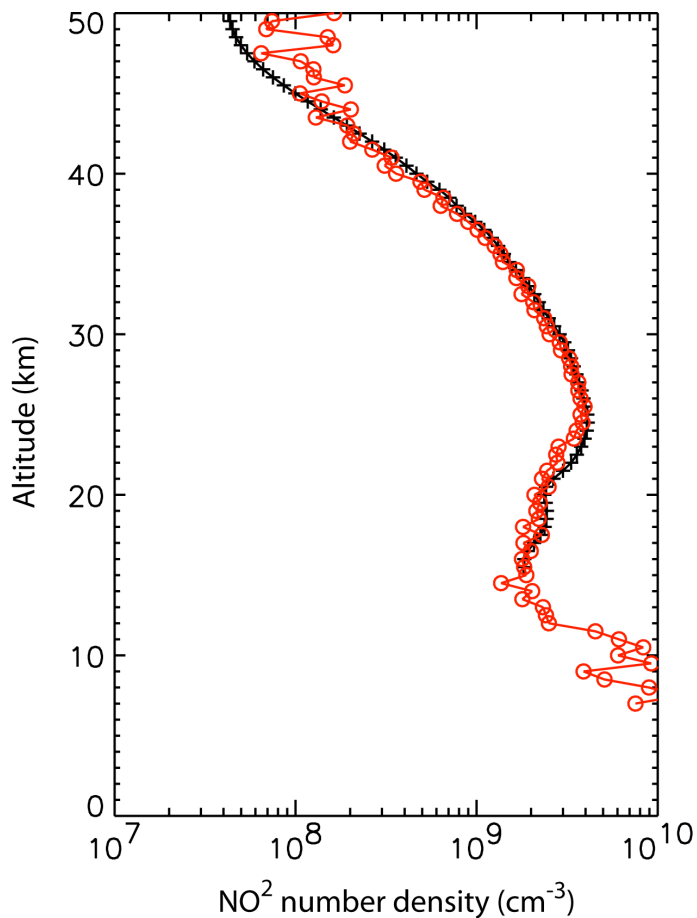
\*Ozonesonde data provided by  
Rene Stubi, Swiss Meteorological  
Institute, MCH

9/20/02

Preliminary Data



# NO<sub>2</sub> SAGE III (V1.06) vs. SAGE II



## **SAGE III (V1.06):**

9-May-02

Lat: 50.04°N to 50.56°N

21 Profiles

## **SAGE II:**

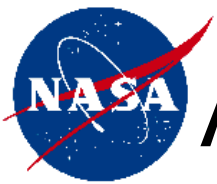
9-May-02

Lat: 50.45°N to 50.49°N

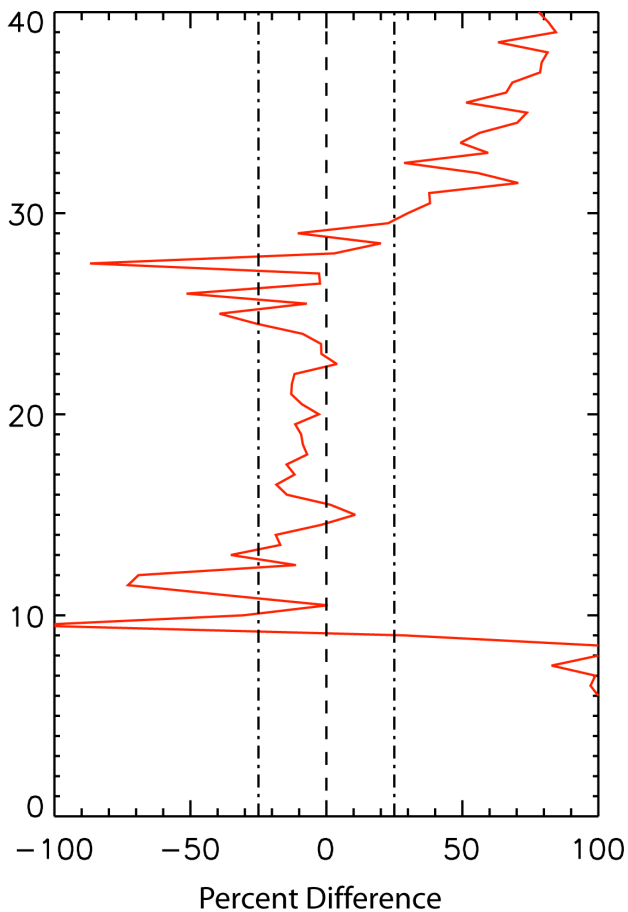
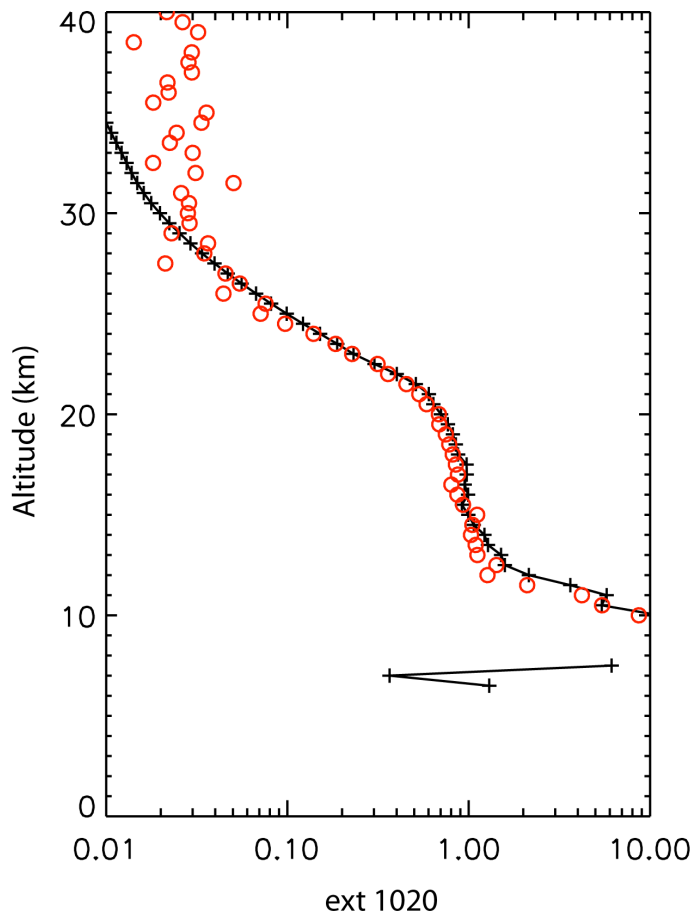
5 Profiles

9/20/02

Preliminary Data



# Aerosol 1020 SAGE III vs. SAGE II

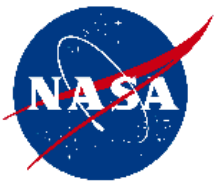


**SAGE III (V1.05):**  
9-May-02 – 10-May-02  
Lat: 50.04°N to 50.56°N  
21 Profiles

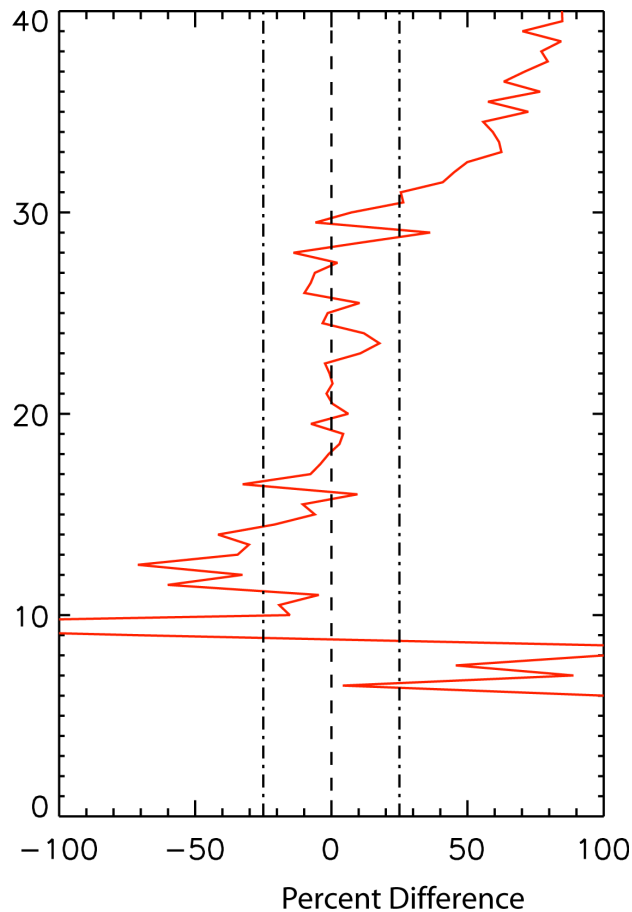
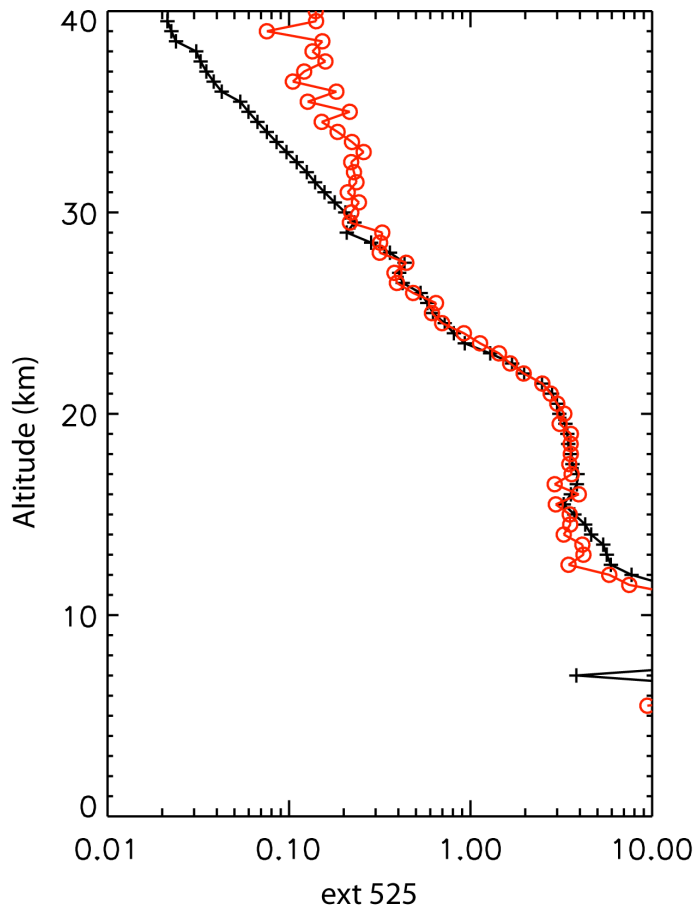
**SAGE II:**  
9-May-02  
Lat: 52.11°N to 52.84°N  
5 Profiles

9/20/02

Preliminary Data



# Aerosol 525 SAGE III vs. SAGE II



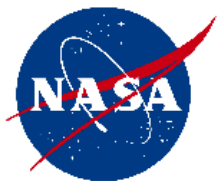
**SAGE III (V1.05):**  
9-May-02 – 10-May-02  
Lat: 50.04°N to 50.56°N  
21 Profiles

**SAGE II:**  
9-May-02  
Lat: 52.11°N to 52.84°N  
5 Profiles

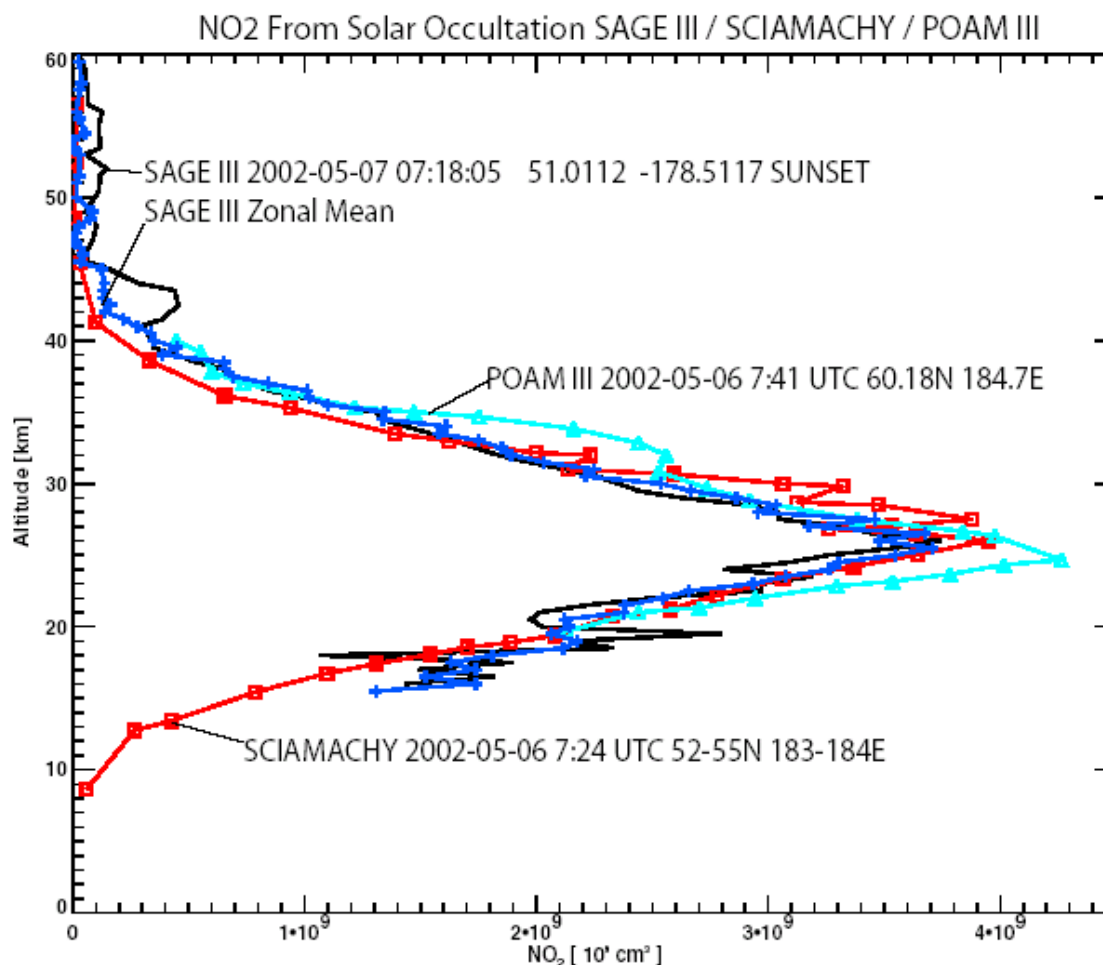
9/20/02

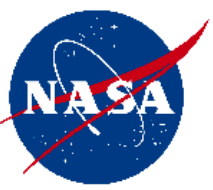
Preliminary Data





# SAGE III / SCIAMACHY / POAM III





# Future Activities

- Attempt limb scattering measurements
- Initial SAGE III data release (Beta) planned for Nov. 2002.
- SAGE III Validation efforts:
  - Ongoing efforts with established programs
  - SOLVE-2 mission (Jan - Feb 2003)



DC-8 at Arena Arctica, Kiruna,  
Sweden