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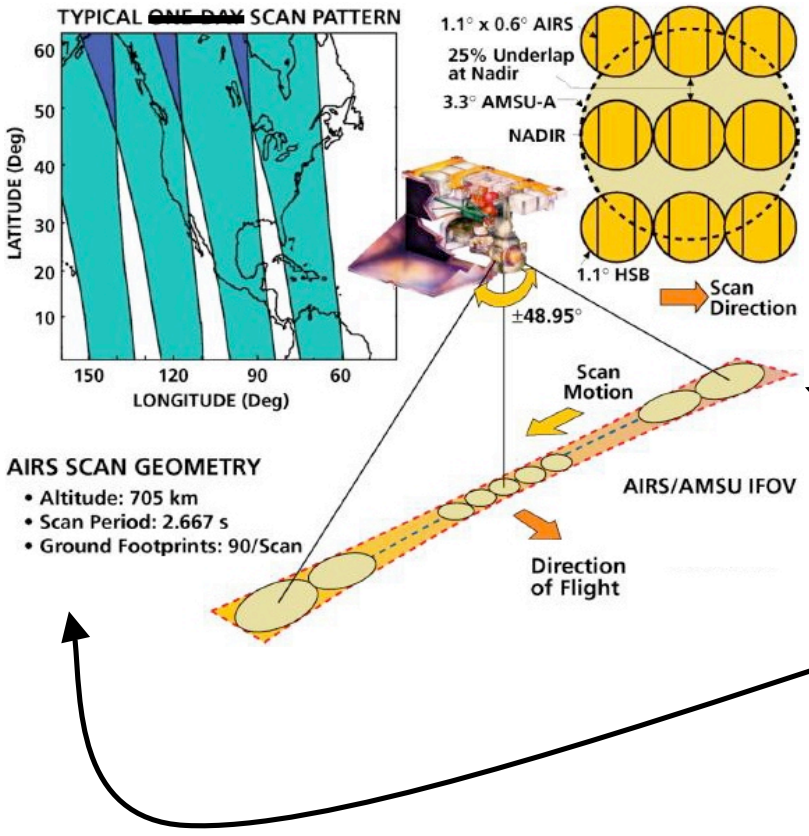
AIRS Observations in Support of AVE

- The AIRS *experiment* is a hyperspectral infrared sounder and associated microwave instrument. See http://www.jpl.nasa.gov/airs/
- Retrieval footprint size is 50 km.
- Retrieved products include
  - Temperature into stratosphere (1-2 km layers); currently well validated
  - Water vapor in 2 km layers to tropopause
  - Cloud fractions, top and temperature.
  - Trace and minor gases: ozone, CO, CH_4
  - Products publicly available, August '03.
- Retrievals *may* be available with about 6 hour latency.

- 300 hPa ozone and water vapor are anticorrelated
  - The AVE data will be useful in validating this relationship.
  - Validation and analyses are ongoing.

The AIRS Viewing geometry



1. AMSU footprint, 45 km across at nadir, contains 9 AIRS spectra
   - THIS IS THE RETRIEVAL GRANULARITY.
2. Viewing swath 30 AMSU footprints or ~1650 km wide.
3. The result: 324,000 retrievals per day

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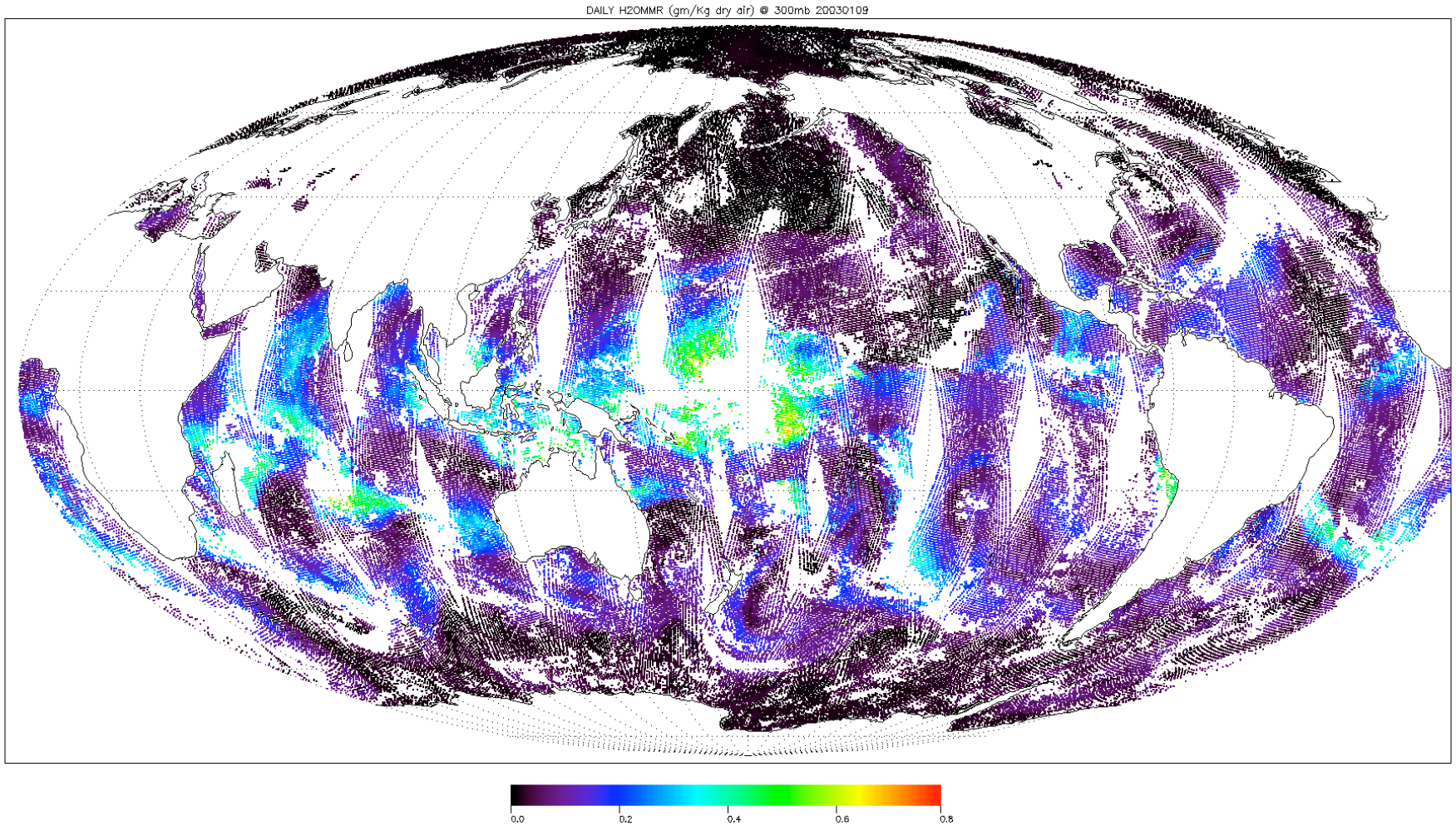
AIRS Water Vapor Mixing Ration at 300 hPa, 9 Jan '03

Combined Ascending and Descending: UNVALIDATED



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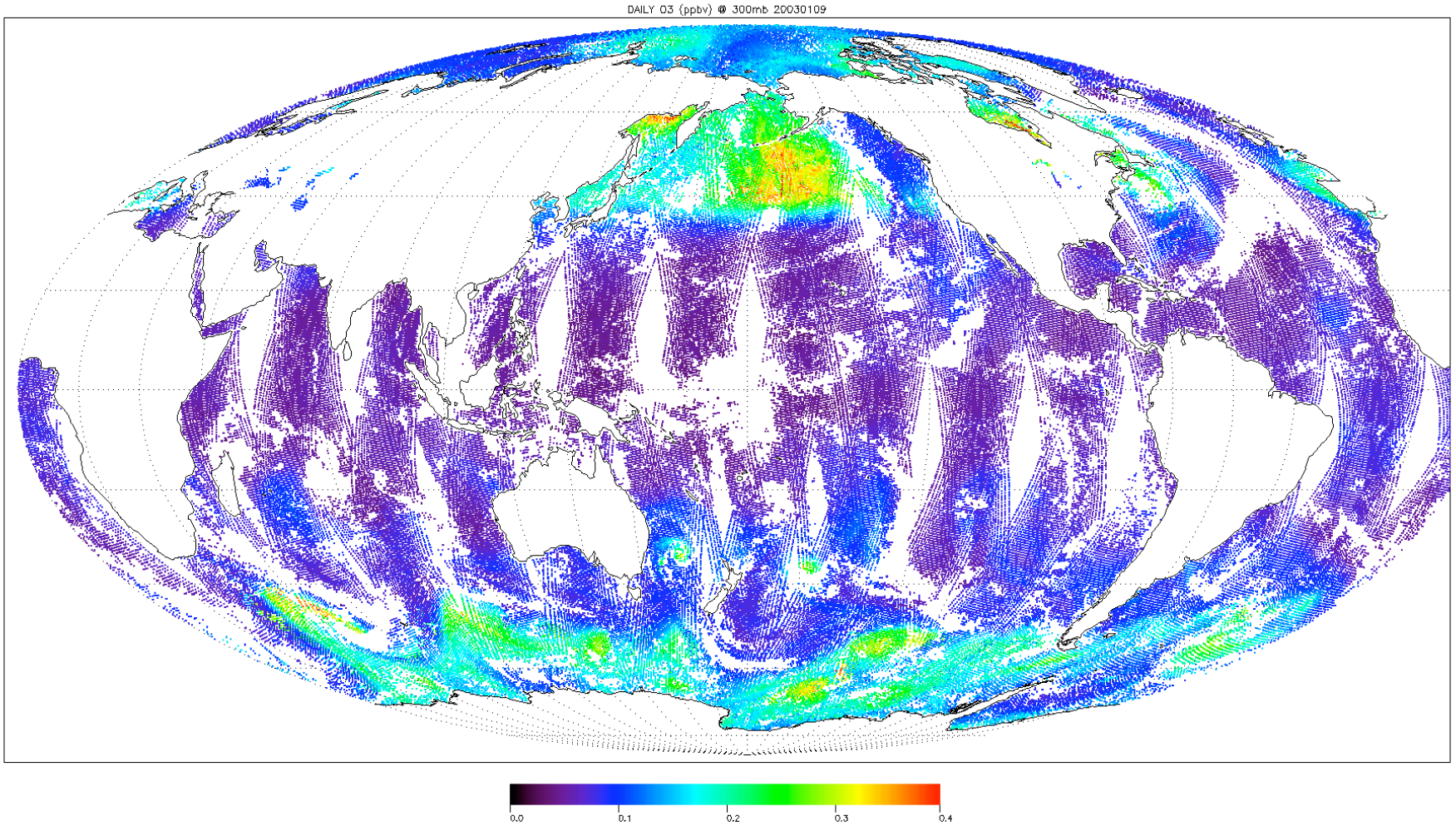
AIRS Ozone Mixing Ratio at 300 hPa, 9 Jan '03

Anti-correlated with water vapor in storm tracks



Conclusions

- AIRS retrievals show anticorrelation between humidity and ozone at 300 hPa
  - Suggestive of tropopause distortion by storm activity.

- 150 hPa humidity is questionable
- 150 hPa ozone is reliable.
- Temperature and cloudiness are also retrieved
- Retrieved products *may* be available with 6 hr latency
  - Small (1.2 GB / day), and in HDF.