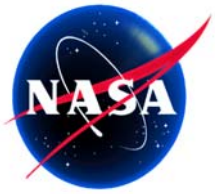

AEROSOL RETRIVALS FROM AVHRR: UPDATED LONG-TERM CLIMATOLOGY OF AEROSOL PROPERTIES

http://gacp.giss.nasa.gov/retrievals

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AVHRR

- **Data** *(polar-orbiting satellite)* **afternoon**
  - NOAA7 1983-1985
  - NOAA9 1985-1988
  - NOAA11 1988-1994
  - NOAA14 1996-2001

- **Two channel retrieval**
  - visible Ch1 centered at 0.65µm
  - near-IR Ch2 centered at 0.85µm

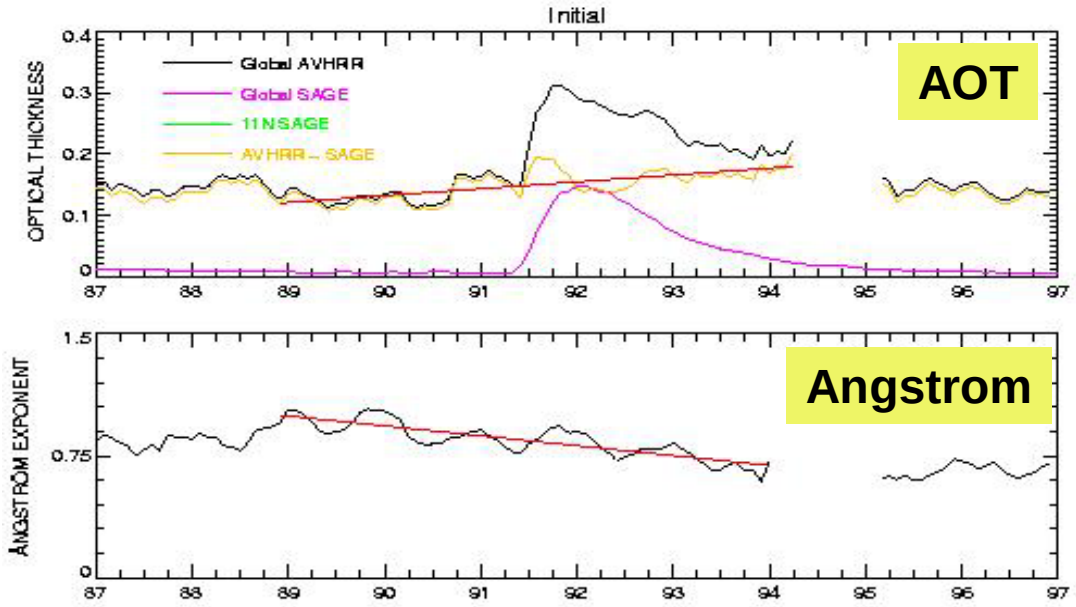
- **Method**
  - Uses ISCCP DX dataset (subsampled 30x30km from GAC, with modified cloud screening)
  - for the specific illumination (sun - satellite) …minimize the difference between
    - radiances measured in Ch1 and Ch2
    - realistic atmosphere-ocean simulations

- **Retrieved properties**
  - aerosol optical thickness (at .55µm)
  - Angström exponent (size-information)

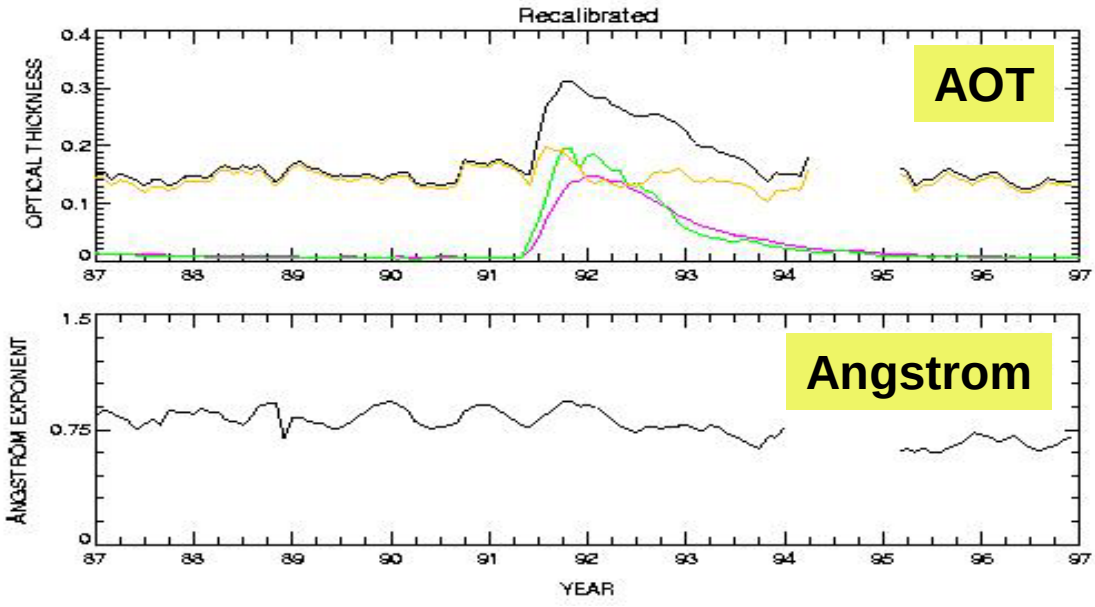
TIMESERIES

global average (ocean)

uncorrected



corrected



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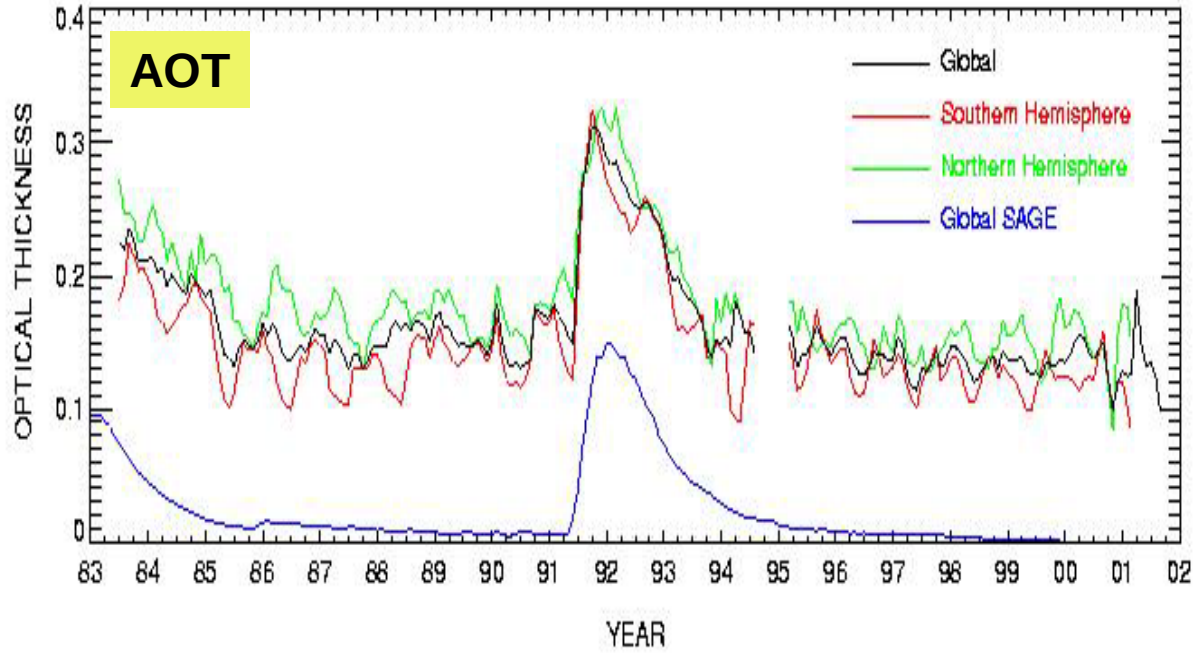
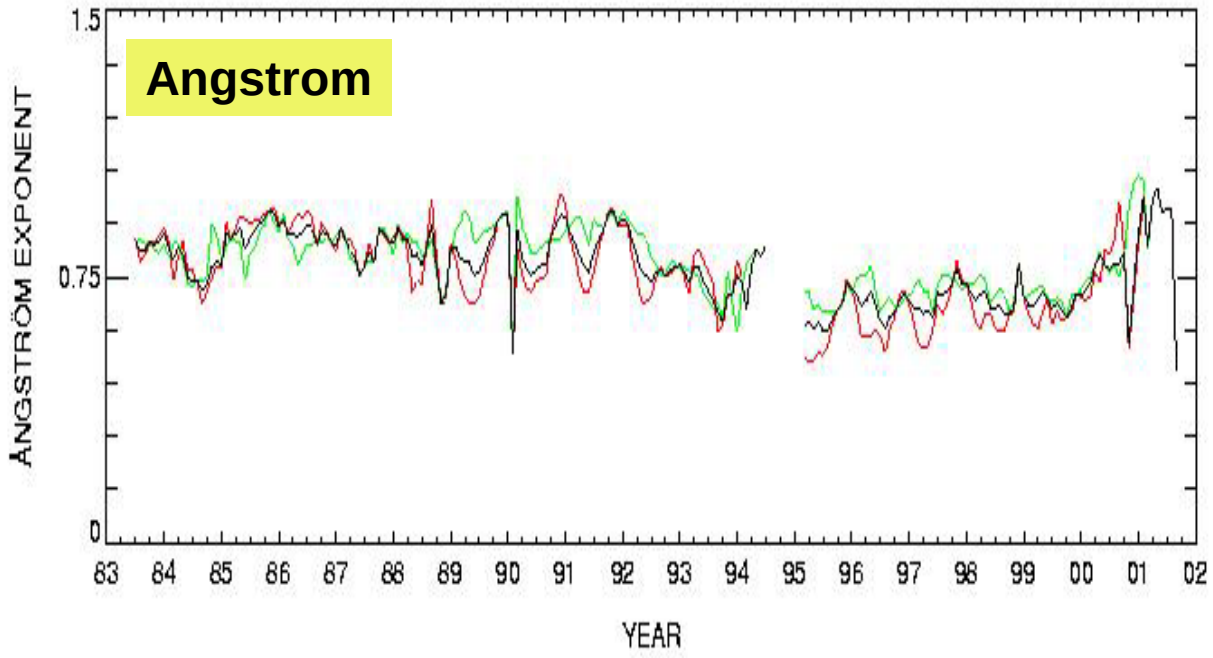
TIMESERIES

hemispheric average (ocean)





SUMMARY

- **LIMITATIONS**
  - NO retrievals over land
  - sensetivity to calibration *(deep –space count)*
  - imperfect cloud-screening *(mistaken identity)*
  - a-priori assumed global microphisical model may result in regional biases due to absorption, shape or ocean color variations

- **RESULTS**
  - NO obvious long-term trend in the global mean aerosol optical thickness between major volcanic eruptions

- **DATA**
  - Jul/1983 until Sep/2001
  - 1*1deg monthly averages at website **http://gacp.giss.nasa.gov/retrievals**
  - daily data on request

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