

GEOS-5 Aerosol and CO Forecasts Support TC4



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NASA GSFC

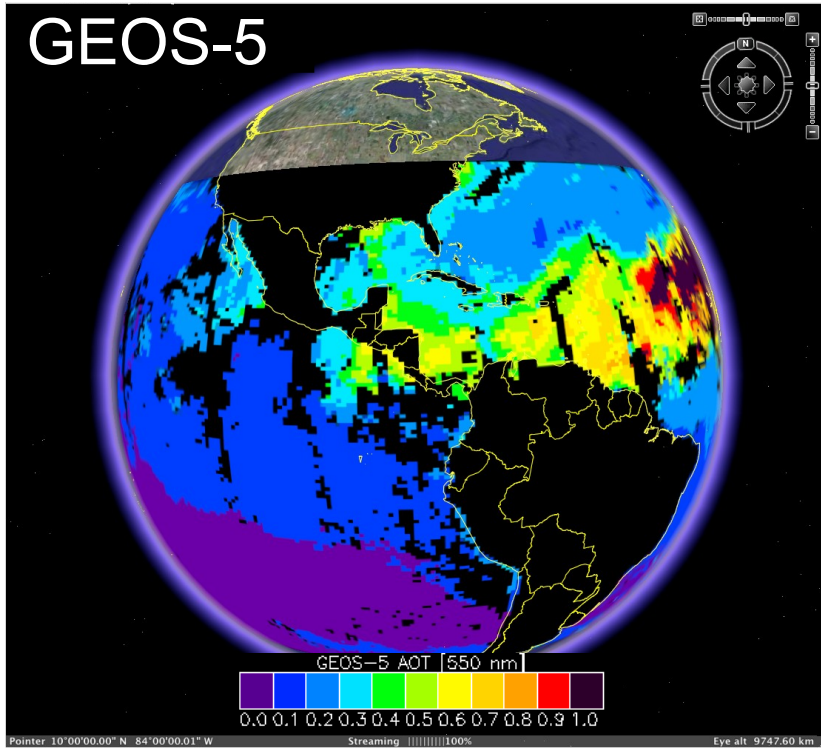
June/July 2007

San Jose, Costa Rica

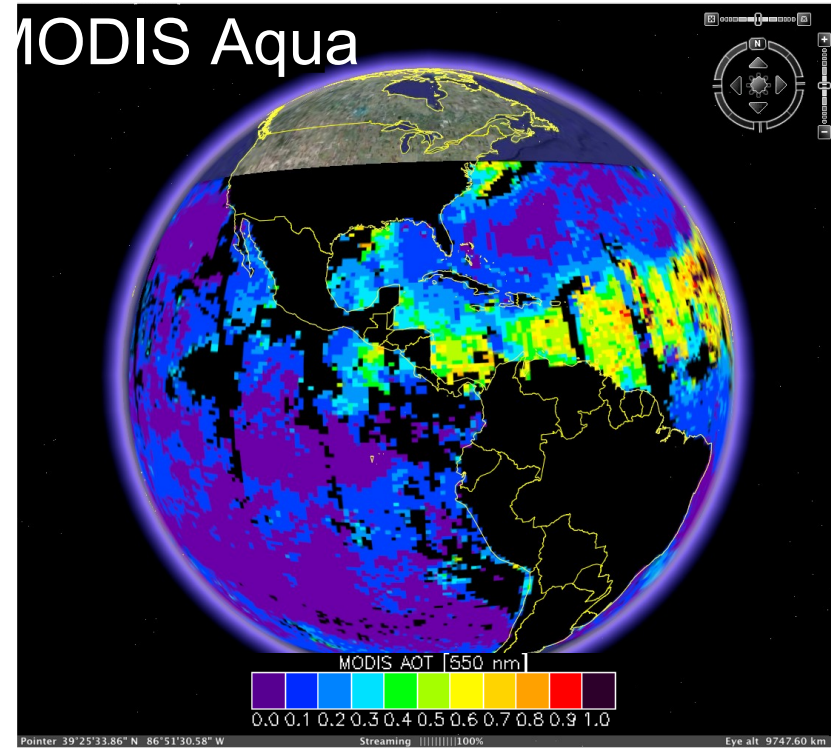
2x daily 5-day forecasts of CO and aerosol distributions

$0.5^\circ \times 0.666^\circ$ horizontal resolution, 72 vertical levels

GEOS-5

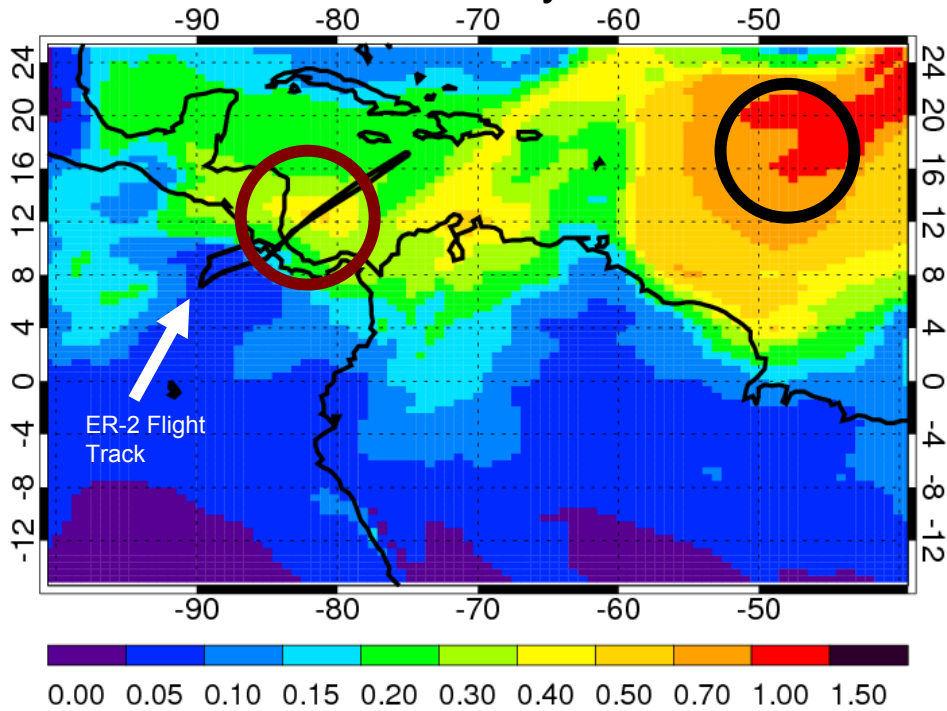


MODIS Aqua

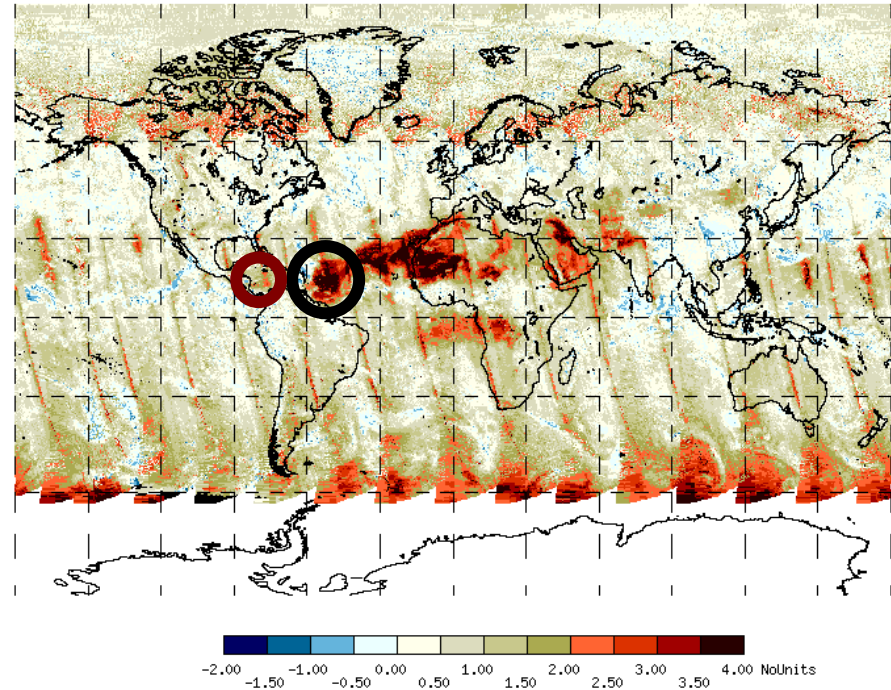


July 16 - 20, 2007, average AOT for GEOS-5 (left) and MODIS Aqua (right). GEOS-5 forecast AOT has similar spatial patterns to MODIS observations, but the magnitude is overestimated.

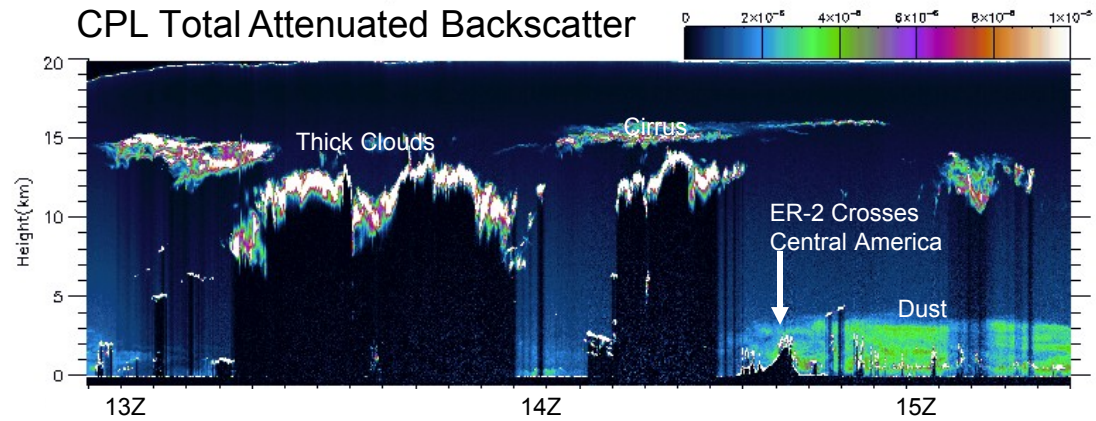
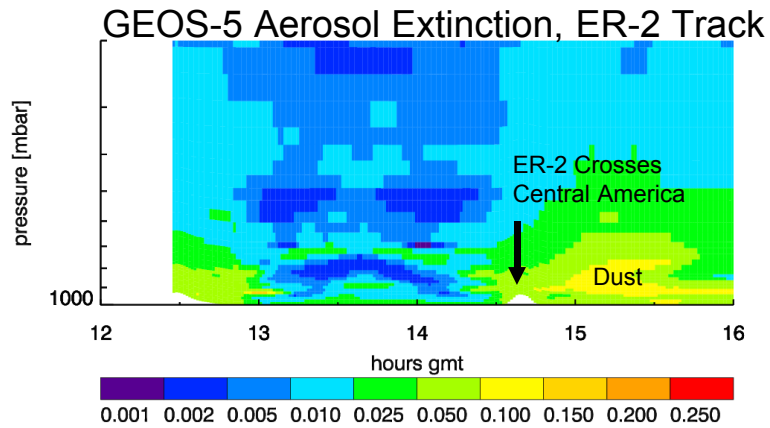
GEOS-5 Dust AOT, July 19, 2007



OMI UV Aerosol Index, July 19, 2007



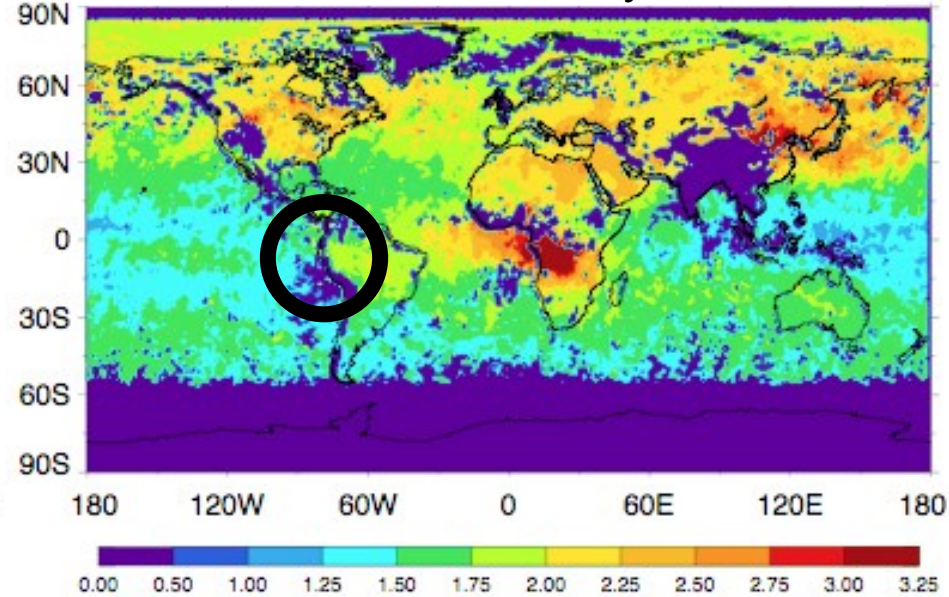
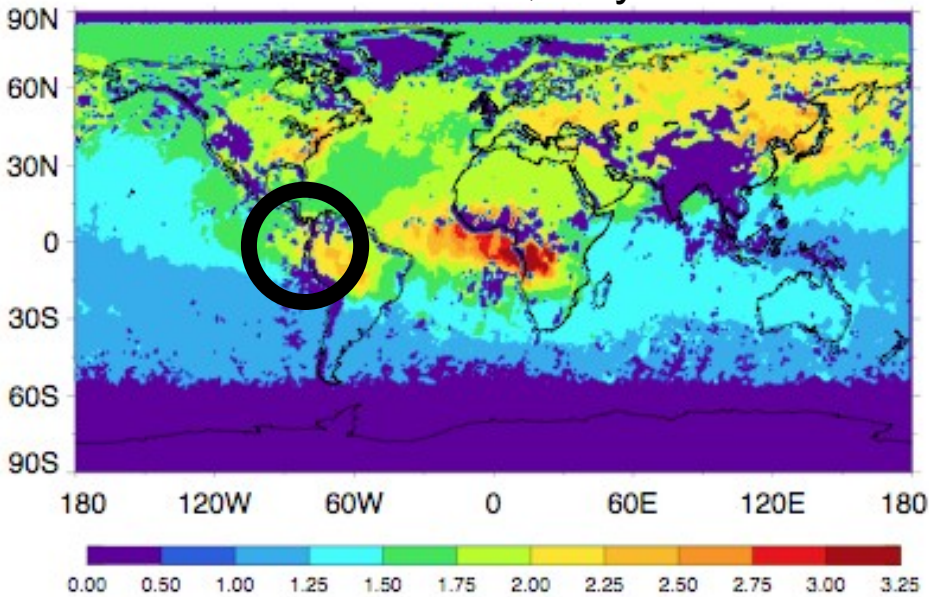
July 19, 2007, dust AOT for GEOS-5 (left) and OMI aerosol index (right). OMI UV aerosol index is sensitive to UV absorbing aerosols like dust. Note the similarities in dust plume placement (circles). The black trace on the GEOS-5 plot shows the ER-2 flight path on this day.



July 19, 2007, GEOS-5 aerosol extinction profile sampled along ER-2 flight track (left) and total attenuated backscatter from ER-2 Cloud Physics Lidar (CPL, right). Note the similar low-level aerosol plume placement in between 1430Z and 1530Z. At this time, the ER-2 is east of Costa Rica (in the Caribbean) and overflying dust laden air.

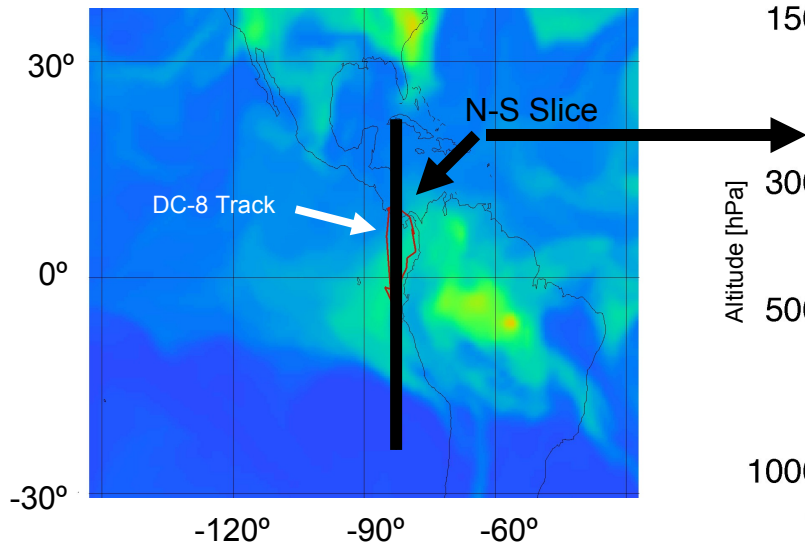
GEOS-5 Column CO, July 2007

MOPITT Column CO, July 2007

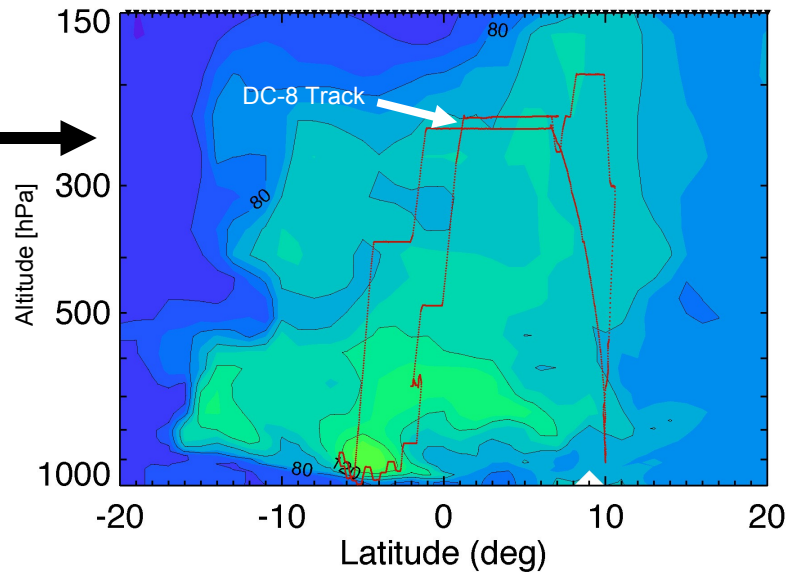


July 2007 carbon monoxide column burden [10^{18} molecules cm^{-2}] for GEOS-5 (left) and MOPITT (right). Note the enhanced CO in GEOS-5 in the eastern Pacific (circle).

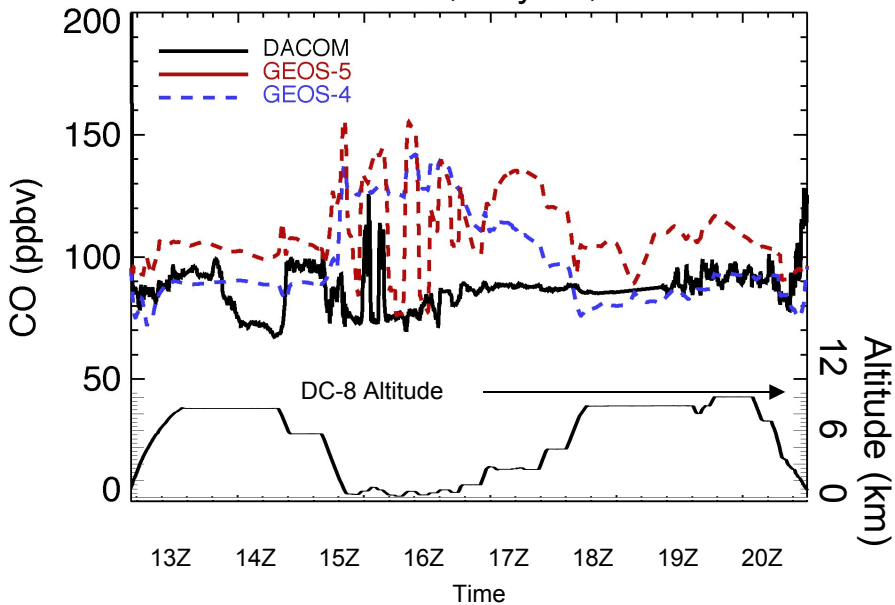
GEOS-5 700 hPa CO



GEOS-5 CO



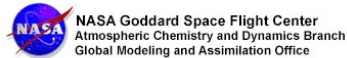
CO on DC-8 Track, July 29, 2007



July 29, 2007, GEOS-5 CO mixing ratio at 702 hPa (left) and along DC-8 flight track (center). Note the flight track is the solid line trace in both panels. At right is the comparison of the GEOS-5 simulated CO to DC-8 DACOM measurements along the flight track. Also shown is the comparison of the (older) GEOS-4 model run of CO. DACOM data is courtesy of Glenn Sachse, NASA LaRC.

Products are visible from several web sites:
http://hyperion.gsfc.nasa.gov/People/Colarco/Mission_Support/

TC-4 Aerosol, CO, and CO2 Forecasts from GEOS-5



[GEOS-5 Forecasting Web Page for TC4](#)
[NASA GSFC Code 613.3/Atmospheric Chemistry and Dynamics Branch](#)
[NASA GSFC Code 610.1/Global Modeling and Assimilation Office](#)
[NASA TC4 Mission Page](#)

Mission Support: Aerosol and CO Forecasts

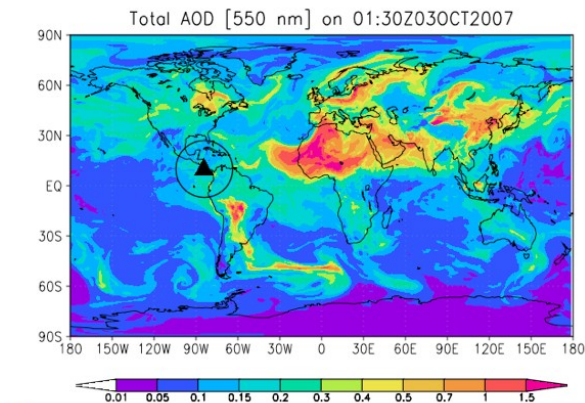
Note: With the completion of the TC-4 mission in early August 2007, our forecast site is now providing a single forecast per day, initialized at 0Z. There are additionally some occasional missing data. Please contact us for more information.

Welcome to the homepage for NASA GSFC Code 613.3 and GMAO aerosol and carbon monoxide forecasts. The page is divided into the following sections:

- [Today's Aerosols and CO](#)
- [Animations of Aerosol and CO Forecasts](#)
- [Static Plots of Aerosol and CO Fields](#)
- [Notes and Descriptions Explaining the Model](#)

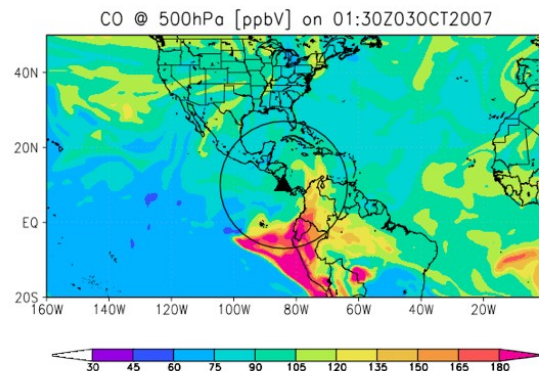
Today's Aerosols

[Today's aerosols in Google Earth](#)



Today's CO

[Today's CO in Google Earth](#)



Data is available via opendap server:
<http://opendap:9090/dods/GEOS-5/TC4>