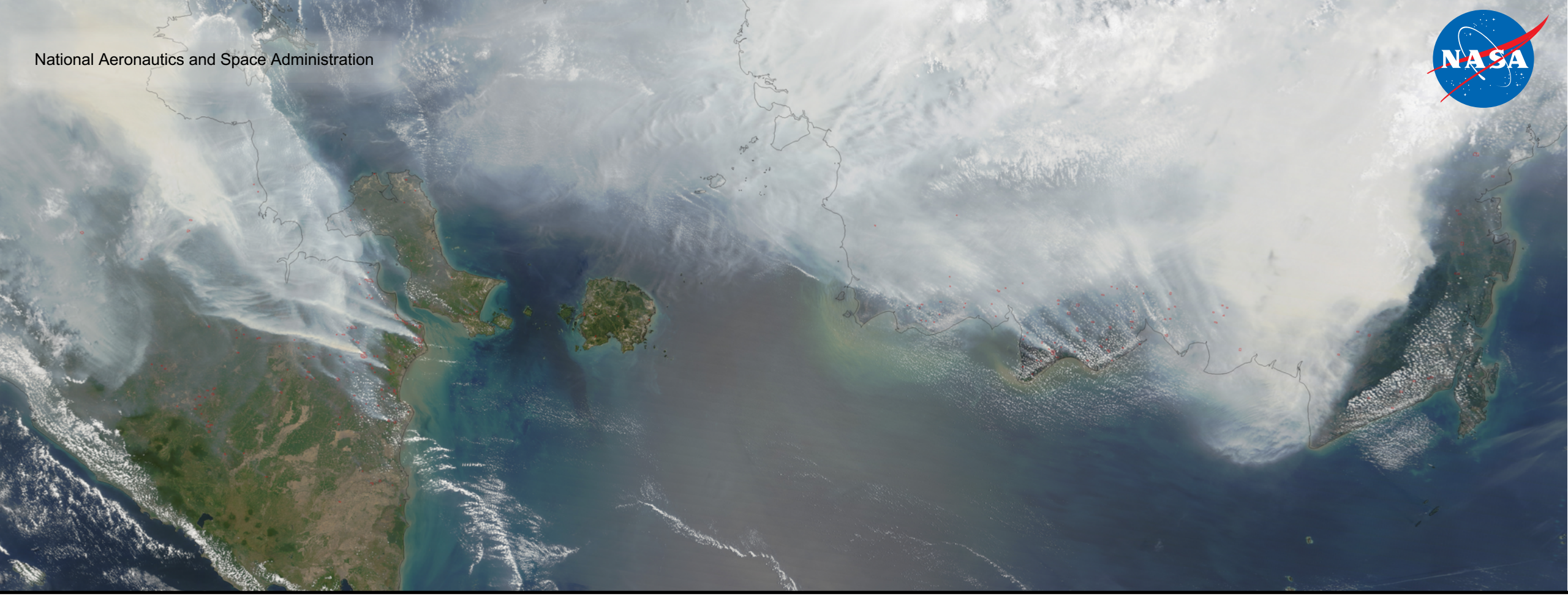
National Aeronautics and Space Administration



Mapping Level 2 & 3 Aerosol Data - Panoply

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NASA Remote Sensing for Air Quality Applications, March 20-23, 2018, Jakarta, Indonesia

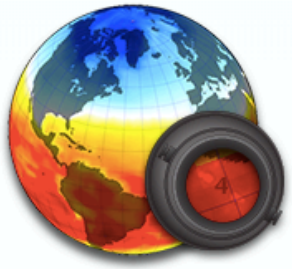
Panoply

- Panoply is an open source software to read and view netCDF, HDF, and GRIB data. It can be downloaded and installed from the NASA GISS website:
  - https://www.giss.nasa.gov/tools/panoply/download/

Panoply

https://www.giss.nasa.gov/tools/panoply/

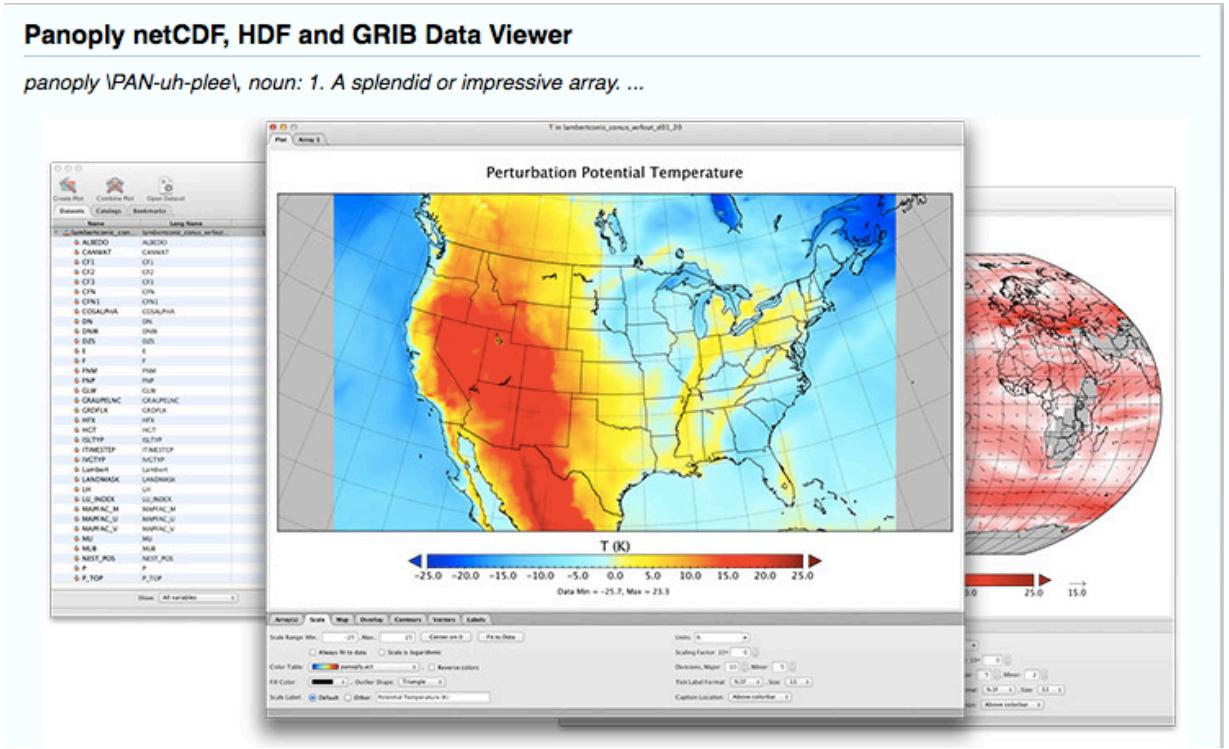
Panoply plots geo-referenced and other arrays from netCDF, HDF, GRIB, and other datasets. With Panoply 4 you can:



- Slice and plot geo-referenced latitude-longitude, latitude-vertical, longitude-vertical, time-latitude or time-vertical arrays from larger multidimensional variables.
- Slice and plot "generic" 2D arrays from larger multidimensional variables.
- Slice 1D arrays from larger multidimensional variables and create line plots.
- Combine two geo-referenced arrays in one plot by differencing, summing or averaging.
- Plot lon-lat data on a global or regional map using any of over 100 map projections or make a zonal average line plot.
- Overlay continent outlines or masks on lon-lat map plots.
- Use any of numerous color tables for the scale colorbar, or apply your own custom ACT, CPT, or RGB color table.
- Save plots to disk GIF, JPEG, PNG or TIFF bitmap images or as PDF or PostScript graphics files.
- Export lon-lat map plots in KMZ format.
- Export animations as MP4 video or as a collection of invididual frame images.
- Explore remote THREDDS and OpenDAP catalogs and open datasets served from them.

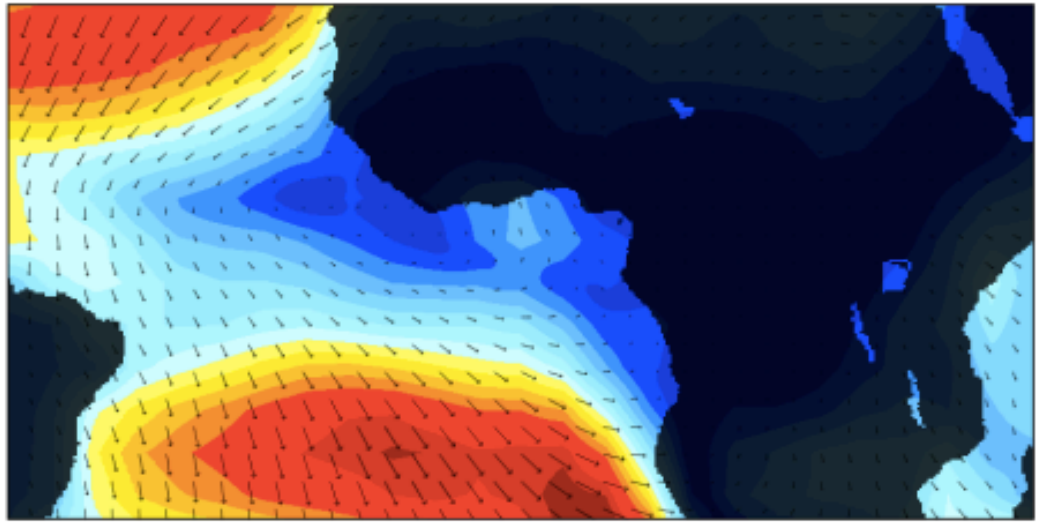
Panoply is a cross-platform application that runs on Macintosh, Windows, Linux and other desktop computers.

The current version of Panoply is 4.8.9, released 2018-02-28.



Panoply Tutorial

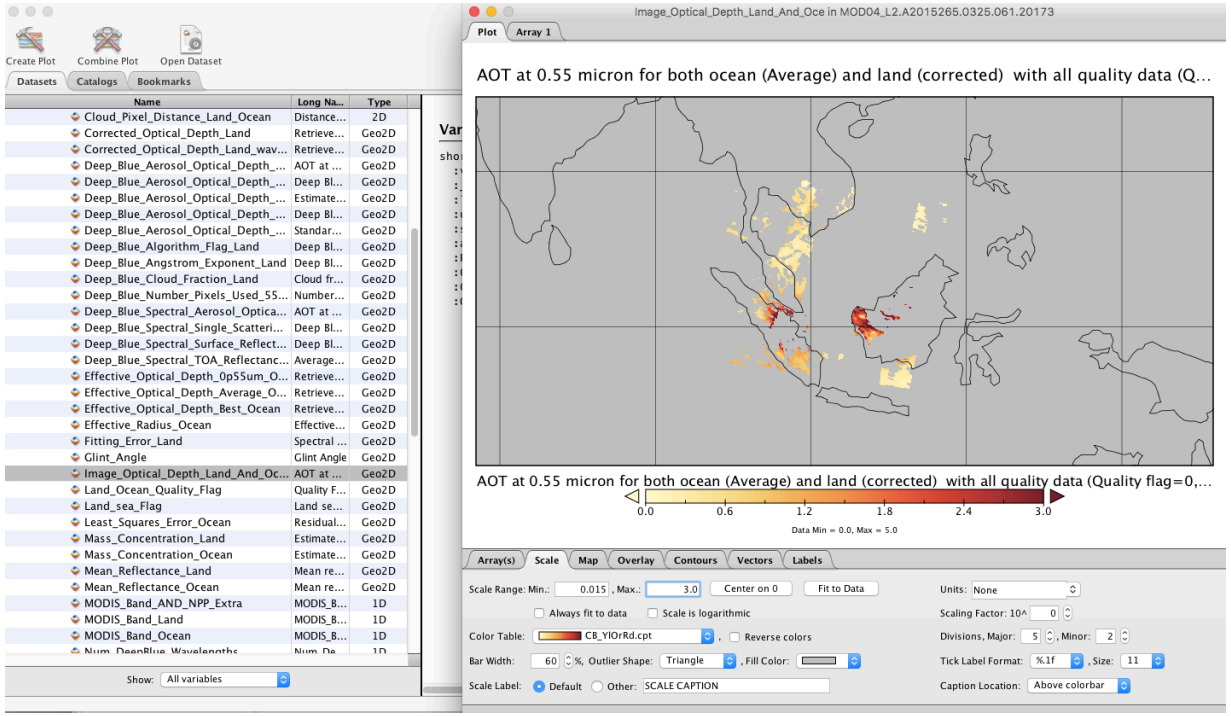
- https://www.geo.uni-bremen.de/Interdynamik/images/stories/pdf/visualizing_netcdf_panoply.pdf



Part 1 – Map MODIS 10 km Aerosol Data

- Display **AOD_550_Dark_Target_Deep_Blue_Combined** sds from the following data file in your directory MOD04_L2.A2015265.0325.061.2017322224258.hdf

  (If data file is not in the dir., download data by clicking https://ladsweb.modaps.eosdis.nasa.gov/archive/allData/61/MOD04_L2/2015/265/MOD04_L2.A2015265.0325.061.2017322224258.hdf
- Save the output map as a .png file



Part 2 – Map MODIS 3 km Aerosol Data

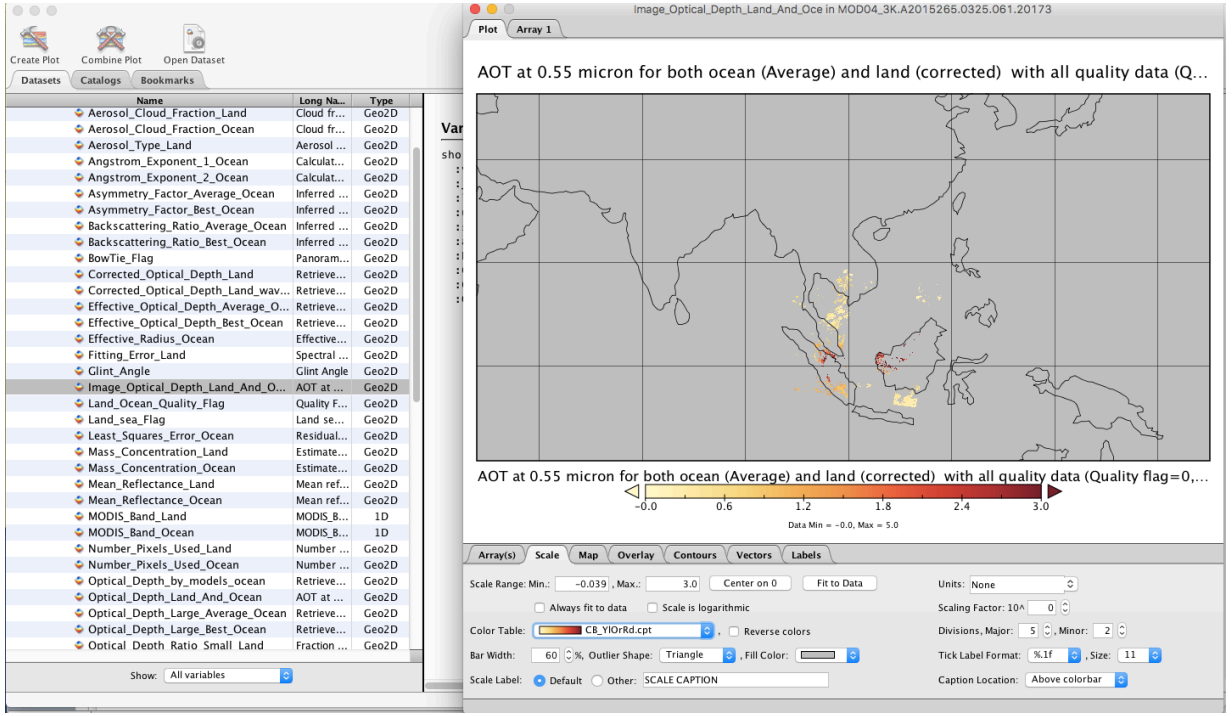
- Display **Image_Optical_Depth_Land_Ocean** sds from the following data file in your directory

MOD04_3K.A2015265.0325.061.2017322223919.hdf

(If data file is not in the dir., download data by clicking

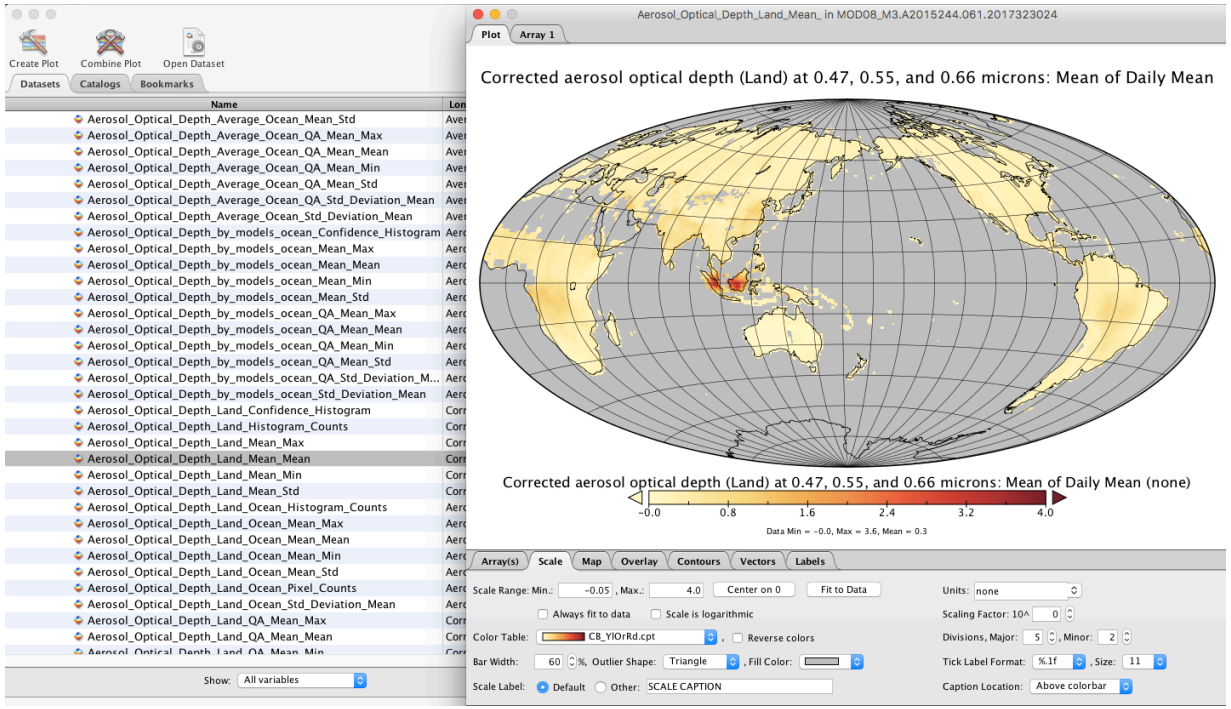
- https://ladsweb.modaps.eosdis.nasa.gov/archive/allData/61/MOD04_3K/2015/265/MOD04_3K.A2015265.0325.061.2017322223919.hdf

- Save the output map as a .png file



Part 3 – Map MODIS 1 Degree Monthly Mean Aerosol Data

- Display **Aerosol_Optical_Depth_Land_Mean_Mean** sds from the following data file in your directory
- MOD08_M3.A2015244.061.2017323024455.hdf

  (If data file is not in the dir., download data by clicking
- https://ladsweb.modaps.eosdis.nasa.gov/archive/allData/61/MOD08_M3/2015/244/MOD08_M3.A2015244.061.2017323024455.hdf

- Save the output map as a .png file