NASA GES DISC Earth Science Data Support

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Outline

- Who are we?

- How do YOU get the Data?

- Data support

- Recent released services

- Resources

The GES DISC: Who We ARE

Atmospheric Data

Total Ozone Mapping Spectrometer (TOMS)
Upper Atmosphere Research Satellite (UARS)
Solar Radiation and Climate Experiment (SORCE)
Aura: Ozone Monitoring Instrument (OMI),
        High Resolution Dynamics Infrared Sounder (HIRDLS),
        Microwave Limb Sounder (MLS)
Historical datasets from Nimbus, Tiros, others
SNPP Ozone Mapping & Profiler Suite (OMPS)
Total and Spectral Solar Irradiance Sensor (TSIS)*
Sentinel 5P (TROPOMI)*
Cloud Absorption Radiometer (CAR)

TIROS Operational Vertical Sounder (TOVS)
Aqua: Atmospheric Infrared Sounder (AIRS)
SNPP/JPSS : Cross-track Infrared Sounder (CrIS)

Atmospheric CO2 Observations from Space (ACOS)
Orbiting Carbon Observatory 2 (OCO-2)
Carbon Monitoring System (CMS)

Modeling
- Modern-Era Retrospective Analysis For Research and Applications (MERRA/2)
- Global Land Data Assimilation System (GLDAS)
- North American Land Data Assimilation System (NLDAS)

Precipitation
- Tropical Rainfall Measuring Mission (TRMM)
- Hydrology Collections
- Global Precipitation Mission (GPM)

MEaSUREs
- MEaSUREs 2006
- MEaSUREs 2012

Nominal Data Support at GES DISC

Types of support:
- Archival of NASA designated data
- Distribution of NASA designated data
- Provide documentation support:
  - Writing user guides
  - Registering DOIs
  - Creating Data Interchange Format (DIFs) documents
  - Web content and interface development
- **Develop Value Added Services**
- **User Support**
- Data and Service Metrics
- Provide Ancillary Data Support

Data and Services Facilitate Research and Applications

Web Interface
- Web interface to data products and services
- Search and Download Mechanisms
- Data Set landing pages

OTF (On-The-Fly) Data Subsetter – Parameter, Spatial, Time, Vertical, Mean averaging, format conversion and regridding.

TDS – THREDDS Data Server

GDS – GrADS Data Server

OP*e*NDAP - Open-source Project for a Network Data Access Protocol

Giovanni – On-line Data Visualization and Analysis Tool which we have monthly and daily instances.

HTTPS direct online access – Direct anonymous HTTPS access

Subscriptions – to mission teams and other "power" users

Value-added generated data products– A-Train Data Depot (ATDD)

The GES DISC Web Interface

Redesigned interface
https://disc.gsfc.nasa.gov

More **efficient** and **user friendly** design to find the information and data you need with new capabilities to search by **mission, discipline, and other key information**.
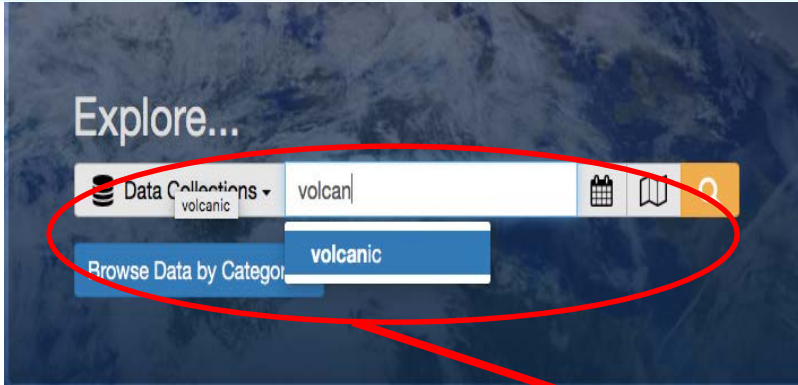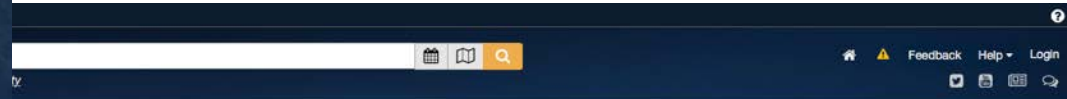
Accessibility from the Start!

- Help Desk/Feedback/User Profile/Social Media

- Direct data product search
and mission search

- Find related documentation

- Link to services from the Gateway

The search result is a product listing of all available Products with the metadata tagged with your keyword. A more specific keyword will yield less more accurate results.
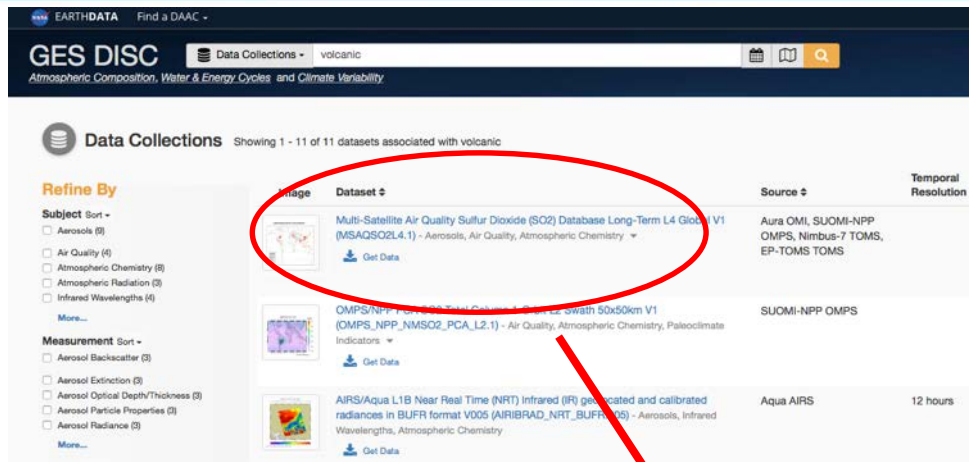
- **Faceted Filter**
  - Measurement
  - Source
  - Discipline
  - Temporal Resolution
  - Spatial Resolution, etc

- **Product Listing**

- **Product Information**

Click on the data product name will bring the user to the Data Set Landing Page.

- **Product description**

- **Documentation**

- **Data Access Methods**

GES DISC Satellite Level 2 Products Subsetter

- **News released** in early May

- **Missions**:
  - 25 OMI Level 2
  - 10 OMI Level 2G products

- **Instructional Aid**:
  - HowTo Recipe
  - Webinar

- **Next in the pipeline:**
  - MLS/OCO2/GPM Products
  - Radial subsetting
  - Point subsetting
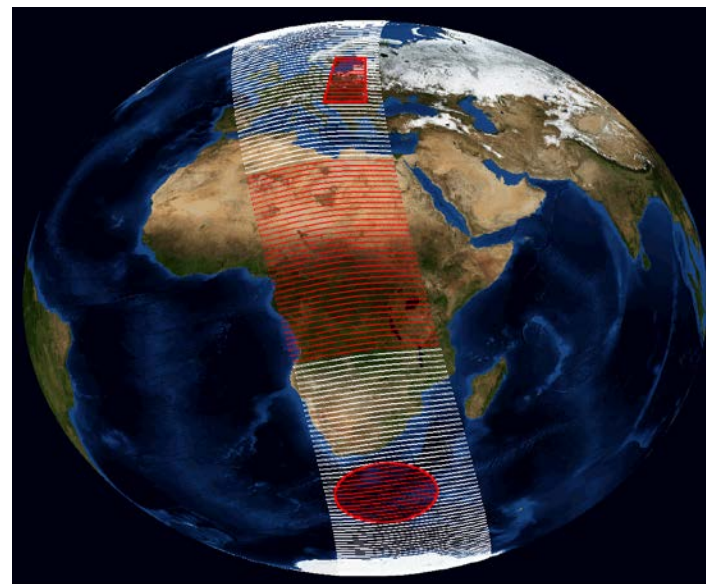
Capabilities:

- Selection of specific variables within a file
- Specification of a latitude-longitude box
- Subsetted variables output as cropped boxes (geolocation dimensions trimmed to smallest box containing subsetted data)
- Index variables generated for each of the subset dimensions, thus preserving original index values
- Dimensional subsetting
- Temporal subsetting
- Preservation of original file structure, metadata, dimensions, data types, and attributes

GES DISC Level 3 and 4 Regridder and Subsetter

- **News released** in April of latest additions

- **Missions:**
  - Modern Era Retrospective-analysis for Research and Applications (MERRA)
  - MERRA-2
  - Global Land Data Assimilation System (GLDAS)
  - Famine Land Data Assimilation System (FLDAS)
  - North American Land Data Assimilation System (NLDAS)
  - National Climate Assessment - Land Data Assimilation System (NCA-LDAS)

- **Instructional aid**:
  - HowTo recipe

- **Next in the pipeline**:
  - GPM Products
  - Point selection and ASCII output
  - Additional statistical options

Before Subset   **After Subset**
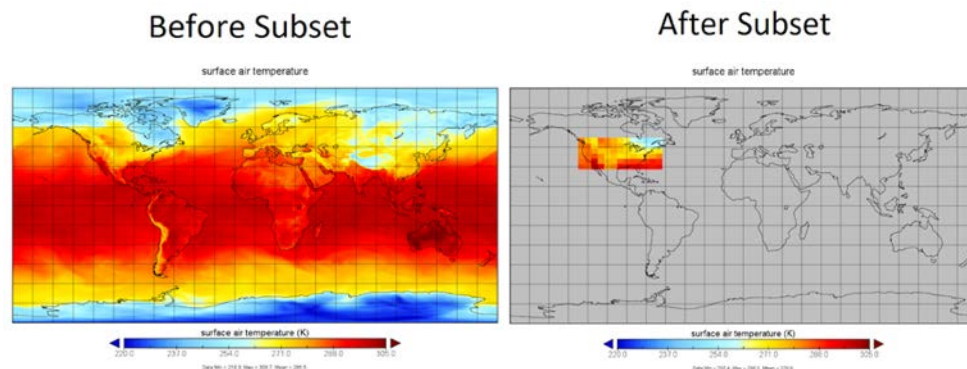
Figure . MERRA-2 surface air temperature before subsetting and regridding (left) and after (right). Surface air temperature data was subsetted over the continental United States and regridded to the Goddard Earth Observing System Model 4° x 5° (geos4x5) grid using the nearest neighbor remapping method.

Capabilities:
- Regridding data from its native grid to a user selected specified grid
- Specification of numerical regridding method
- Subsetting within a user specified latitude-longitude bounding box
- Temporal averaging of data to user specified range (currently MERRA and MERRA-2 data only)
- Dimensional subsetting
- Variable subsetting
- Preservation of original file structure, metadata, data types, and attributes
- File format conversion for HDF-EOS2, NetCDF, GRIB, and GRIB2

User Support
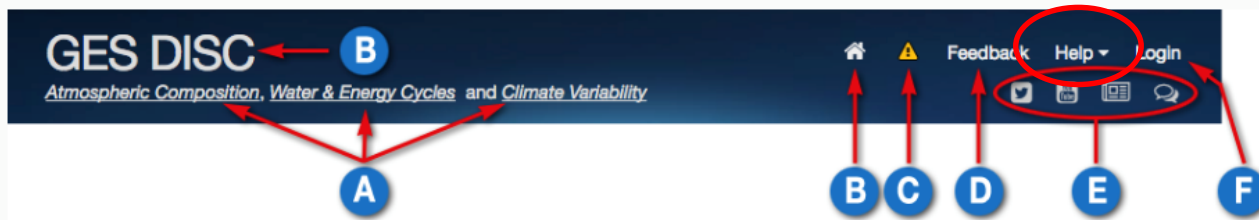
A — Clicking on a science focus areas provides a description of the science area and links to related data holdings.

B — Returns to view the GES DISC home page.

C — View a list of all currently active site and data alerts.

D — Opens a feedback form. Use the form to report issues, ask questions or suggest improvements. Submitting feedback creates and sends an email from the information entered on the form. The email will automatically include information on the browser and the page you are viewing.

E — View our Twitter feed, Youtube channel, the latest GES DISC news and access our User Forum.

F — Click to login. You must be logged in to download data. If you don't have an account, please register. It's easy!

Instructional Help

- User registration
- Web interface to data products and services
- Search and Download Mechanisms
- Data Set landing pages
- Getting Data
- Subsetting Data
- History Panel
- User Forum
- Help Desk (gsfc-help-disc@lists.nasa.gov)

Additional Instructional Aid:

- **How-To's :** 47 entries
- **Glossary**: 159 entries
- **FAQ**: 227 entries
- **News**: 555 entries
- **Alerts**: 362 entries

GES DISC Goddard Earth Science Data and Information Services Center
https://disc.gsfc.nasa.gov

Information

- Search and download GES DISC data:
  http://disc.gsfc.nasa.gov

- Comments and suggestions:
  - gsfc-help-disc@lists.nasa.gov
  - Jennifer Wei jennifer.c.wei@nasa.gov