



AOGS

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NASA GES DISC Earth Science Data Support

Jennifer Wei¹

D. Ostrenga^{1,2}, B. Vollmer¹, and D. Meyer¹

¹ NASA GES DISC

² Adnet Systems, Inc.

GES DISC Goddard Earth Science Data and Information Services Center

<https://disc.gsfc.nasa.gov>



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

OPeNDAP - 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**.

The screenshot displays the NASA EarthData GES DISC web interface. At the top, the NASA logo and 'EARTHDATA' branding are visible. The main header reads 'GES DISC' with a subtitle 'Atmospheric Composition, Water & Energy Cycles and Climate Variability'. A navigation bar includes links for Home, Feedback, Help, and Login. The central area features a large 'Explore...' section with a search bar and a 'Browse Data by Category' button. Below this, statistics are listed: Archive Size (1,891.337 TB), Archived Data Files (108,637,642), Files Distributed (2,217,309,563), and Data Volume Distributed (20,419,464 TB). The interface is divided into three main columns: 'Projects & Missions' (highlighting SSBUV, UARS, and ACOS), 'Featured Gallery Images' (showing a precipitation map of Morocco and Algeria), and 'News' (listing recent releases and product updates). A footer section provides contact information for NASA officials, science focus areas, tools, resources, and an 'About Us' section.

GES DISC Goddard Earth Science Data and Information Services Center
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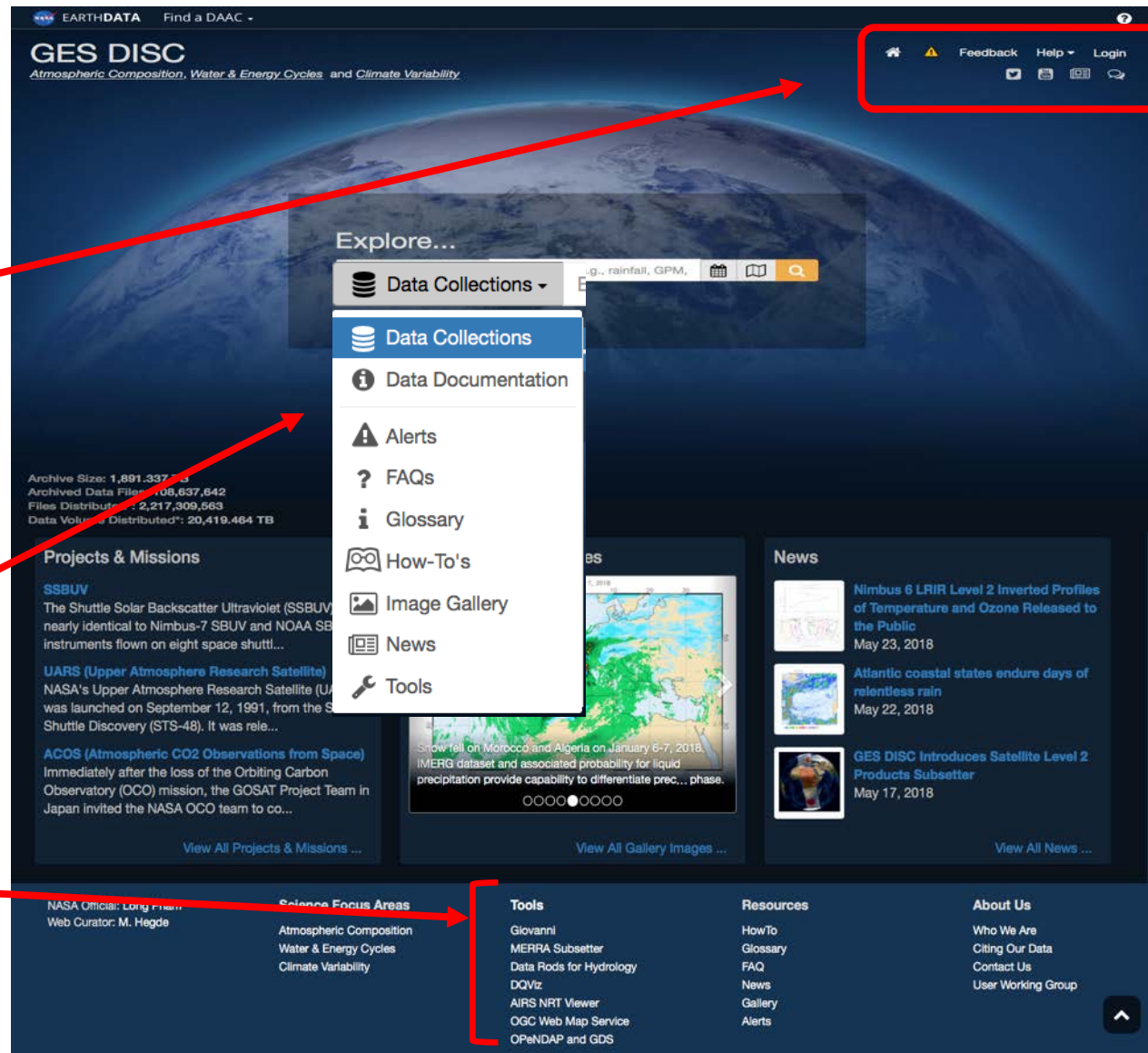


How Do I Find What I Need?

(1/3)

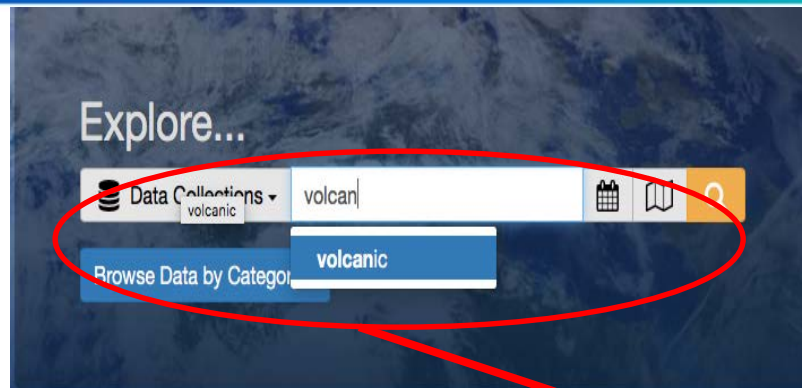
Accessibility from the Start!

- Help Desk/Feedback/User Profile/Social Media
- Direct data product search and mission search
- Find related documentation
- Link to services from the Gateway





How Do I Find What I Need? (2/3)



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.

Data Collections Showing 1 - 11 of 11 datasets associated with volcanic

Refine By

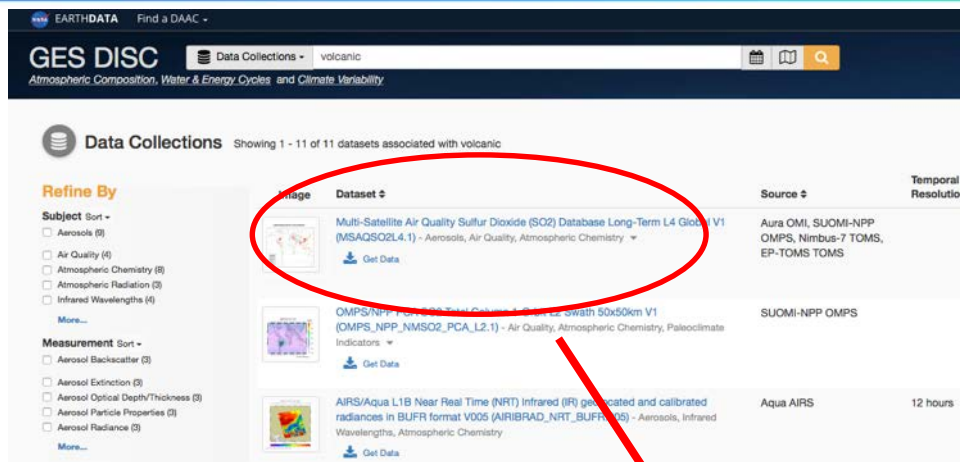
- Subject Sort -**
 - ☐ Aerosols (9)
 - ☐ Air Quality (4)
 - ☐ Atmospheric Chemistry (8)
 - ☐ Atmospheric Radiation (3)
 - ☐ Infrared Wavelengths (4)
 - [More...](#)
- Measurement Sort -**
 - ☐ Aerosol Backscatter (3)
 - ☐ Aerosol Extinction (3)
 - ☐ Aerosol Optical Depth/Thickness (3)
 - ☐ Aerosol Particle Properties (3)
 - ☐ Aerosol Radiance (3)
 - [More...](#)
- Source Sort -**
 - ☐ Aqua AIRS (4)
 - ☐ Aqua MODIS (3)
 - ☐ Aura OMI (2)
 - ☐ EP-TOMS TOMS (2)
 - ☐ Nimbus-7 TOMS (3)
 - [More...](#)
- Processing Level Sort -**
 - ☐ 1B (3)
 - ☐ 2 (5)
 - ☐ 4 (2)
- Project Sort -**
 - ☐ ATDO (3)
 - ☐ Aqua (4)
 - ☐ LANCE (2)
 - ☐ MeaSUREs (4)
- Temporal Resolution Sort -**
 - ☐ 12 hours (4)
- Spatial Resolution Sort -**
 - ☐ 10 km x 10 km (3)
 - ☐ 13.5 km x 13.5 km (4)
 - ☐ 50 km x 50 km (2)

Product Listing

Image	Data	Source	Temporal Resolution	Spatial Resolution	Process Level	Begin Date	End Date
	Multi-Satellite Air Quality Sulfur Dioxide (SO2) Database Long-Term L4 Global V1 (MSAQSO2L4.1) - Aerosols, Air Quality, Atmospheric Chemistry	Aura OMI, SUOMI-NPP OMPS, Nimbus-7 TOMS, EP-TOMS TOMS			4	2005-01-01	2017-12-31
	OMPS/NPP PCA SO2 Total Column 1-Orbit L2 Swath 50x50km V1 (OMPS_NPP_NMSO2_PCA_L2.1) - Air Quality, Atmospheric Chemistry, Paleoclimate Indicators	SUOMI-NPP OMPS		50 km x 50 km	2	2011-11-07	2018-05-29
	AIRS/Aqua L1B Near Real Time (NRT) Infrared (IR) geolocated and calibrated radiances in BUFR format V005 (AIRBRAD_NRT_BUFR.005) - Aerosols, Infrared Wavelengths, Atmospheric Chemistry	Aqua AIRS	12 hours	13.5 km x 13.5 km	1B	2018-05-22	2018-05-29
	AIRS/Aqua L1B Near Real Time (NRT) Infrared (IR) geolocated and calibrated radiances V005 (AIRBRAD_NRT.005) - Aerosols, Infrared Wavelengths, Atmospheric Chemistry	Aqua AIRS	12 hours	13.5 km x 13.5 km	1B	2018-05-22	2018-05-29
	AIRS/Aqua L1B Infrared (IR) geolocated and calibrated radiances V005 (AIRBRAD.005) - Aerosols, Infrared Wavelengths, Atmospheric Chemistry	Aqua AIRS	12 hours	13.5 km x 13.5 km	1B	2002-08-30	2018-05-29
	AIRS/Aqua L1C Infrared (IR) resampled and corrected radiances V006 (AIRICRAD.006) - Aerosols, Infrared Wavelengths, Atmospheric Chemistry	Aqua AIRS	12 hours	13.5 km x 13.5 km	1	2018-04-29	2018-05-29
	MODIS/Aqua Aerosol 10km 5-Min L2 Narrow Swath Subset along CloudSat (MAC04S0.002) - Aerosols, Atmospheric Radiation	Aqua MODIS		10 km x 10 km	2	2006-06-02	2018-02-28
	MODIS/Aqua Aerosol 10km 5-Min L2 Wide Swath Subset along CloudSat (MAC04S1.002) - Aerosols, Atmospheric Radiation	Aqua MODIS		10 km x 10 km	2	2006-06-02	2018-02-28

How Do I Find What I Need? (3/3)

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



MSAQSO2L4: Multi-Satellite Air Quality Sulfur Dioxide (SO2) Database Long-Term L4 Global V1



[View Full-size Image](#)

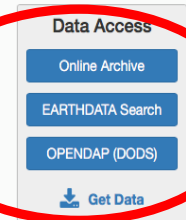
These data are a part of Multi-Decadal Sulfur Dioxide Climatology from Satellite Instrument (MEaSUREs-12-0022 project).

The catalogue MSAQSO2L4 file contains the site coordinates, source type, country, source name, annual SO2 emissions and uncertainties, and the number of OMI/Aura satellite SO2 measurements used for emissions estimates near each source.

The emissions estimates are based on the fitting of the operational Aura/OMI planetary boundary layer (PBL) SO2 data produced with the Principal Component Analysis (PCA) algorithm (10.5067/Aura/OMI/DATA2022) and a site-specific AMF adjustment for each site (Fioletov et al., 2016). The emission estimate method for linking OMI level 2 SO2 vertical column densities (VCDs) to emissions is based on a fit of OMI VCDs to a empirical plume model developed to describe the SO2 spatial distribu...[more](#)

[Product Summary](#) [Data Citation](#) [Documentation](#)

Shortname: MSAQSO2L4
Longname: Multi-Satellite Air Quality Sulfur Dioxide (SO2) Database Long-Term L4 Global V1
DOI: 10.5067/MEASURES/SO2/DATA403
Version: 1
Format: HDF5
Spatial Coverage: -180.0,-90.0,180.0,90.0
Temporal Coverage: 2005-01-01 to 2017-12-31
File Size: 212 KB per file
Data Resolution



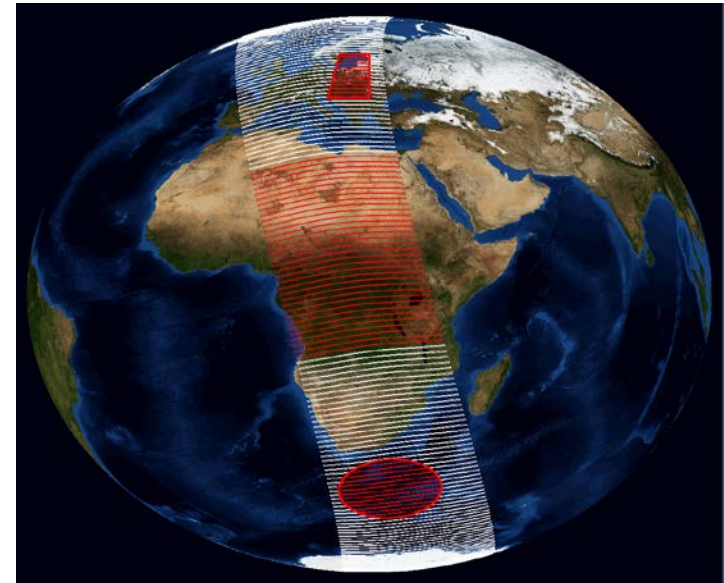
• Data Access Methods

GES DISC



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



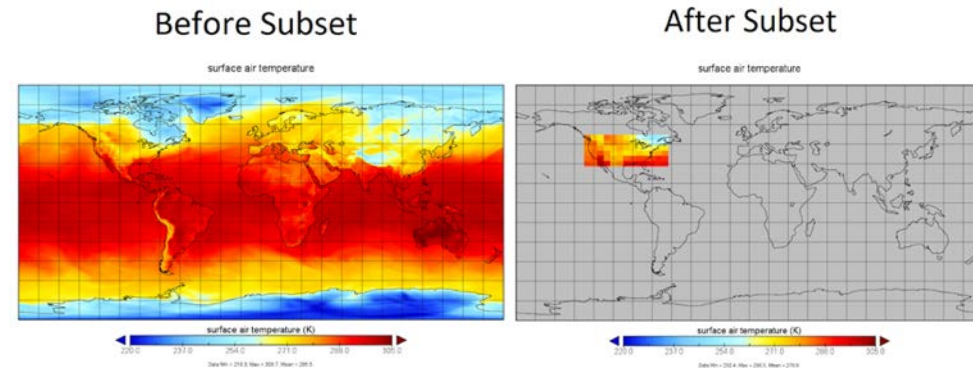
Capabilities:

- 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

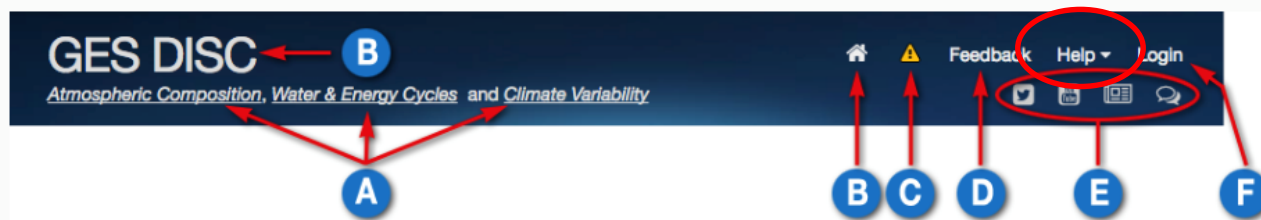


Capabilities:

- 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
- **FAQ**: 227 entries
- **Glossary**: 159 entries
- **News**: 555 entries
- **Alerts**: 362 entries



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