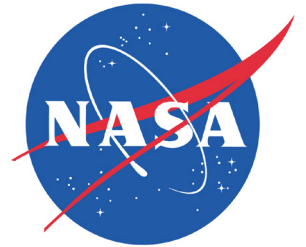




How To Download NASA Data

by



NASA Health and Air Quality Applied Sciences Team (HAQAST)

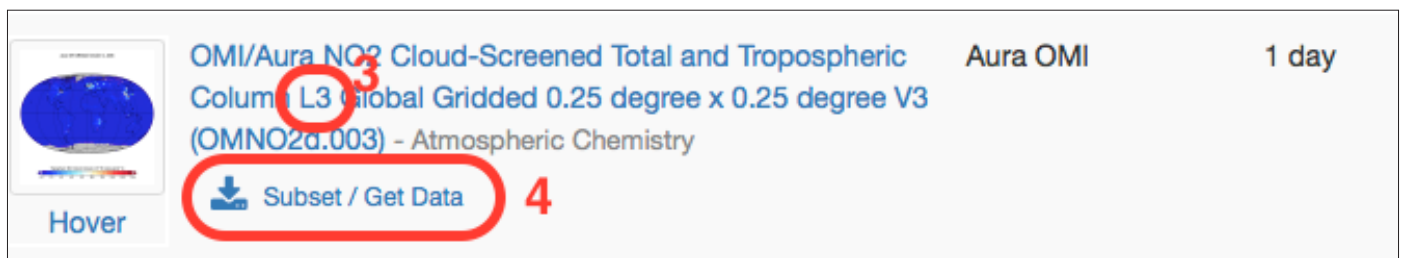
The following will teach you how to download NASA data from a variety of sources. The instructions use the OMI-Aura instrument as an example, but the instructions hold true for whatever instrument you'd like data from.

Note: Though NASA data is free, you will have to register in order to download the data. To do so, follow the instructions that NASA gives you when you finish choosing your data products.

Using GES-DISC to get OMI Data

This strategy allows you to specify the specific places and time ranges for which you'd like data. This is helpful if you do not want an enormous worldwide dataset.

1. Go to <https://disc.gsfc.nasa.gov/>.
2. Enter your search term (e.g.: NO₂).
3. Many different results will appear; make sure you find OMI L3 data to get interpreted & gridded data.
 - a. **Note:** L3 signifies that the data has been gridded. [Click here](#) for more on data processing levels.
4. Click on the icon **subset/get data**. This will allow you to subset your data temporally and spatially



3

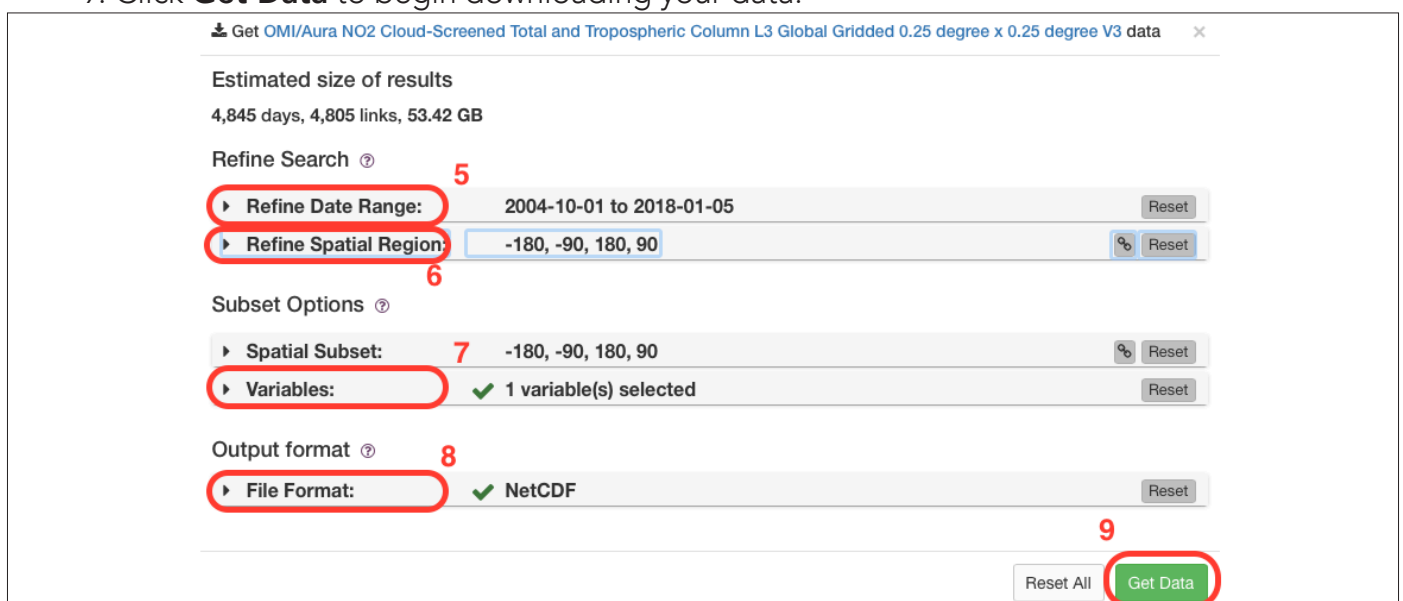
OMI/Aura NO₂ Cloud-Screened Total and Tropospheric Column L3 Global Gridded 0.25 degree x 0.25 degree V3 (OMNO2d.003) - Atmospheric Chemistry

Aura OMI 1 day

4

Subset / Get Data

5. Click **Refine Date Range** to select the range of dates for which you'd like data.
6. Click **Refine Spatial Region** to focus on the area for which you'd like data.
 - a. **Note:** Refining the spatial region automatically populates the spatial subset and vice versa.
7. Click the **Variables** dropdown and choose the variable you'd like to download.
8. Click the **File Format** dropdown to choose the file you'd like.
9. Click **Get Data** to begin downloading your data.



Get OMI/Aura NO₂ Cloud-Screened Total and Tropospheric Column L3 Global Gridded 0.25 degree x 0.25 degree V3 data x

Estimated size of results
4,845 days, 4,805 links, 53.42 GB

Refine Search ⓘ

5

▶ Refine Date Range: 2004-10-01 to 2018-01-05 Reset

▶ Refine Spatial Region: -180, -90, 180, 90 Reset

6

Subset Options ⓘ

▶ Spatial Subset: 7 -180, -90, 180, 90 Reset

▶ Variables: 8 ✓ 1 variable(s) selected Reset

Output format ⓘ

▶ File Format: 8 ✓ NetCDF Reset

9

Reset All Get Data

10. Select **Download links list**. It will save as a text file.

11. In order to retrieve your data, click **Instructions for downloading** and follow the instructions that best suit your software.

📄 Data File Links for [OMI/Aura NO2 Cloud-Screened Total and Tropospheric Column L3 Global Gridded 0.25 degree x 0.25 degree V3](#) —

▶ Selected Options

10
Results (found data in range from 2005-04-01 to 2005-04-05):

[Download links list](#) [\(Instructions for downloading\)](#)

11

[OMI Data User's Guide](#)
[README Document](#)
[OMI-Aura_L3-OMNO2d_2005m0401_v003-2016m0824t185747.he5.nc](#)
[OMI-Aura_L3-OMNO2d_2005m0402_v003-2016m0824t175836.he5.nc](#)
[OMI-Aura_L3-OMNO2d_2005m0403_v003-2016m0824t185803.he5.nc](#)
[OMI-Aura_L3-OMNO2d_2005m0404_v003-2016m0824t175843.he5.nc](#)
[OMI-Aura_L3-OMNO2d_2005m0405_v003-2016m0824t175841.he5.nc](#)

Using Earthdata to get OMI Data

Earthdata also allows you to subset data temporally—but not spatially—as well as to look at the data in an interactive manner.

1. Go to: <https://earthdata.nasa.gov/>.
2. Enter your search parameter (e.g.: NO₂, ozone) **AND** OMI L3 (e.g.: Search “OMI L3 ozone”)
 - a. **Note:** L3 signifies that the data has been gridded. [Click here](#) for more on data processing levels.
3. There will be 3 boxes at the top of the screen; in the case of searching for OMI L3 ozone, select OMI/Aura...Daily L3...at GES DISC

<p>OMI/Aura Ozone (O3) DOAS Total Column Daily L3 1 day 0.25 degree x 0.25 degree V3 (OMDOAO3e) at GES DISC</p> <p>OMDOAO3e v003</p> <p>4812 granules</p>	<p>OMI/Aura TOMS-Like Ozone, Aerosol Index, Cloud Radiance Fraction L3 1 day 1 degree x 1 degree V3 (OMTO3d) at GES DISC</p> <p>OMTO3d v003</p> <p>4806 granules</p>	<p>OMI/Aura TOMS-Like Ozone and Radiative Cloud Fraction L3 1 day 0.25 degree x 0.25 degree V3 (OMTO3e) at GES DISC</p> <p>OMTO3e v003</p> <p>4806 granules</p>
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4. You will be taken to a screen with the data collection you selected. **This collection will include all the data available for your product**—in this case, daily column totals going back to 10/1/2004.
5. To temporally subset your data, click **Back to Collections**.

5

Back to Collections

OMI/Aura Ozone (O3) DOAS Total Column Daily L3 1 day 0.25 degree x 0.25 degree V3 (OMDOAO3e) at GES DISC

OMDOAO3e VERSION 003

View More Metadata API Endpoints

DOI 10.5067/AURA/OMI/DATA3005

Science Keywords: EARTH SCIENCE ATMOSPHERE ATMOSPHERIC CHEMISTRY

Related URLs: [User's Guide](#) | [User's Guide](#) | [View All Related URLs](#)

4

Temporal Extent: 2004-10-01 ongoing

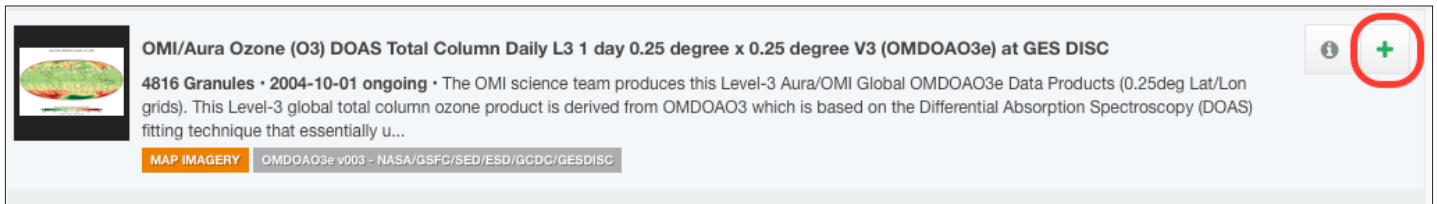
GIBS Imagery Projection Availability: Geographic

Bounding Rectangle: (90.0°, -180.0°, -90.0°, 180.0°)

The OMI science team produces this Level-3 Aura/OMI Global OMDOAO3e Data Products (0.25deg Lat/Lon grids). This Level-3 global total column ozone product is derived from OMDOAO3 which is based on the Differential Absorption Spectroscopy (DOAS) fitting technique that essentially uses the OMI visible radiance values between 331.1 and 336.1 nm. In addition to the total ozone column (best quality data, satisfying the shortest path length) and its precision this product also contains some ancillary parameters such as cloud fraction, cloud height, etc. The short name for this Level-3 OMI ozone product is OMDOAO3e and the lead Algorithm scientist for this product and for OMDOAO3 (the data source of OMDOAO3e) is Dr. Pepijn Veefkind from KNMI.

The OMDOAO3e product files are stored in the version 5 Hierarchical Data Format (HDF-EOS5). Each daily file contains data from the day lit portion of the orbits (approximately 14 orbits) and is roughly 8 MB in size.

6. Add this collection to your project by clicking the green + sign.



OMI/Aura Ozone (O3) DOAS Total Column Daily L3 1 day 0.25 degree x 0.25 degree V3 (OMDOAO3e) at GES DISC

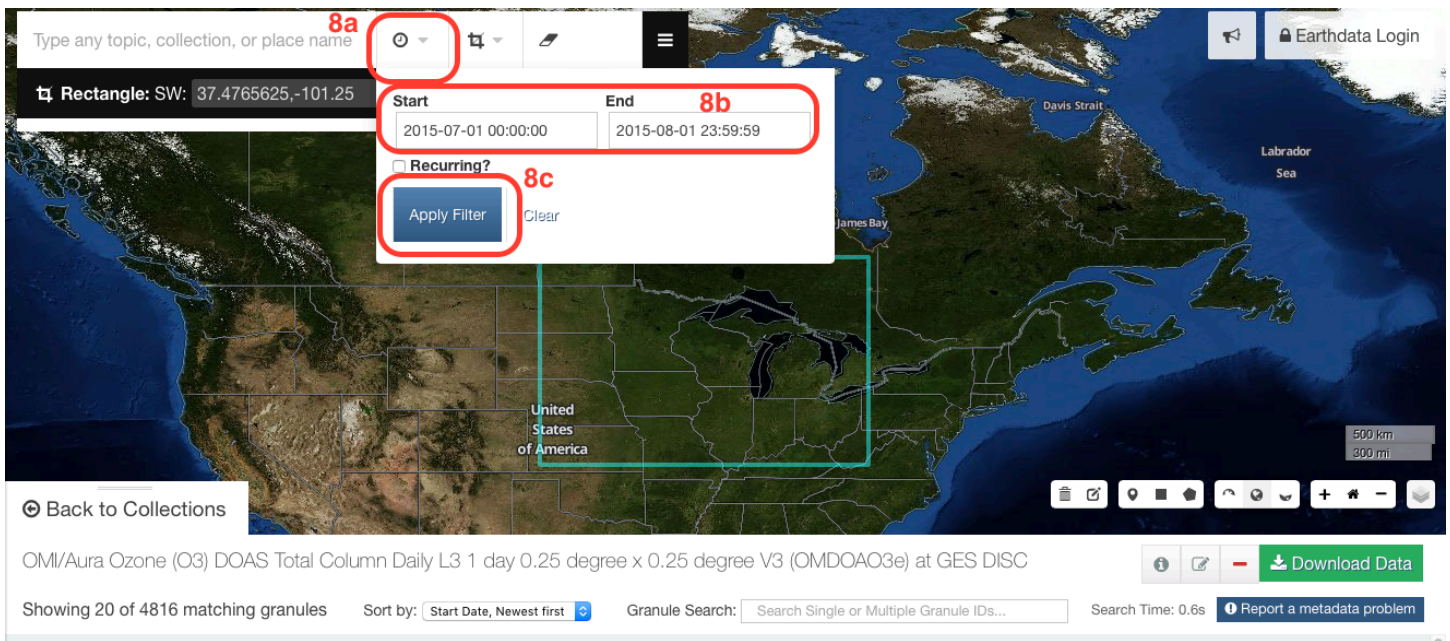
4816 Granules • 2004-10-01 ongoing • The OMI science team produces this Level-3 Aura/OMI Global OMDOAO3e Data Products (0.25deg Lat/Lon grids). This Level-3 global total column ozone product is derived from OMDOAO3 which is based on the Differential Absorption Spectroscopy (DOAS) fitting technique that essentially u...

MAP IMAGERY OMDOAO3e v003 - NASA/GSFC/SED/ESD/GCDC/GESDISC

7. To select the specific temporal granules you want, click your data product.

8. Choose the time range for which you want data by:

- Clicking the time selection tool
- Entering Start and End times
- Clicking **Apply Filter**



Type any topic, collection, or place name

Rectangle: SW: 37.4765625,-101.25

Start: 2015-07-01 00:00:00 End: 2015-08-01 23:59:59

Recurring?

Apply Filter Clear

United States of America

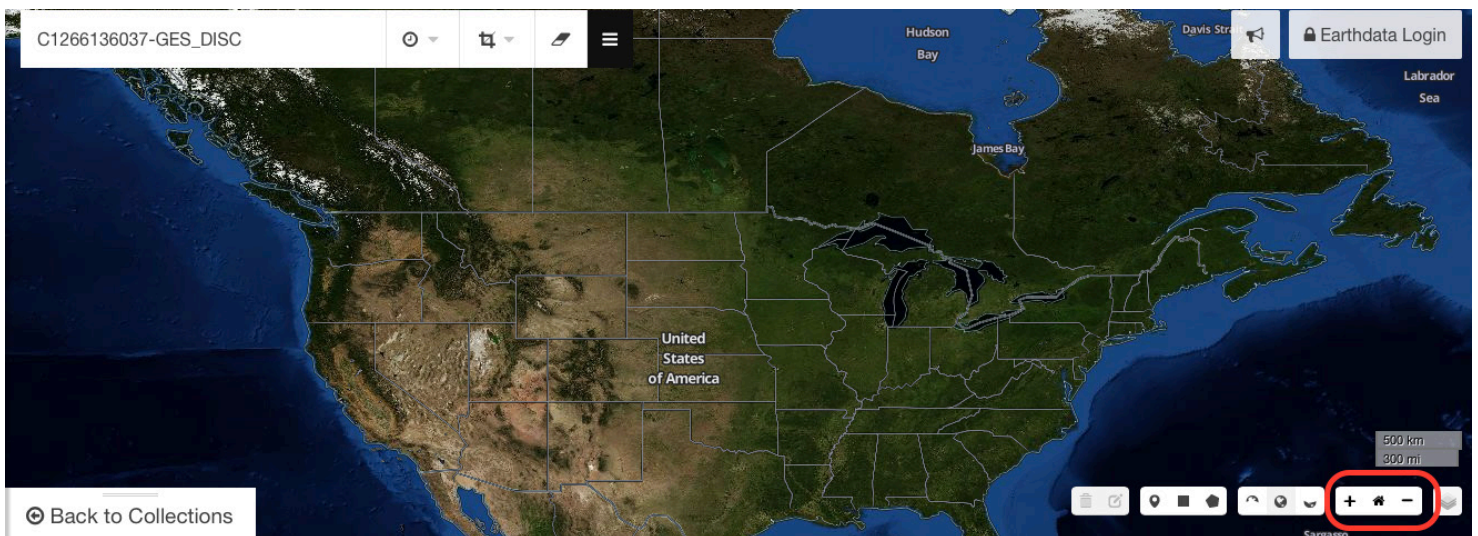
500 km 300 mi

Back to Collections

OMI/Aura Ozone (O3) DOAS Total Column Daily L3 1 day 0.25 degree x 0.25 degree V3 (OMDOAO3e) at GES DISC

Showing 20 of 4816 matching granules Sort by: Start Date, Newest first Granule Search: Search Single or Multiple Granule IDs... Search Time: 0.6s Report a metadata problem

9. Earthdata can visualize your selected data, during the time period you chose, for specific regions. To do so, find your location by dragging the map and zooming in or out.



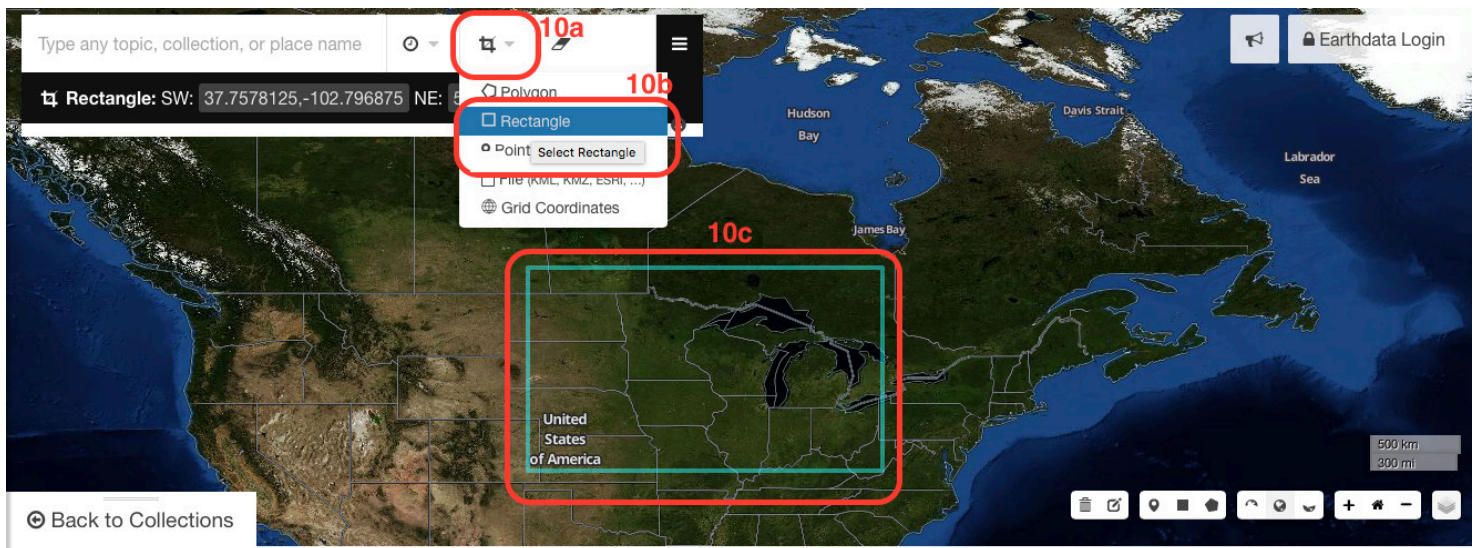
C1266136037-GES_DISC

United States of America

500 km 300 mi

Back to Collections

10. Select the area for which you want data by:
 - a. Clicking the area selection tool
 - b. Choosing which polygon or point you'll use for your selection
 - c. Selecting the area on the map for which you want data.



11. To download your data, click **download data**.

12. To access your data, go to <https://wiki.earthdata.nasa.gov/display/EL/How+To+Register+With+Earthdata+Login> and follow the instructions that best suit your software.

Use Simple Subset Wizard

Simple Subset Wizard allows you to easily subset your data by space and time. It has no interactive features.

1. Go to: <https://disc.gsfc.nasa.gov/SSW/>.
2. You can search by keyword (eg.: OMI) or data set (searching by data set assumes that you know exactly which set you want). Search for OMI NO₂.
3. Enter a date range.
4. Click the map icon to select the area for which you want data.

Enter values for the Date Range and (optionally) the Spatial Bounding Box to search for data sets; those criteria will also be used when data sets are subsetted by Date Range and Spatial Region.

Data Set Keyword(s)

Enter dates as YYYY-MM-DD or use the calendars.

Date Range to

Enter South,West,North,East coordinates or use the map.

Spatial Bounding Box

5. Click **Search for Data Sets**.
6. Hover over each data product for a brief description, or click the product to read the details of the set.
7. Expand each subset to see individual data products.
8. Select the specific product you want.
9. Choose your preferred file format.

Found 3 subsettable data sets.

Subset: Spatial Region (38.28,-94.04,48.25,-80.77), Variables for OMNO2d v003 in **9**

NO2 vertical column density

NO2 vertical column density, screened for CloudFraction < 30%

NO2 tropospheric column density

NO2 tropospheric column density, screened for CloudFraction < 30%

Weight Factor used for each Grid Cell

Subset: Spatial Region (38.28,-94.04,48.25,-80.77), Variables for OMNO2 v003 in **6**

See description for OMI/Aura NO2 Cloud-Screened Total and Tropospheric Column Daily L3 Global 0.25deg Lat/Lon Grid

10. Click **Subset Selected Data Sets**.

11. Click **View Subset Results**.

12. Click **Downloading Instructions** and follow the steps to retrieve your data.

Subset: Spatial Region (38.28,-94.04,48.25,-80.77), Variables for OMNO2d v003
(Get list of URLs for this subset in a file) ([Downloading instructions](#))

1. [OMI-Aura_L3-OMNO2d_2018m0101_v003-2018m0103t105442.he5.nc](#)
2. [OMI-Aura_L3-OMNO2d_2018m0102_v003-2018m0103t135121.he5.nc](#)
3. [OMI-Aura_L3-OMNO2d_2018m0103_v003-2018m0104t125417.he5.nc](#)
4. [OMI-Aura_L3-OMNO2d_2018m0104_v003-2018m0105t120032.he5.nc](#)
5. [OMI-Aura_L3-OMNO2d_2018m0105_v003-2018m0106t141632.he5.nc](#)
6. [OMI-Aura_L3-OMNO2d_2018m0106_v003-2018m0107t115503.he5.nc](#)

Tutorial by Stacy Montgomery and Daegan Miller