

# MODIS Data Access Guide

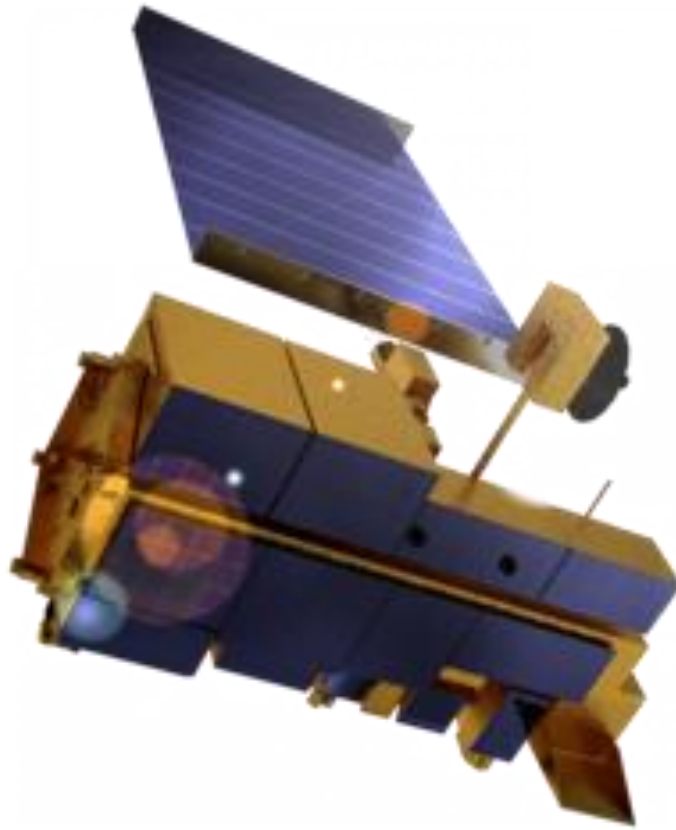


image: Nasa

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The Moderate Resolution Imaging Spectroradiometer (MODIS) is an instrument on Terra and Aqua satellites orbiting around the Earth in order to image the entire surface each 1-2 days. MODIS acquires data in 36 spectral bands with resolutions of 250m, 500m, 1km depending on the bands. MODIS data is available in different levels including the Level 1 products up to higher level products (L3) such as land or cryosphere products.

The details on the mission and specific access possibilities for MODIS data/products are described on: <http://modis.gsfc.nasa.gov/data/>

A very nice browser-based solution to get an overview on available products can be accessed via <https://worldview.earthdata.nasa.gov/>.

The detailed data products available are listed and explained under <https://modis.gsfc.nasa.gov/data/dataproduct/>.

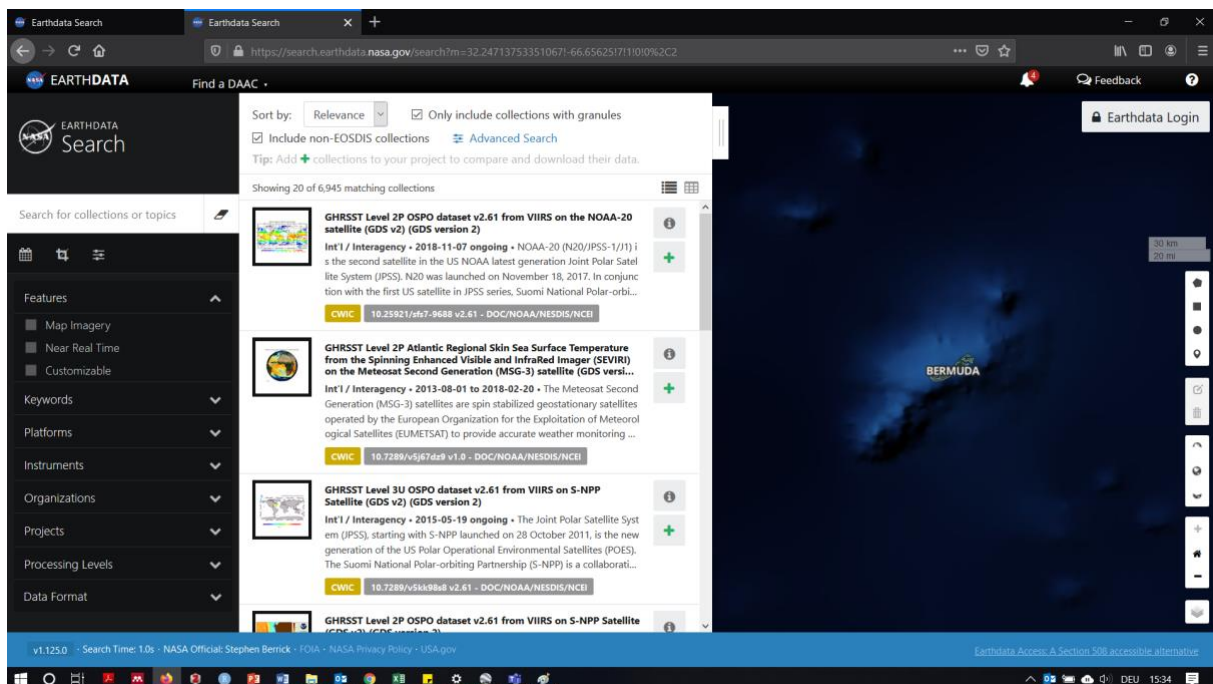
The Level 1 products are the basic products that can be used for analysis. For instance MODIS Surface Reflectance L2G (=corrected for the influence of atmospheric gases and aerosols that are highly weather dependent) or even 8-Day L3 Surface Reflectance (with 8-day composite) can be used as analysis ready products.

You can either search and download the data directly using one of the following searching sites:

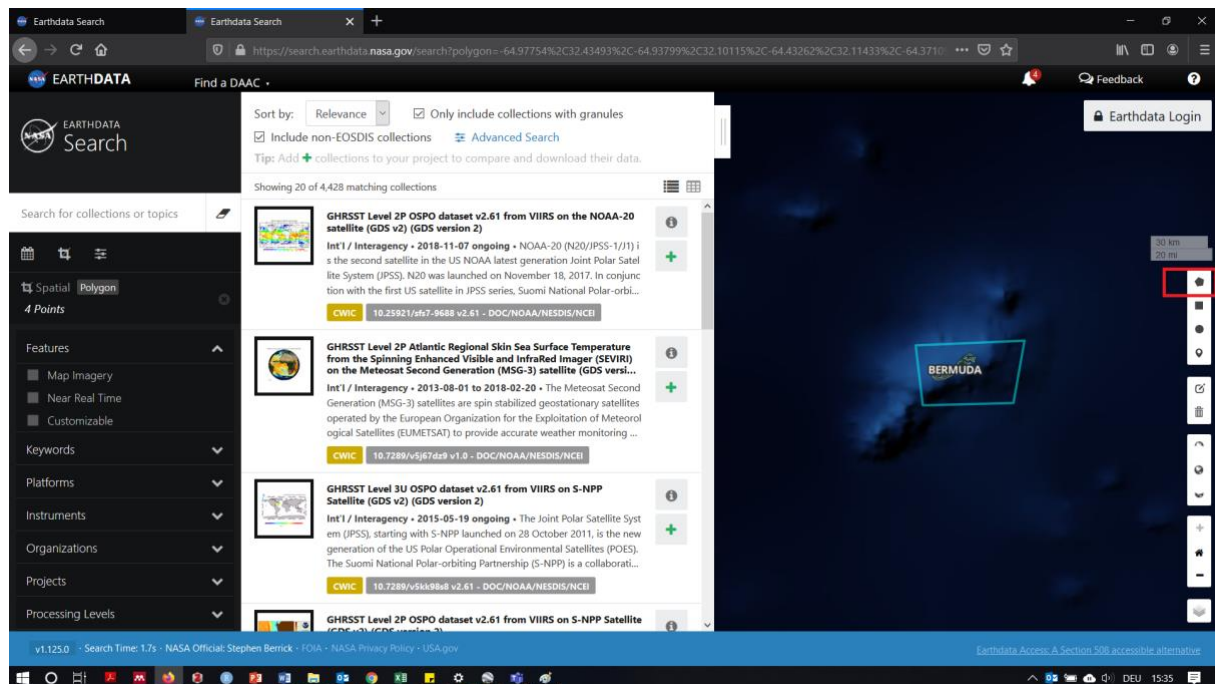
<https://ladsweb.modaps.eosdis.nasa.gov/search/>  
<https://search.earthdata.nasa.gov/search>

In the following we will focus on EARTHDATA (<https://search.earthdata.nasa.gov/search>), as it also allows to search and download most of the free available NASA data sets in the same manner:

The EARTHDATA start page:



To define the spatial borders of your data search, you can either use the mouse and the polygon icon to define a target area in the map (1) or specify latitude/ longitude of your target area (2):



In a second step, you can specify search terms according to your needs to restrict your search results. In this tutorial, we are searching for the MODIS NDVI (Normalized Difference Vegetation Index, L3 product calculated from red and nir-infrared channels) data, which we enter in the left-hand search bar. In MODIS-terms this is the MOD13Q1 product. In the results pane, select the desired MODIS NDVI (MODIS/Terra Vegetation Indices) products as there are different products with different resolutions as well as composites (e.g. 16-days or monthly, see <https://modis.gsfc.nasa.gov/data/dataproduct/mod13.php> ). For further information about a specific dataset, click on the information-button in the top right-hand corner of the dataset window. A new window will open afterwards explaining content and spatial extent as well as providing links to more detailed dataset descriptions:



modis ndvi

Spatial

Rectangle

SW: 44.10003,5.90625

NE: 48.5974,12.23438

Grid Coordinates

Tiling System

None

Temporal

Start

YYYY-MM-DD HH:mm:ss

End

YYYY-MM-DD HH:mm:ss

Recurring?

Day/Night

Find granules captured during the day, night or anytime.

Anytime

Data Access

Find only granules that have browse images

Find only granules that are available online

Cloud Cover

Find granules by cloud cover percentage.

Minimum

Example: 10

Maximum

Example: 50

Search Results (57 Collections)

MODIS/Terra Vegetation Indices 16-Day L3 Global 250m SIN Grid V006

Showing 20 of null matching granule

Sort

View

MOD13Q1.A2019209.h18v04.006.2019226020205.hdf	MOD13Q1.A2019193.h18v04.006.2019210000506.hdf
START2019-07-28 00:00:00	START2019-07-12 00:00:00
END2019-08-12 23:59:59	END2019-07-27 23:59:59
MOD13Q1.A2019177.h18v04.006.2019193235934.hdf	MOD13Q1.A2019161.h18v04.006.2019177235957.hdf
START2019-06-26 00:00:00	START2019-06-10 00:00:00
END2019-07-11 23:59:59	END2019-06-25 23:59:59
MOD13Q1.A2019145.h18v04.006.2019162003757.hdf	MOD13Q1.A2019129.h18v04.006.2019150092000.hdf
START2019-05-25 00:00:00	START2019-05-09 00:00:00
END2019-06-09 23:59:59	END2019-05-24 23:59:59
MOD13Q1.A2019113.h18v04.006.2019130000017.hdf	MOD13Q1.A2019097.h18v04.006.2019113234408.hdf
START2019-04-23 00:00:00	START2019-04-07 00:00:00
END2019-05-08 23:59:59	END2019-04-22 23:59:59
MOD13Q1.A2019	MOD13

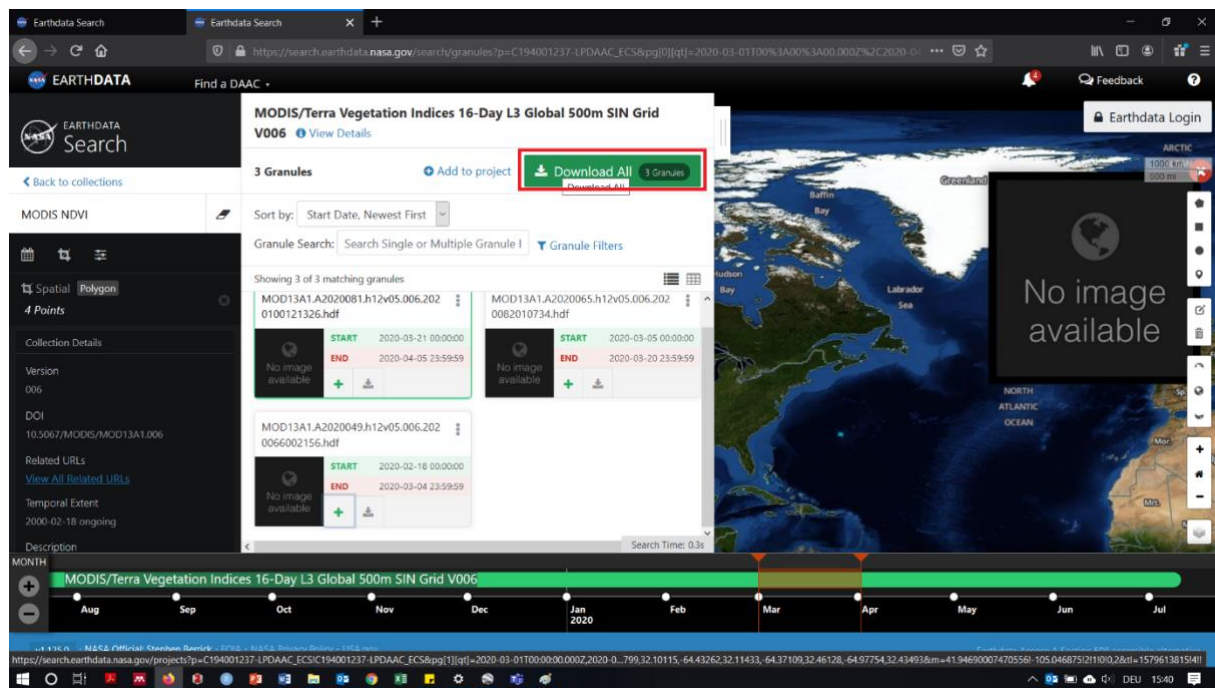
Search Time: 2.1s

null Granule

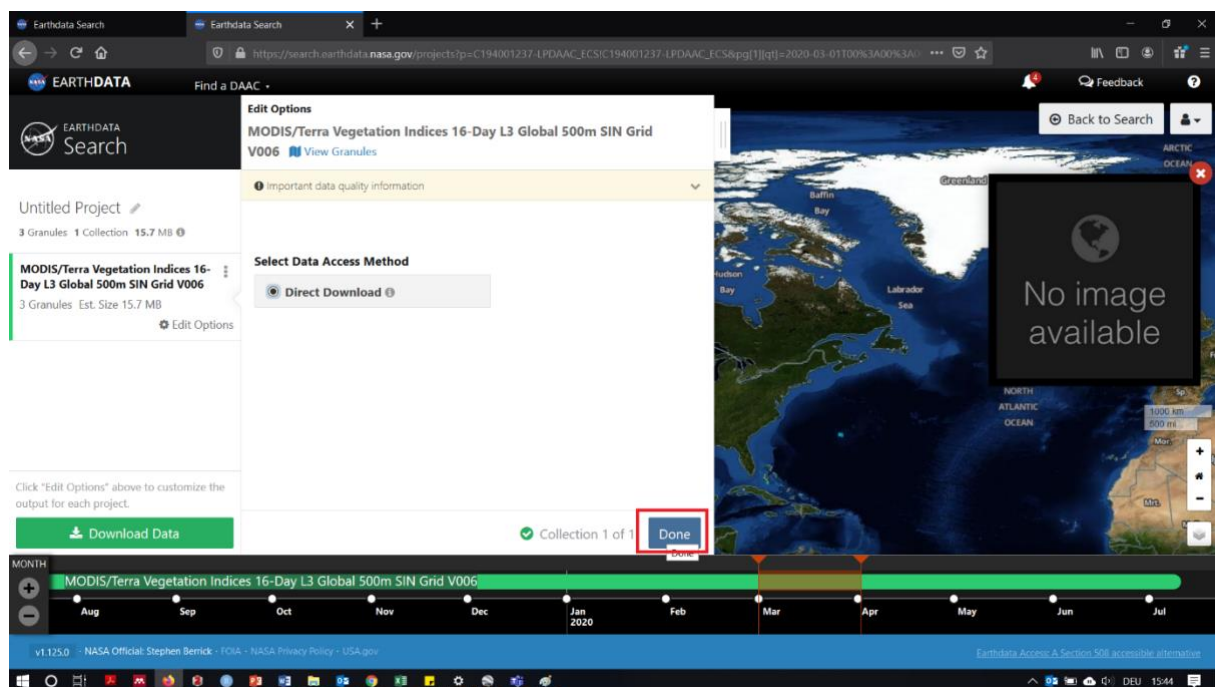
Download All

After filtering the date range, the available dataset will appear in the green download Granules box. Click download to begin the download process. Registration is needed, however, all data is for free. The green bar at the bottom is a time line indicating the period for which the scenes were selected.

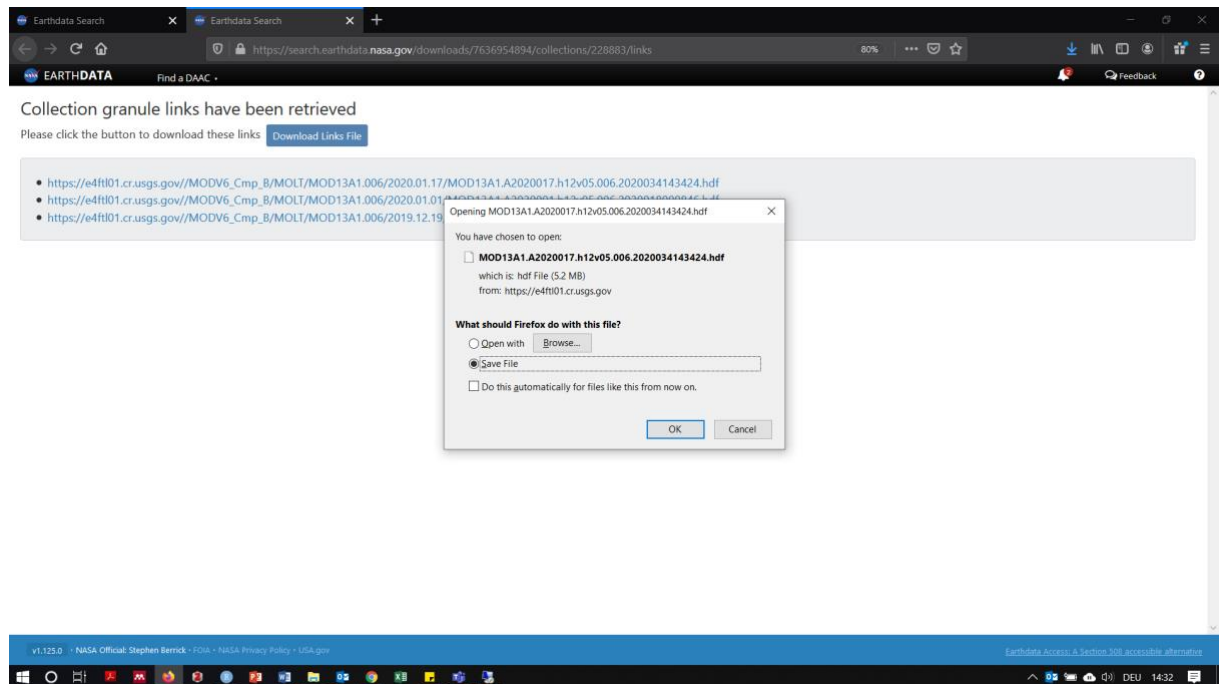




You can start your data download by clicking on the “done” button.



Now you can start the download of the data by clicking the download URL's.



MODIS images are available in a georeferenced hdr-file format that can be loaded/read by any GIS-software such as [QGIS](#). When loading a HDR-file into QGIS, the software asks what layers should be loaded (e.g. if NDVI and EVI layers are available).