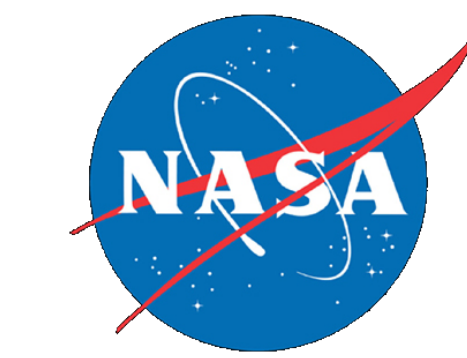




Carbon Cycle Science Data and Services

at the Goddard Earth Sciences Data Information and Services Center (GES DISC)

B13F-2446

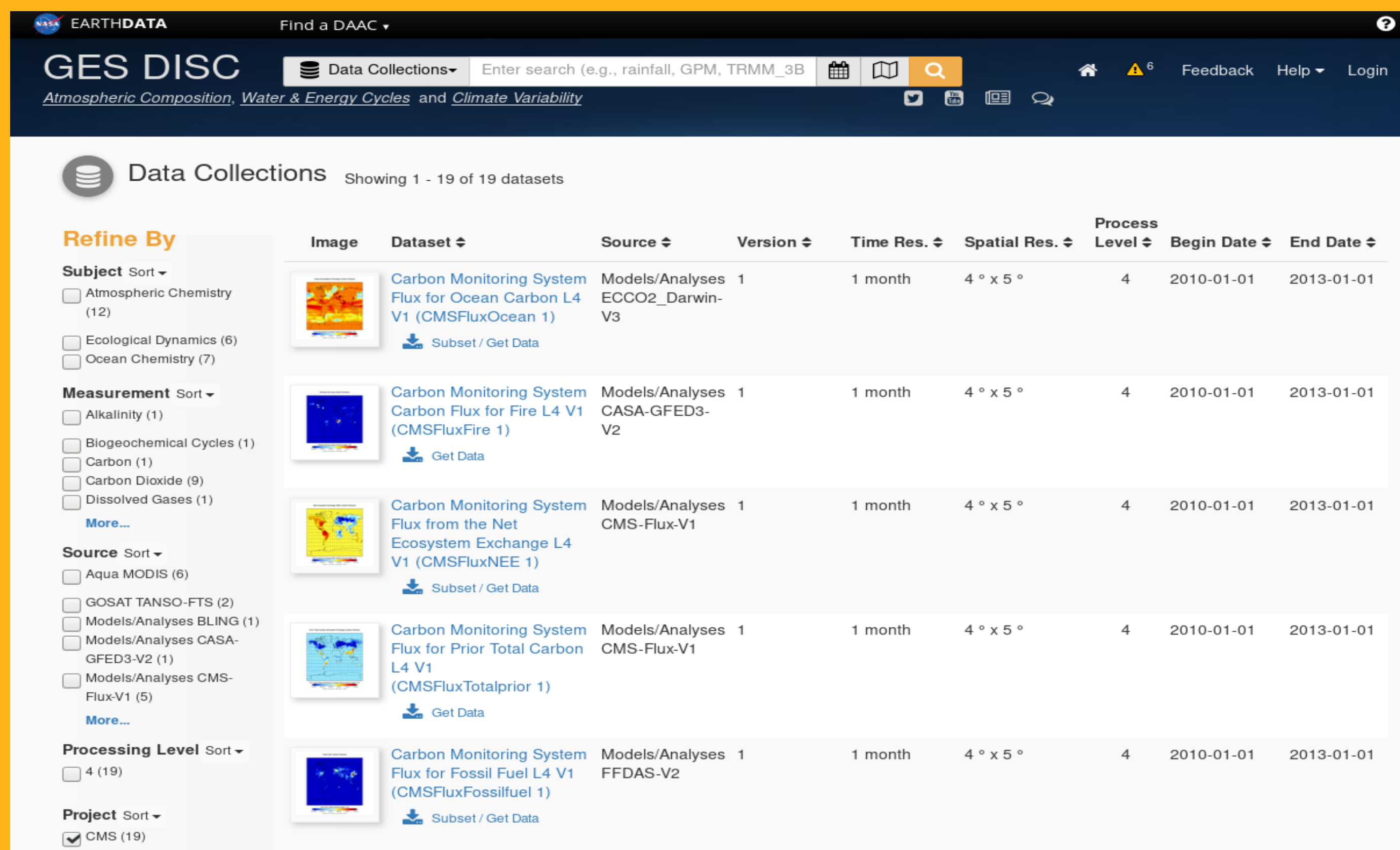
Cell Phone: 703-981-2248

Thomas Hearty, Jennifer Wei, Andrey Savtchenko, David Meyer, Dana Ostrenga, Jennifer Adams, and Paul Huwe
Goddard Space Flight Center (GSFC), Greenbelt, MD 20771 (Thomas.Hearty@nasa.gov)

Summary

The Goddard Earth Sciences Data Information and Services Center (GES DISC) archives and distributes a number of observational and model carbon cycle science data sets. We also provide services that facilitate **data discovery**, **intercomparison**, and **visualization** of these heterogeneous datasets for both research and applications users, such as **subsetting**, **format conversion**, **How-To** documentation, and the **Help Desk**.

Carbon Monitoring System (CMS) Data at the GES DISC <https://disc.gsfc.nasa.gov>



Additional Missions with Carbon Cycle Science Data

In addition to CMS, the GES DISC hosts carbon cycle science data from the following missions:

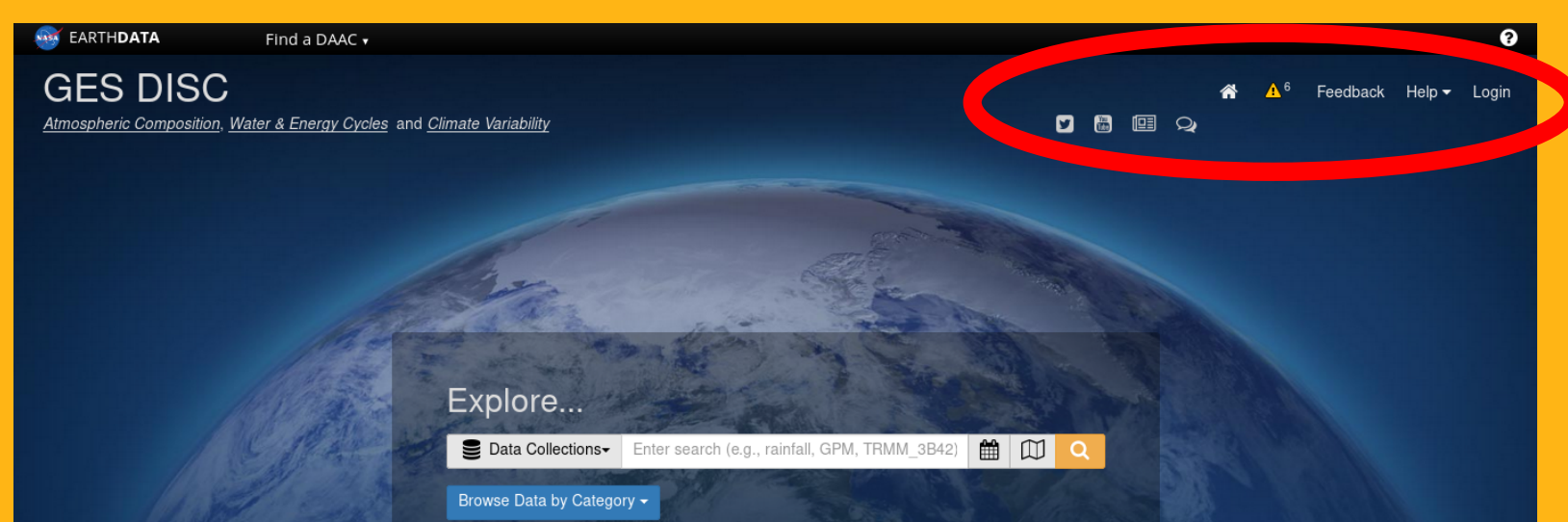
- ✓Atmospheric CO2 Observations from Space (ACOS) data derived from the **GOSAT-TANSO** instrument
- ✓Orbiting Carbon Observatory (**OCO-2**)
- ✓Atmospheric Infrared Sounder (**AIRS**)
- ✓Microwave Limb Sounder (**MLS**)
- ✓Upper Atmosphere Research Satellite (**UARS**)
- ✓TROPOspheric Monitoring Instrument (**TROPOMI**)
- ✓Cross Track Infrared Sounder (**CrIS**)
- ✓Modern-Era Retrospective analysis for Research and Applications version 2 (**MERRA-2**)

Future Datasets

- ✓Geostationary Carbon Observatory (**GeoCarb**)
- ✓**OCO-3** mission
- ✓Additional **CMS** datasets

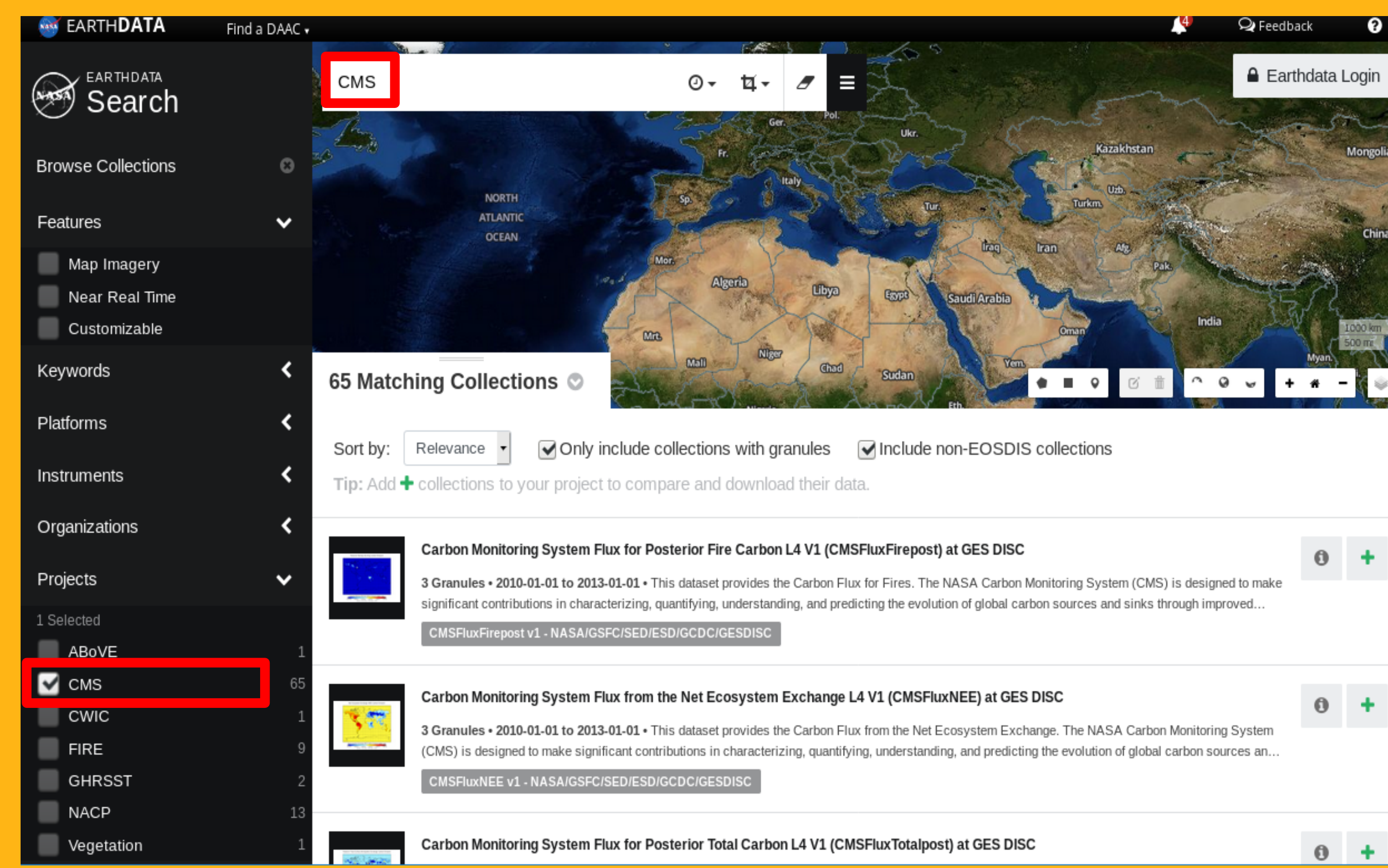
Help and Social Media

- ✓Help Desk
- ✓Twitter
- ✓YouTube
- ✓Earthdata Forum

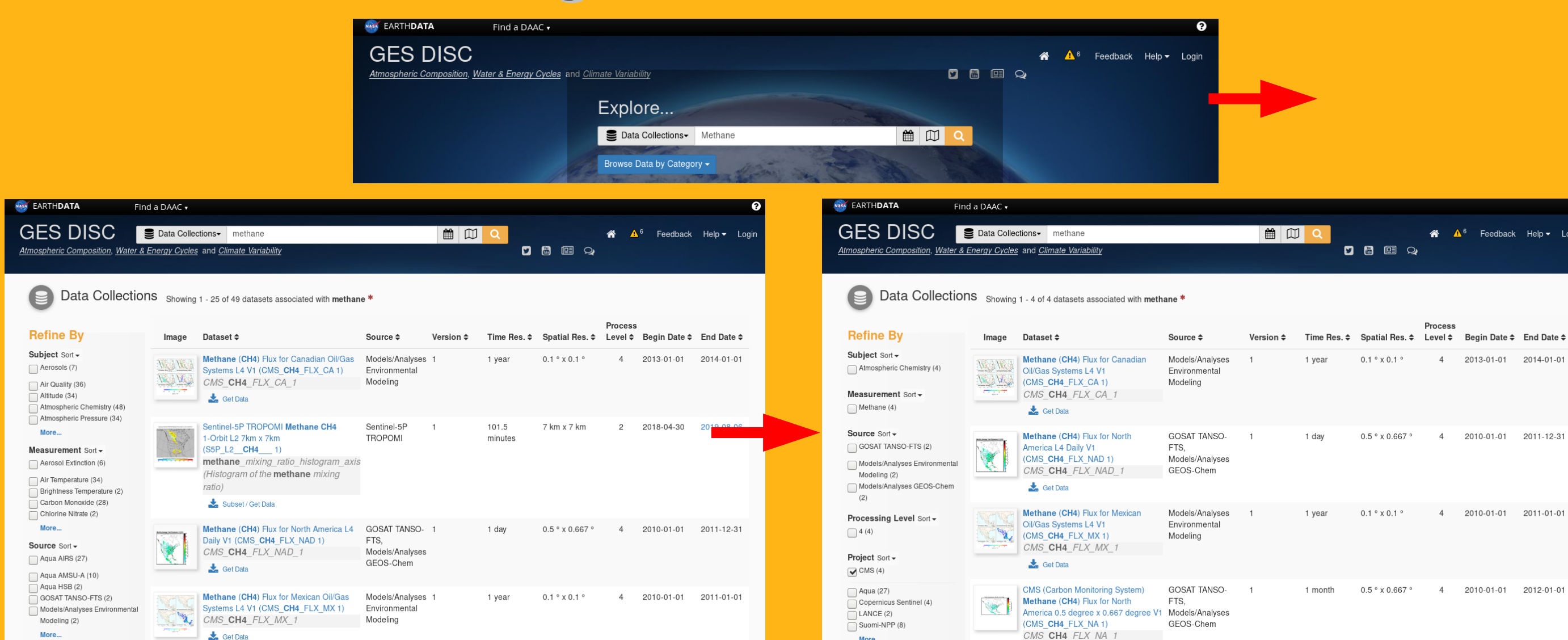


The Earthdata Search Client <https://search.earthdata.nasa.gov/>

The Earthdata Search Client enables searches for NASA Earth science data from all data centers.



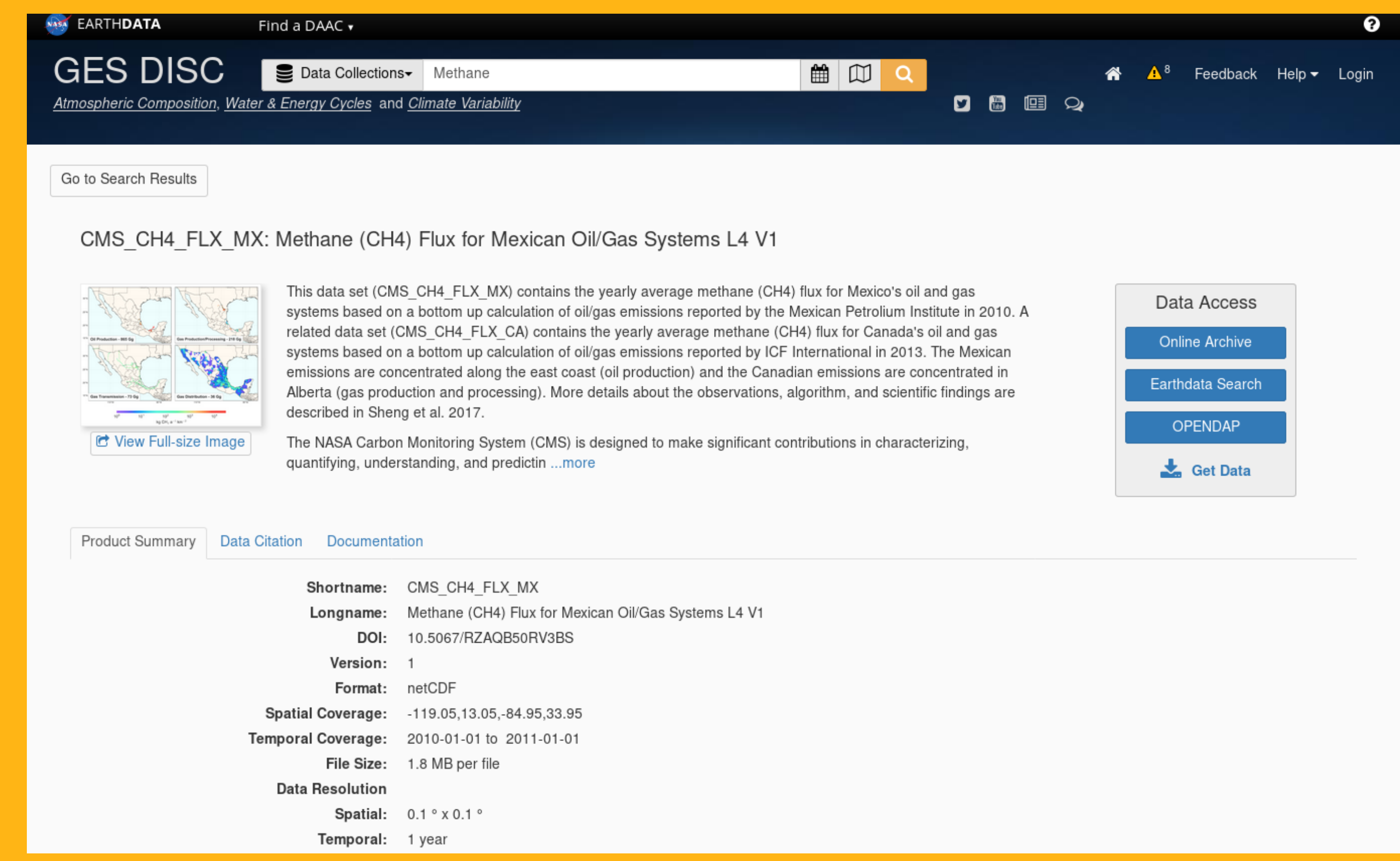
Searching for Data at the GES DISC



A sample search for CMS Methane data archived at the GES DISC.

Dataset Landing Pages

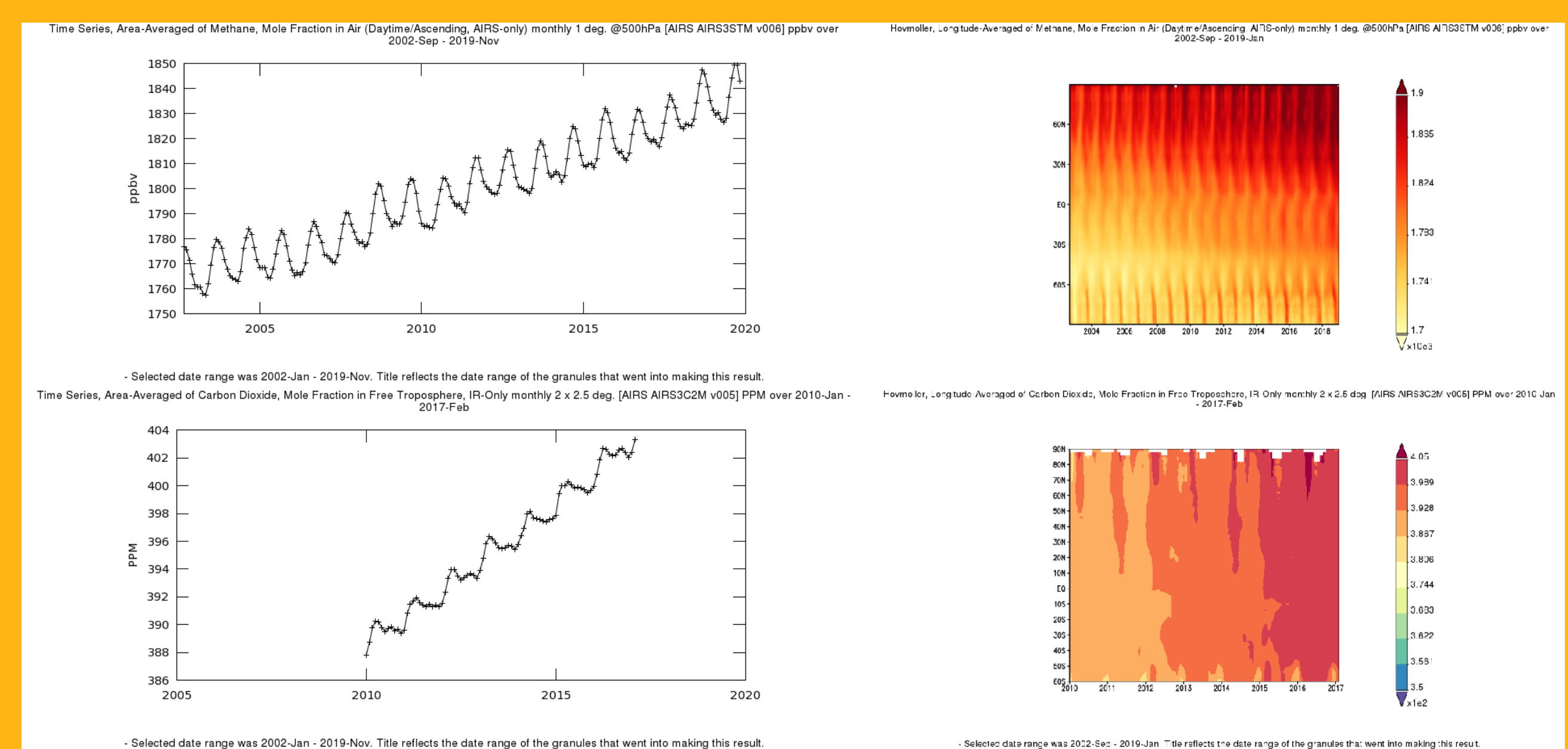
The dataset landing page for each dataset has information about the data product, instructions on how to **cite the data**, links to related **documentation**, **software**, and **data access**.



Services

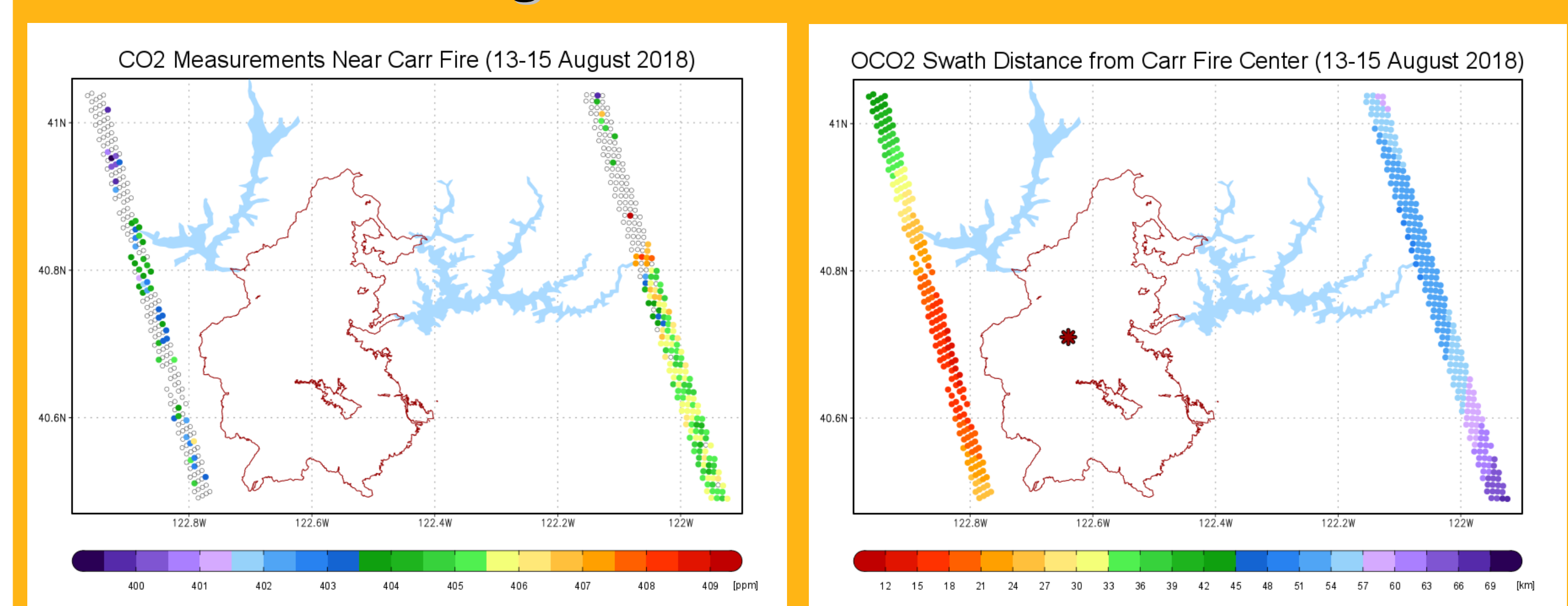
Some data sets have additional **services** such as format conversion, spatial, temporal, or variable **subsetting**, and **visualization**. We also have a library of **How-To** documents, and we record distribution metrics.

Giovanni



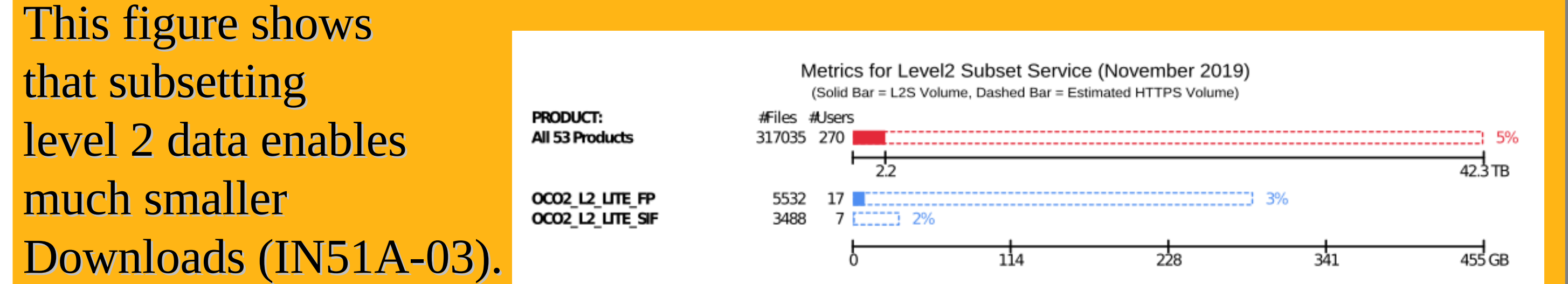
Plots of Methane and Carbon Dioxide data from AIRS created with Giovanni.

Subsetting and “How-To” Documentation



Above: The left panel shows **xCO2** for two **OCO-2** orbits that passed within a 100 km of the Carr Fire (outlined in red). The right panel shows a plot of the “PointRadius” variable that is added to files that are subsetting within a user defined radius around a user specified location. How to create similar subsets, as well as other data operations, are described in GES DISC **How-To** documents.

Level 2 Subsetter Metrics



Data Distribution Metrics

We collect metrics on the number of user downloads for all data sets archived at the GES DISC. The figure at right shows the domain of unique users of the CMS data Products archived at the GES DISC.

