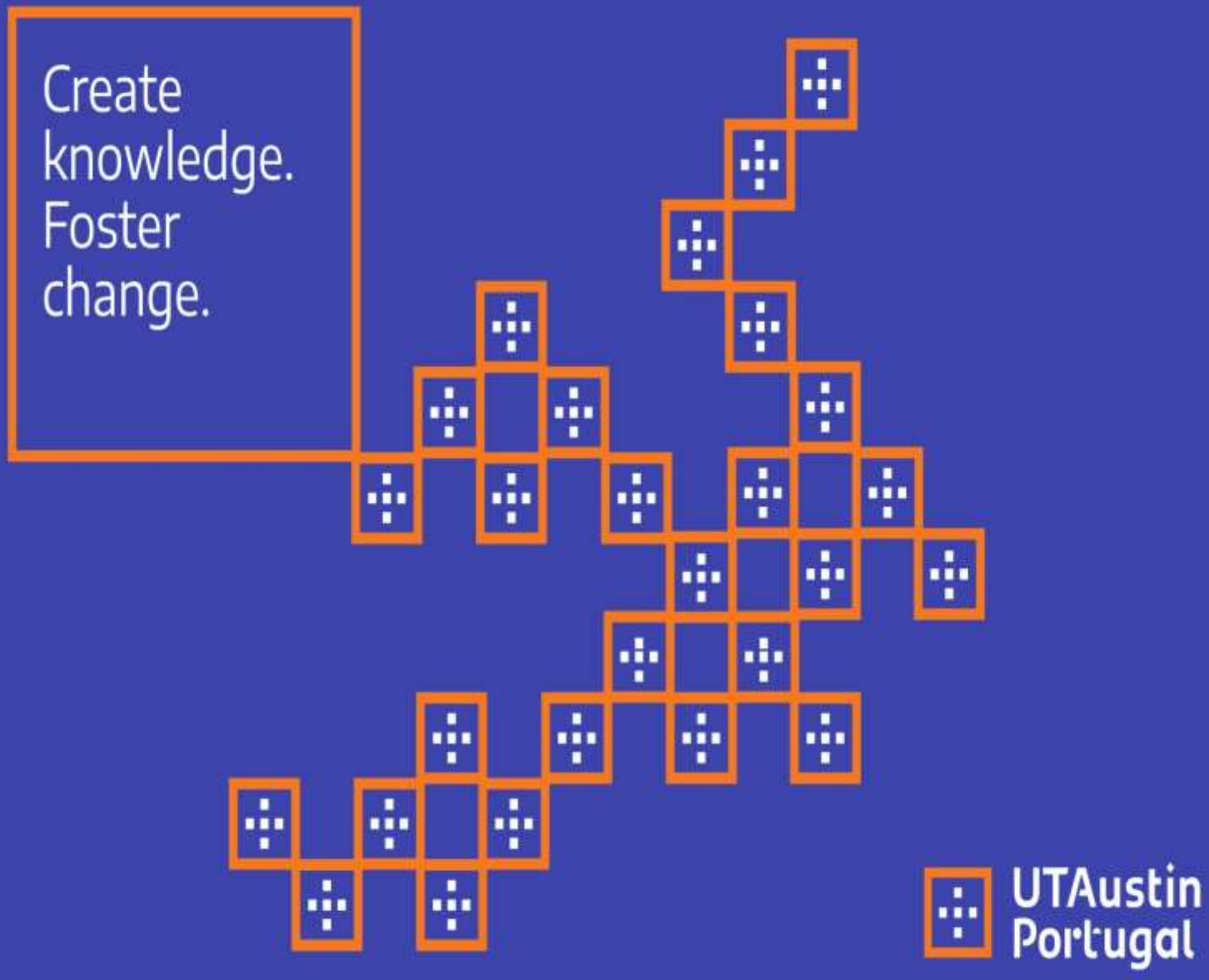

Create
knowledge.
Foster
change.
UTAustin
Portugal

Satellite-based Global Precipitation Data and Services at NASA GES DISC (Part II)

Zhong Liu

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

CSISS, George Mason University

Outline

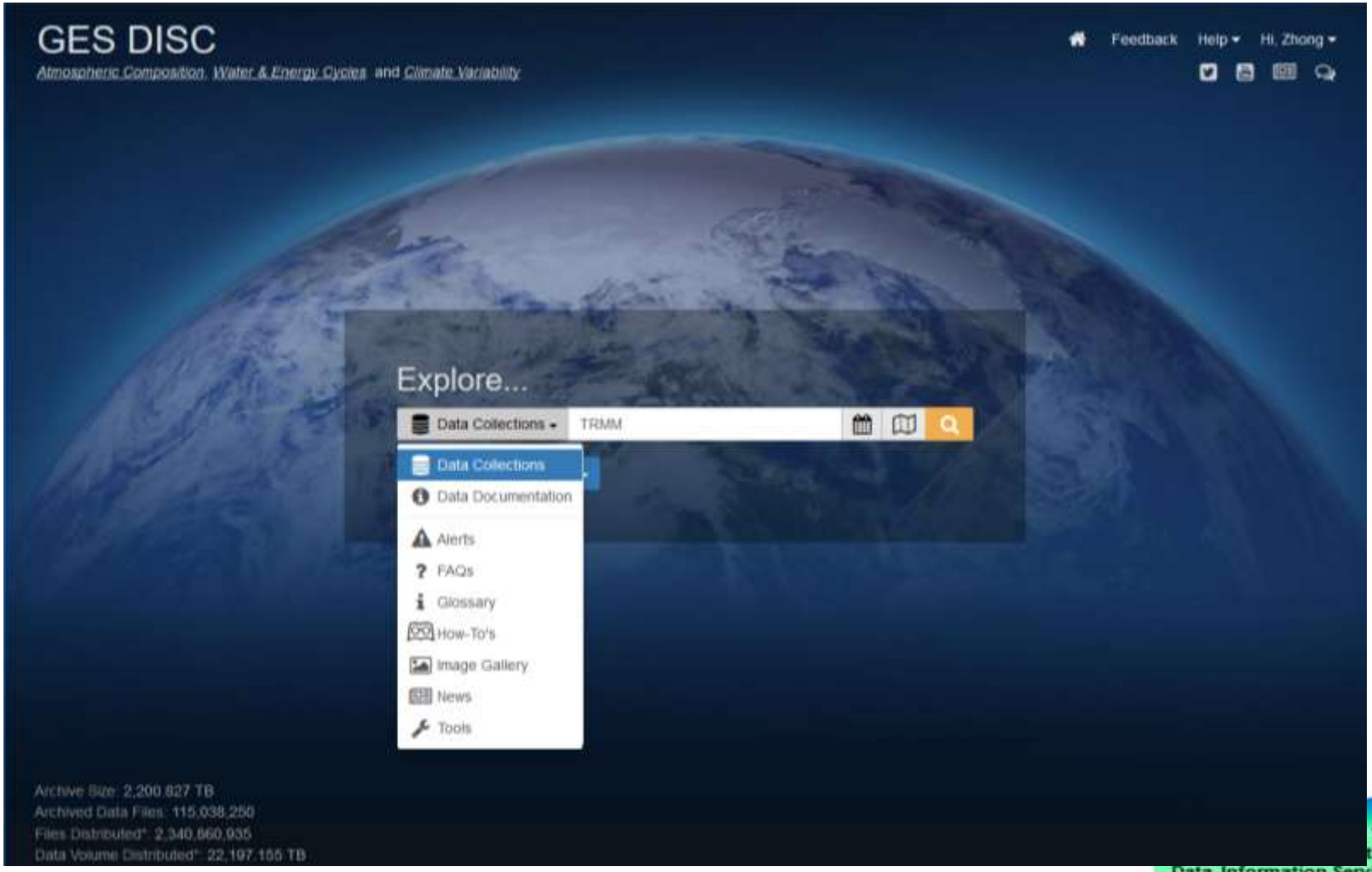
- Data services
- Giovanni (easy-to-use online tool without downloading data and software)
- Live demo
- Summary

Data Services (How to find data?)

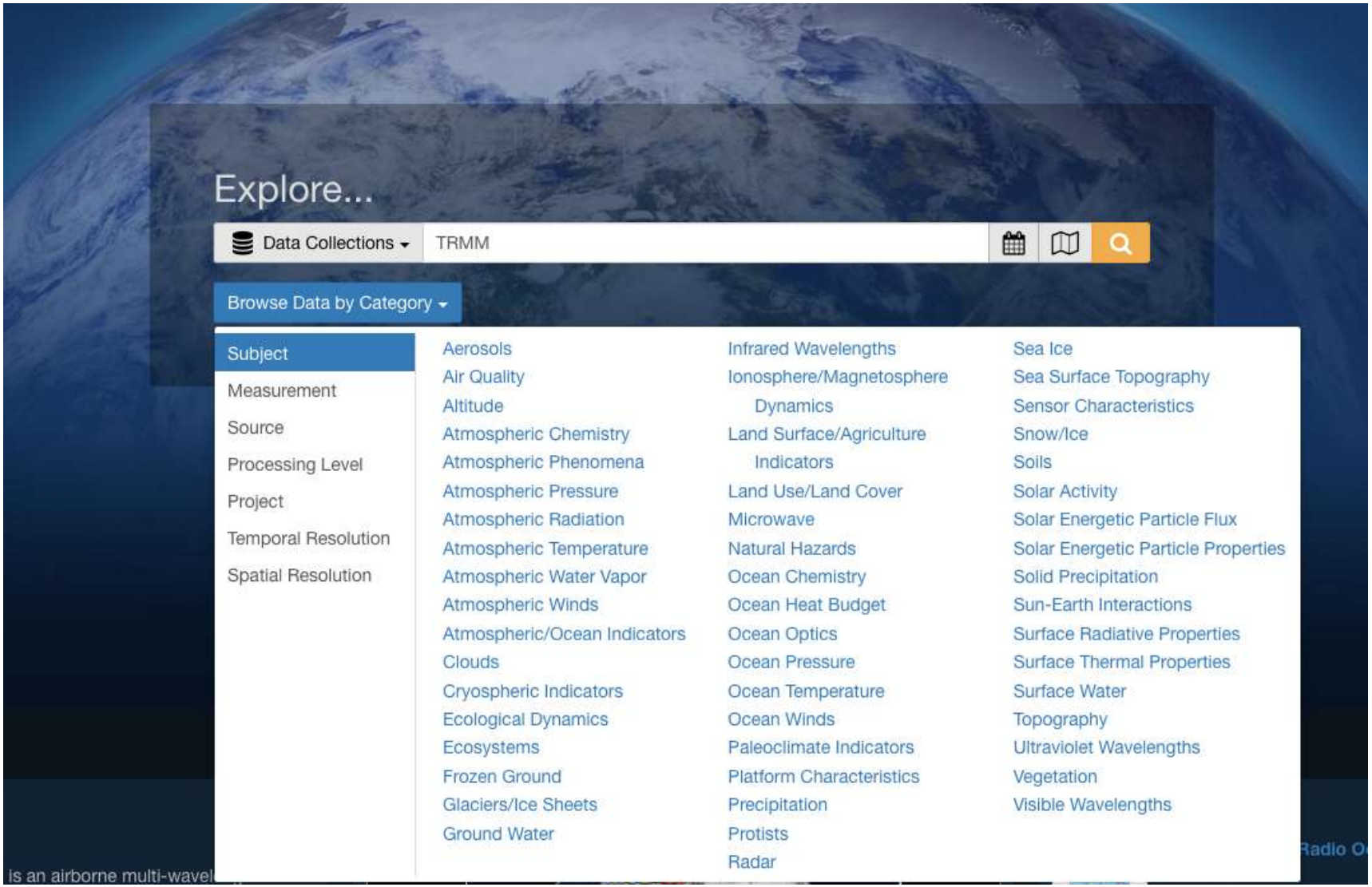
A <u>three-panel</u> design for searching data and information

Data Services (cont.)

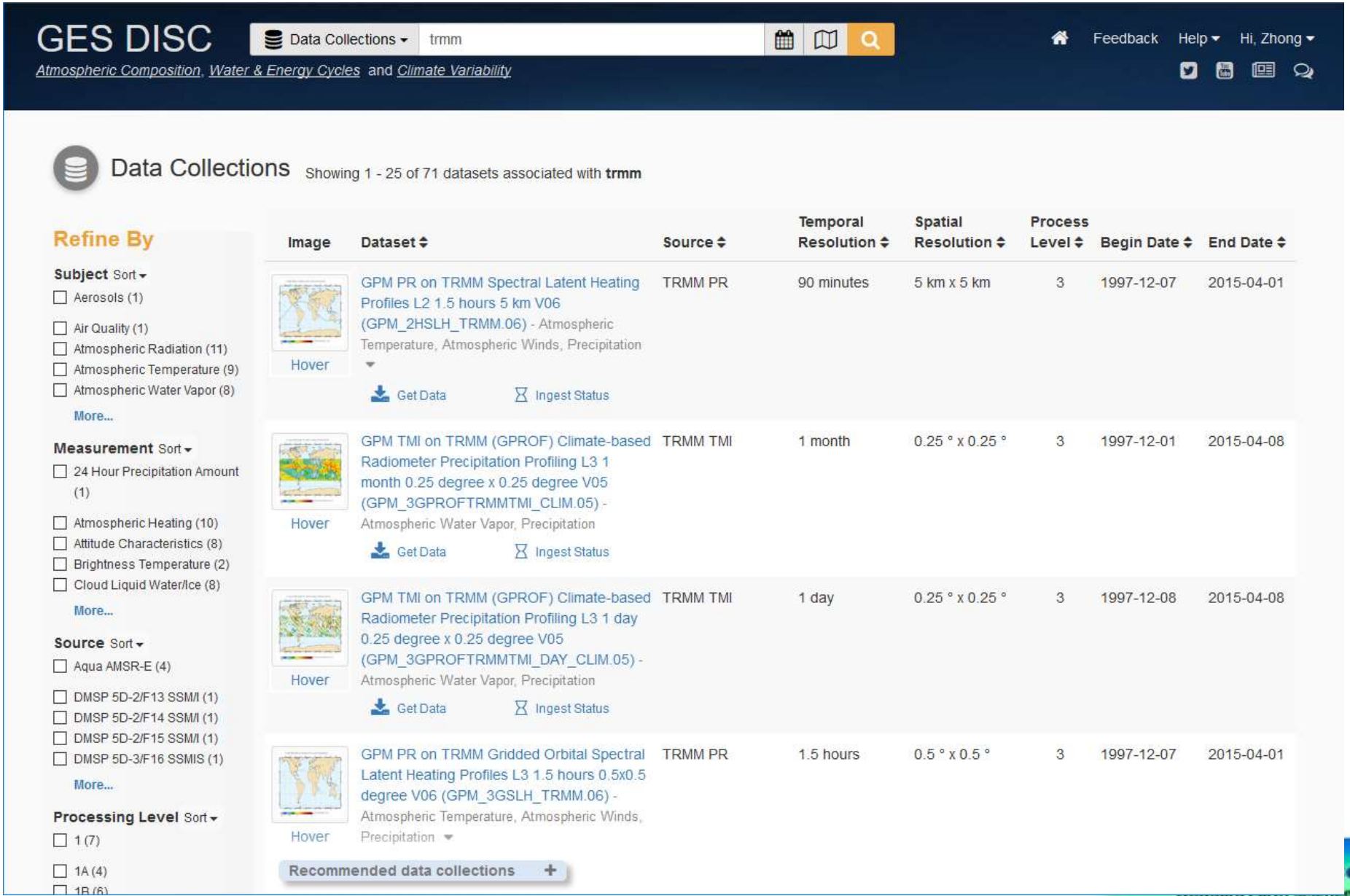
- TRMM, GPM, NLDAS, GLDAS, MERRA-2
- precipitation, soil moisture, temperature, etc.



Data Services (cont.)



Data Services (cont.)



Data Services (cont.)

GES DISC

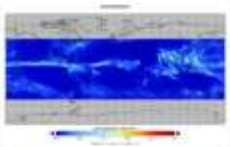
Atmospheric Composition, Water & Energy Cycles and Climate Variability

Data Collections | 3b43

Feedback | Help | Hi, Zhong

Go to Search Results

TRMM_3B43: TRMM (TMPA/3B43) Rainfall Estimate L3 1 month 0.25 degree x 0.25 degree V7



View Full-size Image

The 3B43 dataset is the monthly version of the 3B42 dataset.

This product is created using TRMM-adjusted merged microwave-infrared precipitation rate (in mm/hr) and root-mean-square (RMS) precipitation-error estimates.

It provides a 7best7 precipitation estimate in a latitude band covering 50o N to 50o S, an expansion of the TRMM region, from all global data sources, namely high-quality microwave data, infrared data, and analyses of rain gauges. The granule size is one month.

Data Access

- Online Archive
- Earthdata Search
- Giovanni
- Web Services
- Subset / Get Data

Product Summary | Data Citation | Documentation

Shortname:	TRMM_3B43
Longname:	TRMM (TMPA/3B43) Rainfall Estimate L3 1 month 0.25 degree x 0.25 degree V7
DOI:	10.5067/TRMM/TMPA/MONTH/7
Version:	7
Format:	HDF
Spatial Coverage:	-180.0,-50.0,180.0,50.0
Temporal Coverage:	1998-01-01 to 2018-07-31
File Size:	4.9 MB per file
Data Resolution	
Spatial:	0.25 ° x 0.25 °
Temporal:	1 month

Data Services (cont.)

- Dataset and information search
- Subsetting (spatial and parameter)
- Format conversion (NetCDF, ASCII)
- Time series (Data Rods)
- Machine to machine (OPeNDAP, https, THREDDS, GDS)
- GIS support (in-house GIS specialists)
- Online visualization and analysis (explore and evaluate datasets without downloading software and data)

Data Services (cont.)

Projects & Missions

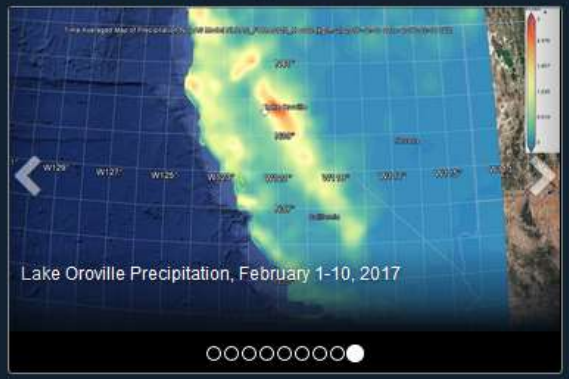
Cloud Absorption Radiometer (CAR)
The Cloud Absorption Radiometer (CAR) is an airborne multi-wavelength scanning radiometer that can perform several functions including: d...

MEaSUREs
MEaSUREs: Making Earth System Data Records for Use in Research Environments, is a NASA project, solicited through Research Opportunities in ...

SSBUV
The Shuttle Solar Backscatter Ultraviolet (SSBUV), nearly identical to Nimbus-7 SBUV and NOAA SBUV/2 instruments flown on eight space shuttl...

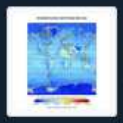
View All Projects & Missions ...

Featured Gallery Images

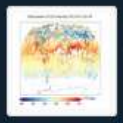


View All Gallery Images ...

News



Release of GPS Radio Occultation Boundary Layer Depth Products
Oct 25, 2018



OCO-2 Releases Lite product V9r
Oct 17, 2018

New Version 01 TSIS-1 Level 3 Products Released to Public
Oct 5, 2018

View All News ...

NASA Official: Long Pham
Web Curator: M. Hegde

Science Focus Areas
- Atmospheric Composition
- Water & Energy Cycles
- Climate Variability

Tools
- Giovanni
- MERRA Subsetter
- Data Rods for Hydrology
- DQViz
- AIRS NRT Viewer
- OGC Web Map Service
- OPeNDAP and GDS

Resources
- HowTo
- Glossary
- FAQ
- News
- Gallery
- Alerts

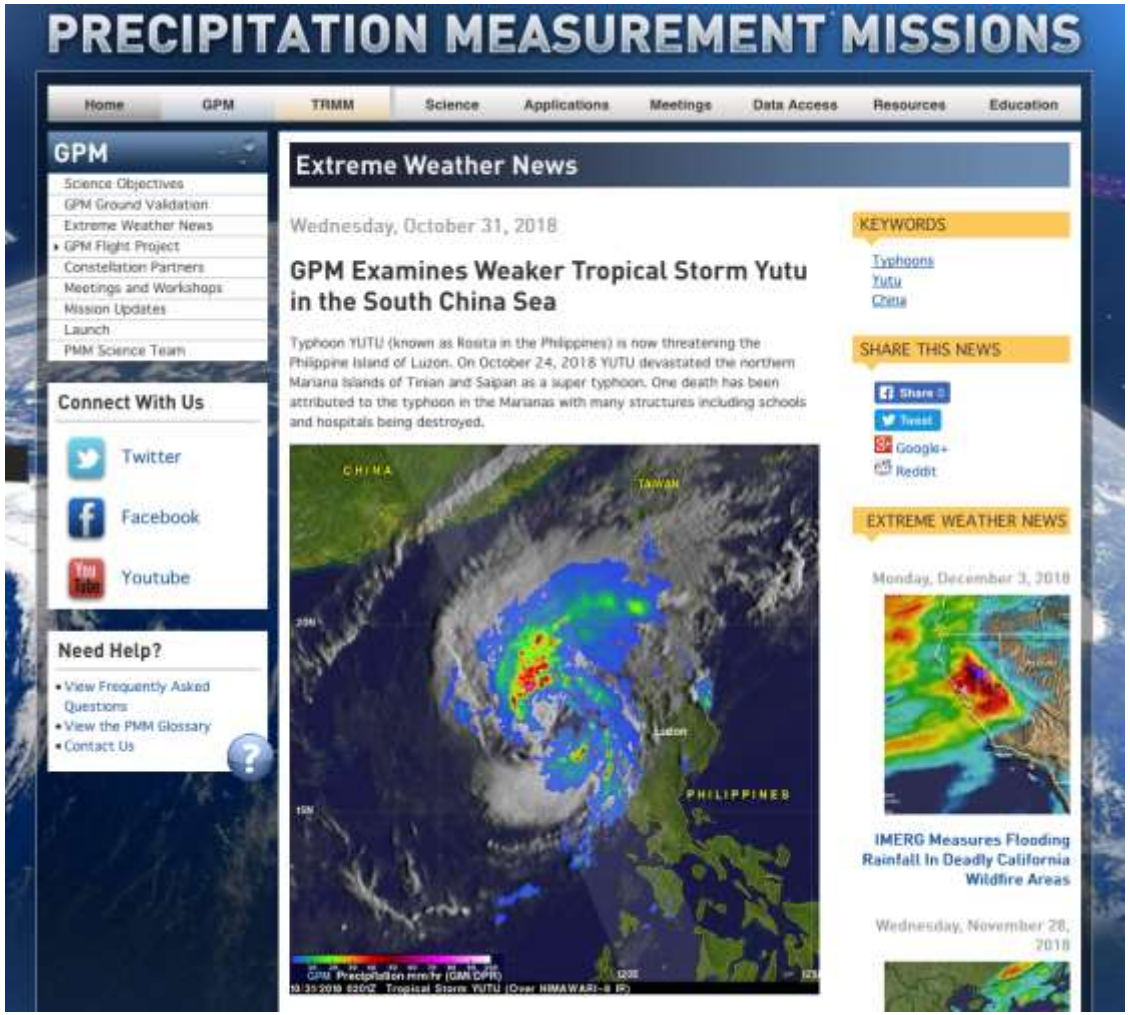
About Us
- Who We Are
- Citing Our Data
- Contact Us
- User Working Group

Monitor
- Console

GES – DISC
Goddard Earth Sciences
Data Information Services Center

Data Services (cont.)

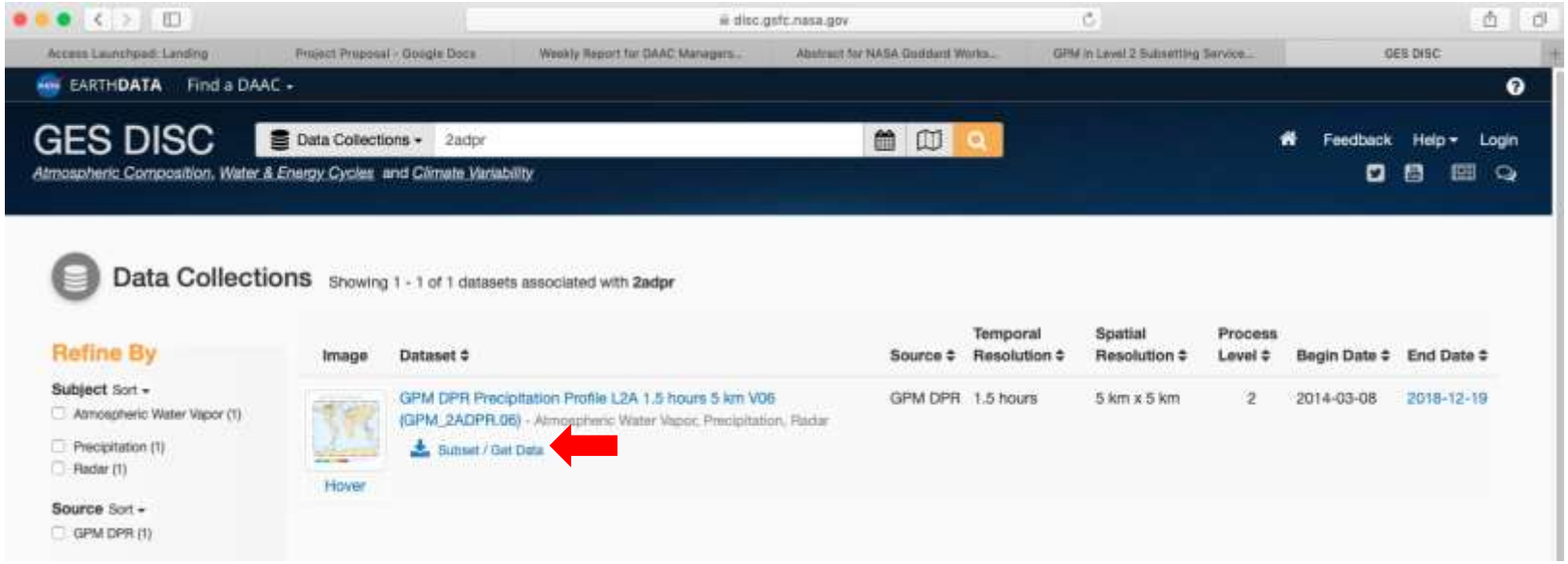
- New: Level-2 GPM DPR subsetting service

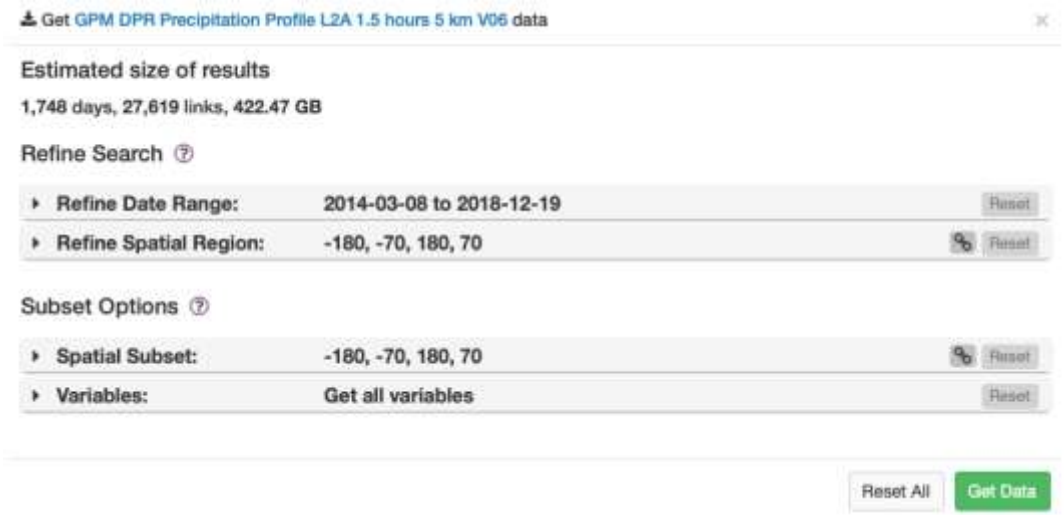


Tropical Strom Yutu in the South China Sea near the Philippines on Oct. 31, 2018 (https://pmm.nasa.gov)

Data Services (cont.)

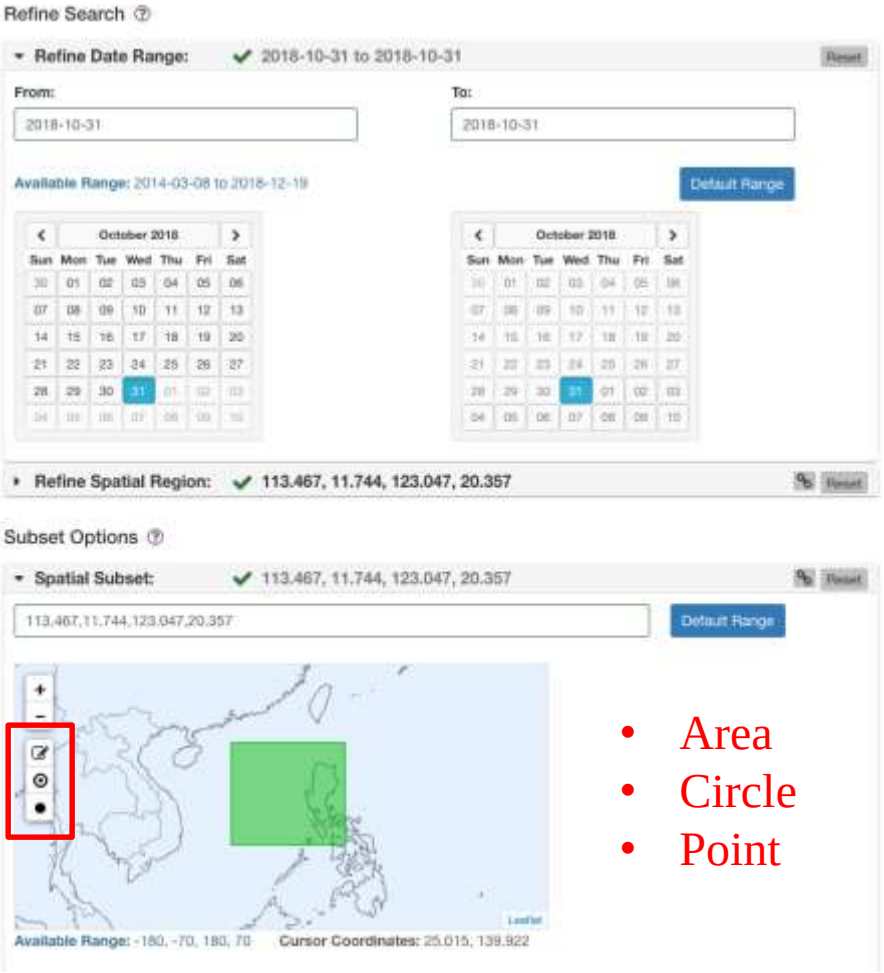
- Level-2 GPM DPR subsetting service





Data Services (cont.)

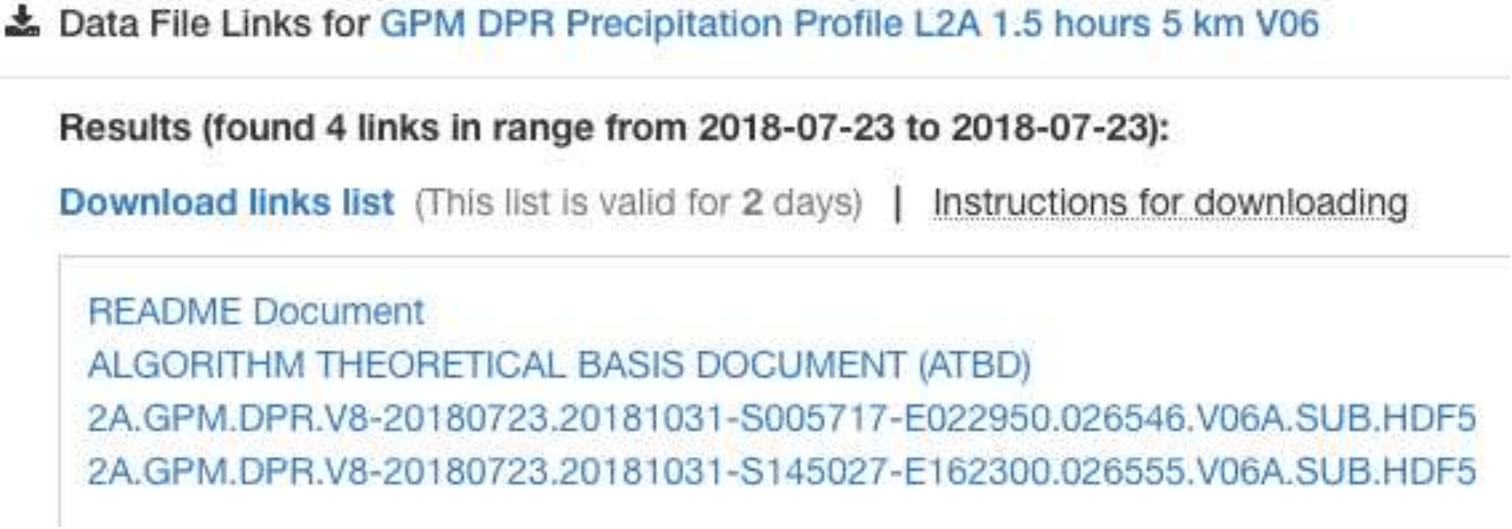
- Level-2 GPM DPR subsetting service

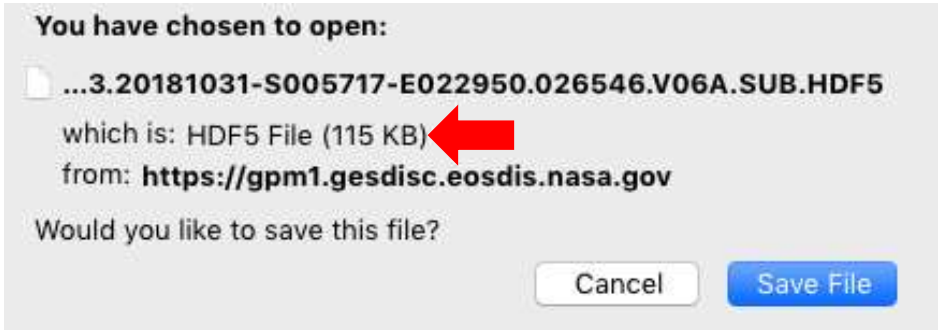


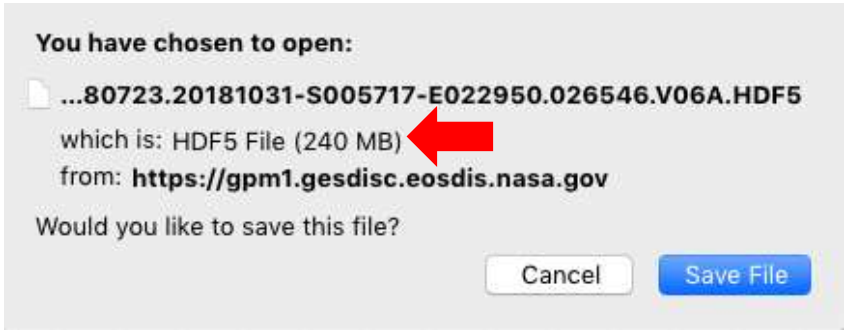
- Area
- Circle
- Point

Data Services (cont.)

- Level-2 GPM DPR subsetting service



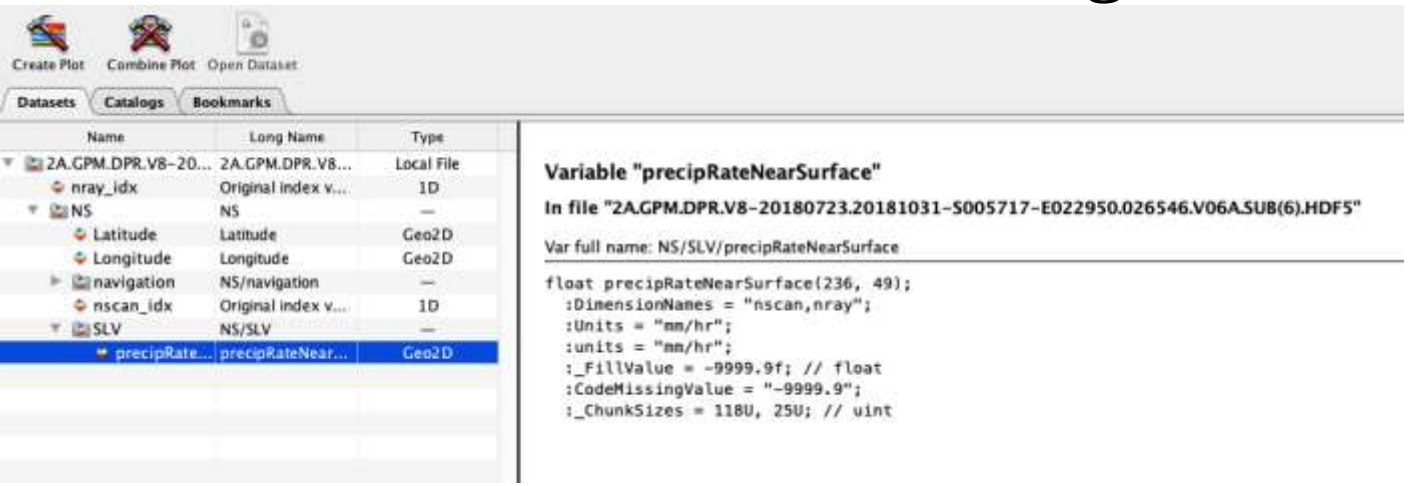


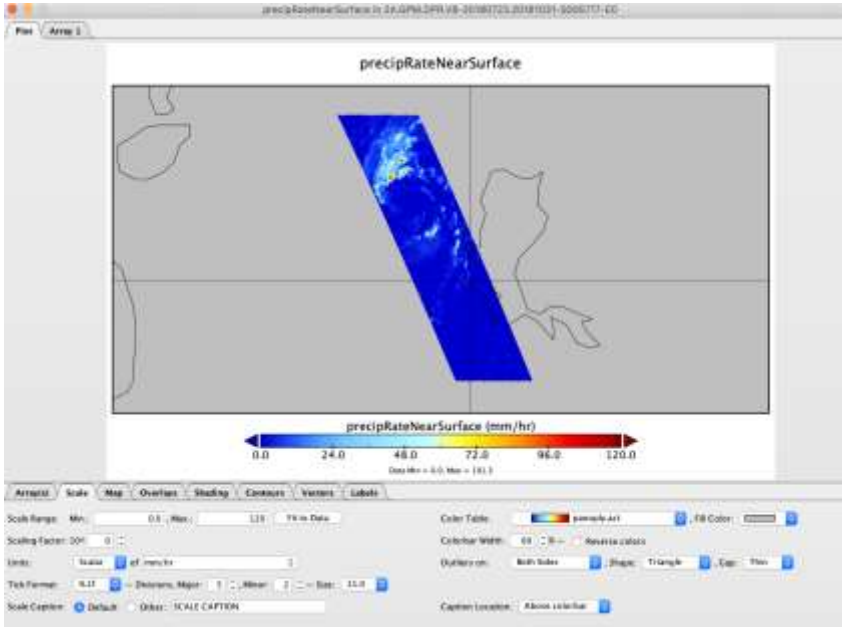


Subset Vs. Full (everything)

Data Services (cont.)

- Level-2 GPM DPR subsetting service



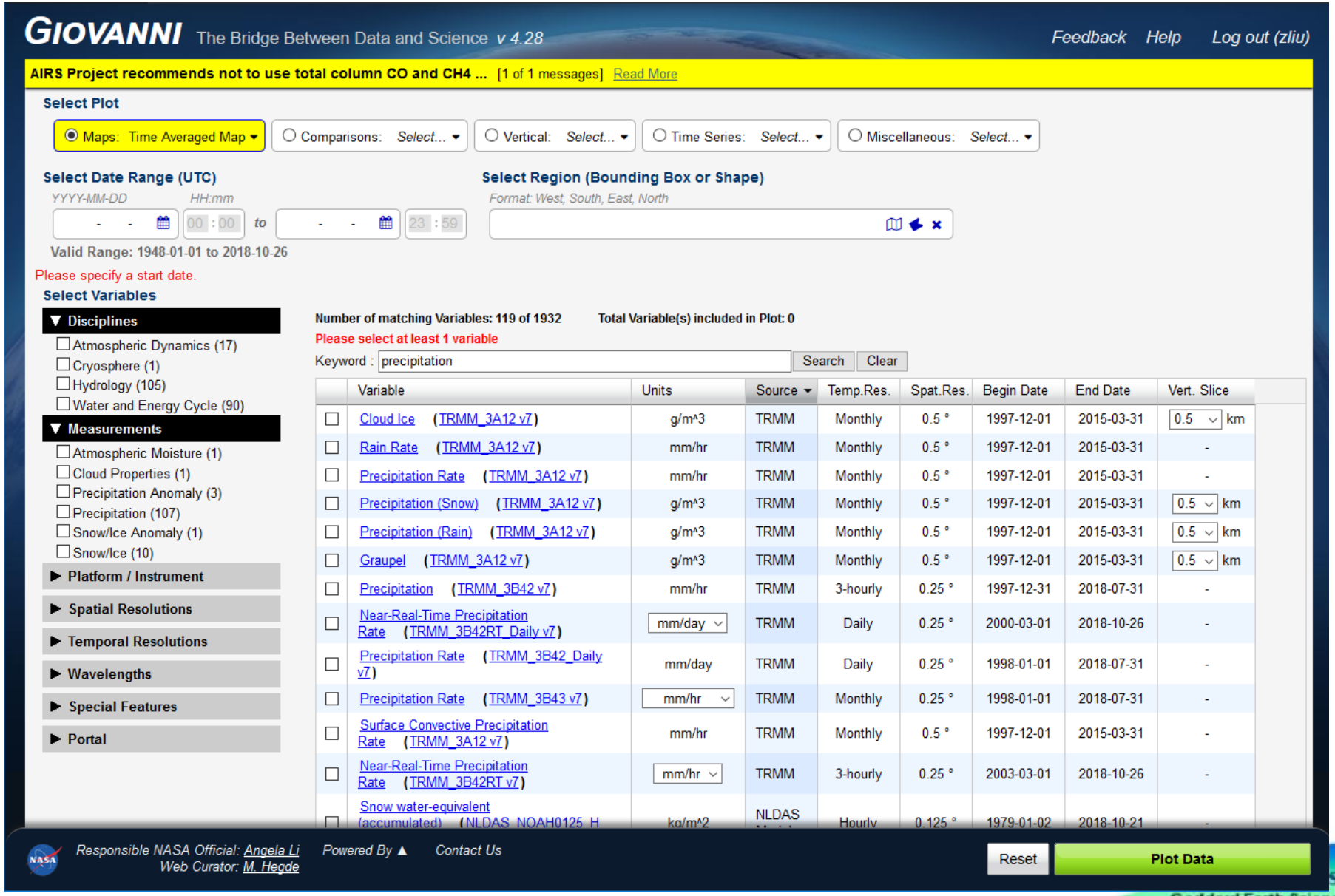


Visualized in NASA GISS Panoply

User Services

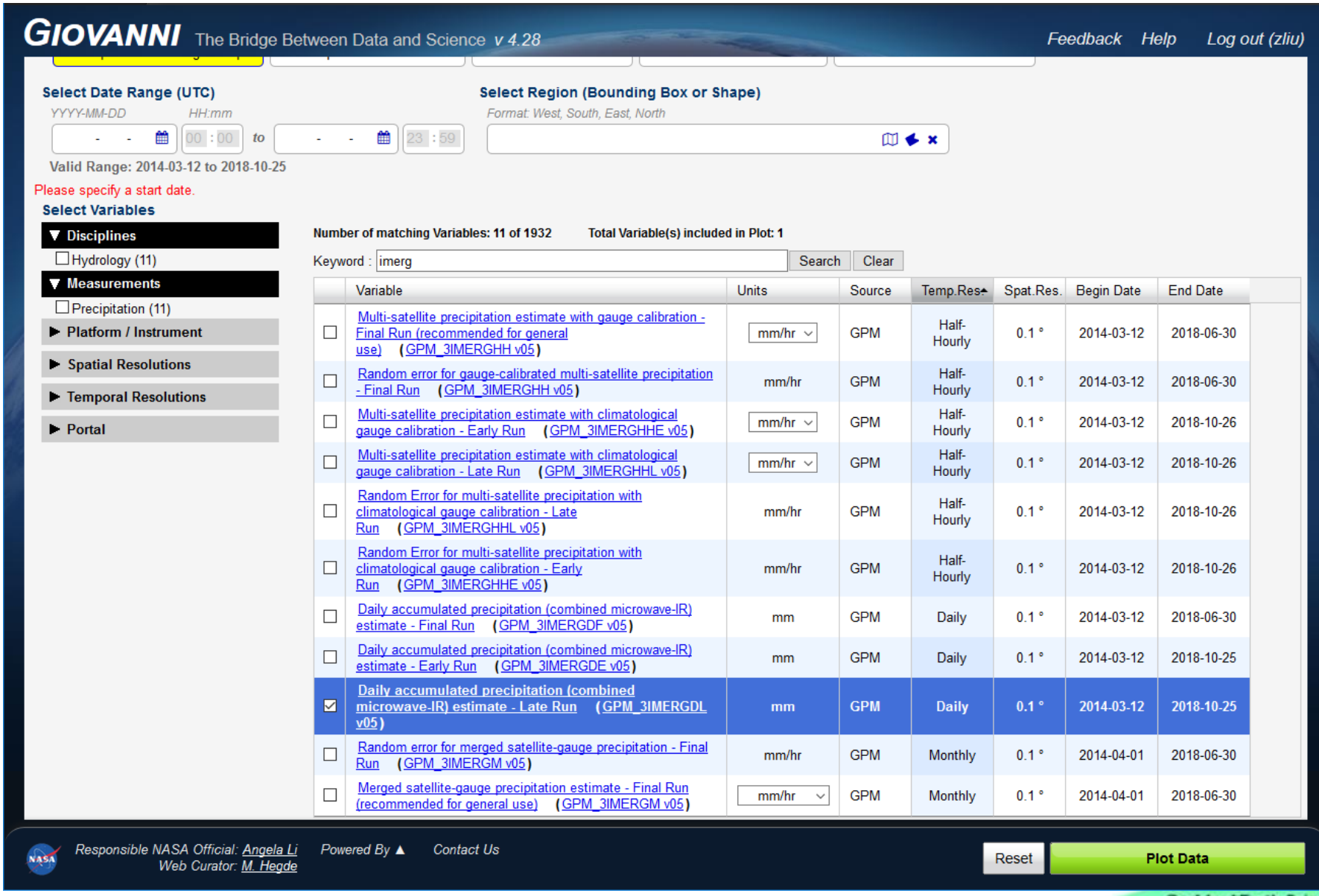
- FAQs, How-To (recipes), Glossary, etc.
- Social media (Twitter, YouTube, User Forum)
- Help desk (phone, email, online feedback)
- Training materials (ARSET => Applied Remote Sensing Training)

Giovanni (https://giovanni.gsfc.nasa.gov) - Data visualization and analysis without downloading data and software)



Goddard Earth Sciences Data Information Services Center

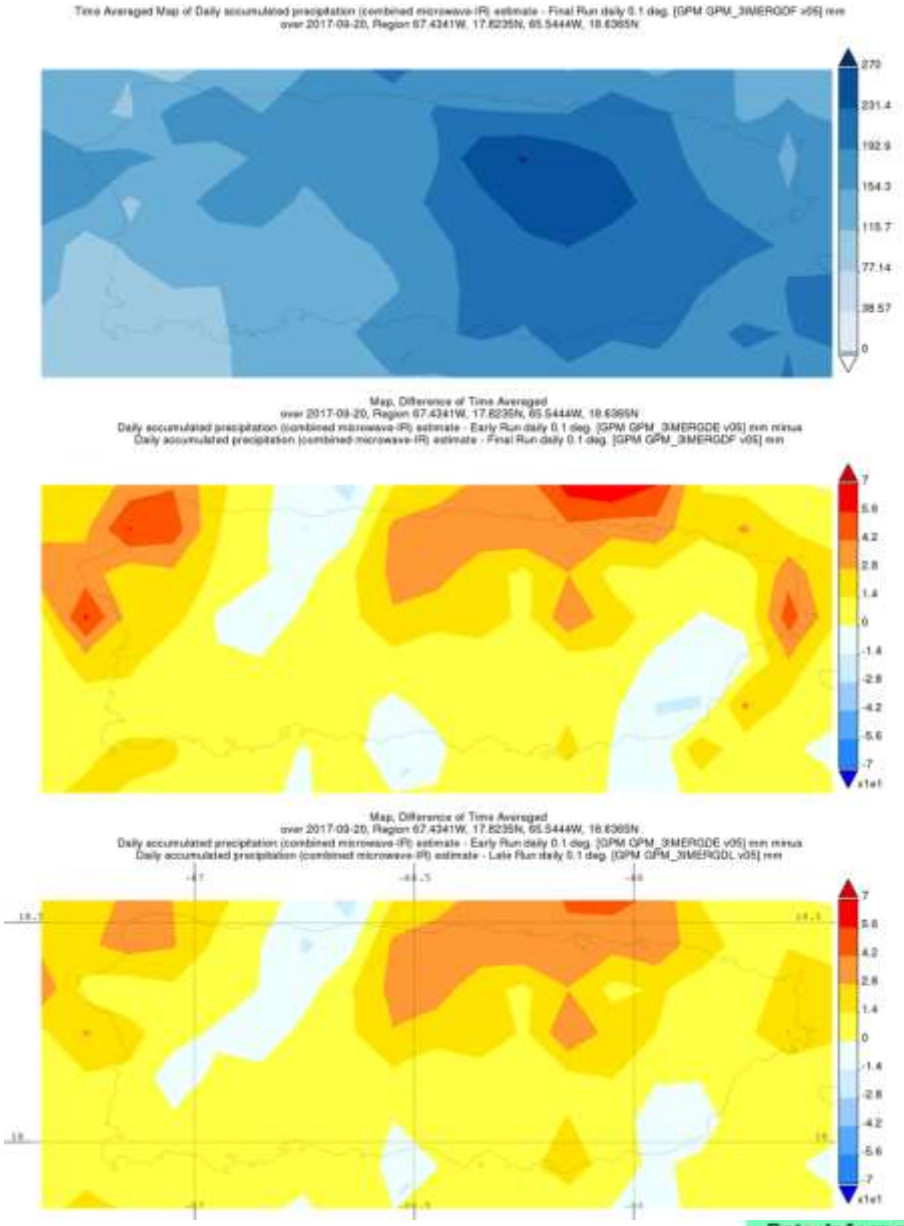
Giovanni (cont.)



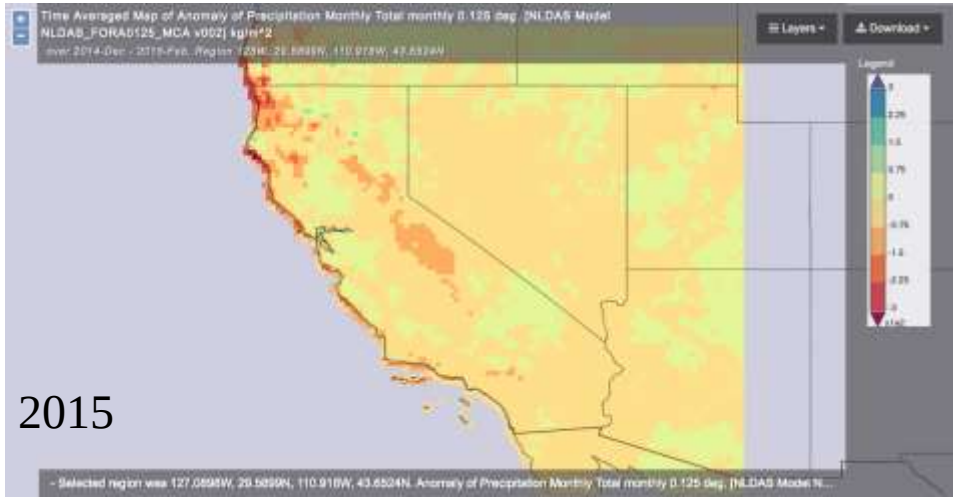
Example (Hurricane Maria)

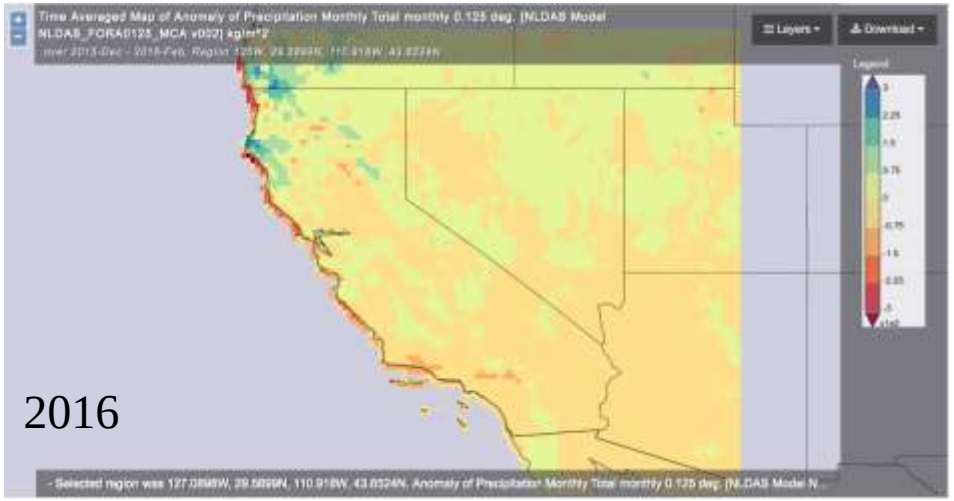
Source: NASA Worldview

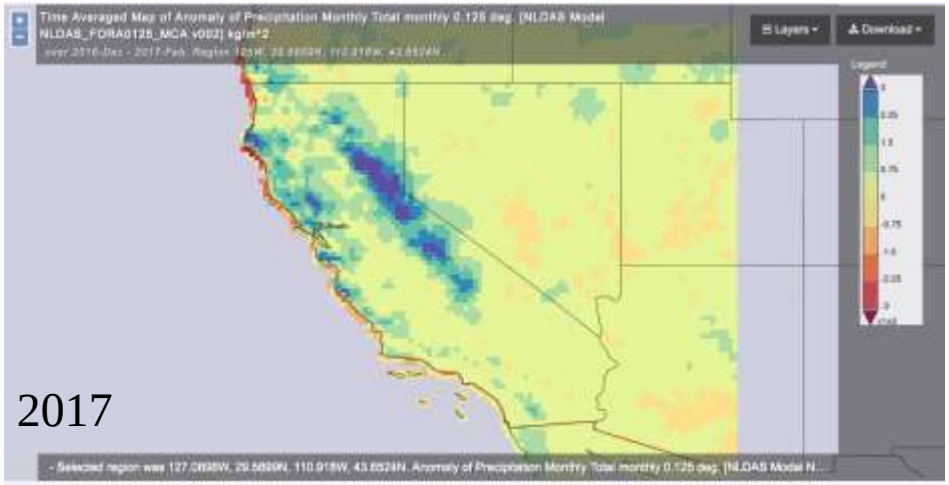
Total IMERG-Final rainfall map (in mm) in Puerto Rico (top right) and difference maps (in mm) between IMERG-Early and IMERG-Final (middle) and between IMERG-Early and IMERG-Late (bottom) on September 20, 2017.



Example (California Droughts)







NLDAS Total Precipitation Anomaly in Giovanni

Summary

- Data services (search, subsetting, format conversion, GIS, etc.)
- Giovanni (online tool for visualization, analysis, evaluation, etc.)

Acknowledgements:

We thank scientists and engineers at GES DISC for their contributions to data management, distribution, and development of data services. We also thank scientific investigators and many users for their feedback and suggestions that improve our data services. GES DISC is funded by NASA's Science Mission Directorate.

Information

- Data information and services: https://disc.gsfc.nasa.gov/ Search for: TRMM (GPM, TRMM, IMERG, NLDAS, GLDAS, MERRA)
- Giovanni: https://giovanni.gsfc.nasa.gov or Google search “NASA giovanni” Search for “GPM”, “TRMM”, “MERRA”, “GLDAS”
- Comments and suggestions: **gsfc-help-disc@lists.nasa.gov**