GHRC Outreach and User Services

Leigh Sinclair

2018 GHRC User Working Group Meeting
November 13-14, 2018

NASA
itsc
INFORMATION TECHNOLOGY AND SYSTEMS CENTER
THE UNIVERSITY OF ALABAMA IN HUNTSVILLE

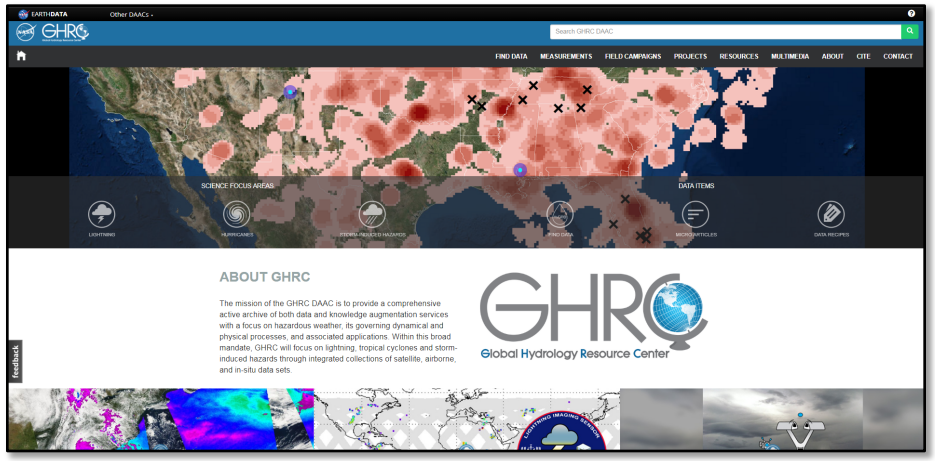
Introduction

GHRC focuses on a series of science and outreach efforts to accomplish the following:

- Make GHRC data and critical resources more discoverable for users
- Enable unfamiliar users to become more informed on GHRC data, instruments, and science focus areas
- Increase the usability of GHRC data to address user needs

Ways we work towards these efforts:

- Micro Articles
- Data Recipes
- Mastheads
- Webinars
- Website changes or improvements
- Attend conferences

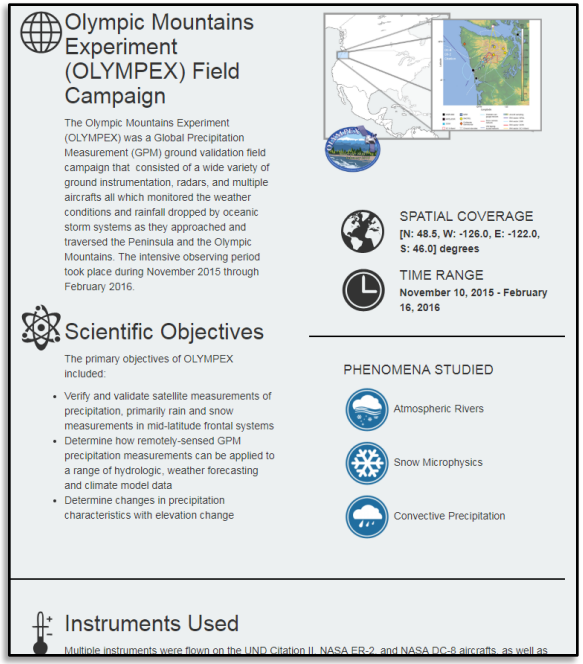


Micro Articles

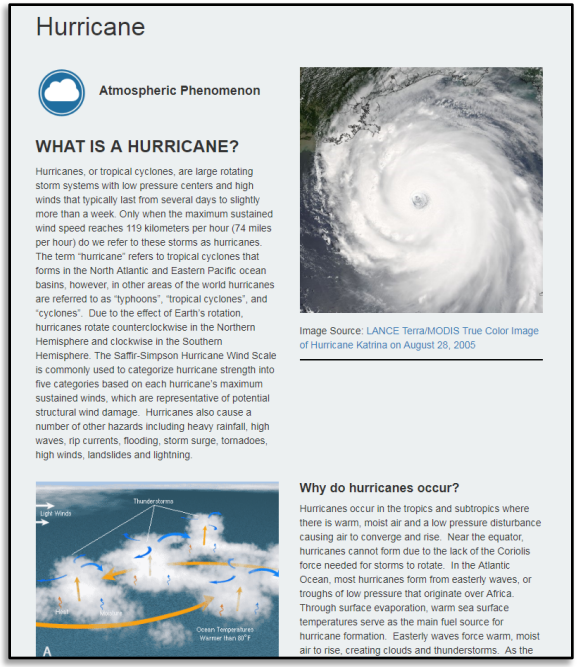
- Short documents that bring together data and key science concepts curated by both Earth and data scientists

2018 Micro Articles

OLYMPEX Field Campaign



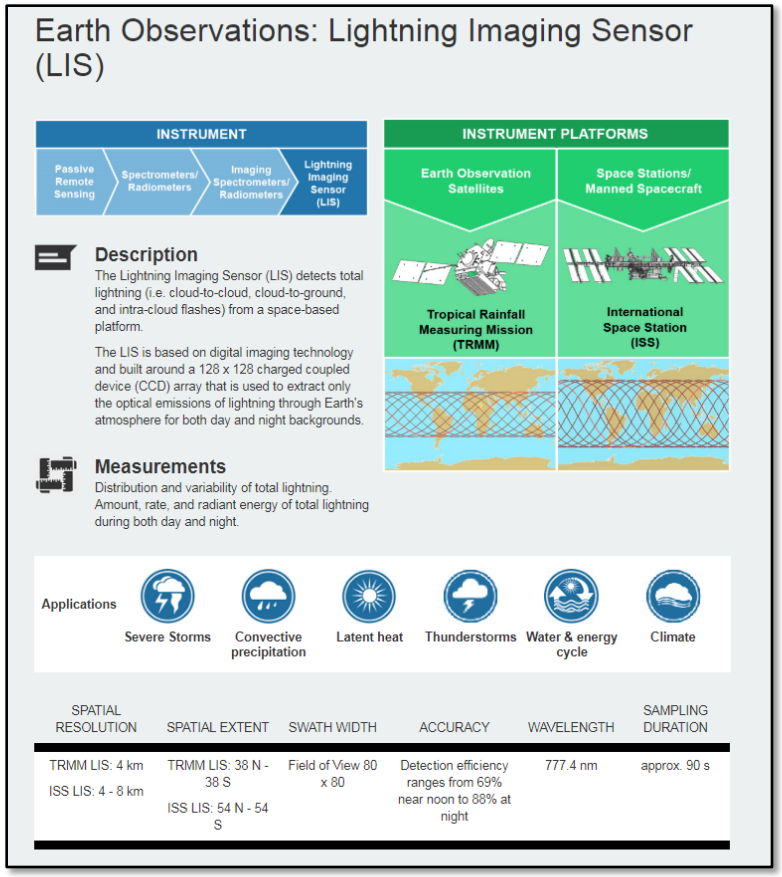
Hurricane Phenomenon



2DVD Instrument

Micro Article Metrics

- Most viewed Micro Article:
  - Lightning Imaging Sensor (LIS) Instrument
    - https://ghrc.nsstc.nasa.gov/home/micro-articles/earth-observations-lightning-imaging-sensor
  - Lake Effect Snow Phenomenon
    - https://ghrc.nsstc.nasa.gov/home/micro-articles/lake-effect-snow
- Longest view time:
  - Highlights from Cecil et. al.'s 'Gridded lightning climatology from TRMM-LIS and OTD: Dataset description' publication
    - https://ghrc.nsstc.nasa.gov/home/micro-articles/highlights-cecil-et-als-gridded-lightning-climatology-trmm-lis-and-otd-dataset
  - Optical Transient Detector (OTD) Instrument
    - https://ghrc.nsstc.nasa.gov/home/micro-articles/earth-observations-optical-transient-detector-otd



Data Recipes

- Step-by-step tutorials that instruct users on how to complete a task using data

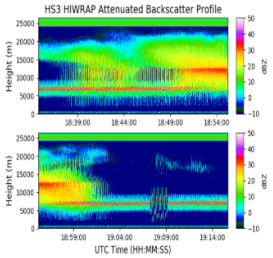
2018 Data Recipes

HS3 HIWRAP Radar Reflectivity Profile Quick View

Description | How to Use | Dataset Information | Key Parameters

Description

The Hurricane and Severe Storm Sentinel (HS3) airborne field campaign used the High-Altitude Imaging Wind and Rain Airborne Profiler (HIWRAP) instrument to collect wind and precipitation measurements. This data recipe enables users to generate a time-height plot of the measured HS3 HIWRAP radar reflectivity through a Python plotting routine. The Python routine requires users to define the GHRC OPENDAP path to a data file and measured variable of interest. This data recipe then plots the data to provide a quick visualization of radar reflectivity. To run this Python routine, a pre-installed version of Python and additional Python packages are required. Advanced users may alter the code to plot other HS3 HIWRAP data variables.



This figure depicts a vertical two-panel time-height plot of HS3 HIWRAP radar reflectivity.

Data Recipe Type

Data Visualization

Supporting Software Information

TYPE	ACCESS
Python Script	Open Source

How to use

This data recipe uses the Hurricane and Severe Storm Sentinel (HS3) High-Altitude Imaging Wind and Rain Airborne Profiler (HIWRAP) dataset.

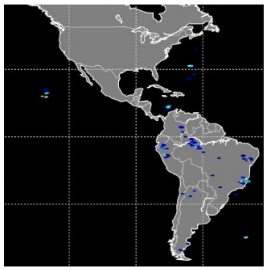
This data recipe is available as a Python script. To run the Python script, please install the following Python packages: matplotlib, NumPy, and Pydap.

ISS LIS Lightning Flash Location Quickview using Python and GIS

Description | How to Use | Dataset Information | Key Parameters

Description

The Lightning Imaging Sensor (LIS) onboard the International Space Station (ISS) retrieves optical lightning measurements over most of the Earth. This Python-based data recipe steps the user through code that compiles information from a series of ISS LIS datafiles in a directory and generates a gridded heat map plot of lightning flash locations and a CSV file containing the location coordinates. This data recipe enables the visualization of lightning flash locations across several user-selected ISS LIS swath data files, accumulates flashes within a Python plot, and creates a CSV file with locations to enable use with other software. For this data recipe, the CSV file will be used to plot lightning flash locations in ESRI ArcMap.



ISS LIS data capturing lightning from the Jan. 4, 2018 bombogenesis event

Data Recipe Type

Visualization

Supporting Software Information

TYPE	ACCESS
Python Script	ArcMap 10.2+

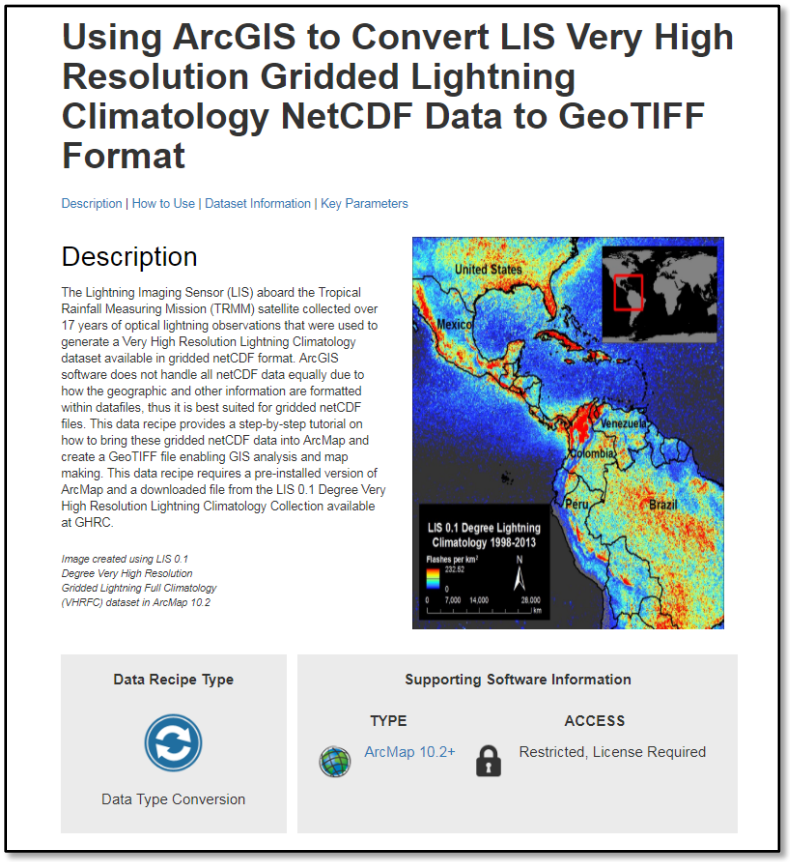
How to use

This data recipe uses the ISS LIS Provisional Science Data, however, this routine may be applied to the other ISS LIS data products offered by GHRC. More information and additional resources about this particular dataset can be accessed here.

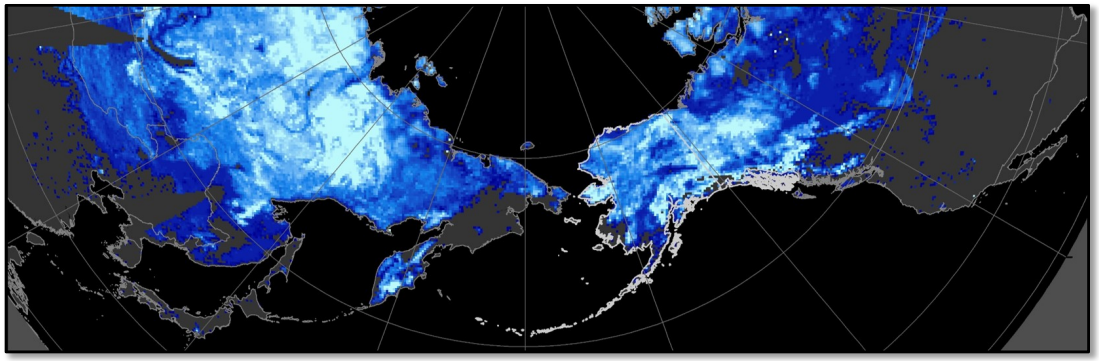
This data recipe is available as a Python script. To run the Python script, please install the following Python package

Data Recipe Metrics

- Most viewed Data Recipe
  - Using ArcGIS to Convert LIS Very High Resolution Gridded Lightning Climatology NetCDF Data to GeoTIFF Format
    - https://ghrc.nsstc.nasa.gov/home/data-recipes/using-arcgis-convert-lis-very-high-resolution-gridded-lightning-climatology-netcdf-data
  - How to Georeference and Convert NRT AMSR2 Snow Water Equivalent Polar EASE-Grid Data to GeoTIFF Format using Python and ArcGIS
    - https://ghrc.nsstc.nasa.gov/home/data-recipes/how-georeference-and-convert-nrt-amsr2-snow-water-equivalent-polar-ease-grid-data
- Longest view time
  - Using ArcGIS to Convert LIS Very High Resolution Gridded Lightning Climatology NetCDF Data to GeoTIFF Format
    - https://ghrc.nsstc.nasa.gov/home/data-recipes/using-arcgis-convert-lis-very-high-resolution-gridded-lightning-climatology-netcdf-data
  - ISS LIS Lightning Flash Location Quickview using Python and GIS
    - https://ghrc.nsstc.nasa.gov/home/data-recipes/iss-lis-lightning-flash-location-quickview-using-python-and-gis

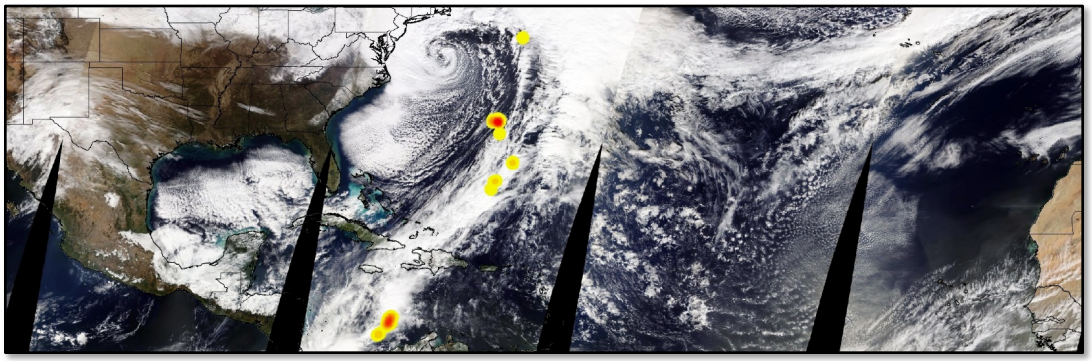


FY2018 Mastheads



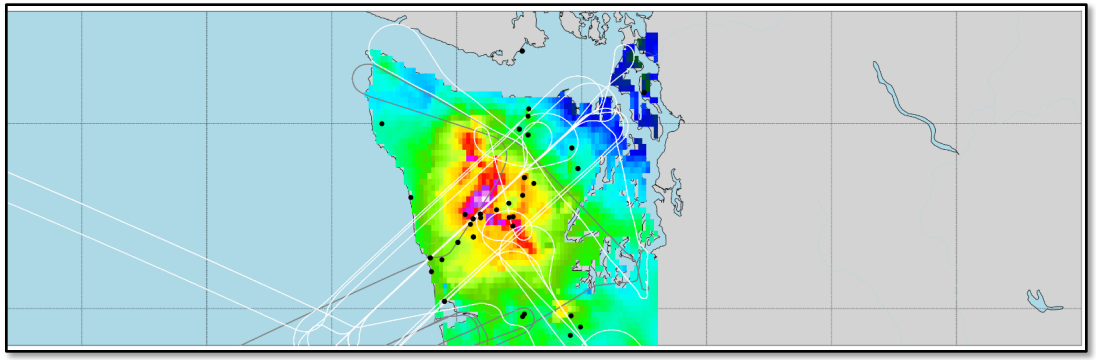
November 11, 2017
winter storm in Alaska

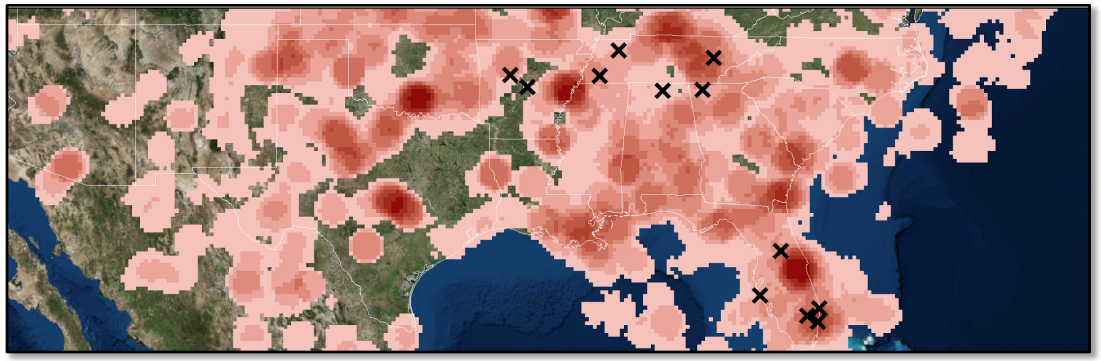
"Bomb Cyclone" that brought winter weather to the U.S. East Coast



FY2018 Mastheads

Heavy precipitation observed during the OLYMPEX field campaign

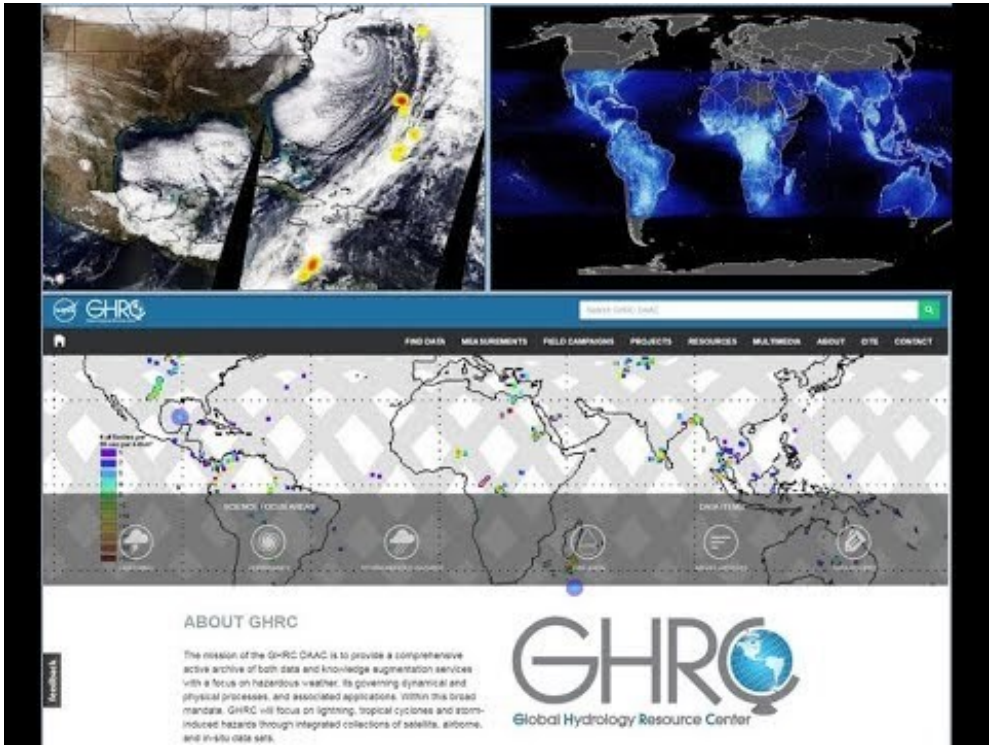




Summer lightning statistics

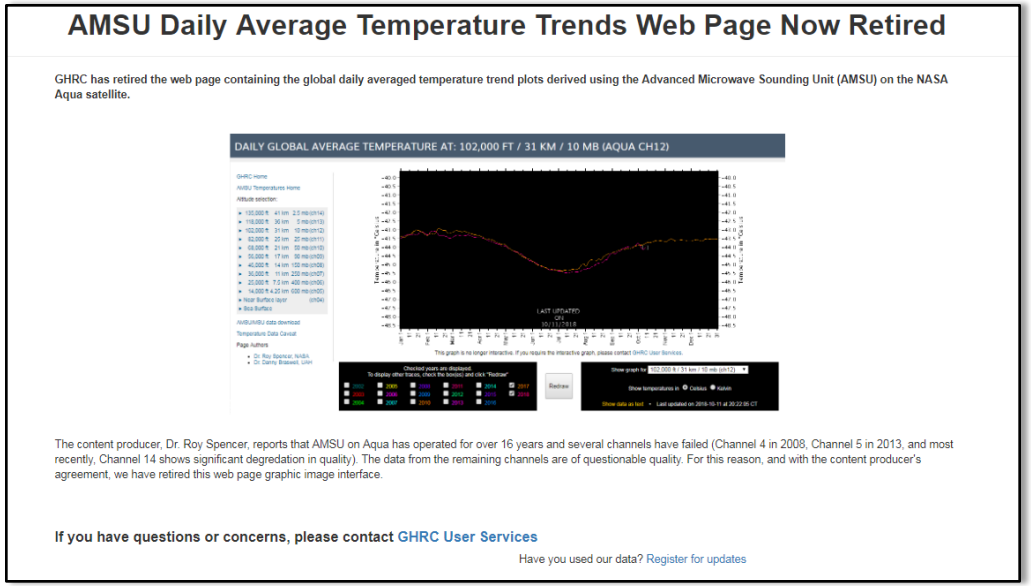
Webinars

- Striking New Spatial Bounds Using ISS LIS Data
  - Conducted on March 7th with Dr. Michael Peterson
- Background about ISS LIS data
- Discover, download, plot data
- https://youtu.be/m83cNoaMXUw
- Next webinar in April



Website Updates: AMSU TEMPS Decommissioned

- Daily Earth Temperatures from Satellites, or AMSU TEMPS, webpage was decommissioned
  - https://ghrc.nsstc.nasa.gov/amsutemps/
- Determined by data creator, Roy Spencer, to decommission page due to multiple instrument channels malfunctioning or are no longer working
- Users will be redirected to a page explaining why page was decommissioned



AMSU Daily Average Temperature Trends Web Page Now Retired

GHRC has retired the web page containing the global daily averaged temperature trend plots derived using the Advanced Microwave Sounding Unit (AMSU) on the NASA Aqua satellite.

DAILY GLOBAL AVERAGE TEMPERATURE AT: 102,000 FT / 31 KM / 10 MB (AQUA CH12)

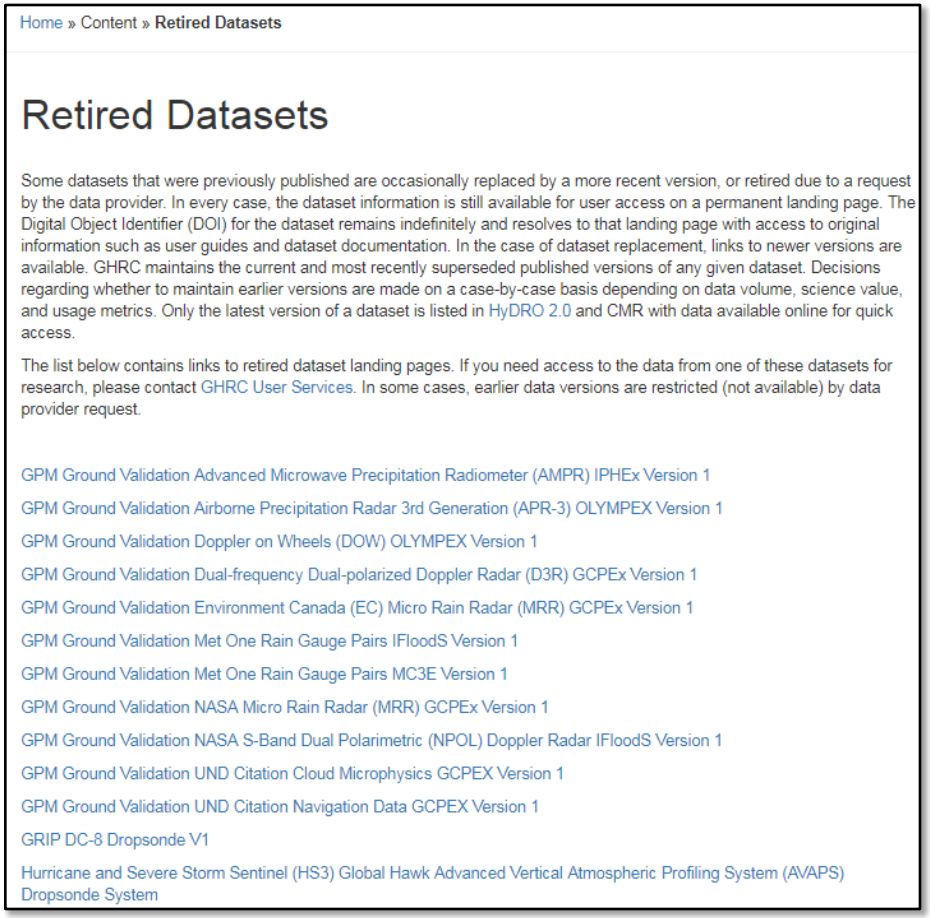
The content producer, Dr. Roy Spencer, reports that AMSU on Aqua has operated for over 16 years and several channels have failed (Channel 4 in 2008, Channel 5 in 2013, and most recently, Channel 14 shows significant degredation in quality). The data from the remaining channels are of questionable quality. For this reason, and with the content producer's agreement, we have retired this web page graphic image interface.

If you have questions or concerns, please contact GHRC User Services

Have you used our data? Register for updates

Website Updates: Retired Datasets Page

- Datasets are occasionally replaced or retired
- Contact GHRC User Services if want data
- https://ghrc.nsstc.nasa.gov/home/content/retired-datasets



Home » Content » **Retired Datasets**

Retired Datasets

Some datasets that were previously published are occasionally replaced by a more recent version, or retired due to a request by the data provider. In every case, the dataset information is still available for user access on a permanent landing page. The Digital Object Identifier (DOI) for the dataset remains indefinitely and resolves to that landing page with access to original information such as user guides and dataset documentation. In the case of dataset replacement, links to newer versions are available. GHRC maintains the current and most recently superseded published versions of any given dataset. Decisions regarding whether to maintain earlier versions are made on a case-by-case basis depending on data volume, science value, and usage metrics. Only the latest version of a dataset is listed in HyDRO 2.0 and CMR with data available online for quick access.

The list below contains links to retired dataset landing pages. If you need access to the data from one of these datasets for research, please contact GHRC User Services. In some cases, earlier data versions are restricted (not available) by data provider request.

GPM Ground Validation Advanced Microwave Precipitation Radiometer (AMPR) IPHEx Version 1

GPM Ground Validation Airborne Precipitation Radar 3rd Generation (APR-3) OLYMPEX Version 1

GPM Ground Validation Doppler on Wheels (DOW) OLYMPEX Version 1

GPM Ground Validation Dual-frequency Dual-polarized Doppler Radar (D3R) GCPEx Version 1

GPM Ground Validation Environment Canada (EC) Micro Rain Radar (MRR) GCPEx Version 1

GPM Ground Validation Met One Rain Gauge Pairs IFloodS Version 1

GPM Ground Validation Met One Rain Gauge Pairs MC3E Version 1

GPM Ground Validation NASA Micro Rain Radar (MRR) GCPEx Version 1

GPM Ground Validation NASA S-Band Dual Polarimetric (NPOL) Doppler Radar IFloodS Version 1

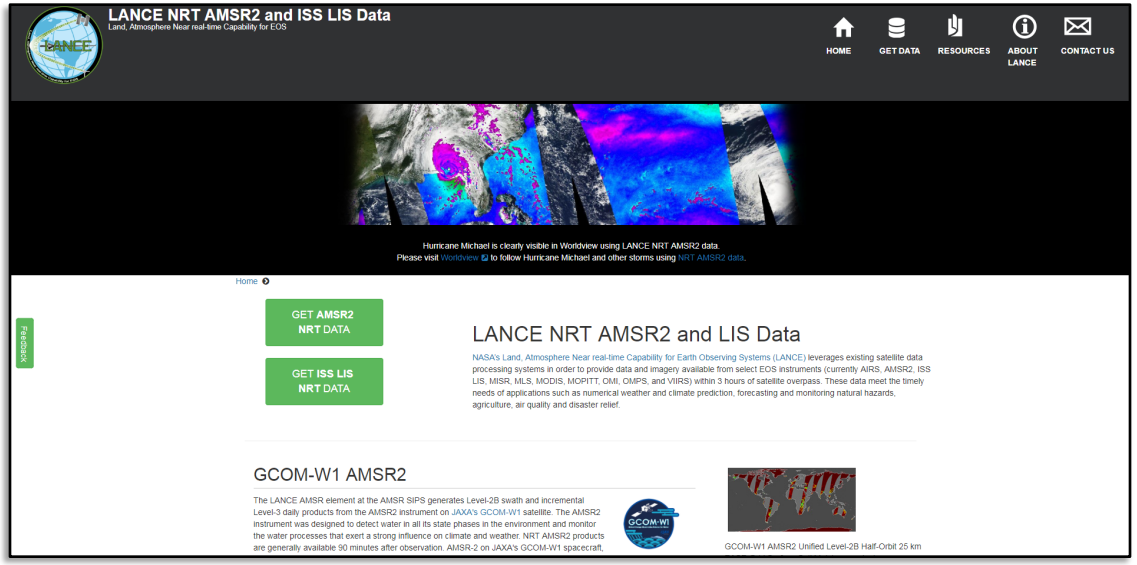
GPM Ground Validation UND Citation Cloud Microphysics GCPEX Version 1

GPM Ground Validation UND Citation Navigation Data GCPEX Version 1

GRIP DC-8 Dropsonde V1

Hurricane and Severe Storm Sentinel (HS3) Global Hawk Advanced Vertical Atmospheric Profiling System (AVAPS) Dropsonde System

Website Updates: GHRC LANCE Webpages



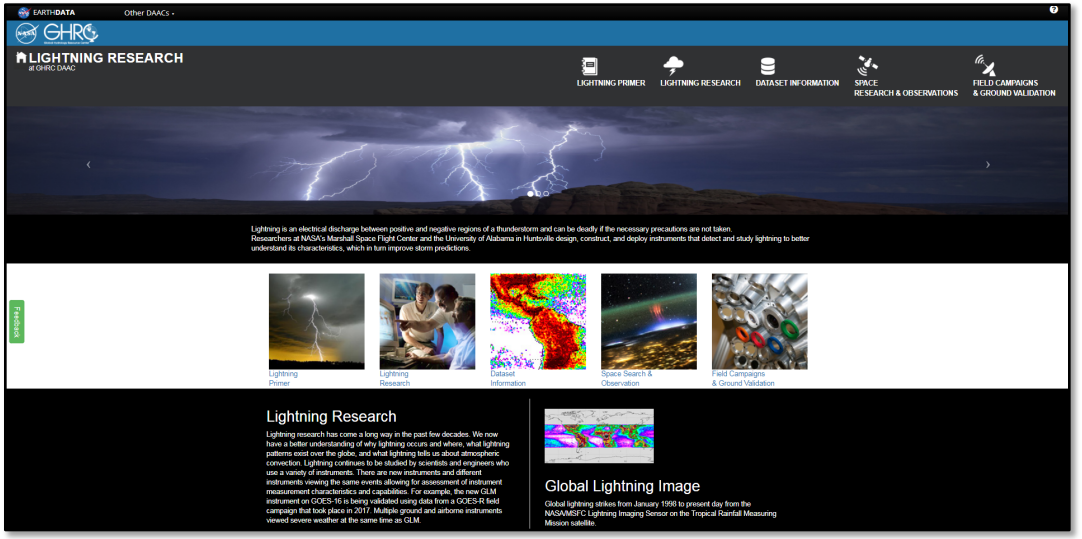
Implemented new GHRC LANCE website which includes the NRT ISS LIS and AMSR2 data

https://lance.nsstc.nasa.gov/

Website Updates: Lightning Webpages

Fully updated lightning webpages where users can find the Lightning Primer, as well as information about lightning research, lightning datasets, space search and observations, and field campaigns

https://ghrc.nsstc.nasa.gov/lightning/



Website Updates: Field Campaign Collection Pages


GPM Ground Validation OLYMPEX Field Campaign Data Collection

General Characteristics

Coverage

Member Datasets and More Information

Documentation

Created collection level DOIs for each GPM GV field campaign resolving to a landing page. These landing pages contain information about the field campaign, including citation, general characteristics, datasets collected, and documentation

OLYMPEX: http://dx.doi.org/10.5067/GPMGV/OLYMPEX/DATA101

IPHEx: http://dx.doi.org/10.5067/GPMGV/IPHEX/DATA101

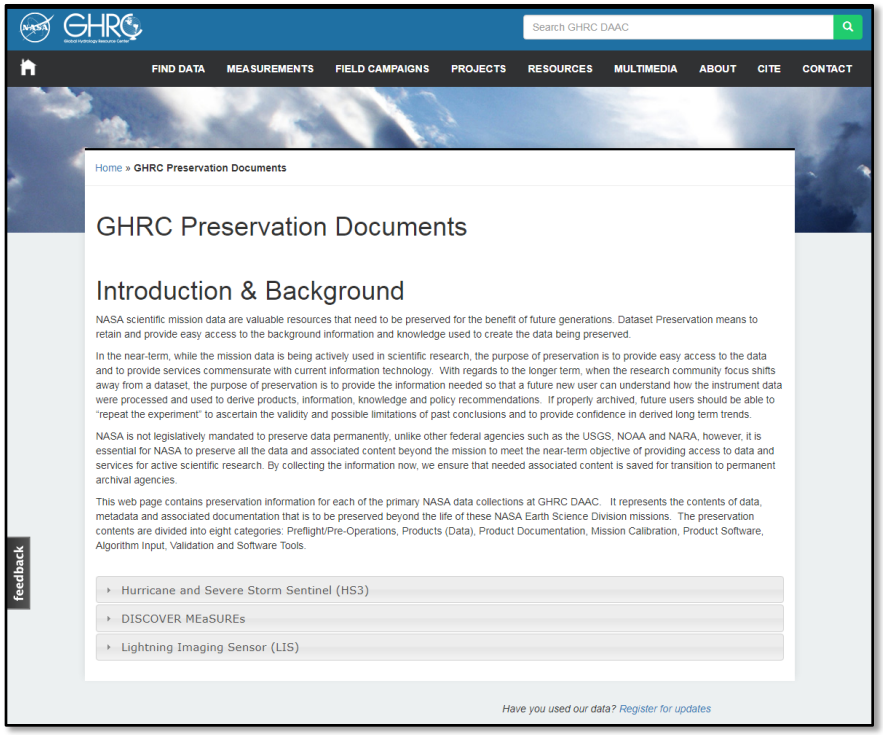
IFloodS: http://dx.doi.org/10.5067/GPMGV/IFLOODS/DATA101

MC3E: https://doi.org/10.5067/GPMGV/MC3E/DATA101

GCPEx: https://doi.org/10.5067/GPMGV/GCPEX/DATA101

Website Updates: Preservation Pages

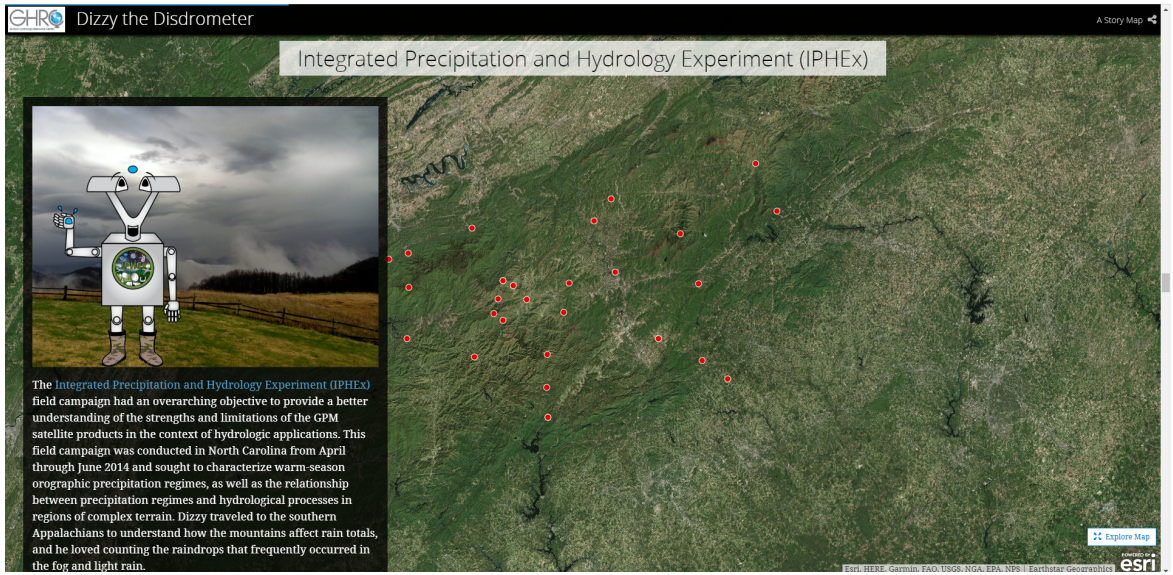
- Contains preservation information for each primary NASA data collections at GHRC
  - Lightning
  - HS3 EVS
  - DISCOVER MEaSUREs
- Represents contents of data, metadata, and associated documentation
- Divided into 8 categories:
  - Preflight/Pre-Operations
  - Data Products
  - Product Documentation
  - Mission Calibration
  - Product Software
  - Algorithm Input
  - Validation
  - Software Tools

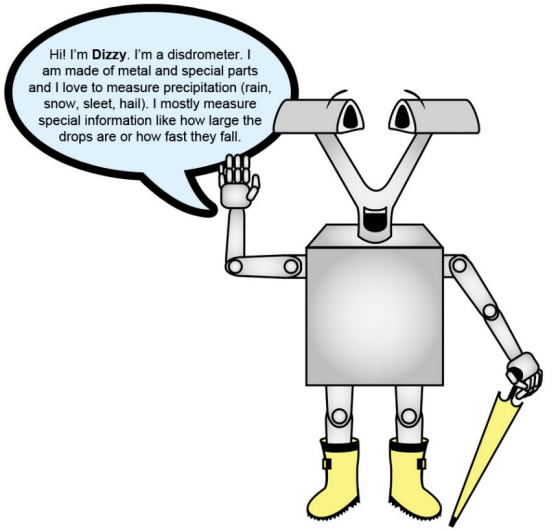


https://ghrc.nsstc.nasa.gov/home/ghrc-preservation-documents

Dizzy the Disdrometer ESRI Story Map

- A story of how Dizzy the Disdrometer participated in the Global Precipitation Measurement (GPM) Ground Validation field campaigns
- https://arcg.is/100b5e

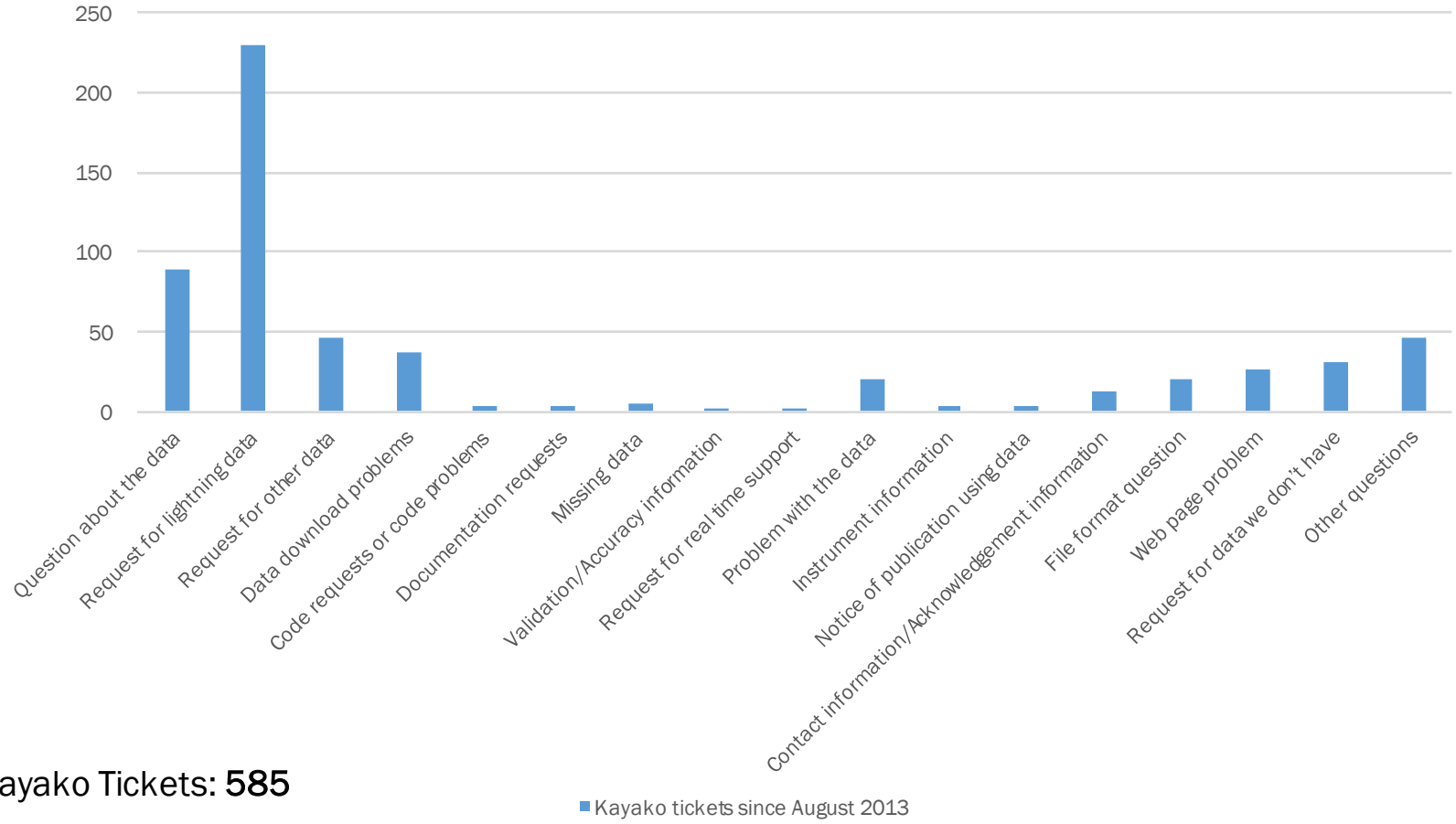




User Feedback

- Find out about issues a user is experiencing through the 'Feedback' button on the GHRC webpage or thru the GHRC User Services email (support-ghrc@earthdata.nasa.gov)
  - Sent to us through Kayako
- Kayako is a customer service ticket portal that helps user services organize issues tickets and properly communicate with users

Kayako Metrics



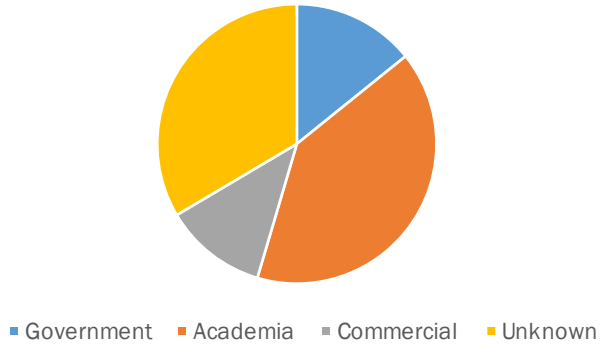
Total Kayako Tickets: **585**

Questions Lead to an Action

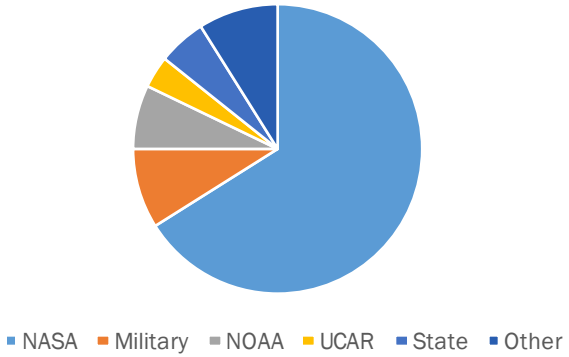
Summary of Question Types	Recommended Actions
Question about the data	Make a FAQ
Request for lightning data	Guide user to data or contact lightning team
Request for other data	Guide user to data
Data download problems	Make a FAQ, add to HyDRO 2.0 Help Page
Code requests or code problems	Fix code issue
Documentation requests	Provide documentation, improve user guide, improve web content
Missing data	Alert DMG
Validation/Accuracy information	Provide information, alert DMG if error
Request for real time support	Notify leadership
Problem with the data	Alert DMG, contact PI, fix problem
Instrument information	Provide information, improve user guide, improve web content
Notice of publication using data	Add to publication list
Contact information/Acknowledgement information	Provide information, update content
File format question	Make a FAQ, create a Data Recipe
Web page problem	Contact web team
Request for data we don't have	Point to alternative
Other questions	Create FAQ if needed

User Characterization

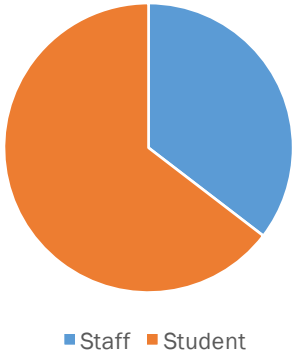
User Organization



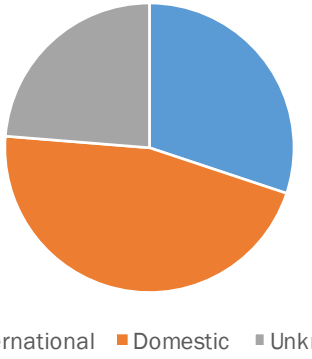
Within Government Organization



Within Academia



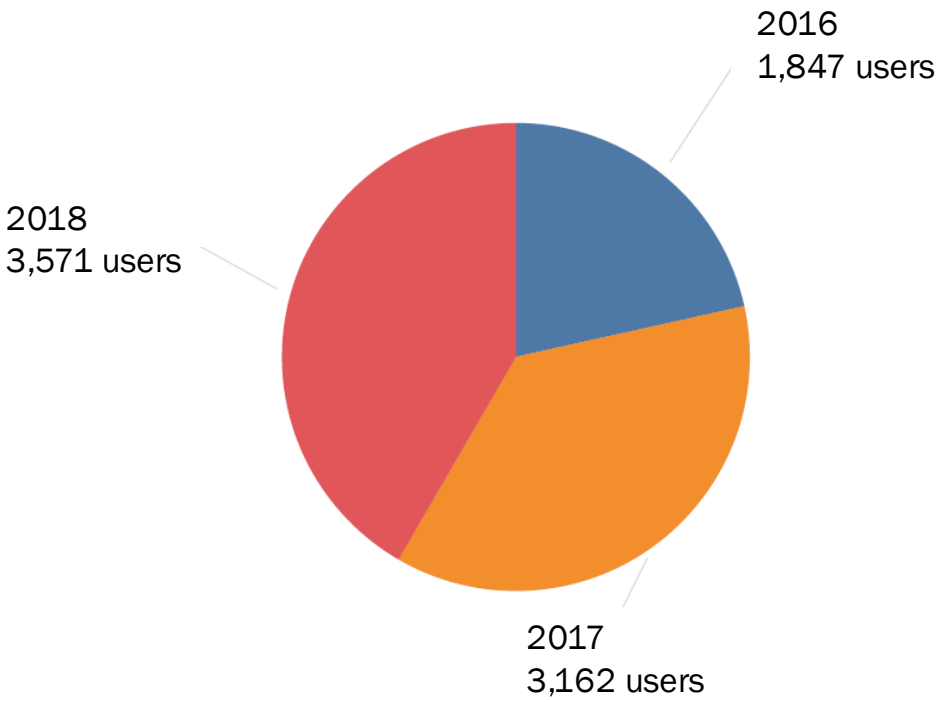
International or Domestic Users



Since August 2013

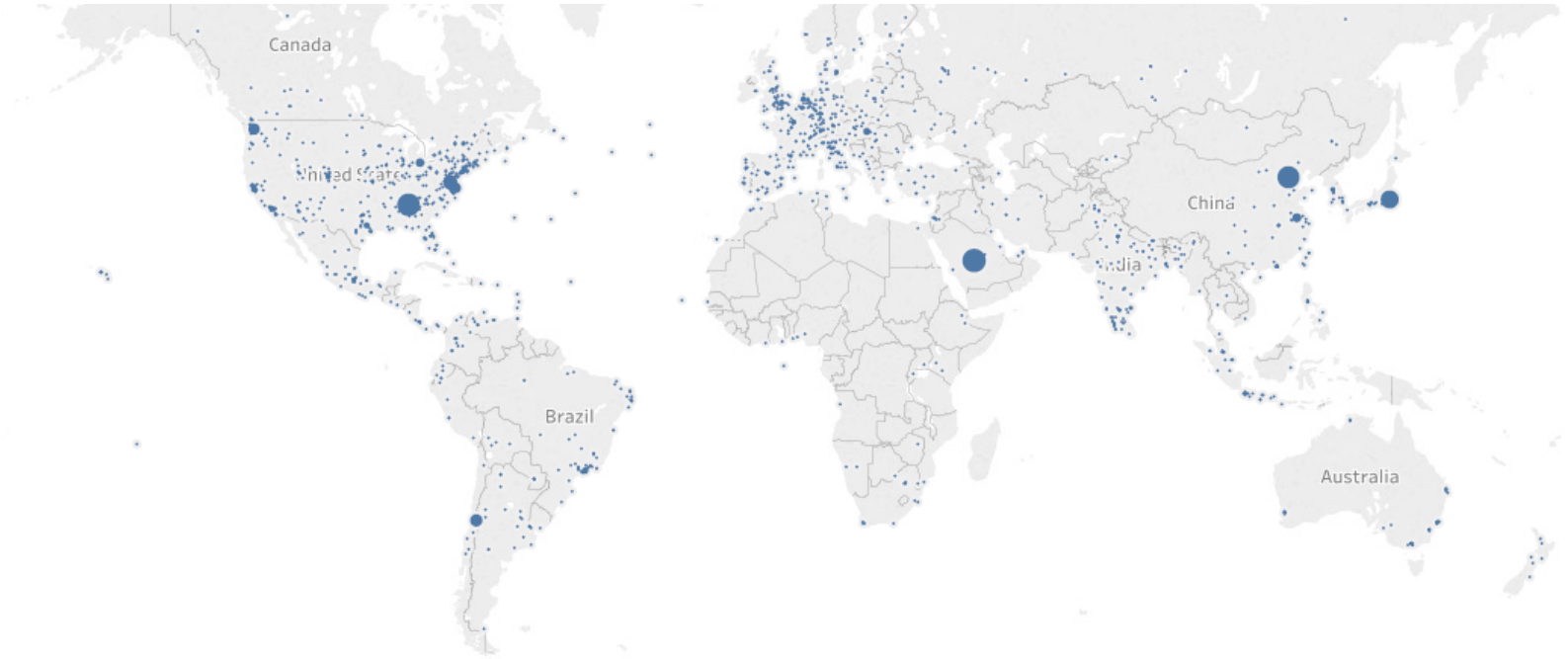
Earthdata User Log Metrics

Distinct User/Year



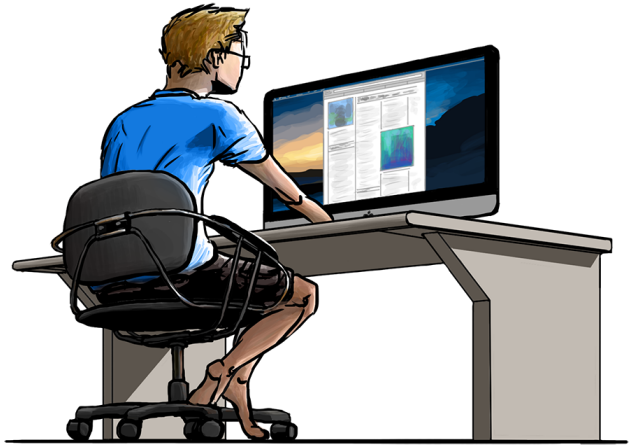
Since August 2013

Earthdata User Log Metrics



Possible Future User Journey Study

- Possible future web usability study thru ESDIS to learn user journey rather than user characterization
- GHRC is interested in this as it will help us better understand what our user needs



FY2019 Planned Activities

- Planned Conferences/Meetings
  - AGU
  - AMS
  - GLM Science Meeting
  - UN TIM Meeting
- Create more Data Recipes and Micro Articles
- Continue collaboration with DEVELOP
- Improve web content and consistency
- Improve preservation pages
- Create more mastheads
- Event-based data search and distribution
- NASA Webinar
  - Suggestions on topics to cover?

AGU Talks and Sessions

- Tuesday, December 12th
  - Flash Talk
    - Application of ISS Lightning Data to Improve Hazardous Weather Preparation
- Thursday, December 13th
  - Posters
    - Using GHRC's Data Publication Workflow Portal to Improve Data Management, Metadata Quality, and Documentation (8:00-12:20)
    - Patterns in Snowfall: Findingthe Unexpected in Nature (13:40-18:00)
    - Near Real-Time Distribution of ISS LIS Lightning Data (13:40-18:00)
    - Dizzy the Disdrometer: Illustrating Field Campaign Data Using an ESRI Story Map (13:40-18:00)
- Friday, December 14th
  - Oral Session
    - Developing Innovative Tools and Services to Enable Data Discovery and Use of Big Data Variety Across Broad Users (8:00-10:00)
  - Poster Session
    - Developing Innovative Tools and Services to Enable Data Discovery and Use of Big Data Variety Across Broad Users (13:40-18:00)

AGU 100 ADVANCING EARTH AND SPACE SCIENCE | FALL MEETING Washington, D.C. | 10–14 Dec 2018

THANK YOU!

Discussion

2018 GHRC User Working Group Meeting
November 13-14, 2018

NASA

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THE UNIVERSITY OF ALABAMA IN HUNTSVILLE