

National Aeronautics and
Space Administration

Jet Propulsion Laboratory
California Institute of Technology
Pasadena, California

NASA Report to GHRSSST Science Team

**Jorge Vazquez, Edward Armstrong, Victor Zlotnicki,
Michelle Gierach in support of Eric Lindstrom**

16th GHRSSST Science Team Meeting

ESA/ESTEC Amsterdam, Netherlands

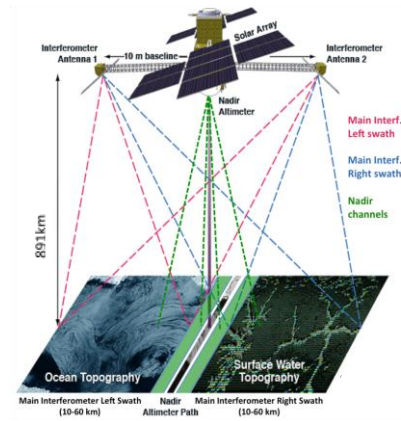
July 20-24, 2015

© 2015 California Institute of Technology.
Government sponsorship acknowledged.

Physical Oceanography

Program Manager: Eric Lindstrom

- **Support Physical Oceanography Missions on Orbit**
 - Jason-2 and Jason-3 (Altimetry), QuikSCAT (Winds), Aquarius (Salinity), GRACE (Gravity), RapidSCAT (Winds), SMAP (Soil Moisture and Salinity),
- **Support Physical Oceanography Missions in Development**
 - Surface Water and Ocean Topography (SWOT), Jason-3 (Altimetry)
- **Support Research Teams**
 - GHRSSST, Ocean(Surface Topography (OSTST), Ocean Vector Winds (OVWST), Ocean Salinity (Aquarius OSSST), SPURS-1, SPURS2, Next Generation SST (GHRSSST), Atlantic Meridional Overturning Circulation (AMOC), Sea Level Change, NASA SST Science Team
- **Support Climate Focus Area/Ocean Observing**
 - US CLIVAR, USGCRP, GOOS, GCOS, OOPC, GODAE OceanView, NOAA COSC, IOOC, CEOS,
- **Process Studies Related to NASA Physical Oceanography Missions**
 - **Salinity Processes in the Upper ocean Regional Study: SPURS-1 (2012-2015)**
 - **Salinity Processes in the Upper ocean Regional Study: SPURS-2 (2015-2018)**
 - **Oceans Melting Greenland: OMG (2016-2021)**



NASA GHRSSST SUPPORT

- RDAC: continues to support L2P distribution of MODIS Terra and Aqua data.
- NASA funded GHRSSST datasets
 - MUR
 - G1SST
 - MODIS TERRA
 - MODIS AQUA
 - WindSat
 - VIIRS
- ESDIS GIBS
- PODAAC: continues to support all GDAC activities including user services
- MISST: continue to support MISST activities
- NASA SST Science Team: (Team Lead Andy Jessup)
- CEOS COVERAGE: CEOS Ocean Variables Enabling Research and Applications for GEO (COVERAGE)
 - What is COVERAGE?
 - Seeks to build a Near-Real-Time (~24 hr) a gridded (~25km) global data set including Sea Surface Height, Temperature, Salinity, Color, Vector Winds, and Salinity (and potentially Ocean Currents)

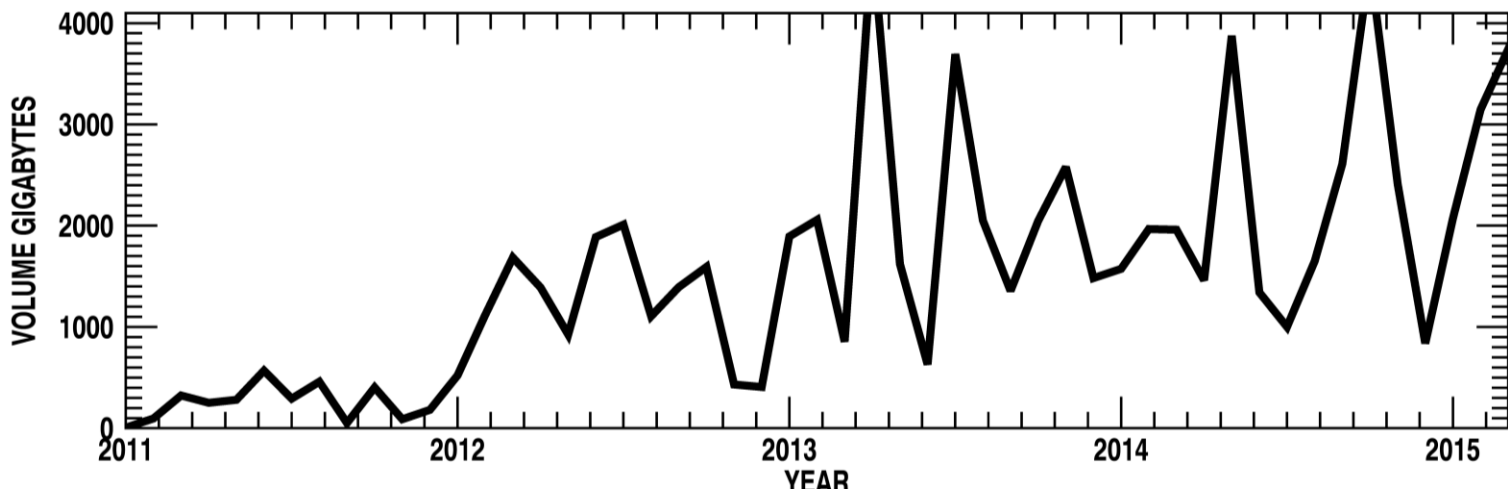
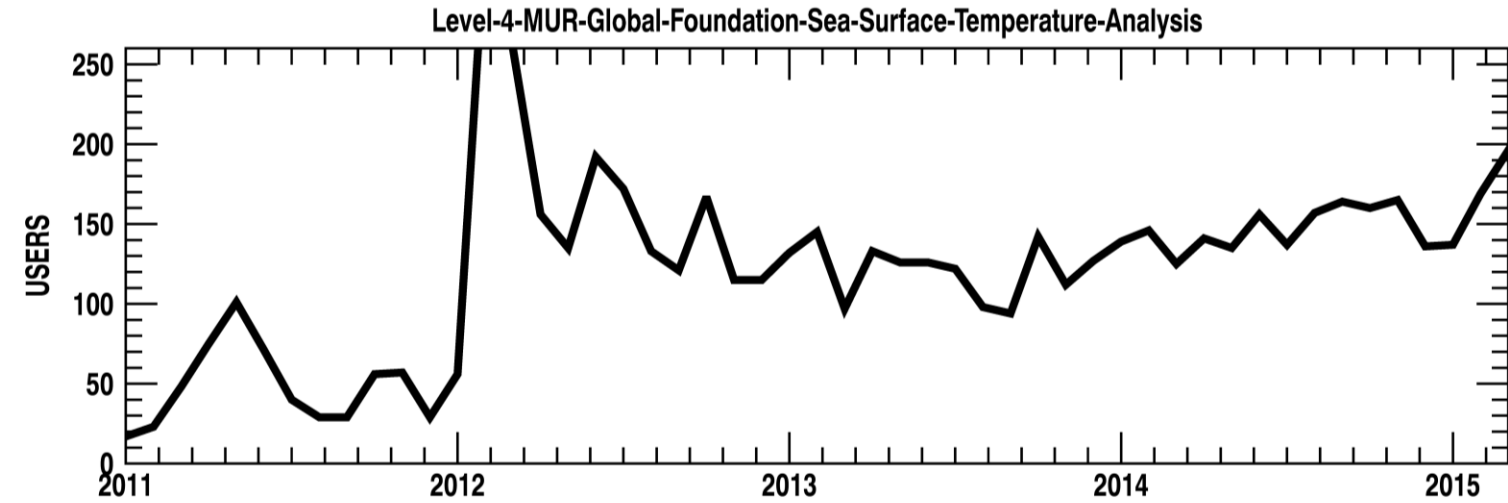
NASA SUPPORT

- Current Missions directly related to GHRSSST:
 - MODIS Aqua
 - MODIS Terra
 - VIIRS (collaboration with NOAA)
 - AMSR2 (collaboration with JAXA)
 - Global Precipitation Measurement Microwave Imager (**GMI**) collaboration with JAXA
- Future Missions:
 - Hyperspectral: HYSPIRI Hyperspectral infrared imager (meter resolution)

NASA/PO.DAAC Support and Overview

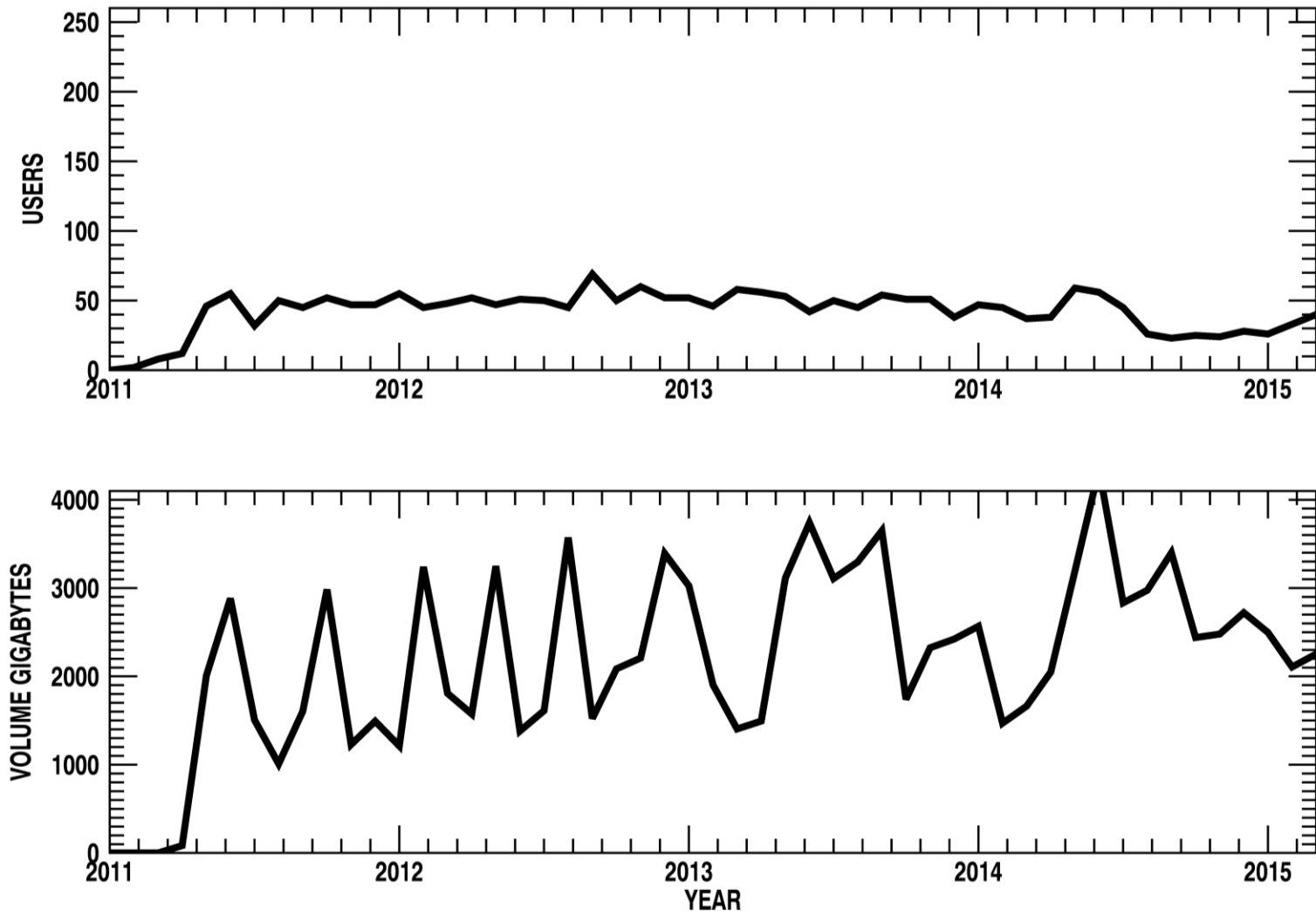
- The JPL Physical Oceanography DAAC has been managing the ingest and distribution of GHRSSST datasets since 2005.
- In the last year it has made publically available over 30 new datasets in the GDS2 data format for the SST science community including those from novel new sensors such as VIIRS and IASI. It also continues to fulfill the NASA contribution to the project vis-à-vis the Aqua and Terra MODIS L2P datasets it produces in collaboration with the NASA OBPG.
- Supports 93 GHRSSST data streams.
 - Includes 32 new GDS2 datasets.
 - Metrics/stats are kept and should be used to make recommendations on which data sets to support. The PO.DAAC would like to focus resources on those data sets that are the most valuable for the user community.

MUR Users and volume distributed by month



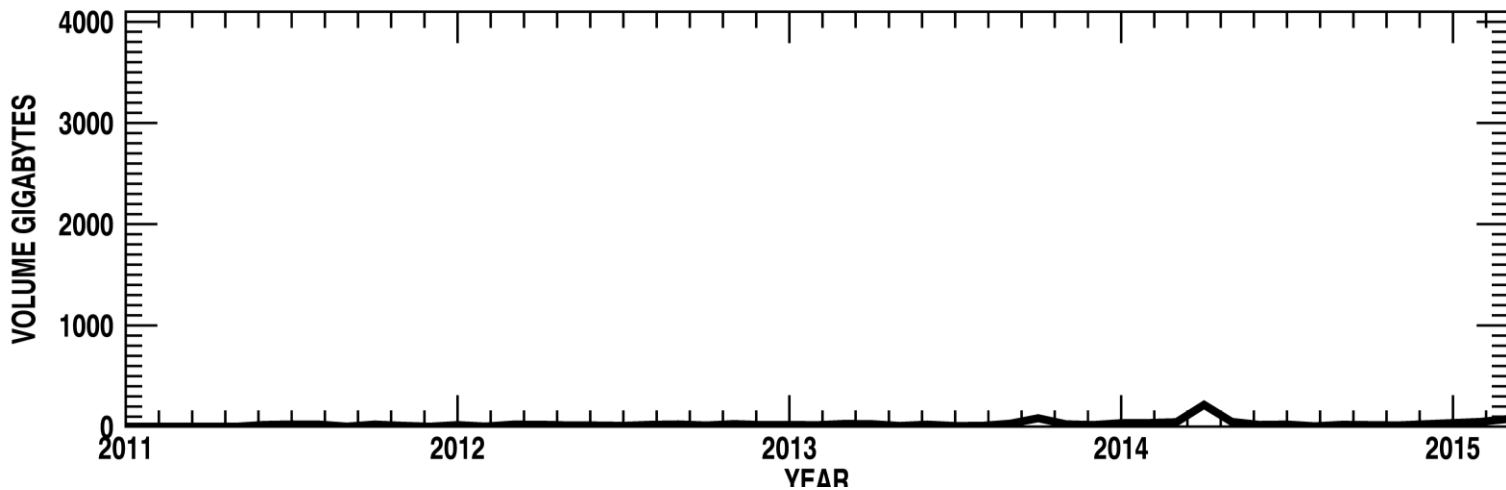
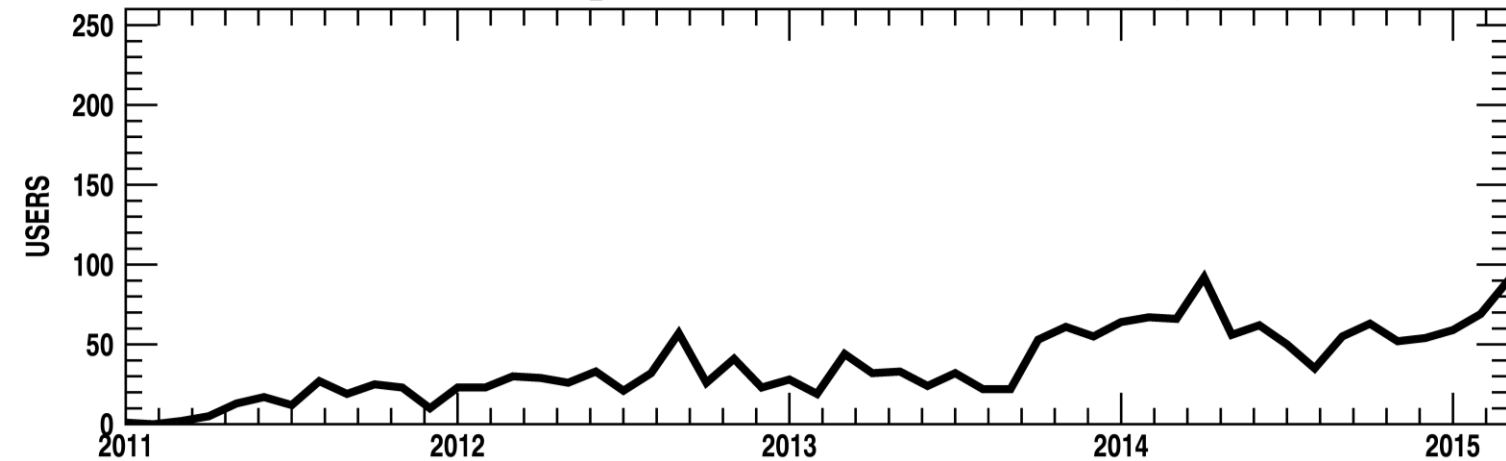
MODIS L2P Aqua Users and volume distributed by month

Level-2P-Global-Skin-Sea-Surface-Temperature-from-the-Moderate-Resolution-Imaging-Spectroradiometer-(MODIS)-on-the-NASA-Aqua-satellite



AVHRR_OI Users and Volume distribute by month

Level-4-AVHRR_OI-Global-Blended-Sea-Surface-Temperature-Analysis



Conclusions based on metrics

- MUR is the most popular data set.
- Care needs to be taken in interpretation of metrics.
Example: MODIS Aqua L2P doesn't necessarily have the highest number of users but does have large volume distribution.
 - Indicative possibly of power users
 - There are additional users beyond the near real time applications.
 - Should reexamine data sets with both low volume and low users
 - AVHRR_OI has high number users but lower volume simply because of 25km resolution compared to MUR.

Conclusions and Discussion

- :NASA contributes to GHRSSST 4 current instruments (GMI in the future), science team and data management. Additional value products include MUR and G1SST.
- As part of an overall review an examination of user statistics , combined with a user survey, should be done to evaluate GHRSSST data sets and support.
- Decisions regarding the structure of GHRSSST and future GDAC evolution should be coupled with clear understanding of user impacts and support.