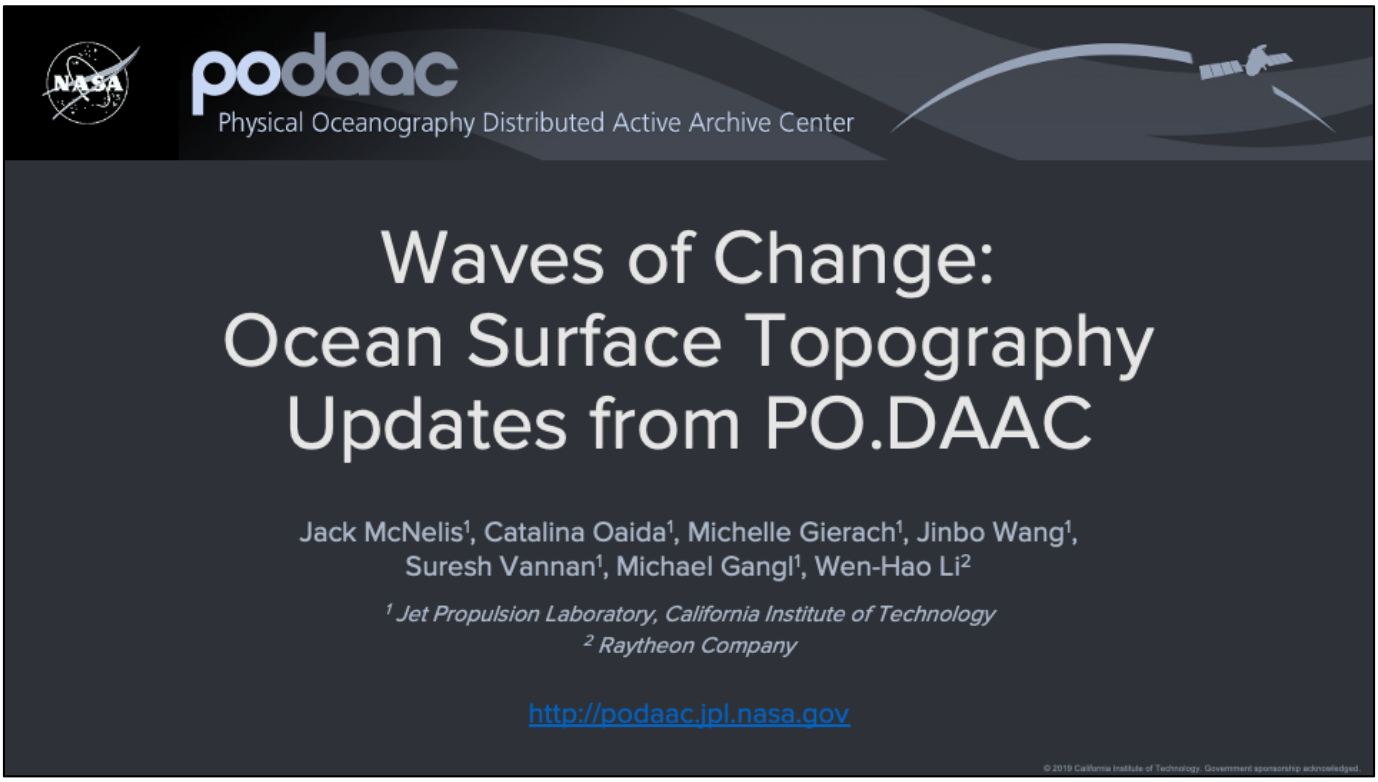


The **Physical Oceanography Distributed Active Archive Center** (**PO.DAAC**; https://podaac.jpl.nasa.gov) is the NASA data center that archives physical oceanographic data from the NASA Earth Observing System and oceans science research programs, and supports their use by the wider research community. PO.DAAC data consist of ocean surface topography, sea surface temperature, salinity, winds, ocean circulation, and gravity. Ocean surface topography holdings include data from Seasat to the Jason series, GRACE and GRACE-FO, and more. The PO.DAAC published several datasets of interest to the OST community since the last science team meeting. Examples include reconstructed global mean sea level for years 1900 to 2018 from GRACE/GRACE-FO and long-term in-situ observations/model estimates (doi: 10.5067/GMSLT-FJPL1; published in Frederikse et al. 2020, Nature), wind speed and surface heat flux from CYGNSS, ship- and air-deployed CTD measurements and bathymetry from OMG field campaigns, and several others. The new Integrated Multi-Mission Ocean Altimeter Data for Climate Research Version 5 product suite from MEaSUREs-SSH is also set for release by mid-November. The PO.DAAC also plans to publish the latest estimates of ocean circulation and climate from ECCO by the end of 2020, which will include monthly, daily, and sub daily estimates for the period from 1992 to 2017. PO.DAAC will archive the first L1-L2 data from the Sentinel-6 MF/Jason-CS radar altimetry mission, and continue its support of SWOT pre-launch activities. Web page links to various missions and data products relevant to the OSTST community are provided below. Finally, PO.DAAC continues to develop and test its cloud infrastructure to ensure OST data are accessible following the upcoming launches of Sentinel-6 (November

2020) and SWOT (February 2022). Data recipes and Jupyter notebooks that leverage these cloud services are being developed to assist users with the transition to accessing/using data in the cloud. The PO.DAAC will continue to support the OSTST in their pursuit of scientific insight about Earth's oceans.

PO.DAAC Ocean topography datasets:
https://podaac.jpl.nasa.gov/datasetlist?ids=Keywords&values=Oceans:Sea%20Surface%20Topography&view=list

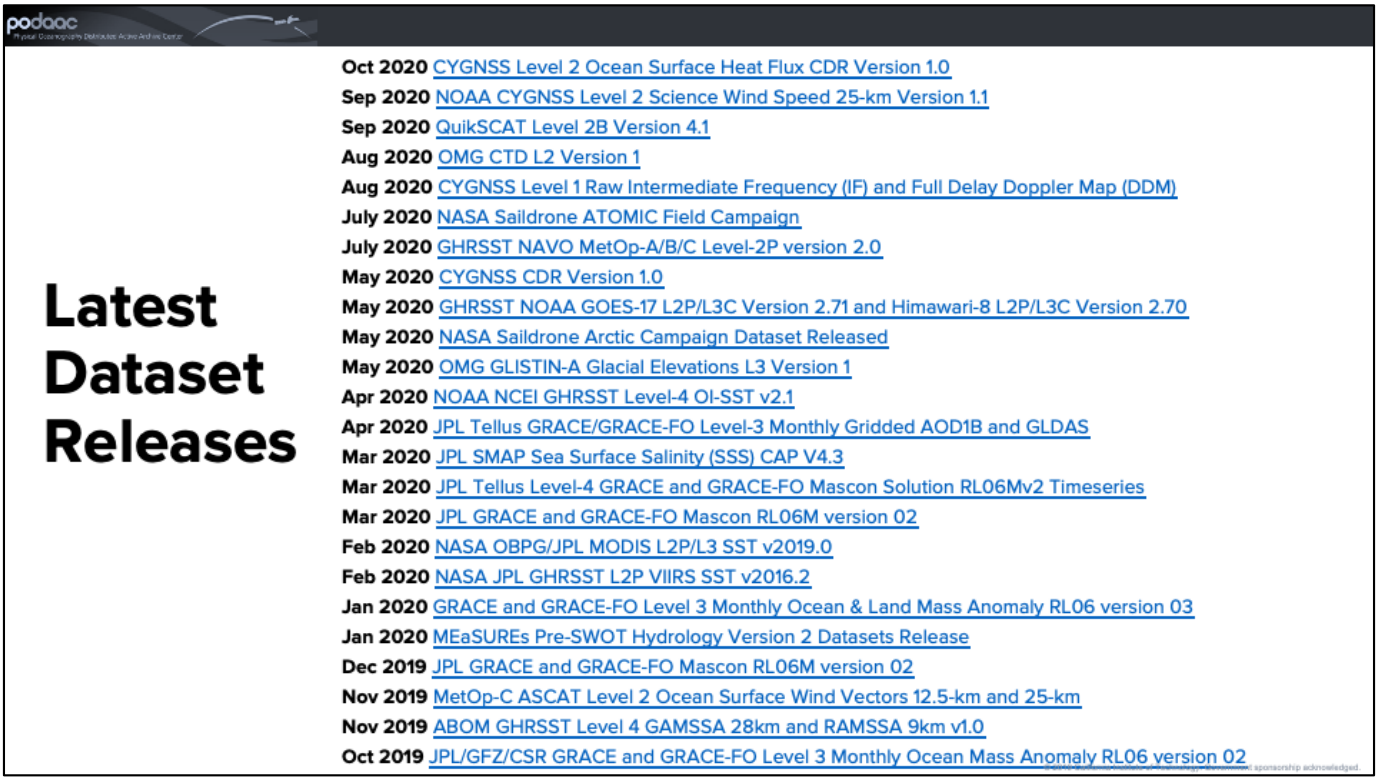
PO.DAAC Sentinel-6 mission page:
https://podaac.jpl.nasa.gov/Sentinel-6

PO.DAAC SWOT mission page:
https://podaac.jpl.nasa.gov/SWOT

New and Upcoming Releases

ECCO, Sentinel-6, SWOT

Web Portal Enhancements



(Click the links below to go to the dataset release announcements.)

Oct 2020 CYGNSS Level 2 Ocean Surface Heat Flux CDR Version 1.0
Sep 2020 NOAA CYGNSS Level 2 Science Wind Speed 25-km Version 1.1
Sep 2020 QuikSCAT Level 2B Version 4.1
Aug 2020 OMG CTD L2 Version 1
Aug 2020 CYGNSS Level 1 Raw Intermediate Frequency (IF) and Full Delay Doppler Map (DDM)
July 2020 NASA Saildrone ATOMIC Field Campaign
July 2020 GHRSST NAVO MetOp-A/B/C Level-2P version 2.0
May 2020 CYGNSS CDR Version 1.0
May 2020 GHRSST NOAA GOES-17 L2P/L3C Version 2.71 and Himawari-8 L2P/L3C Version 2.70
May 2020 NASA Saildrone Arctic Campaign Dataset Released
May 2020 OMG GLISTIN-A Glacial Elevations L3 Version 1
Apr 2020 NOAA NCEI GHRSST Level-4 OI-SST v2.1
Apr 2020 JPL Tellus GRACE/GRACE-FO Level-3 Monthly Gridded AOD1B

and GLDAS

Mar 2020 JPL SMAP Sea Surface Salinity (SSS) CAP V4.3

Mar 2020 JPL Tellus Level-4 GRACE and GRACE-FO Mascon Solution RL06Mv2 Timeseries

Mar 2020 JPL GRACE and GRACE-FO Mascon RL06M version 02

Feb 2020 NASA OBPG/JPL MODIS L2P/L3 SST v2019.0

Feb 2020 NASA JPL GHRSST L2P VIIRS SST v2016.2

Jan 2020 GRACE and GRACE-FO Level 3 Monthly Ocean & Land Mass Anomaly RL06 version 03

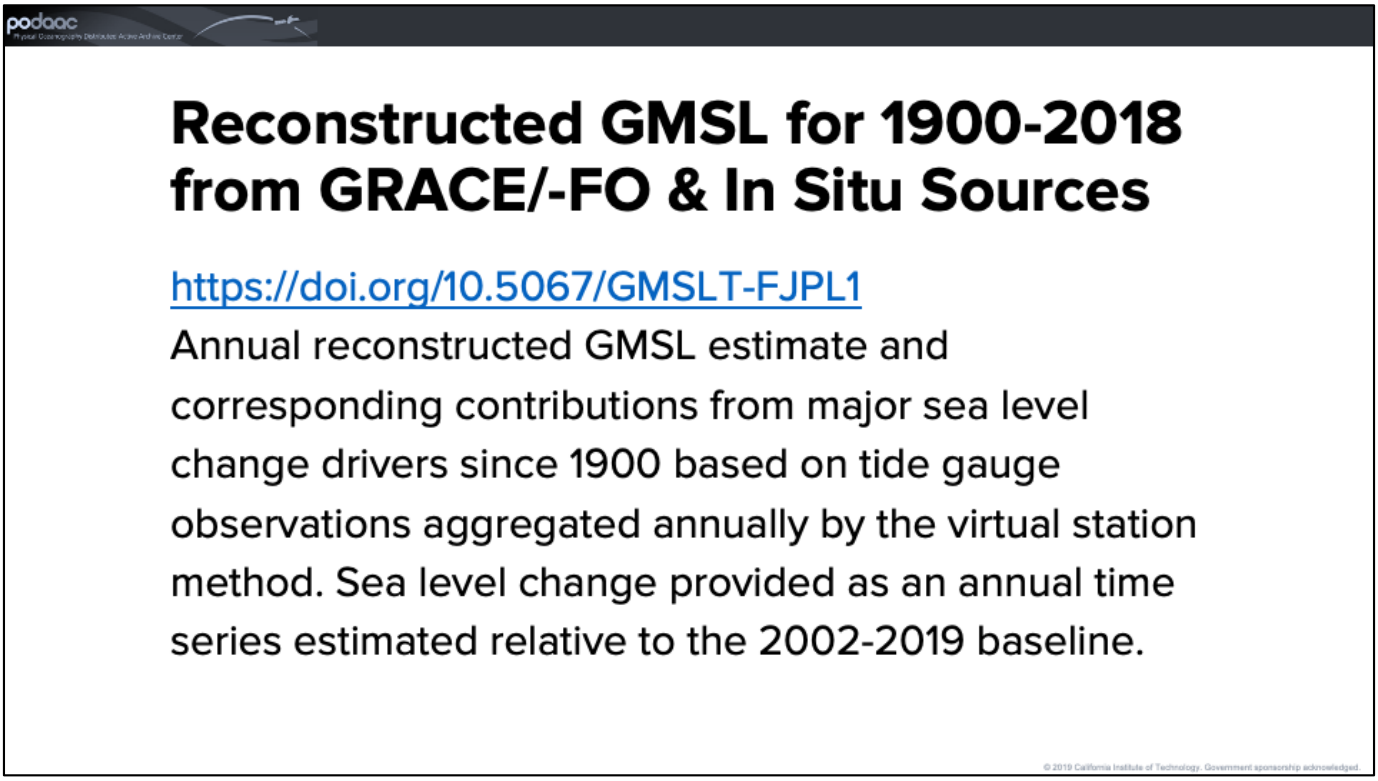
Jan 2020 MEaSUREs Pre-SWOT Hydrology Version 2 Datasets Release

Dec 2019 JPL GRACE and GRACE-FO Mascon RL06M version 02

Nov 2019 MetOp-C ASCAT Level 2 Ocean Surface Wind Vectors 12.5-km and 25-km

Nov 2019 ABOM GHRSST Level 4 GAMSSA 28km and RAMSSA 9km v1.0

Oct 2019 JPL/GFZ/CSR GRACE and GRACE-FO Level 3 Monthly Ocean Mass Anomaly RL06 version 02



The PO.DAAC is pleased to announce the public release of Reconstructed Global Mean Sea Level (GMSL) from GRACE and In Situ observations 1900 to 2018.

The dataset was produced by JPL scientist Thomas Frederikse and his colleagues for their recent Nature publication (Frederikse et al., 2020) under funding produced by NASA's Making Earth System Data Records for Use in Research Environments (MEaSUREs) Program through a project called Heat and Ocean Mass from Gravity ESDR (HOMAGE). More information about GMSL is available from the NASA Sea Level program website; HOMAGE is described further at the MEaSUREs program site.

This dataset provides an annual reconstructed GMSL estimate and corresponding estimates of the contributions from various drivers of sea level change between 1900 and 2018. The reconstructed sea level is based on tide gauge observations aggregated annually using the virtual station method. Sea level change contributions from thermosteric changes, glacier mass changes, terrestrial water storage changes, and changing mass of the Greenland and Antarctic Ice Sheet were estimated by combining GRACE/GRACE-FO observations with long-term estimates based on in situ temperature profiles. The dataset consists of one file in netCDF-4 format conforming to CF

metadata conventions. Sea level change relative to the 2002-2019 baseline is provided annually as a one-dimensional time series (119 years). Annual contributions from each source are provided in separate variables in the netCDF file.

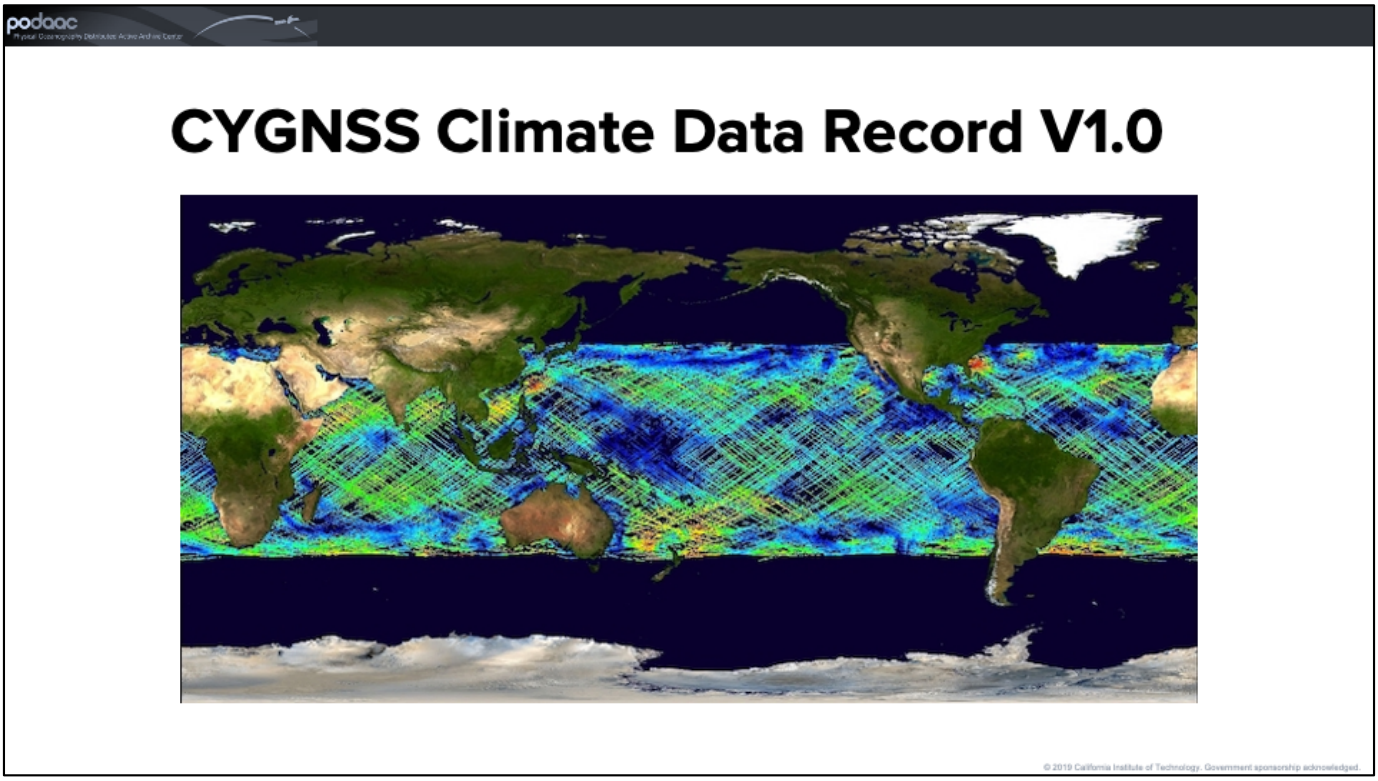
This Reconstructed Global Mean Sea Level from GRACE and In Situ 1900 to 2018 dataset is described and discoverable on the PO.DAAC web portal.

Dataset

Frederikse, T.; Landerer, F.; Caron, L.; Adhikari, S.; Parkes, D.; Humphrey V.; Dangendorf, S.; Hogarth, P.; Zanna, L.; Cheng, L.; Wu, Y.. 2020. Reconstructed Global Mean Sea Level from GRACE and In Situ 1900 to 2018. Ver. 1.0. PO.DAAC, CA, USA. Dataset accessed [YYYY-MM-DD] at https://doi.org/10.5067/GMSLT-FJPL1.

Manuscript

Frederikse, T., Landerer, F., Caron, L. et al. The causes of sea-level rise since 1900. Nature 584, 393397 (2020). https://doi.org/10.1038/s41586-020-2591-3



The PO.DAAC is pleased to announce the public release of the CYGNSS Climate Data Record (CDR) Version 1.0 dataset.

The Cyclone Global Navigation Satellite System (CYGNSS), launched on 15 December 2016, is a NASA Earth System Science Pathfinder Mission that was designed with the purpose to collect the first frequent space-based measurements of surface wind speeds in the inner core of tropical cyclones. Made up of a constellation of eight micro-satellites, the CYGNSS observatories provide coverage over the tropical oceans with a mean (i.e., average) revisit time of seven hours and a median revisit time of three hours. As a result of the CYGNSS constellation coverage, the CDR data is made available from 18 March 2017 to present with an approximate 1 to 2 month latency in the netCDF-4 formatted data files, where each file contains data within a 24-hour UTC period from a combination of up to 8 unique CYGNSS spacecraft. More information on CYGNSS can be found on the CYGNSS mission page (https://podaac.jpl.nasa.gov/CYGNSS).

Version 1.0 represents the first climate-quality release and is a collection of reanalysis products derived from the SDR v2.1 Level 1 data. Calibration accuracy and long-term stability are improved compared to the SDR v2.1 using a new trackwise correction algorithm which constrains the average value

of the L1 data using MERRA-2 reanalysis wind speeds. Details of the algorithm are provided in the Trackwise Corrected CDR Algorithm Theoretical Basis Document. CDR Level 2 and 3 products (ocean surface wind speed and mean square slope) are generated from the CDR L1 data using the v2.1 SDR data processing algorithms. A more detailed explanation of the updates and improvements in the CDR data can be found within the respective dataset landing pages.

Datasets comprising this release include Level 1 and Level 2, both at an approximate binned spatial resolution of 25-km, followed by Level 3, which is regularly gridded with a binned 0.2° by 0.2° lat/lon spatial resolution. All datasets cover the global tropical oceans within a latitude domain of approximately 40° S to 40° N.

Datasets

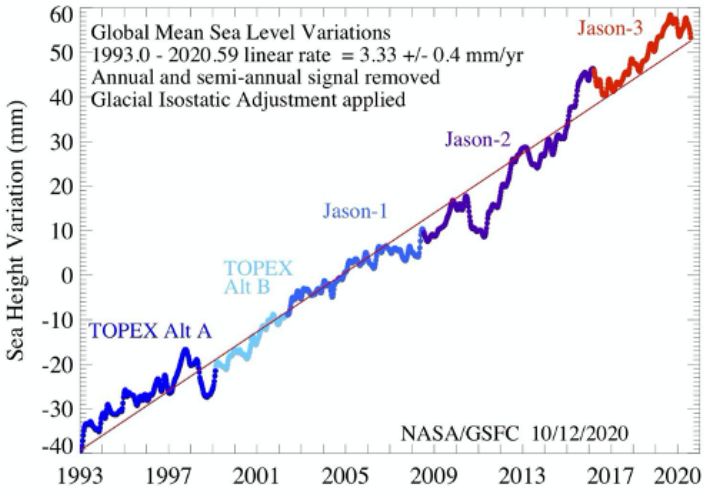
- https://doi.org/10.5067/CYGNS-L1C10
- https://doi.org/10.5067/CYGNS-L2C10
- https://doi.org/10.5067/CYGNS-L3C10

podaac

MEaSUREs-SSH

Coming Soon!

New version 5.0 datasets for the Integrated Multi-Mission Ocean Altimeter Data for Climate Research product suite

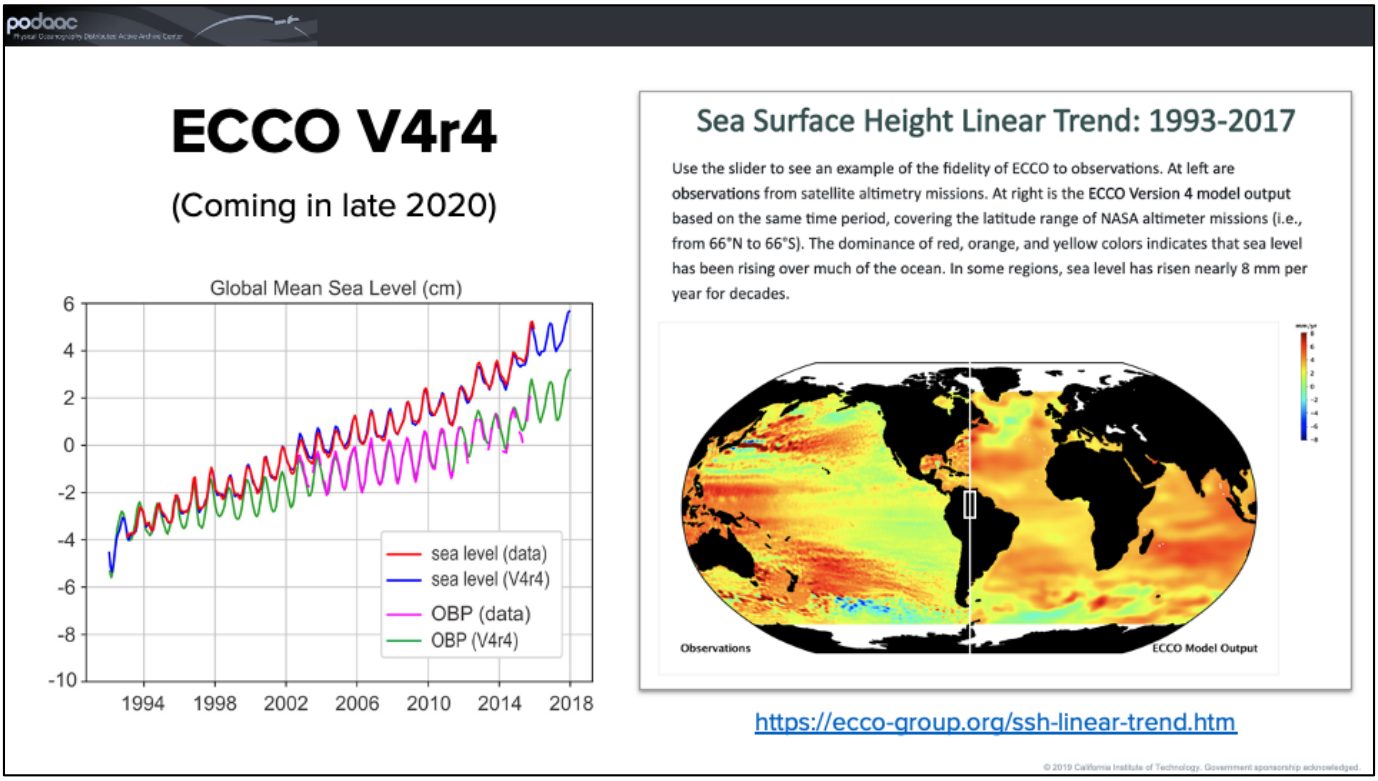


MEaSUREs version 5.0 Sea Surface Height (SSH) anomaly and Global Mean Sea Level (GMSL) datasets are set for release in November 2020.

The MEaSURE's TPJAOS v5.0 sea surface height (SSH) anomaly product is a multi-mission dataset comprised of TOPEX/Poseidon (T/P), Jason-1, OSTM (Jason-2), and Jason-3 altimeter data integrated to form a single SSH Climate Data Record (CDR). Altimeter data from the multimission Geophysical Data Records (GDRs) are interpolated to a common reference orbit facilitating direct time series analysis of the geo-referenced SSH.

Three new products will be released in November 2020 to supersede the version 4.2 products, listed here:

- Global Mean Sea Level Trend from Integrated Multi-Mission Ocean Altimeters TOPEX/Poseidon Jason-1 and OSTM/Jason-2 Version 4.2 (https://doi.org/10.5067/GMSLM-TJ142)
- Integrated Multi-Mission Ocean Altimeter Data for Climate Research Version 4.2 (https://doi.org/10.5067/ALTCY-TJ142)
- Integrated Multi-Mission Ocean Altimeter Data for Climate Research complete time series Version 4.2 (https://doi.org/10.5067/ALTTS-TJ142)



ECCO V4r4 outputs will be published at PO.DAAC by the end of 2020.

The ECCO output hosted at PO.DAAC comes as a regularly spaced latitude-longitude grid by 0.5 degree available as a daily or monthly mean. These are suitable for users who have not used ECCO output previously and would like to use gridded ocean data. There are also the native cube sphere grid output, from which the 0.5 degree grids are derived. These are provided for those who are accustomed to using ECCO output.

Additionally, the ECCO V4r4 outputs will be published to with a 0.1 degree gridding resolution following the release of the 0.5 degree datasets.

About ECCO

"Estimating the Circulation and Climate of the Ocean" (ECCO) is a data assimilating model that uses satellite and in situ data to make the best possible estimates of ocean circulation and its role in climate. Those solutions combine state-of-the-art ocean circulation models with global ocean datasets.

What sets ECCO apart from other models?

ECCO reproduces observations in a physically and statistically consistent manner. ECCO provides information on sea level rise, sea ice loss, El Niño events, and the cycling of water and carbon.

ECCO's long-term goal is to produce global high-resolution coupled ocean/sea-ice/biochemical (and ultimately, atmosphere) state estimates to a wide community. ECCO's efforts toward this goal now include several projects, each of which is bringing ECCO closer to its long-term goal, while providing significant scientific contributions.

Additional information about ECCO can be found at their website https://ecco-group.org

The PO.DAAC will begin publishing datasets from Sentinel-6 in early 2021!

PO.DAAC Sentinel-6 mission page:
https://podaac.jpl.nasa.gov/Sentinel-6

SWOT Mission Page

Filter by science themes

Identify data products available in tools

Few clicks to access data

Tutorials and guides (resources)

Metrics by usage and citation

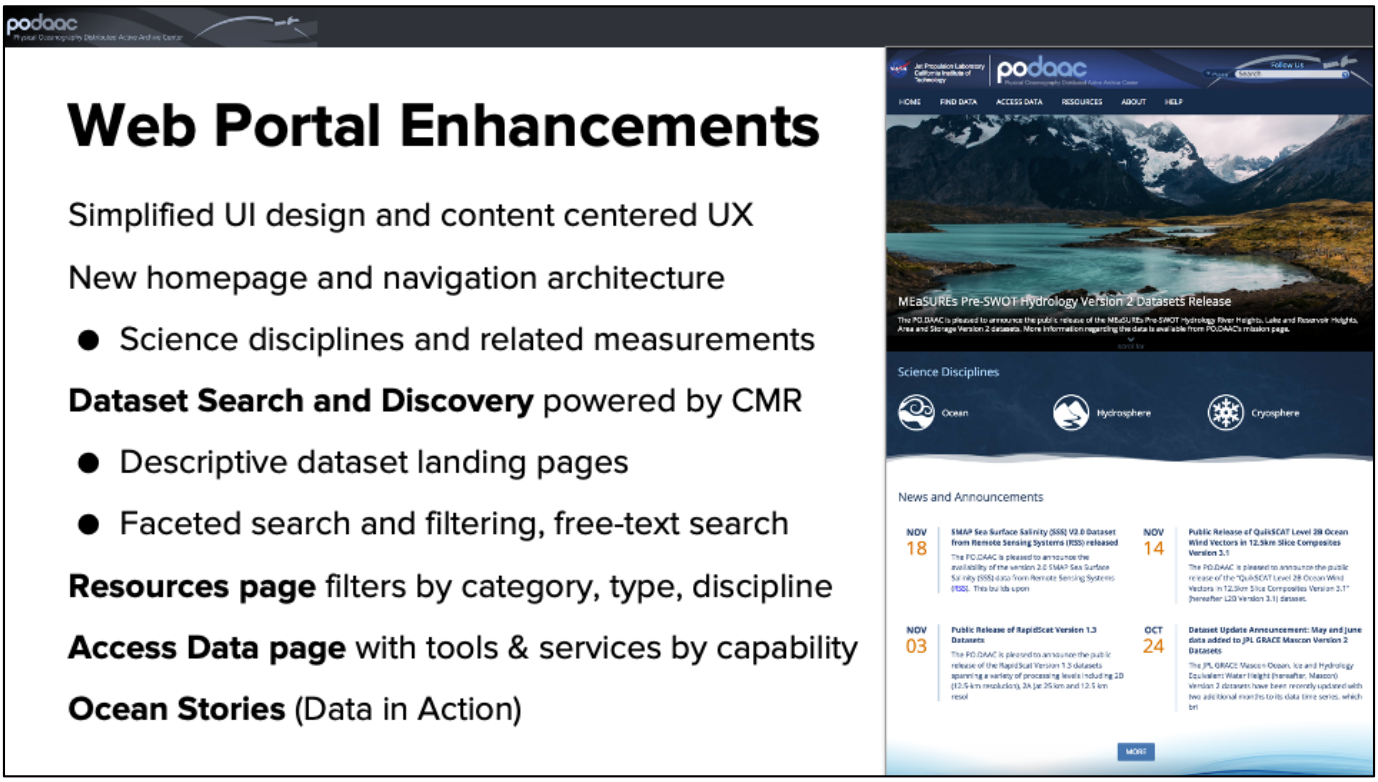
Related news and announcements

The redesign applies to all mission pages.

The PO.DAAC is pleased to release the Surface Water and Ocean Topography (SWOT) mission page.

The SWOT mission is targeted to launch in September 2021, providing valuable data about the world's oceans and its terrestrial surface water such as lakes, reservoirs, rivers, and wetlands. In preparation for its launch, PO.DAAC designed a new SWOT mission page as a hub for users to find data and information. The SWOT mission page showcases a new look and feel that will be transitioned through the entire PO.DAAC portal in 2020. Additionally, dynamic filtering and rendering of content by science themes is enabled to enhance user experience, reducing the time required to get to data and information of interest. Expect to see more content and further enhancements to dynamic filtering and content rendering pre- and post-launch.

Visit the SWOT mission page:
https://podaac.jpl.nasa.gov/SWOT



PO.DAAC is transitioning towards a web portal that is content centered, data driven, and provides personalized user experiences that are supplemented with efficient search and discovery capabilities. The first phase of the web portal revitalization showcases a simplified, modernized design and several improvements towards a content, data-driven user experience. This video tutorial showcases the new look and feel and how to navigate the web portal: https://youtu.be/NP4TQuDbDtg

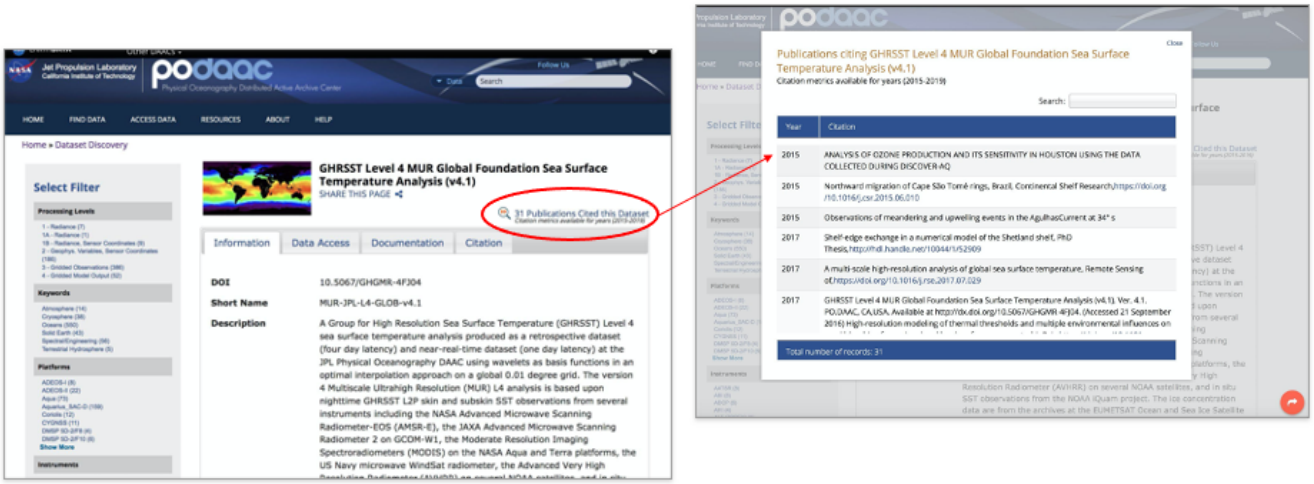
The second phase of the web portal revitalization is focused on improving the PO.DAAC Dataset Search and Discovery. This involves integration with NASA Earthdata Common Metadata Repository (CMR). CMR is a high-performance, high-quality, continuously evolving metadata system that catalogs all data and service metadata records for NASA's Earth Observing System Data and Information System (EOSDIS) system and will be the authoritative management system for all EOSDIS metadata. CMR metadata records are registered, modified, discovered, and accessed through programmatic interfaces leveraging standard protocols and APIs. The second video tutorial showcases the improvements in the PO.DAAC Web Portal Dataset Search and Discovery including free-text search, faceted search and filtering, and information displayed on the dataset landing pages. https://youtu.be/4M5AAsUVV1Q

New PO.DAAC Web Portal Highlights:

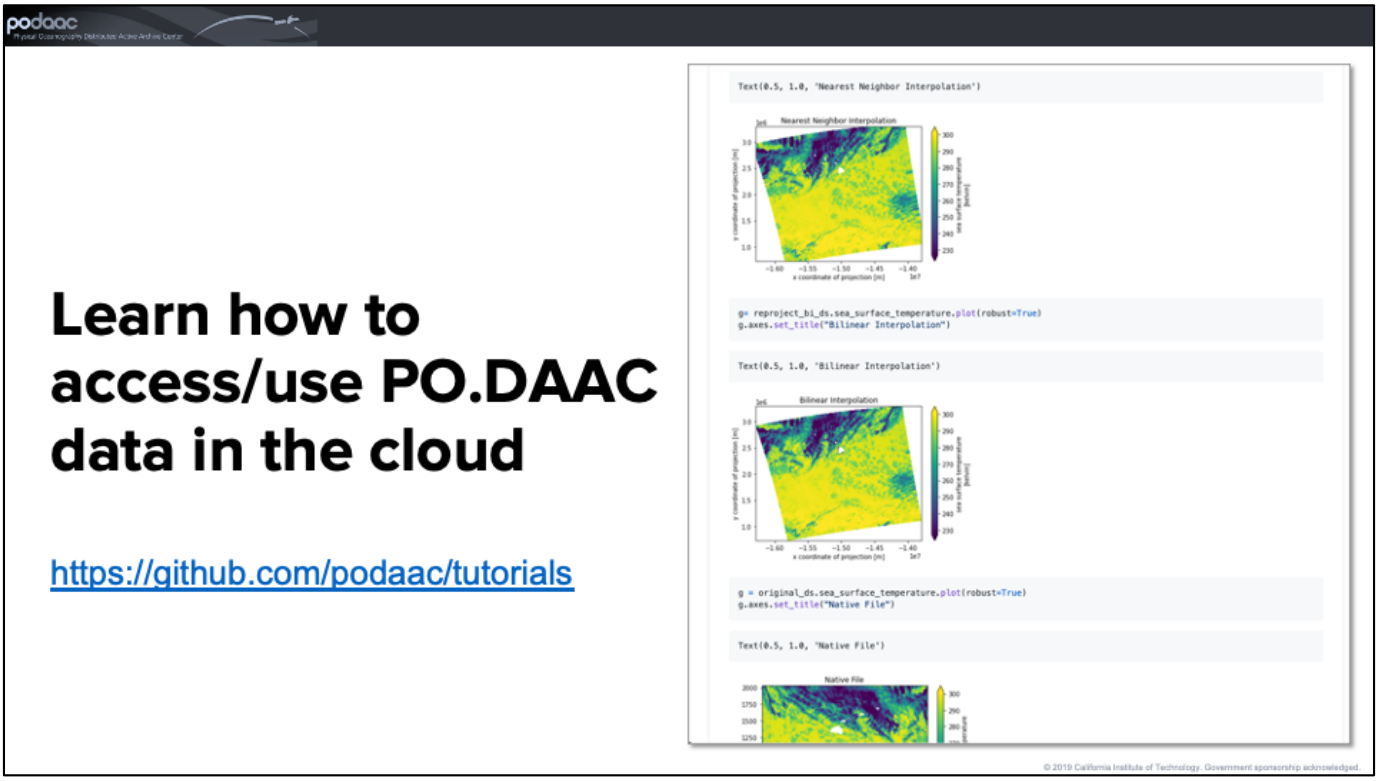
- New Homepage and New Navigation architecture

- Introduction of Science Disciplines
- Find Data and information by Science Disciplines and related Measurements
- Redesigned Missions and Measurements pages
- New Resources page with dynamic filtering by category, type and science discipline
- New Access Data page featuring tools & services filterable by capability
- Rebranded Ocean Stories (Data in Action)
- Introduction of dynamic linkage between content type across the web portal
- Improved search and discovery capability
- Website content shareable with social media sharing buttons
- Search Engine Optimization (SEO) and performance improvements

Web Portal Enhancements: Citation Metrics



Dataset citations are referenced on dataset landing pages!



Data recipes and Jupyter notebooks that leverage these cloud services are being developed to assist users with the transition to accessing/using data in the cloud.

Check out PO.DAAC tutorials on Github:
https://github.com/podaac/tutorials

Thank you for your contributions to the PO.DAAC!