

# NASA (RDAC) REPORT TO THE GHRSSST SCIENCE TEAM

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## ABSTRACT

The NASA JPL and JPL\_OUROCEAN RDACs continued their scientific contributions to GHRSSST community for providing valuable GHRSSST Level-2 and Level-4 products, of which the MUR and Terra MODIS L2P have been listed at the top 10 most active GHRSSST data in 2018 (See GDAC Report in these proceedings). The JPL RDAC has continually produced the MODIS Aqua/Terra L2P, VIIRS L2P and MUR L4 datasets, while JPL\_OUROCEAN RDAC has produced and supported the G1SST L4 dataset. The report will also discuss NASA contributions to the COVERAGE project and the US GHRSSST community in general.

## 1. Introduction

The summary accomplishments and milestones performed by the two RDACs are noted below:

- GHRSSST datasets provided by JPL RDAC
  1. MODIS Aqua and Terra L2P, version 2014.0.
    - \* Data landing page: [https://podaac.jpl.nasa.gov/dataset/MODIS\\_T-JPL-L2P-v2014.0](https://podaac.jpl.nasa.gov/dataset/MODIS_T-JPL-L2P-v2014.0)
    - \* The data have been used as input layer in State of The Ocean (SOTO) visualization tool.
  2. VIIRS L2P, version 2016.
    - \* Data landing page: [https://podaac.jpl.nasa.gov/dataset/VIIRS\\_NPP-JPL-L2P-v2016.0](https://podaac.jpl.nasa.gov/dataset/VIIRS_NPP-JPL-L2P-v2016.0)
    - \* Fully completed the 2012-2018 time series by March 2018.
  3. MUR L4 version 4.1.
    - \* Data landing page: <https://podaac.jpl.nasa.gov/dataset/MUR-JPL-L4-GLOB-v4.1>.
    - \* The data have been used as input layer in State of The Ocean (SOTO) visualization tool.
    - \* Experimental field "dt\_1km\_data" was introduced in mid-2016 to indicate temporal proximity to MODIS L2P samples at each grid. Enables MUR L4 to be use as a L3C
    - \* Smoothness optimization (given the L2P sampling patterns and timing) using simulated SST dynamics (from 2km global ECCO2 runs)
    - \* 25-km grid MUR product create as a by-product of the full MUR production line for COVERAGE project
- GHRSSST datasets provided by JPL\_OUROCEAN RDAC
  1. G1SST Level 4.
    - \* The G1SST 2DVAR blending algorithm has been revised for blending L2 VIIRS SSTs, with emphasis on keeping small-scale features resolved by VIIRS.

## 2. COVERAGE (CEOS Ocean Variables Enabling Research and Applications for GEO)

COVERAGE is a collaborative effort within CEOS and 3-year NASA project involving the 4 Ocean VCs (SST, OST, OCR, OSVW) and GEO projects (MBON, Blue Planet) to enable more widespread use of ocean satellite data in support of applications. An initial phase focused on creating common 25 km global

gridded products of 4 Ocean VCs. COVERAGE will serve as a platform for improved and integrated ocean data access utilizing emerging data management and cloud capabilities.

### 3. NASA Physical Oceanography Program

The following are the recent awarded SST initiatives and proposals:

- National Ocean Partnership Program (NOPP)
  - MISST: Continuing the GHRSSST Partnership and Arctic Data (Chelle Gentemann, Earth Space Research)
- ROSES Physical Oceanography 2017
  - Physical Deterministic SST from MODIS and VIIRS Radiances (Prabhat Koner, Univ. of Maryland)
  - Merging Optimal Estimation and Multi-Channel Atmospheric Corrections for Accurate SSTs from MODIS and VIIRS (Peter Minnett, Univ. of Miami)
  - Improved Air-Sea Essential Climate Variables from Aqua AMSR-E and VIIRS (Frank Wentz, Remote Sensing System)

The NASA Physical Oceanography Program also supported the editorial responsibilities and logistics for the online *Remote Sensing Journal: Topical Collection "Sea Surface Temperature Retrievals from Remote Sensing"* with 16 papers published so far and Jorge Vazquez, JPL serving as Guest Editor. See [http://www.mdpi.com/journal/remotesensing/special\\_issues/SST\\_RS](http://www.mdpi.com/journal/remotesensing/special_issues/SST_RS)

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