



Ocean Science and Technology Applications (OSTA) for NOAA Satellite Oceanography and Climatology Division

- Areas of Support:**
- Sea Surface Roughness Algorithm/Product Research, Development, Demonstration, Validation, and Operational Science Support
 - Ocean Winds Science, Engineering, and Programming Support
 - Ocean Surface Altimetry
 - Ocean Color Remote Sensing Research and Applications
 - Ocean Color Algorithm Development and Cal/Val
 - Research-to-Operations for Coral Reef Watch (CRW)
 - JPSS and GOES-R Sea Surface Temperature (SST)
 - Secretariat Support for Blue Planet

Timeline: July 2012 to present

Locations: National Center for Climate and Weather Prediction, College Park, MD

GST supports NOAA’s Satellite Oceanography and Climatology Division’s (SOCD) in the area of research and development of remote sensing data on the world’s oceans, help calibrate instruments and uses them in the field, verifies the satellite data, and creates products to meet the needs of users for satellite data and other information on the oceans. We transform satellite data into high quality, state-of-the-art products and information on the oceans. Products include ocean color to help locate harmful algal blooms; observing sea-surface roughness to locate sea ice and its extent for oil spill detection; measuring ocean surface winds in support of weather forecasts; and analyzing sea surface temperature and sea surface height, both for hurricane predictions.

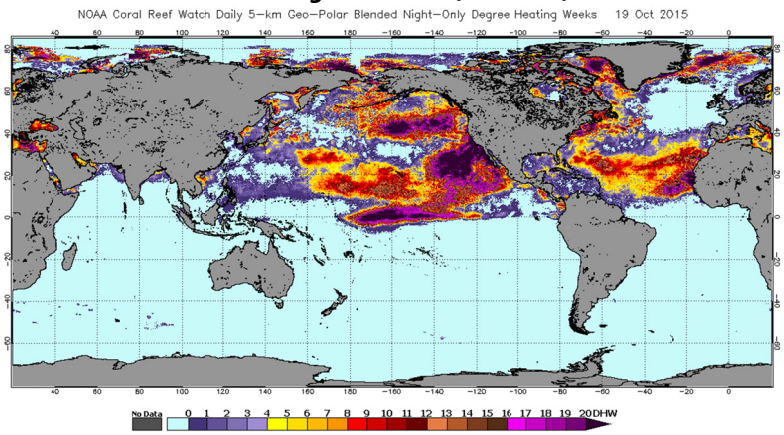
GST works with the teams in their early development phases to establish project data management plans, resulting in smooth data acquisition and ingest; analyze metadata standards to determine their appropriateness for and relevance to new data; and infuse IT security into the software as an integral part of development. Where cal/val and quality assessment are concerned, GST performs statistical analyses and generates plots and visualizations of product performance as well as inter/intra-sensor and in situ comparisons. GST also brings unparalleled experience in computational and algorithmic procedures, thereby enabling reprocessing of large volumes of satellite data.

GST works with the user community to define data structures and temporal and spatial data capabilities, utilizing domestic and foreign data. GST identifies what data are valuable to various communities through direct contact with users at local, national, and international levels and fosters broad partnerships and community engagement to enable SOCD’s unique data products to support governmental decision-making and near real-time forecasting. GST also works with the science teams to

- configure and customize the production system to process new data streams, reusing as many components of existing and previous systems as possible
- define the data formats, metadata, and ingest schedule that will enable timely ingest into data processing systems
- obtain draft science algorithms and test data early in the process to make unit and system testing as realistic as possible
- provide test and operational data and reports for scientific validation at frequent intervals
- ensure proper data versioning to avoid potential loss of scientific information
- ensure complete production history to enable full recreation of all datasets

NOAA selected GST for several reasons deemed important to a smooth transition and phase-in: the frequency of interactions between the PM and Work Assignment Monitors; the guarantee of equivalent or better benefits; GST’s benefit of publication bonuses; the GST team’s knowledge and understanding of their work (including management); and the team’s knowledge of Ocean Color and potential work relationship with NASA’s Ocean Color Group, their reachback ability, network of Ocean Color scientists, and ability to recruit and retain Ocean Color expertise.

NOAA Coral Reef Watch Annual Maximum Satellite Coral Bleaching Alert Area (Oct 2015)



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