



Naval Oceanographic Office Regional Data Assembly Center

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**Science Team Meeting XX
Frascati, Italy
3 – 7 June 2019**

Approved for public release; distribution unlimited.



GHRSSST Products Provided



L2P GDSV2.0

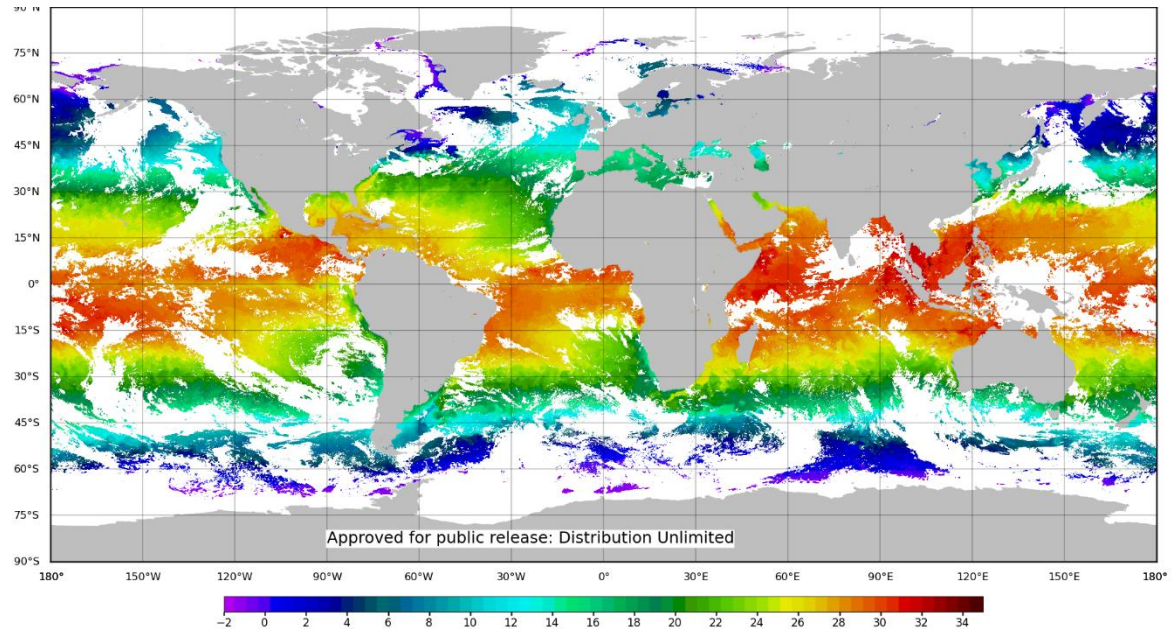
- NOAA-19 global 8.8 km
- NOAA-19 regional 2.2 km
- S-NPP VIIRS global 750 m

- MetOp-A global 8.8 km
- MetOp-B global 8.8 km

L4 GDSV2.0

- K10 global 10 km

NAVO L2P/L4 data provided to JPL in near-real time for user access via the PODAAC





Main Activities

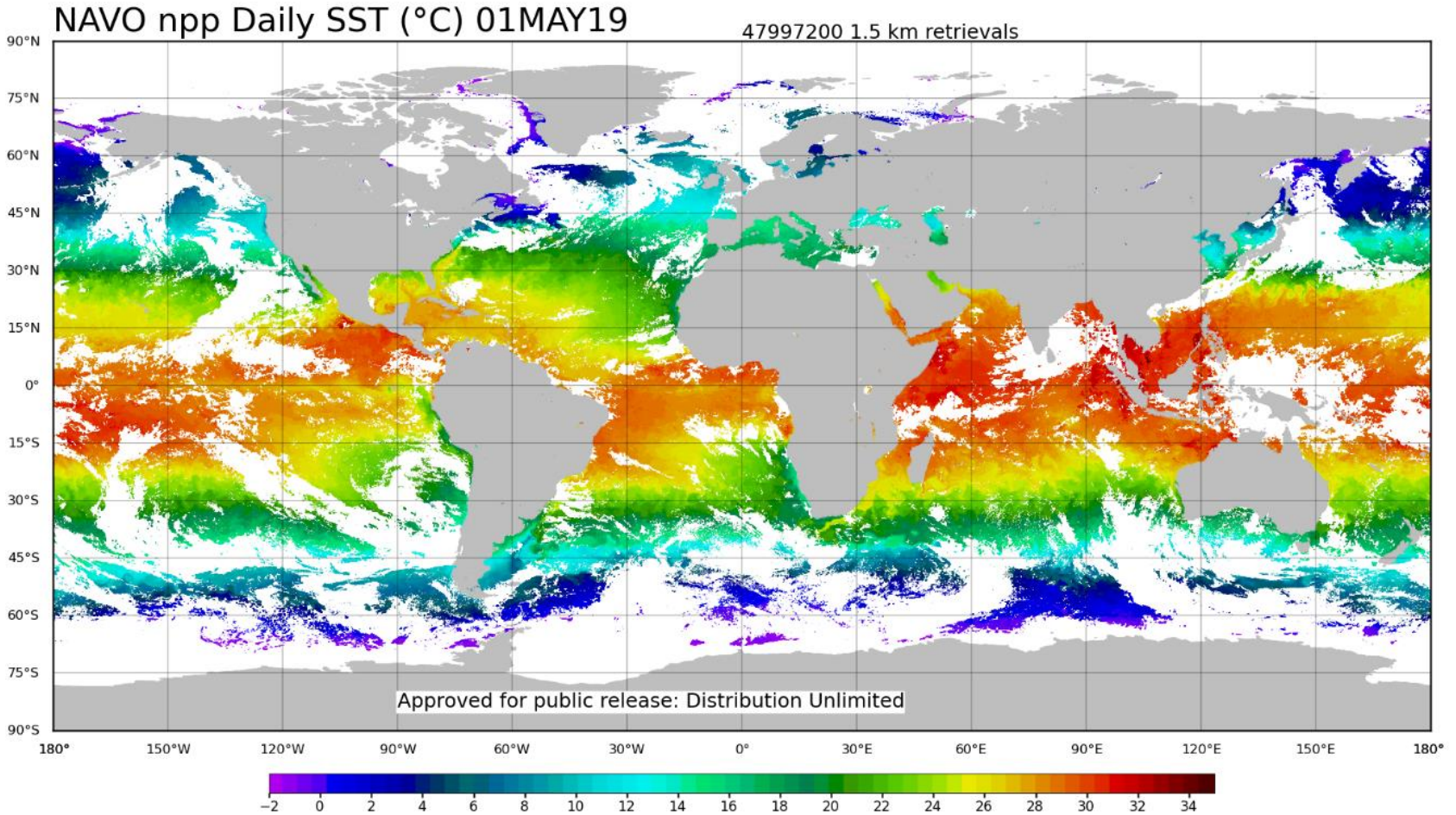
- **Updated VIIRS SST**

The test on the difference between the brightness temperatures at 10.x um (10.8 um for VIIRS) and at 12.x um (12.0 um for VIIRS) is updated. In the original test from AVHRR processing, the upper threshold on the difference was a function of the brightness temperature at 10.x um, while the lower threshold was a constant (0). In the updated test, both the upper and lower thresholds are functions. The functions are based on the estimated SST instead of the brightness temperature.

- **L4 data provided in GDSV2.0 format Jan 10th, 2019**

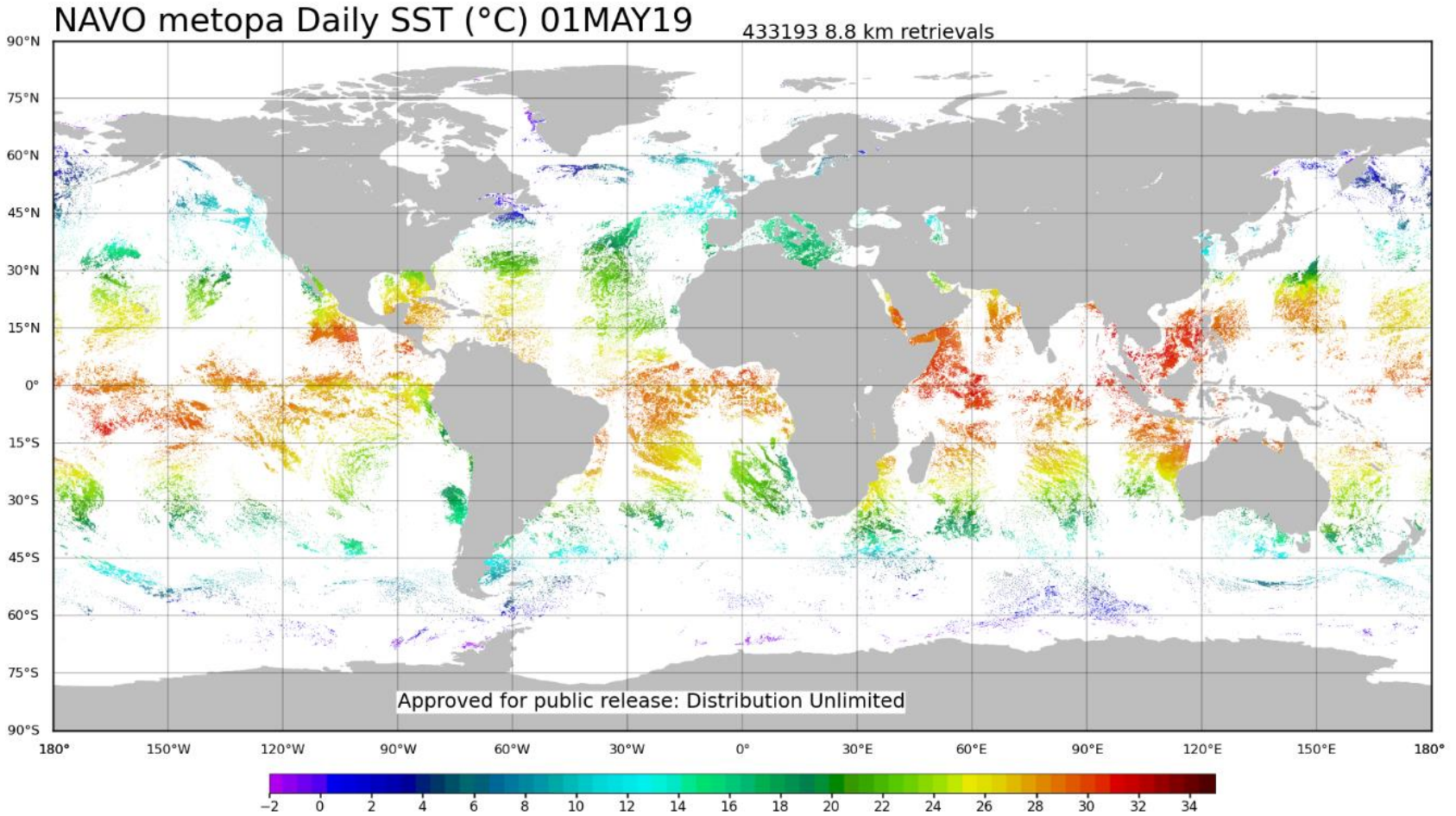


NAVO SST Coverage



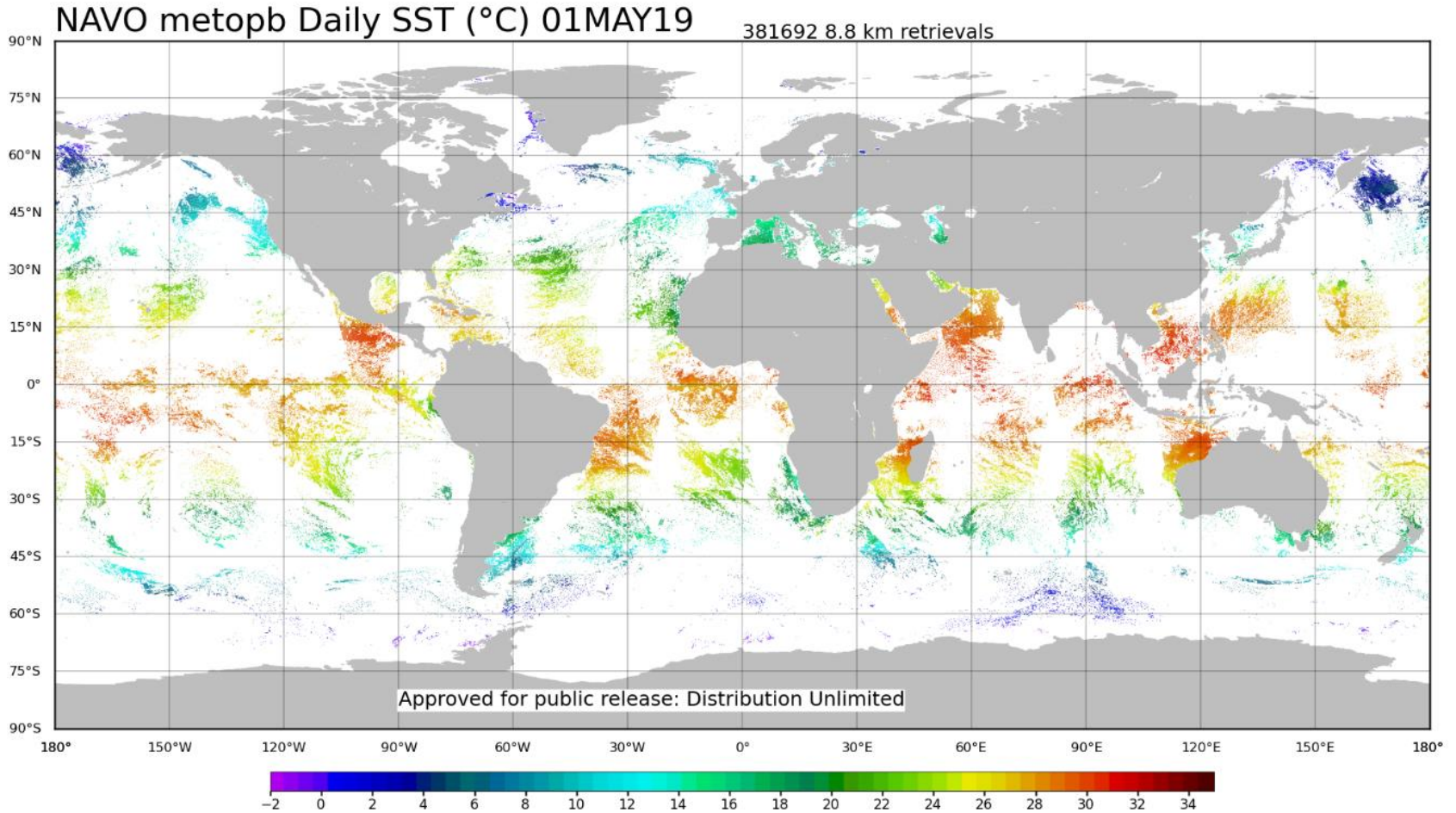


NAVO SST Coverage



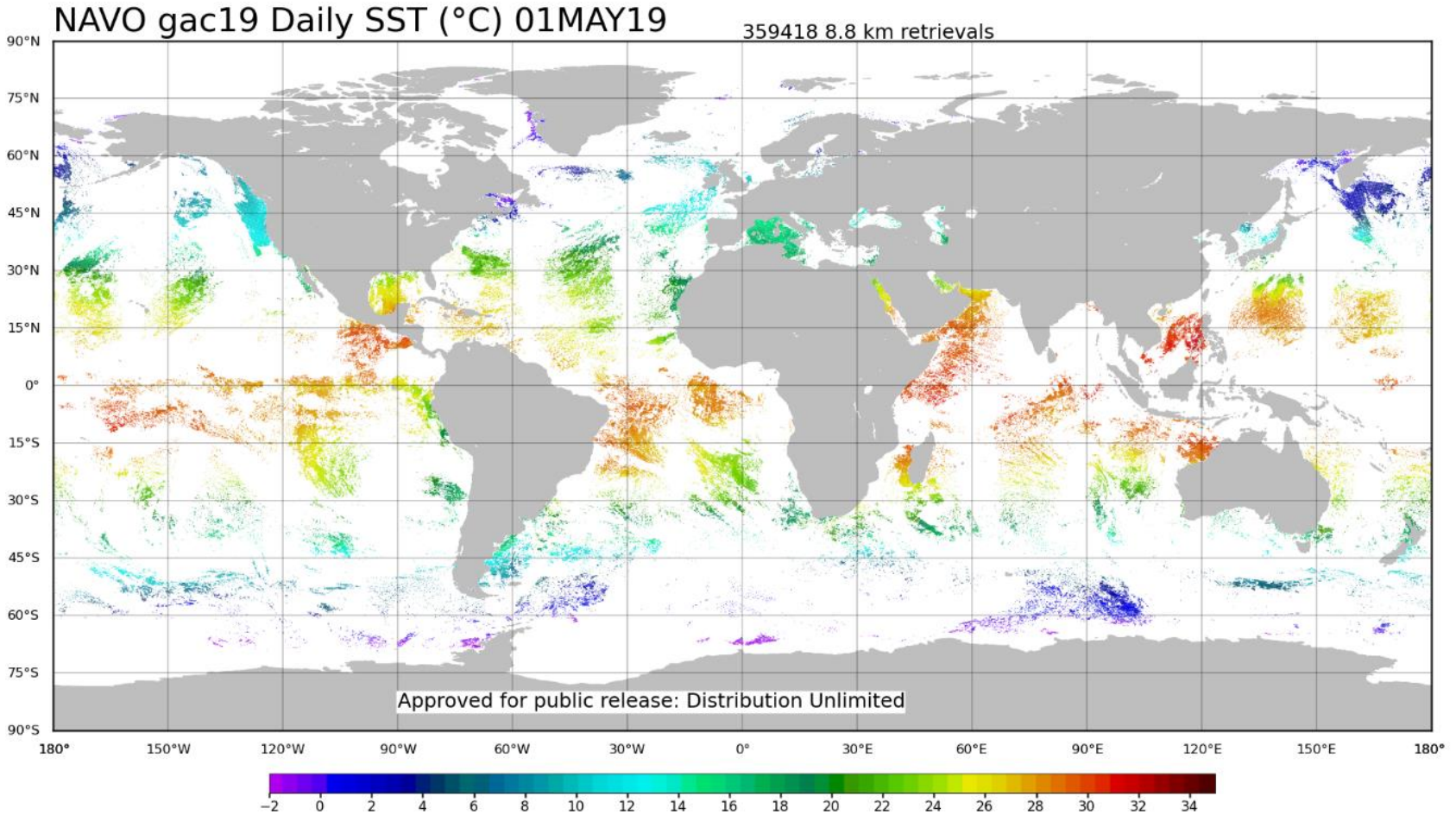


NAVO SST Coverage





NAVO SST Coverage

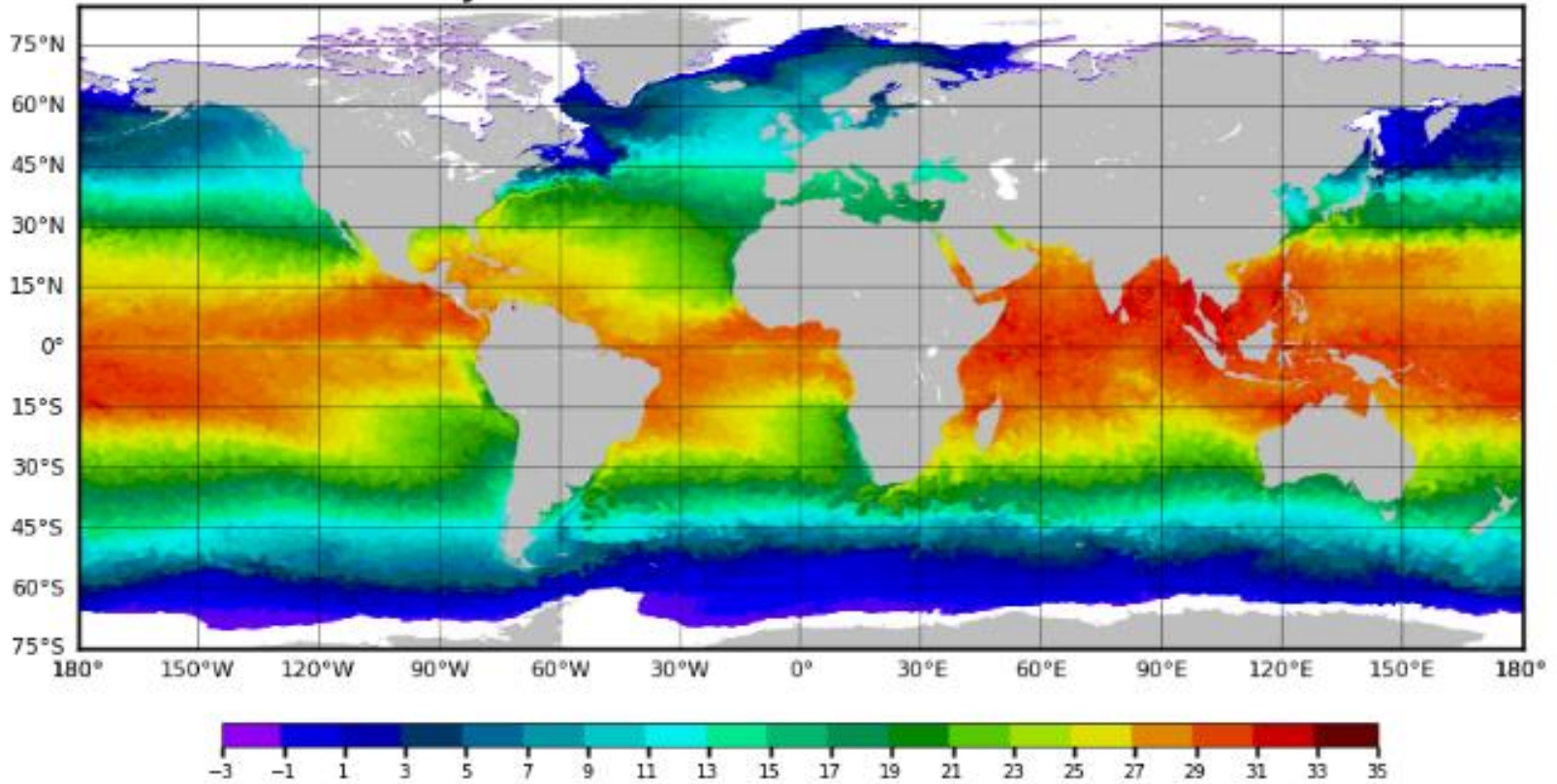




NAVO SST Coverage

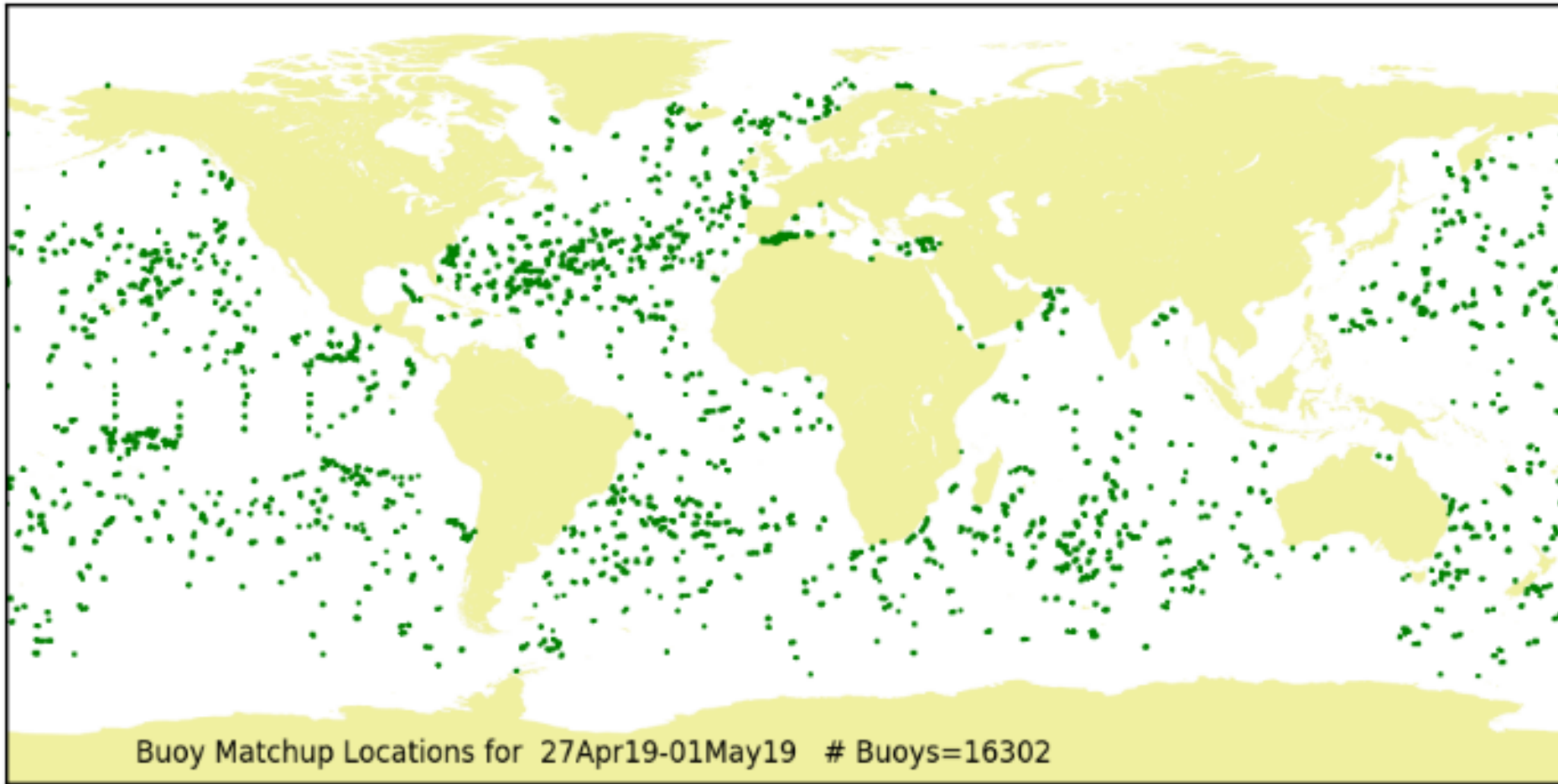


NAVOCEANO Daily K10 for world 01MAY19 with icemask





SST Matchups

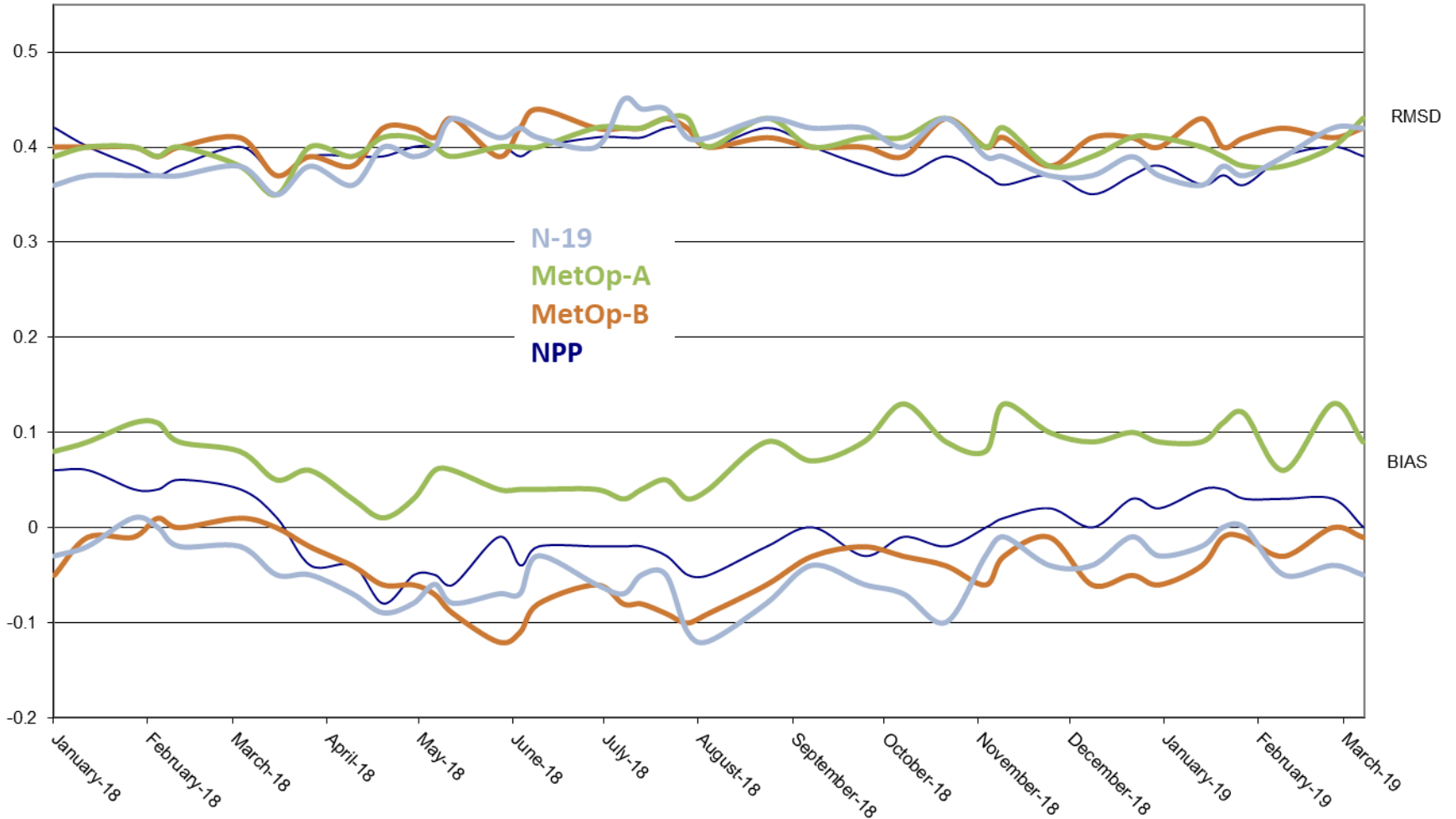


All sources of drifting buoys and the tropical moored buoy array



NAVO GHRSSST L2P Statistics

Daytime SST Bias and RMSD relative to buoy SST

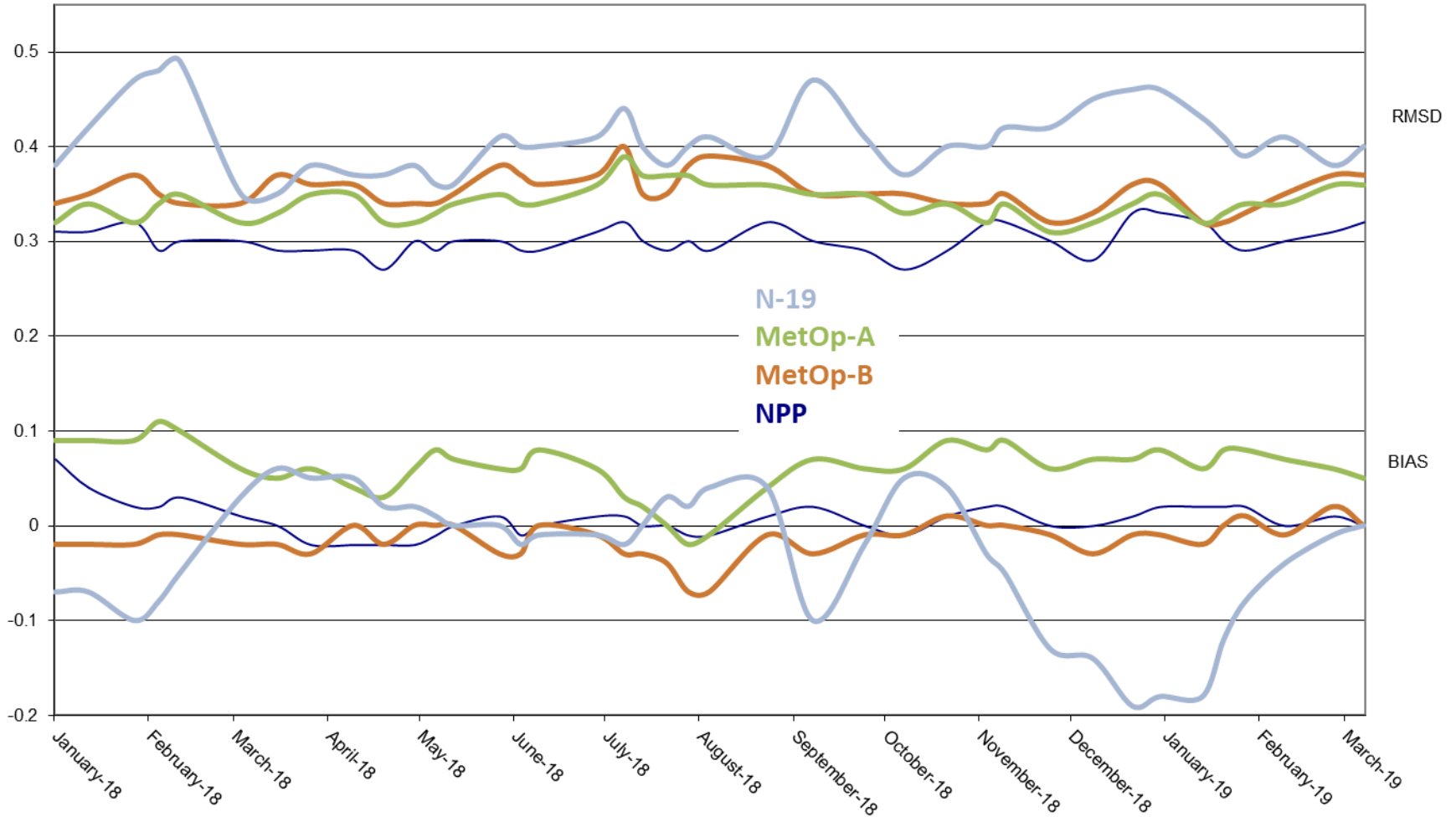




NAVO GHRSSST L2P Statistics



Nighttime SST Bias and RMSD relative to buoy SST

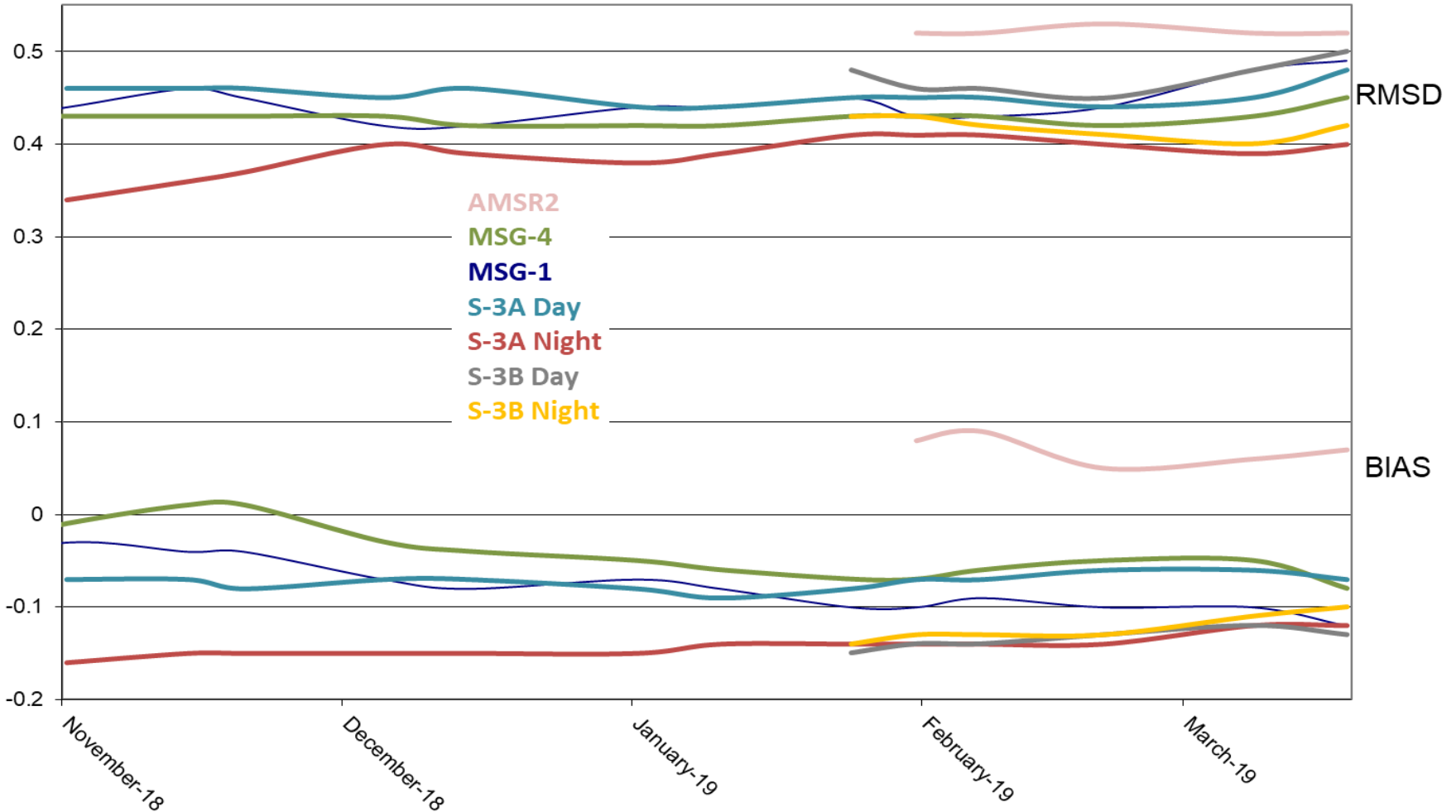




GHR SST Data Statistics



Bias and RMSD relative to buoy SST





GHRSSST Data Acquired



- **MSG SEVIRI L3C from OSISAF**
 - Acquired from PODAAC
 - MSG1 (IO) - operational input to the Navy Coupled Ocean Data Assimilation (NCODA) system that feeds the Global Ocean Forecast System (GOFS).
 - MSG4 – operational input to NCODA
- **GCOM-W AMSR2_NRT from JAXA**
 - operational input to NCODA
- **Sentinel-3A/B SLSTR L2P from EUMETSAT**
 - Acquired from NOAA STAR which has a terrestrial EUMETCAST feed of S-3 data
 - Will be used in FY20 in NCODA
- **MSG1, MSG4, AMSR2 are inputs to the NAVO K10 L4**



Plans

- **MetOp-A GAC L2P production will stop this year when AVHRR data flow from NOAA is discontinued**
- **NOAA-20 VIIRS L2P available August 2019**
- **MetOp-C GAC L2P available January 2020**
 - Will be processed with the improved SST code currently used for VIIRS
- **Implement ONR MISST-3 high latitude developments in 2021**



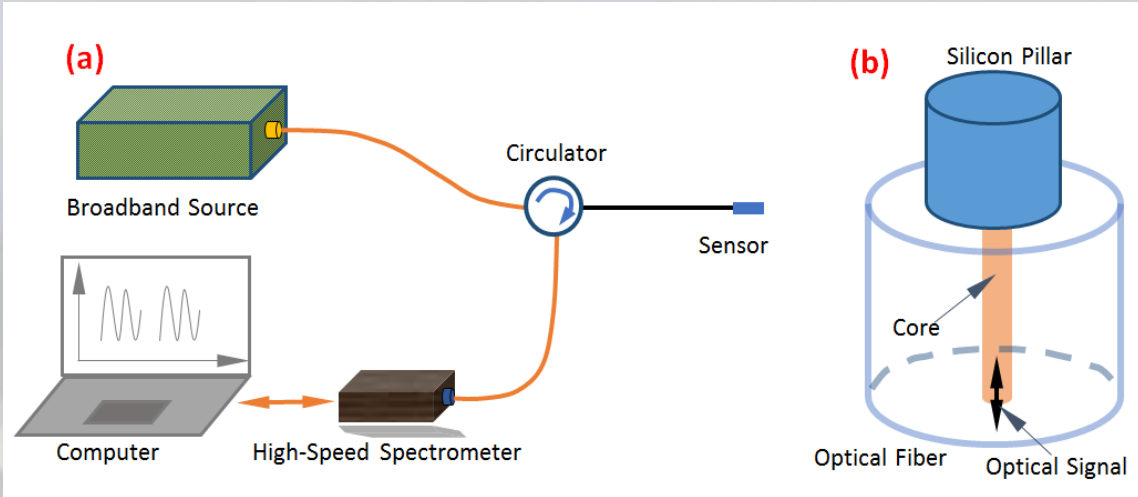
Questions ??

Contact info:

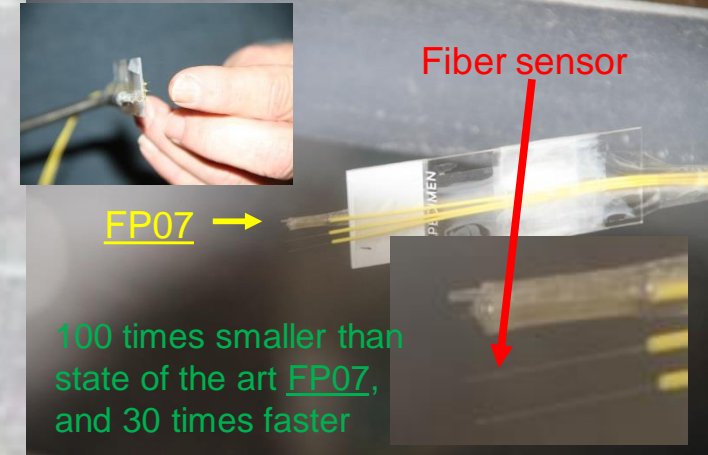
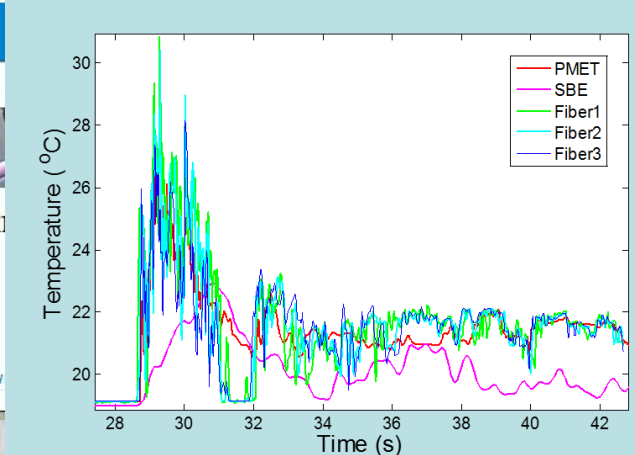
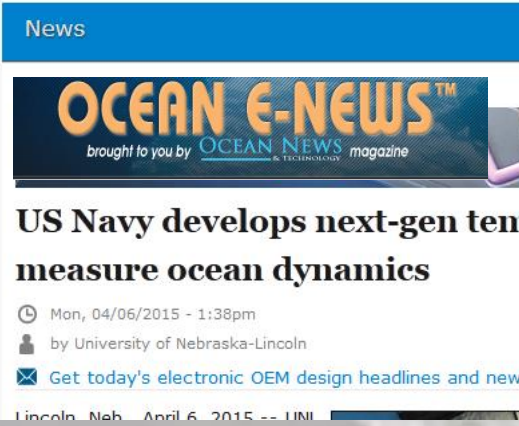
NAVO_STNS_MCSST@navy.mil

Bruce.Mckenzie@navy.mil

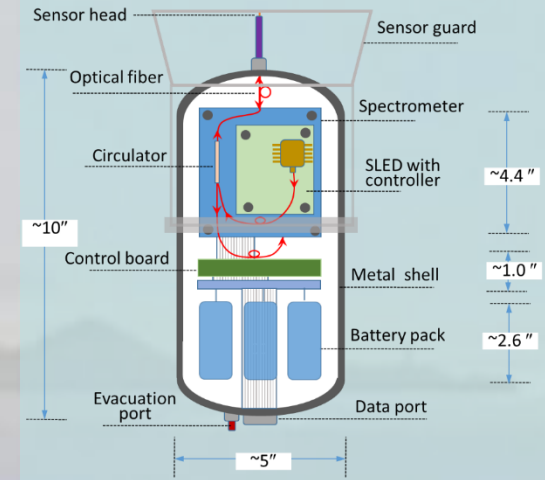
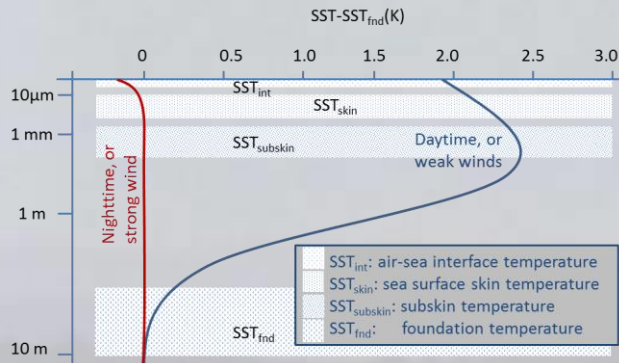
K-T (“Katie”): high speed, high resolution temperature sensor (1kHz, 0.001 °C)



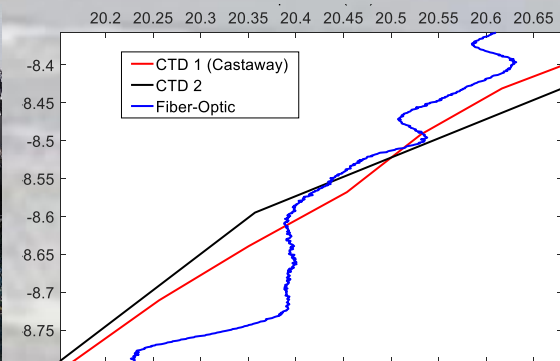
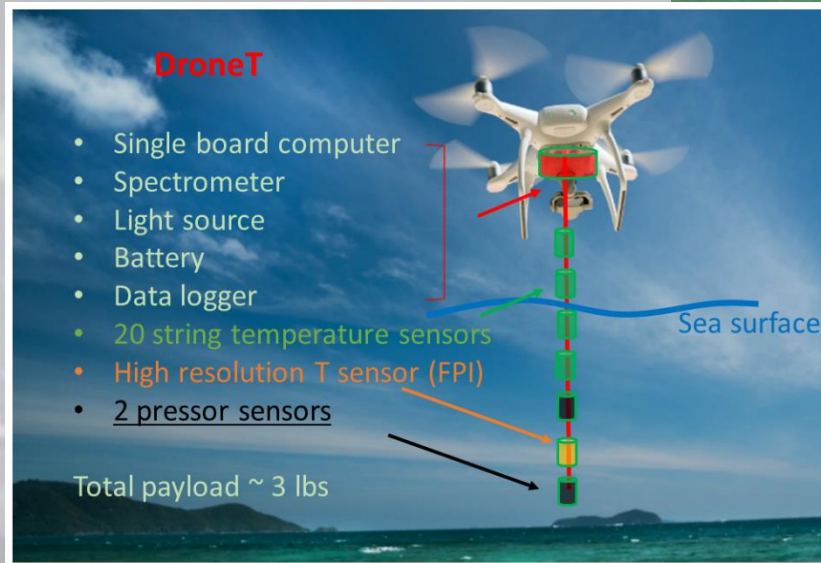
- Fiber optics based, using FP interferometry approach; patented
- Spec: 1000 to 2000 Hz (**K**) sampling rate @ 0.001 °C accuracy (**T**)
- Minimal intrusion to the environment (**hair-like sensor head**)
- Tested in lab, working on field version; Flow sensor in design phase



Potentials & future plans



Schematic of the proposed sensor instrument.





Take home

- New sensors available to get us better in situ SST (spatially, temporally), especially at the skin surface layer
- Can be integrated to floats, buoys, UxVs
- More info:
 - Contact: Will Hou, NRL, hou@nrlssc.navy.mil
 - Liu, Han, Hou, Optics Express Vol. 23, No. 6, March, 2015