



Progress at the Naval Oceanographic Office Regional Data Assembly Center

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Outline



- L2P production
- NAVO K10 L4
- NAVO production statistics
- GDAC downloads
- MCSST processing improvements
- Accomplishments
- Future Plans



L2P Production

Product

Formats

- | | |
|-----------------------------|-------|
| • NOAA-18 global 9 km | GDSv2 |
| • NOAA-19 global 9 km | GDSv2 |
| • NOAA-19 regional 2.2 km | GDSv2 |
| • MetOp-A global 9 km | GDSv2 |
| • MetOp-B global 9 km | GDSv2 |
| • S-NPP VIIRS global 1.5 km | GDSv2 |



L2P Input Data



- Calibrated and earth-located AVHRR and HIRS 1b data
 - NOAA-18 GAC/HIRS
 - NOAA-19 GAC/LAC/HRPT/HIRS
 - METOP-A GAC/HIRS
 - METOP-B GAC/HIRS
- NPOESS S-NPP VIIRS M-Band and associated geo-location files
- Navy Aerosol Analysis and Prediction System (NAAPS) aerosol optical depth data (appended to each retrieval)
- Land/Sea Mask (1km resolution)
- Climatology
- Analyzed fields (100 km and 10 km)
- SST matchup database



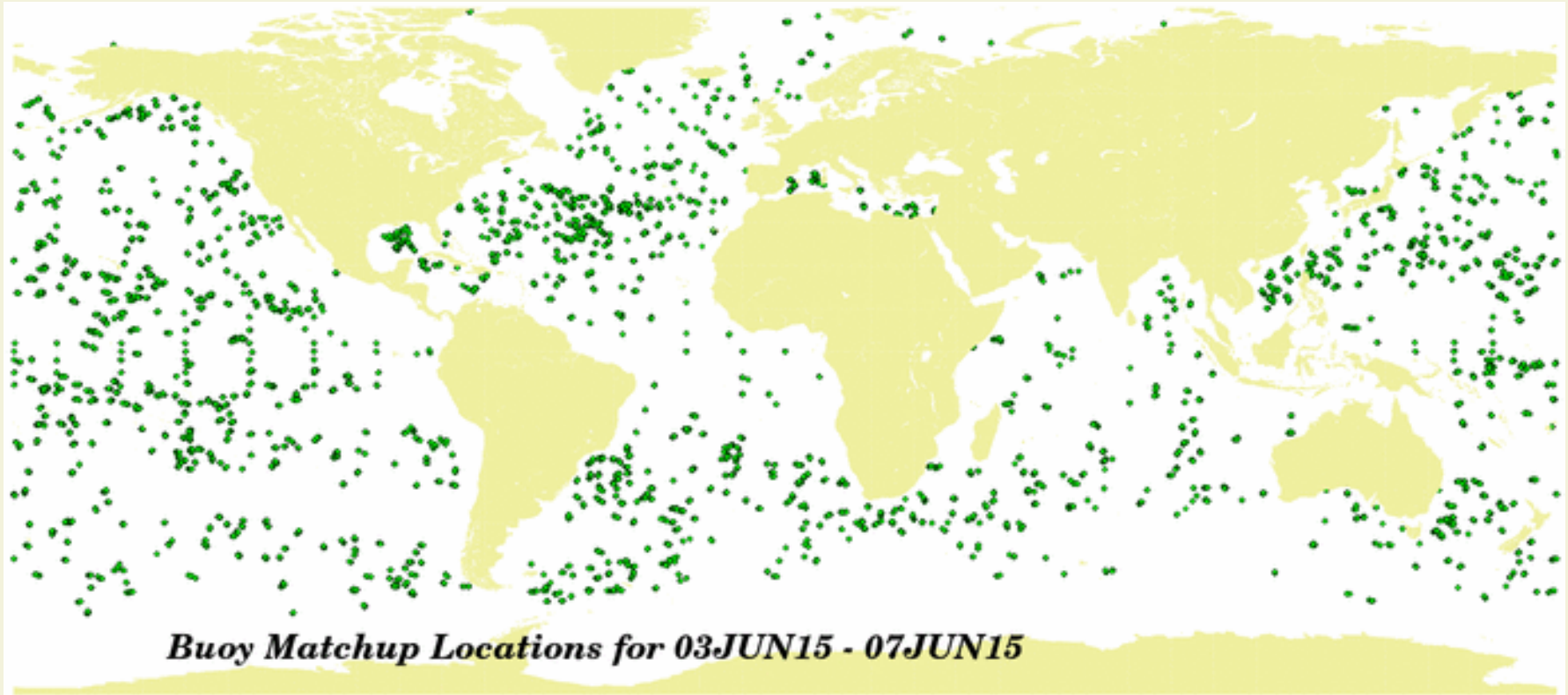
L2P Output File Content – GDSv2

Variables filled by NAVOCEANO:

- adi_dtime_from_sst
- aerosol_dynamic_indicator
- brightness_temperature_11um
- brightness_temperature_12um
- brightness_temperature_4um
- dt_analysis
- l2p_flags
- land/sea flag (new, VIIRS only)
- lat
- lon
- ni
- nj
- quality_level
- satellite_zenith_angle
- sea_surface_temperature
- sses_bias
- sses_standard_deviation
- sst_dtime
- time



NAVOCEANO L2P SSES Matchup Buoy Coverage



NAVO SST matchups Jun 3 - 7, 2015



NAVOCEANO L2P SSES

10 June 15



Product	Quality Level 5		Quality Level 4		Quality Level 3	
	RMS	Bias	RMS	Bias	RMS	Bias
NOAA-18 GAC	0.42 (97% of data)	-0.04	0.78	0.42	1.43	0.46
NOAA-19 GAC	0.42 (96% of data)	0.02	0.82	0.38	1.71	1.44
NOAA-19 LAC	0.45 (97% of data)	-0.08	0.86	0.11	2.07	0.39
METOP-A GAC	0.41 (97% of data)	0.01	0.82	0.39	1.86	0.40
METOP-B GAC	0.44 (98% of data)	-0.05	0.90	0.24	1.89	1.00
S-NPP VIIRS	0.40 (93% of data)	-0.03	0.79	0.09	1.65	-0.19
VIIRS v2.0	0.38 (80% of data)	-0.03	0.68	-0.02	0.59	-0.04



NAVOCEANO K10 L4 Analysis

- Updated 4 times daily with the following:
 - GOES 13 (EAST) SST
 - GOES 15 (WEST) SST
 - MSG SST (IFREMER)
 - NOAA 19 GAC 9km SST
 - NOAA 19 LAC/HRPT 2.2 km SST (regional)
 - METOP-A GAC 9km SST
 - METOP-A FRAC 2.2km SST
 - METOP-B GAC 9km SST
 - METOP-B FRAC 2.2km SST
 - S-NPP VIIRS 1.5km SST
 - WindSat (microwave) SST (REMSS)
 - JPL Pentad Climo 1985 – 1999

2015 June 10 statistics
Matches = 11443
RMS = 0.58
Bias = -0.09



NAVO Product Downloads from the GDAC May 2015



Satellite	Product	Format	Users	GB	Files
NOAA-18	GAC L2P	GDSv1	2	1.1	84
NOAA-18	GAC L2P	GDSv2	15	440.2	16704
NOAA-19	GAC L2P	GDSv1	13	0.7	82
NOAA-19	GAC L2P	GDSv2	14	451.1	17117
NOAA-19	LAC L2P	GDSv1	16	4.3	576
NOAA-19	LAC L2P	GDSv2	8	722.9	26203
MetOp-A	GAC L2P	GDSv1	3	0.8	71
MetOp-A	GAC L2P	GDSv2	7	132.3	6224
MetOp-B	GAC L2P	GDSv2	7	125.8	11270
SNPP	VIIRS L2P	GDSv2	38	3036.8	317957
Multiple	K10 L4	GDSv1	158	9.5	13012
TOTAL			281	4925.5	409300



NAVOCEANO VIIRS SST v. 2.0



NAVOCEANO introduced significant upgrades to VIIRS SST processing including the following:

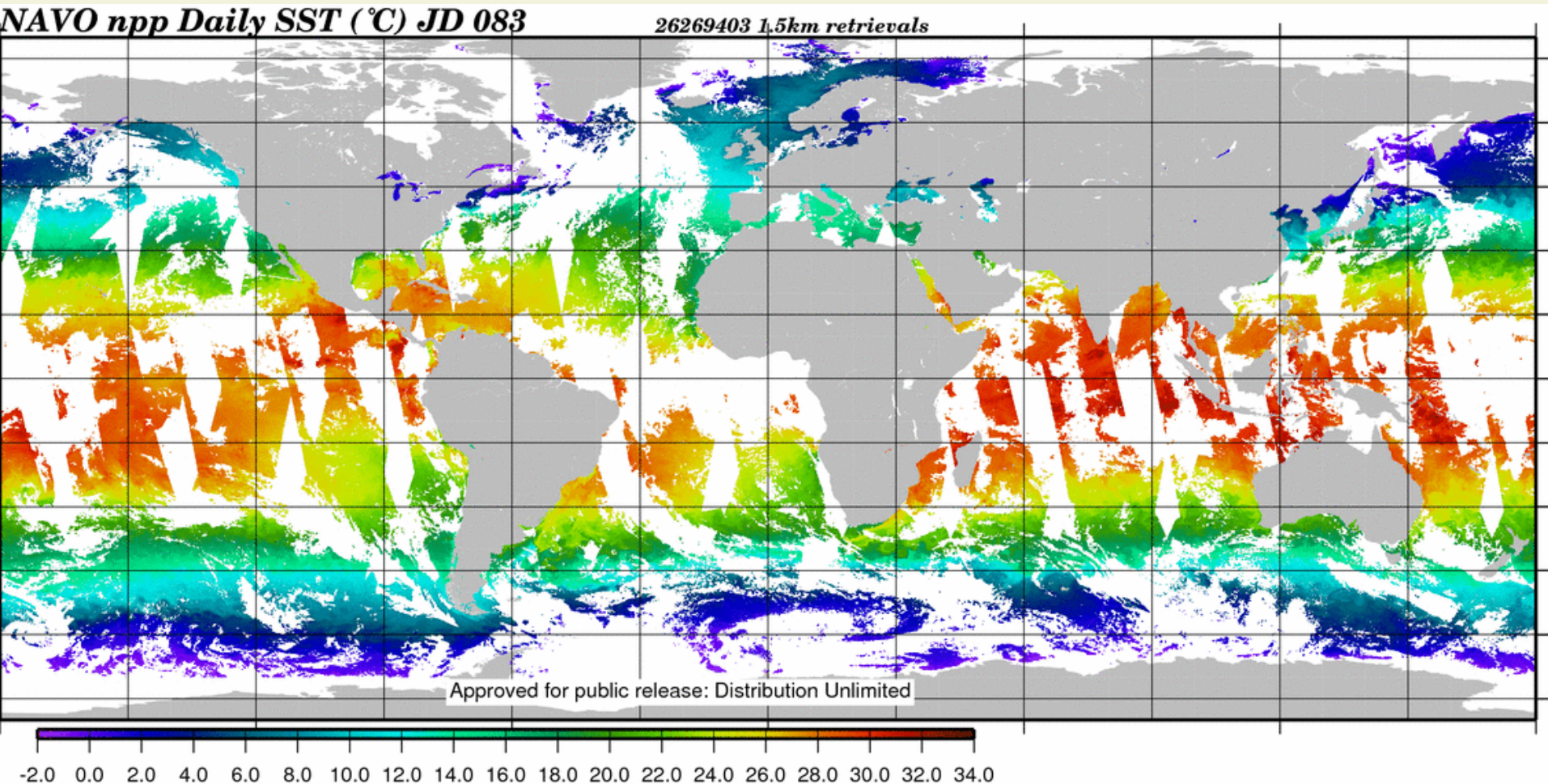
- ❑ Switched to a higher resolution field SST
- ❑ Improved cloud/contamination screening
- ❑ Implemented full swath processing
- ❑ Introduced new “extended” NLSST equations
- ❑ Expanded southern process boundary from 70° to 80° S.
- ❑ Output full resolution SST in L2P
- ❑ Output day/night flag in L2P



NAVOCEANO VIIRS SST v. 2.0



NAVOCEANO VIIRS before and after coverage:



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Accomplishments



- Updated the NAVO cloud mask
- Investigated accuracy of satellite retrievals to profiling float data
- Turned off dissemination of L2P products in GDSv1 format
- Added day/night indicator to GDSv2 L2P data using l2p_flags array
- Implemented full swath for VIIRS SST
- Implemented full resolution for VIIRS L2P

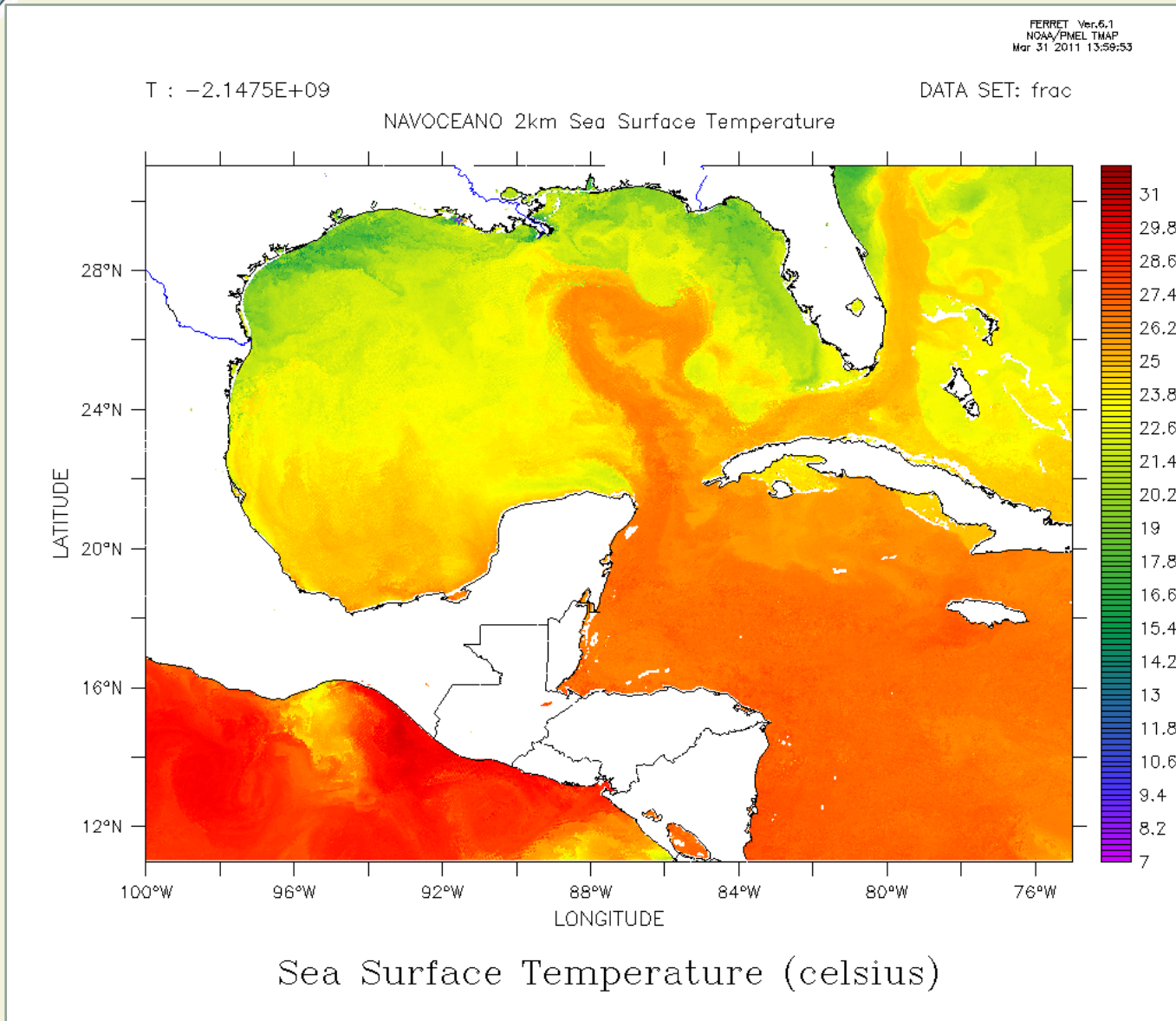


Future Plans

- Continue improvements to NAVO cloud mask
- Use Pathfinder SST climatology
- Incorporate ice data in K10 L4
- Obtain Sentinel-3 L2P data
- Distribute the NAVOCEANO K10 L4 analysis in GDS V2.0 format



Thank you. Questions?





Additional Information



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