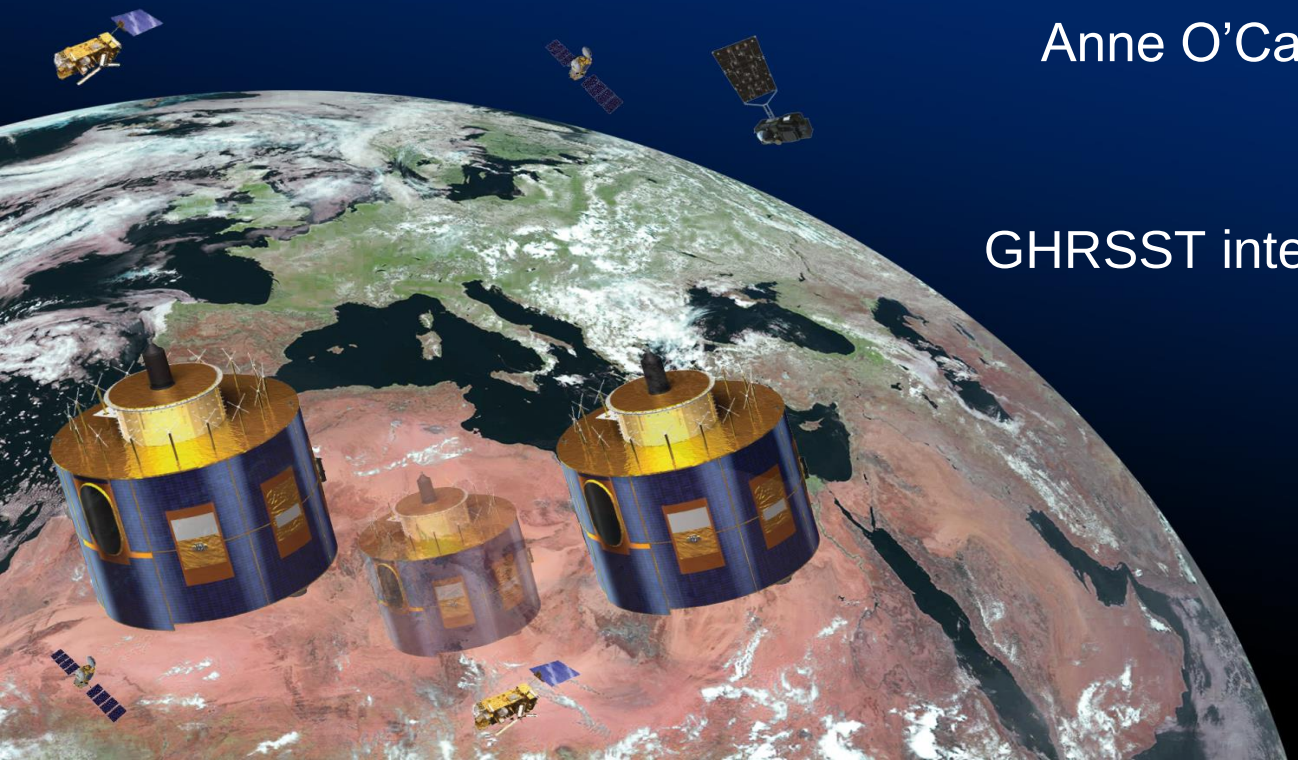
EUMETSAT Sea Surface Temperature activities



Anne O'Carroll, Gary Corlett, Igor Tomazic

3rd June 2019

GHRSST international science team meeting

Anne.Ocarroll@eumetsat.int

Oceanography at EUMETSAT

Sea Surface Temperature

Sea surface winds

Sea-ice products

Radiative fluxes

Significant wave height

Sea surface topography

Sea-ice ST/MIZT

Ocean Colour products

Turbidity

Aerosol optical depth over water

The EUMETSAT Network of Satellite Application Facilities

OSI SAF
Ocean and Sea Ice

- Operational data provider
- Weather, climate, ocean, atmospheric composition
- Mandatory, Optional and Third party programmes
- EUMETSAT Ocean and Sea Ice Satellite Application Facility

Sea Surface Temperature missions

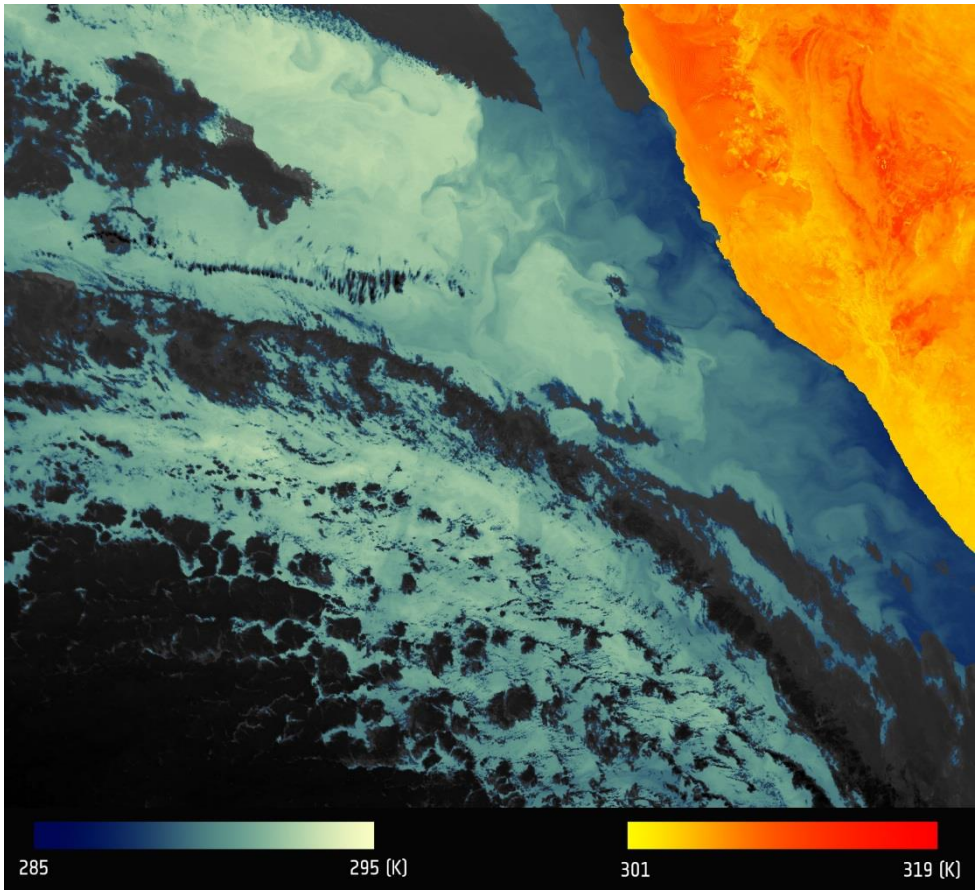
- Most recent launches:
  - Metop-C (7th November 2018)
  - Copernicus Sentinel-3B: (25th April 2018)
  - Copernicus Sentinel-3A (16th Feb 2016)
  - MSG-4 (15th July 2015)
  - Metop-B (17th Sept 2012)

- Future:
  - MTG-I1 (FCI): ~Q4 2021
  - Metop-SG A (MetImage, IAS): ~Q4 2022
  - MTG-S1 (IRS): ~Q1 2023
  - Sentinel-3C: ~2023
  - CIMR: ~2024

- Meteosat-8 Indian Ocean Data Coverage (IODC) Services available from January 2017 onwards.

Sentinel-3 SLSTR-A Sea Surface Temperature

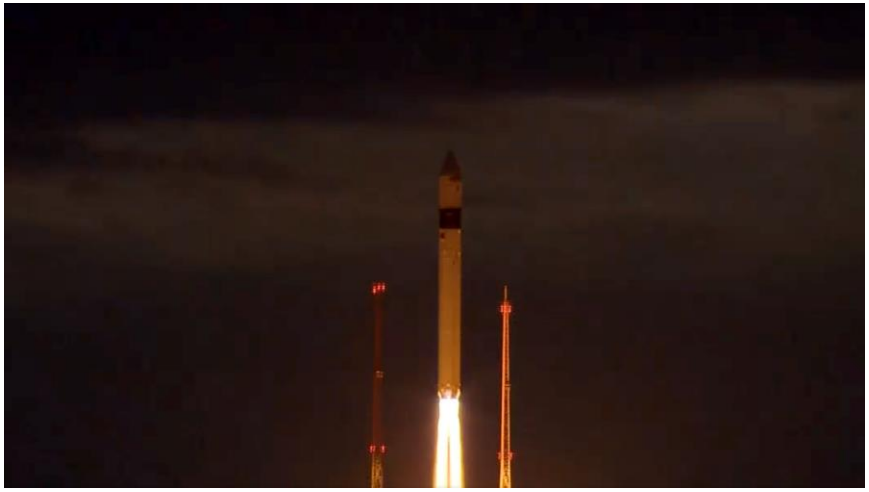
- Operational release of SLSTR-A SST: 5th July 2017
- Major version update: 4th April 2018
  - Bayesian cloud implemented & revised Quality Level's
- SLSTR-A SST fully reprocessed (04/2016-04/2018) and available now
- For more information on SLSTR SST and data access - webpages

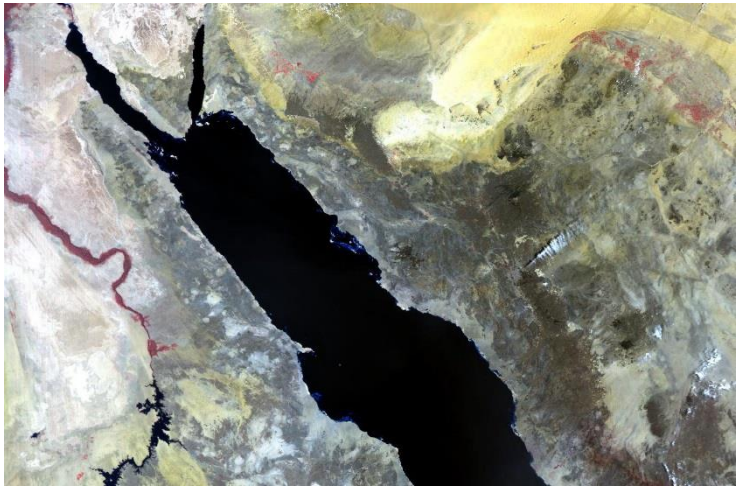


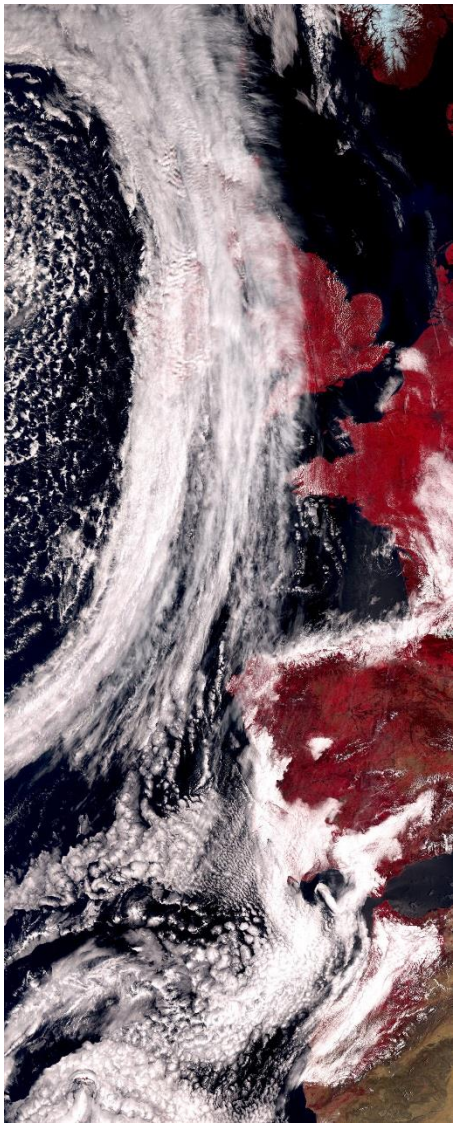
https://www.eumetsat.int/website/home/Data/CopernicusServices/Sentinel3Services/SeaSurfaceTemperature/index.html

Sentinel-3 SLSTR-B SST

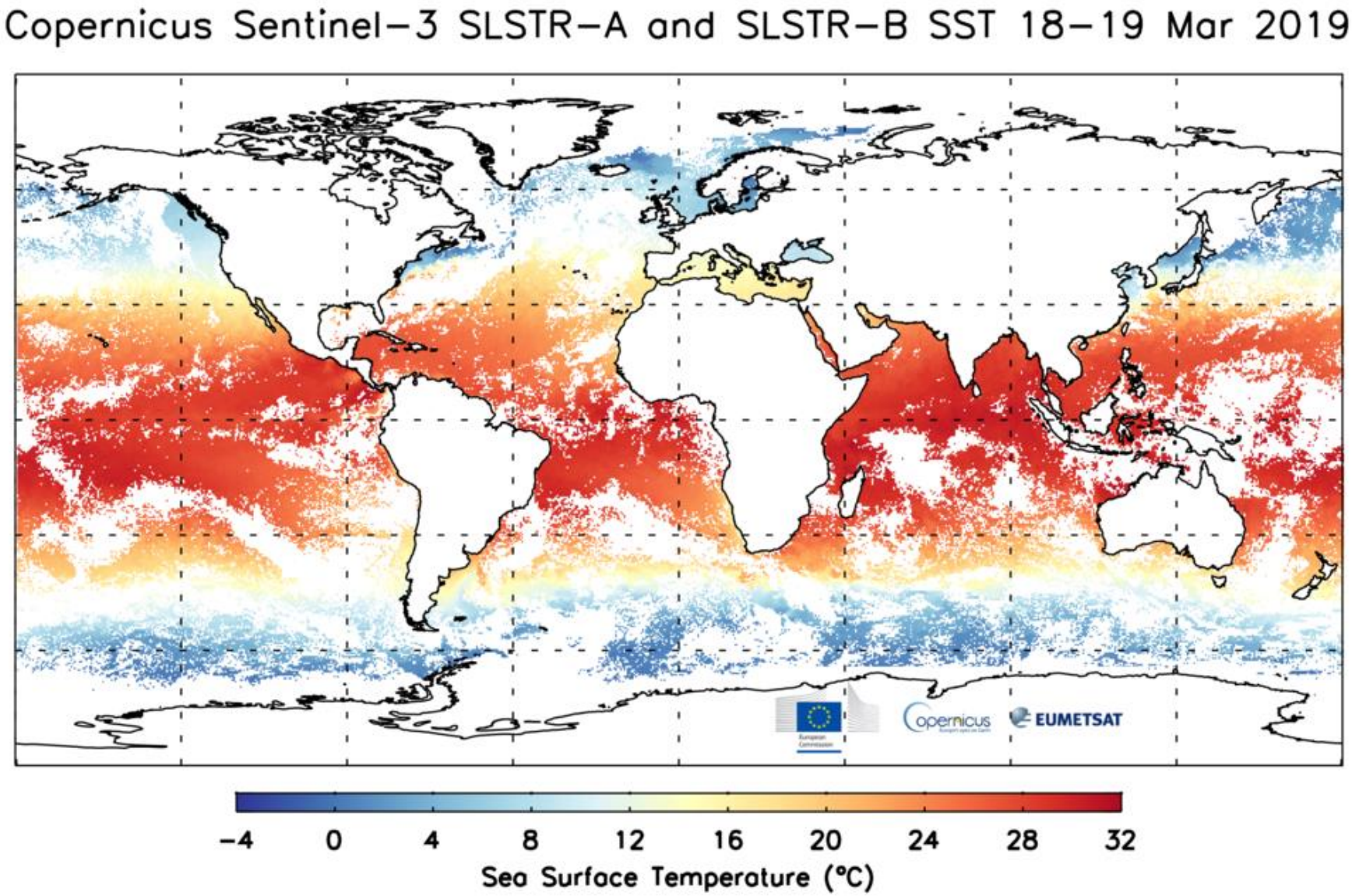
- Sentinel-3B launch 25th April 2018
- Visible channels switched on 9th May 2018
- Infrared channels switched on 1st June 2018
- Commissioning to end of July 2018 -> L1b
- SST products to Sentinel-3 Validation Team 8th Nov 2018
- Operational SST projects available 12th March 2019
- Participation to S3 Validation Team still open (https://earth.esa.int/aos/S3VT).







Combined coverage: SLSTR-A & SLSTR-B – two days



IASI Sea Surface Temperature

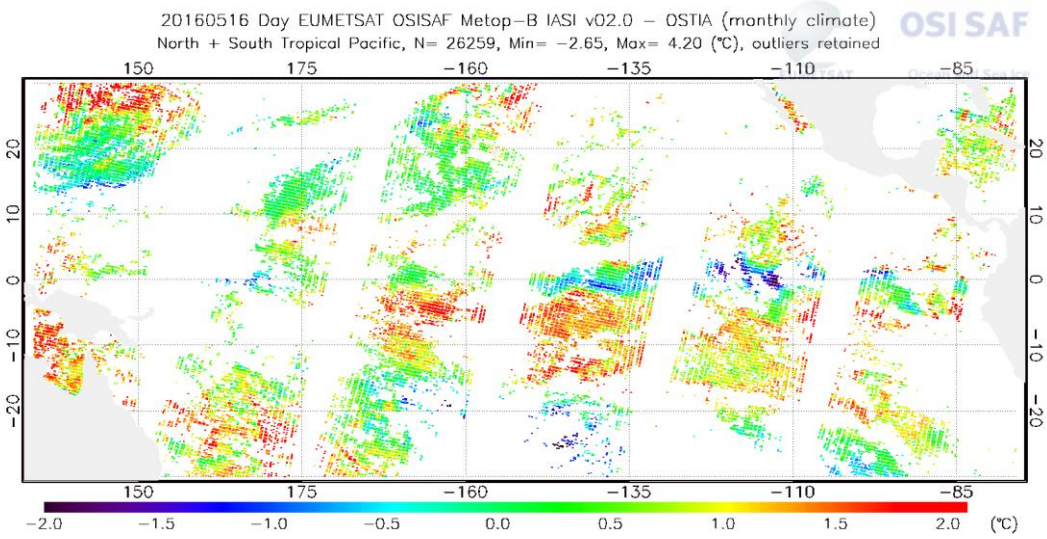
- OSI SAF IASI SST operational
- v6.2 - of IASI L2 processor June 2016 (no SST impact)
- v6.3 - 20th June 2017 to include SST retrieval update (greater number of clear obs; aerosol flagging/correction; uncertainties)

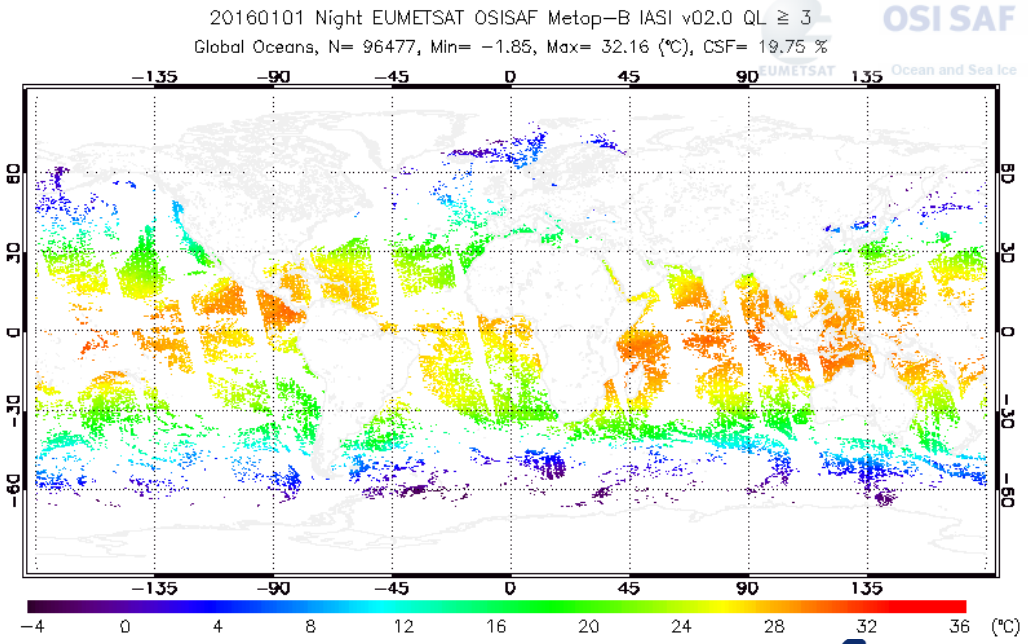
https://www.eumetsat.int/website/home/News/DAT_3423485.html

- v6.4 - 7th March 2018

https://www.eumetsat.int/website/home/TechnicalBulletins/IASI/DAT_3829049.html

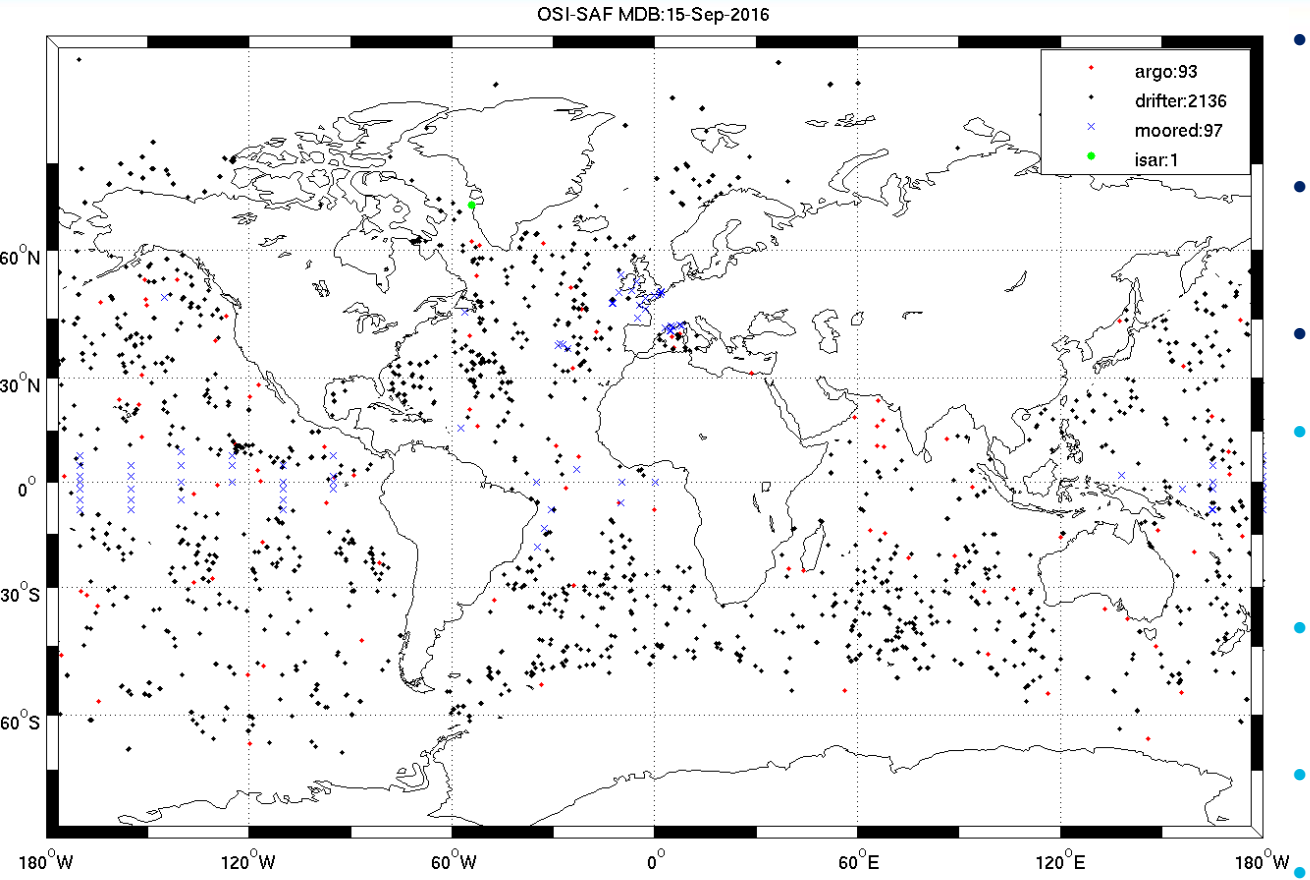
- V6.5 – next version of retrieval and validation under preparation.
- Metop-C launched 7th November 2018
- Reprocessing of Metop-A/B IASI underway – target for preliminary products for evaluation – end of 2018





EUMETSAT

SST MDB



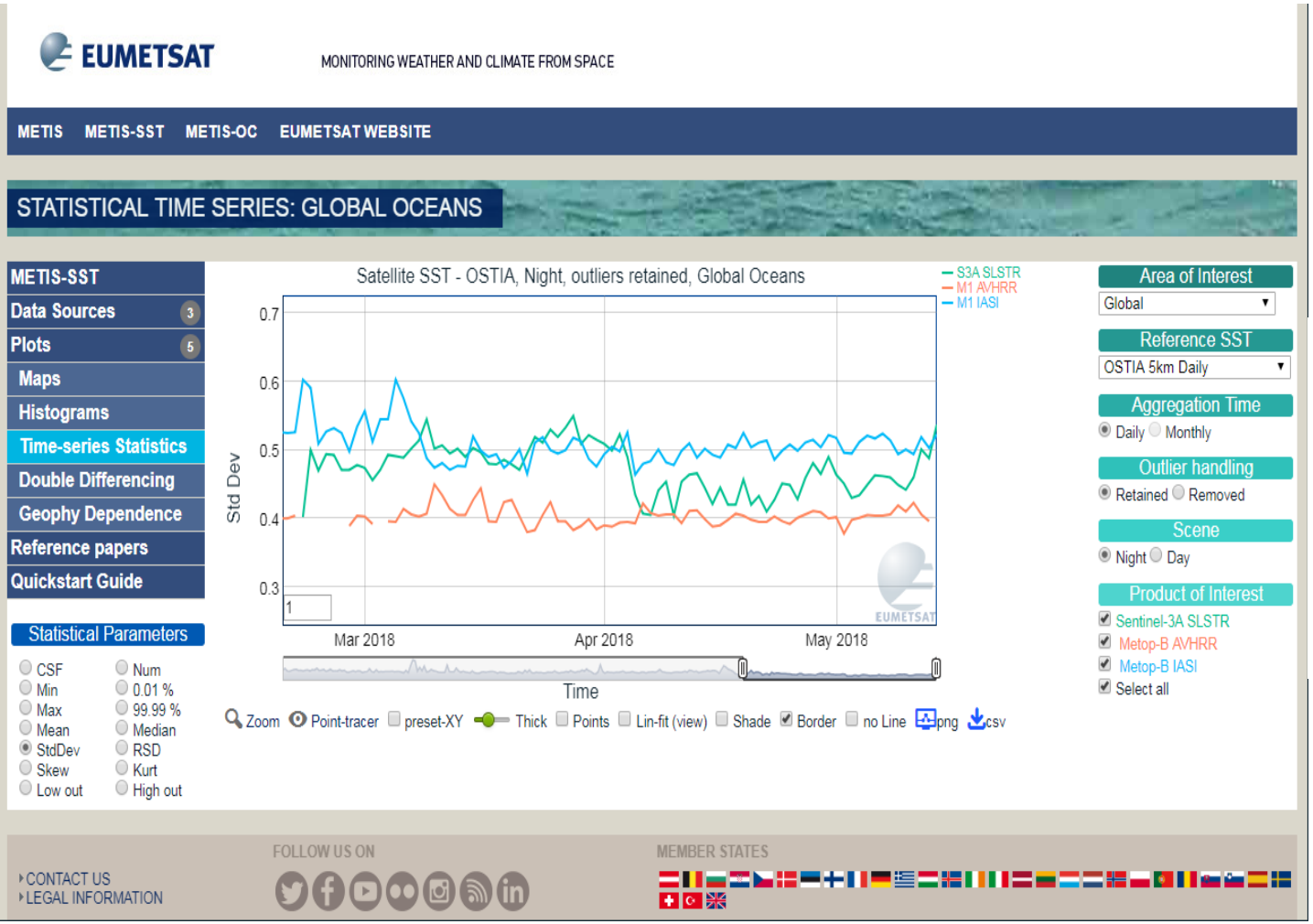
- Routine collocation of in situ and satellite data.
- Drifters, Moored buoys, Argo, Ship Borne radiometers.
- Use of Coriolis.
- Currently 5 SST MDBs running in parallel (SLSTR-A/B, IASI-B, AVHRR-B, VIIRS experimental)
- SLSTR-A reprocessed version ready.
- SLSTR-A/B available to S3VT.
- New radiometer data being added.
- TRUSTED drifter data being added.

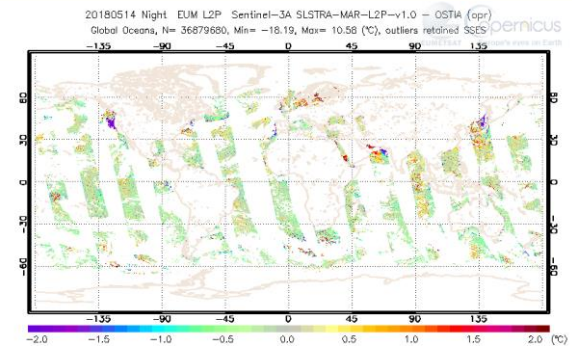
The EUMETSAT Network of Satellite Application Facilities

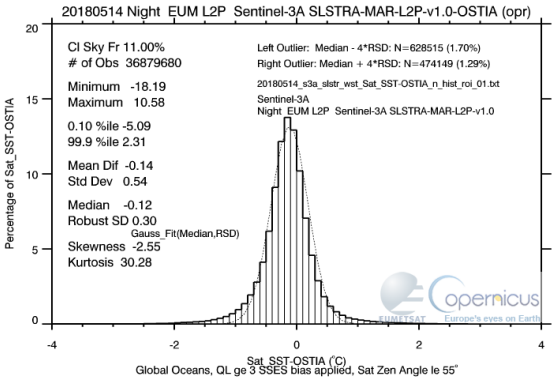
OSI SAF
Ocean and Sea Ice

EUMETSAT

METIS (metis.eumetsat.int)







- To include SLSTR-B

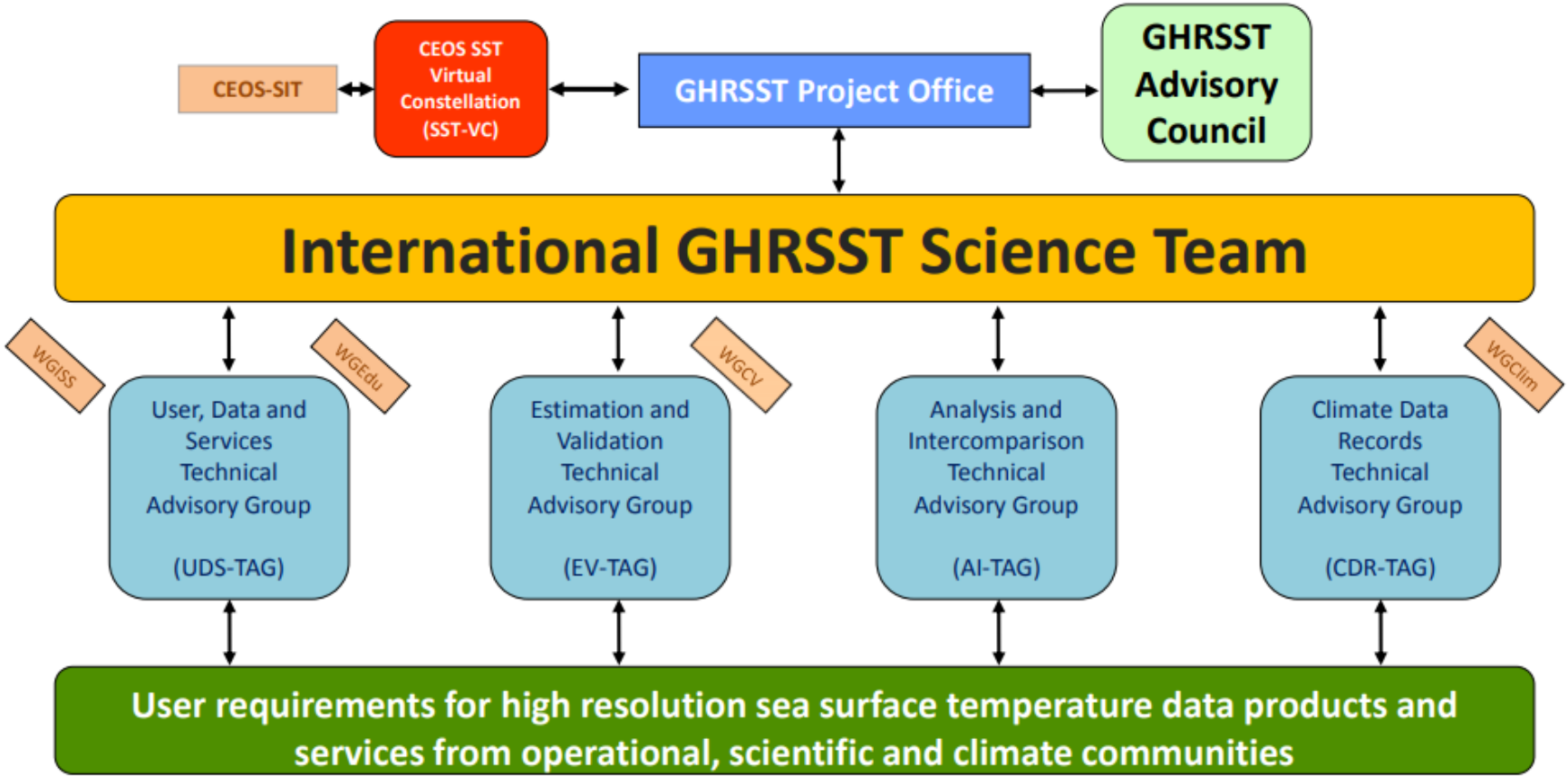
Relevant recent Projects – overview

- SLSTR sea-ice cloud-screening - CNR (completed 2017)
- IASI Ice Surface Temperature validation - DMI (completed 2017)
- SLSTR cloud validation processor – Deimos (completed 2018)

Ongoing:
- GHRSST Project Office – University of Leicester & Ifremer (began 2017, previously ESA)
  - Extended till 2021
- TRUSTED drifting buoys – CLS+ (2018-2022)
- SLSTR sea-ice surface temperature – DMI+ (2018-2020)
- SLSTR Level-1 uncertainties and monitoring – RAL (2018-2019)

Upcoming:
- Thermal infrared product inter-comparison and validation with FRM radiometers
- Surface Temperature service contract
  - SST product improvements and Cal/Val
  - Diurnal variability and skin effect model
  - GHRSST R/GTS implementation
- Fiducial Reference Measurements

GHRSST Project Office

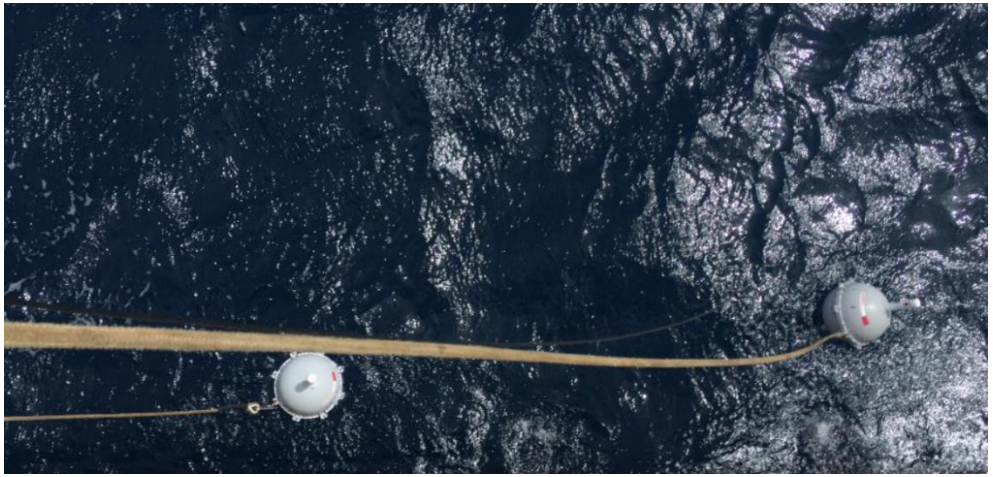


GHRSST Project Office Coordinator: Karen Veal
GHRSST Project Administrator: Silvia Bragaglia-Pike
GHRSST data discovery and cataloguing: Jean-Francois Piolle

TRUSTED drifting buoys

- Additional digital SST probe to standard SVP-B.
- Near surface water pressure sensor.
- High frequency data available.
- Over 35 deployed so far globally, data on GTS (and Coriolis).
- SST uncertainty better than +-0.05K.
- Review workshop planned ~2021 – independent assessment of the outcomes of the project and towards FRM status – GHRSST inputs.

-> Poster by Marc Lucas (CLS)

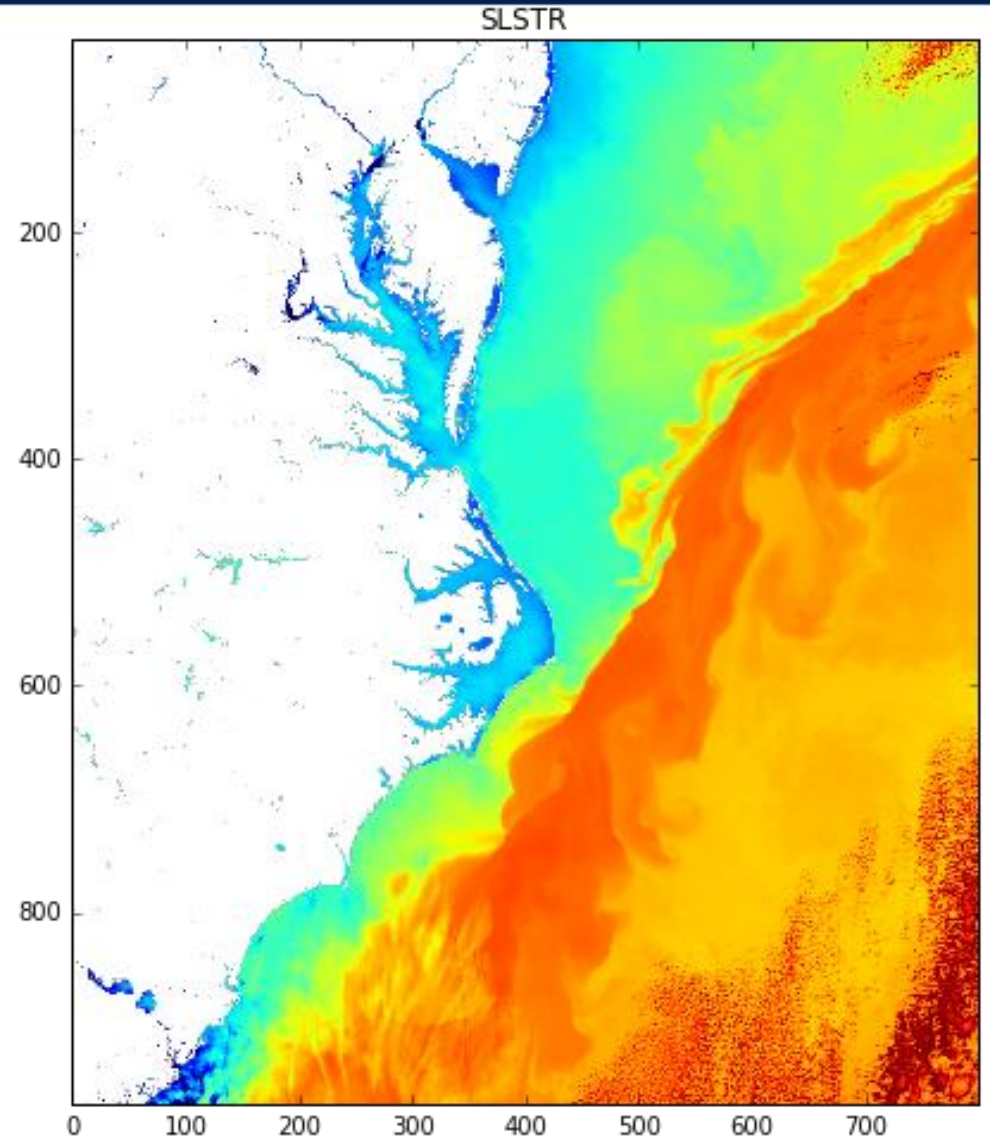


Future of GHRSST

- EUMETSAT continue commitment to GHRSST

- Personal perspective:
  - Welcome new countries participation.
  - Keep focus on core activities of GHRSST; more interactions with user communities and to respond to these needs.
  - Good to see younger and early career scientists taking much larger roles – opportunities in Task Teams:
    - You are the future of GHRSST!
    - Important to retain the collaborative and friendly community!

Thank you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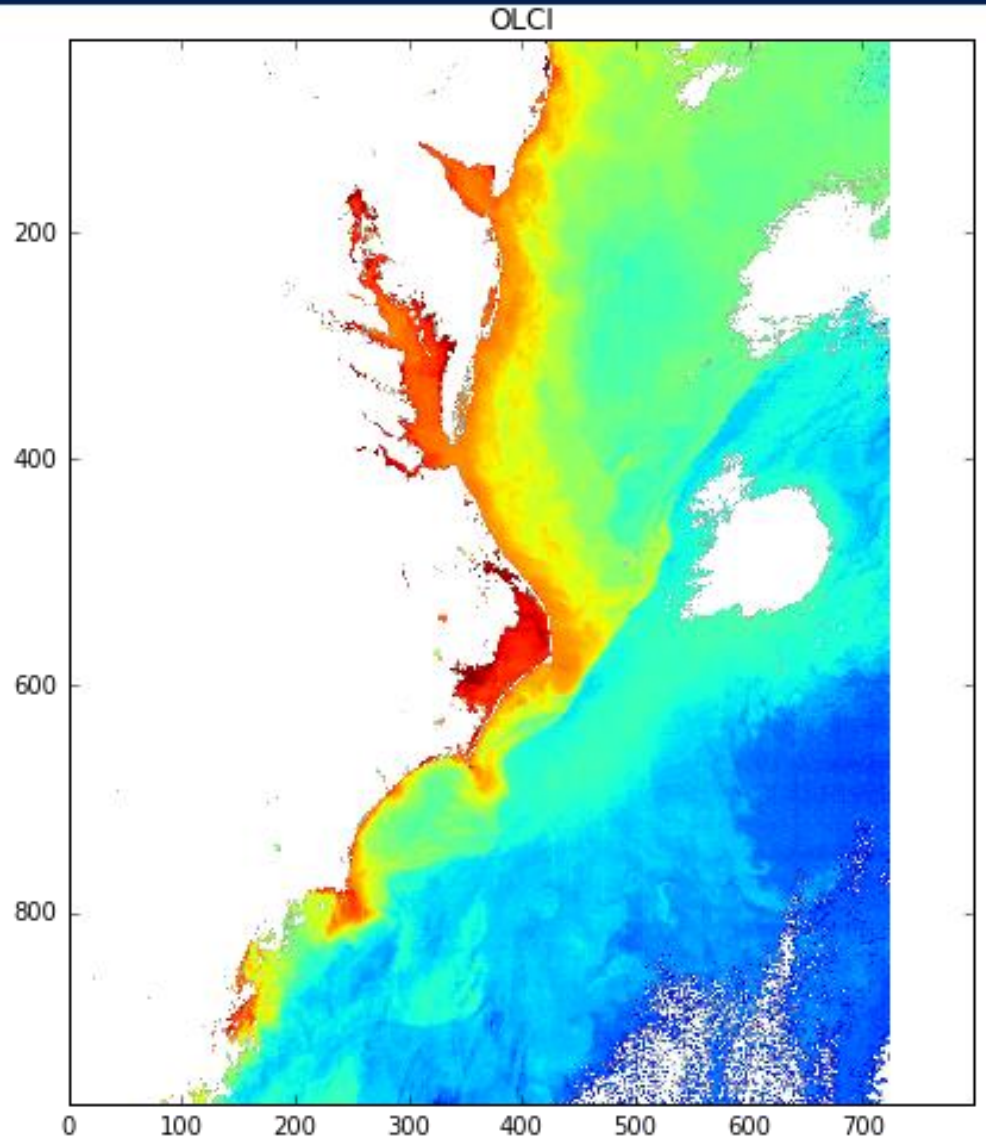
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