

Purpose: Empower oceanographers & ocean enthusiasts to view the state of the oceans and track associated events and objects, at any time from anywhere.

Date-specific ocean data & events

- Satellite based parameter 1
 - Ocean Color Chl-a
 - Sea Surface Height
 - Sea Surface Salinity
 - Sea Surface Temperature**
 - Sea Surface Wind
 - Natural True Color
- In situ match-up 1 (future)
- Satellite based parameter 2
- In situ match-up 2 (future)
- Velocity overlays (at an instance of time)
 - NOAA NWS NCEP GFS 10m wind (animation rate: 0.49)
 - NOAA STAR SOCD LSA RADS Current (animation rate: 0.77)
- Oceanic Fronts
- Storm tracks (traversing the shown date)
- Hurricanes (max WS ≥ 25 knots, min P ≤ 1010 mb)
- +Earth events

Objective

Display geospatial ocean information from NOAA STAR SOCD and other permissible providers. The focus is on the **state of the ocean and events** and only selected (not all available) fit-for-purpose products will be included. Other divisional data-portal will showcase more products.

Satellite
Sea Surface Temperature (SST), Ocean Color (OC) Chl-a, Sea Surface Height (SSH), Sea Surface Salinity (SSS), Sea Surface Wind (SSW)

Model
NCEP GFS wind-speed

In situ
Match-ups corresponding to the satellite products

Derived
Ocean currents, thermal fronts

Currently tracking

Man-made objects
Satellites, polar flight missions (may expand to sail drones, ship tracks, ocean debris and pollutants)

Earth or man-made events
Hurricanes, quakes, wild-fires, volcanisms (may expand to HABs, oil-spills and other types)

Accessories

Base layers and static overlay vector layers

Bells and Whistles

CRS: EPSG 3413 4326 3031

Arctic Geographic Antarctic

Search a place from OpenCage Geocoder

Great-circle distance

GIS Calculations (future work)

- Draw profile
- Analyze polygon
- Investigate point
- Resize/reposition drawn layers
- Remove all drawn layers

Application features

Map-controls and interactions

- zoom, pan
- raster (sat & base map)
- vector (coastlines, rivers, lakes)
- vector animation (wind, currents)
- transparency, show value, legend
- coordinate ref sys (polar & lat-lon)
- export screen display
- display local file (desktop app)
- permalink, social media share

Scientific

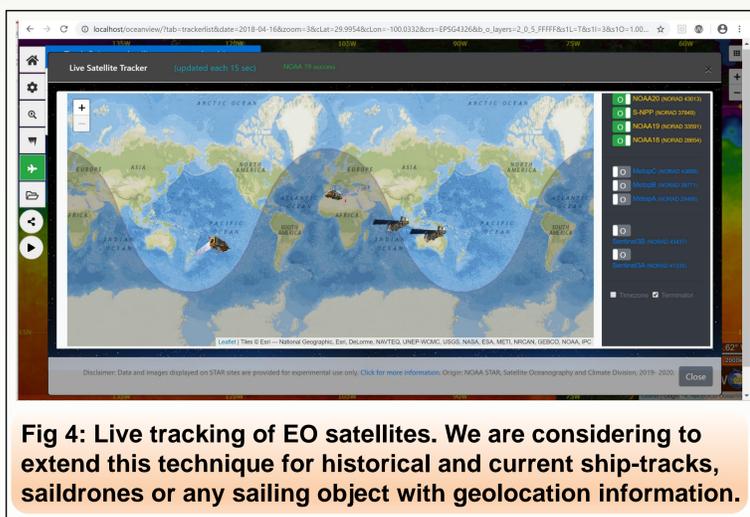
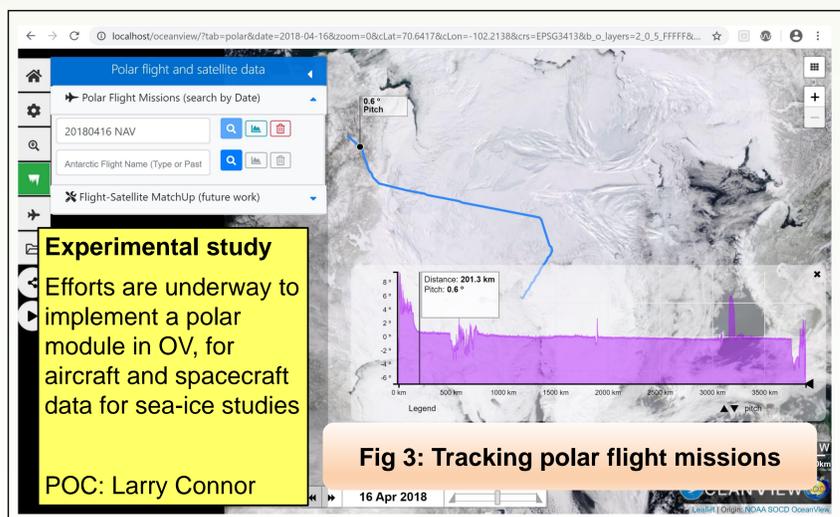
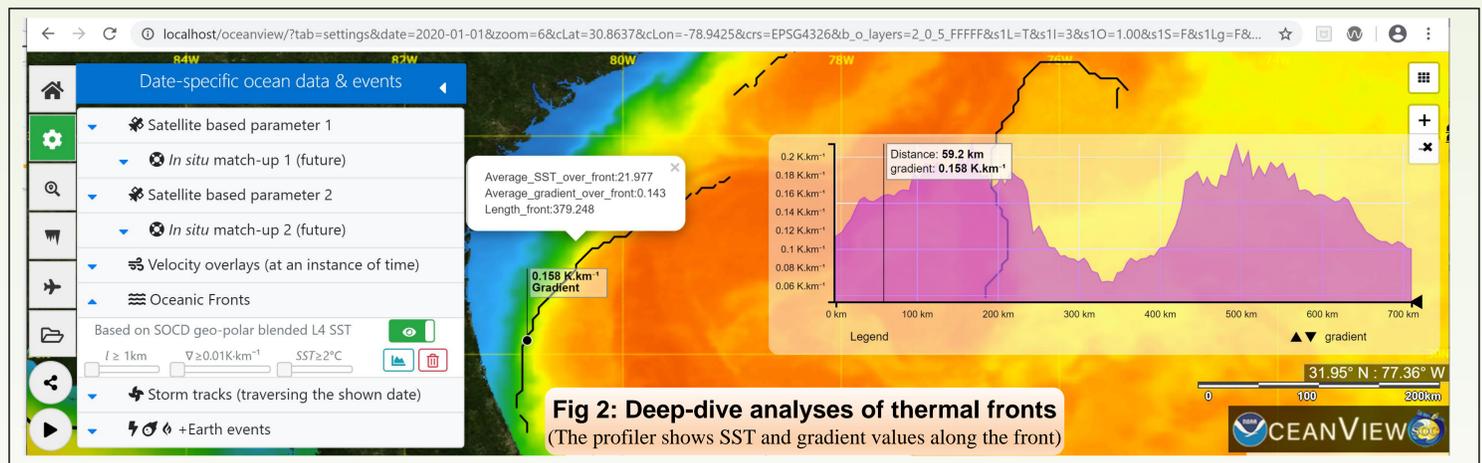
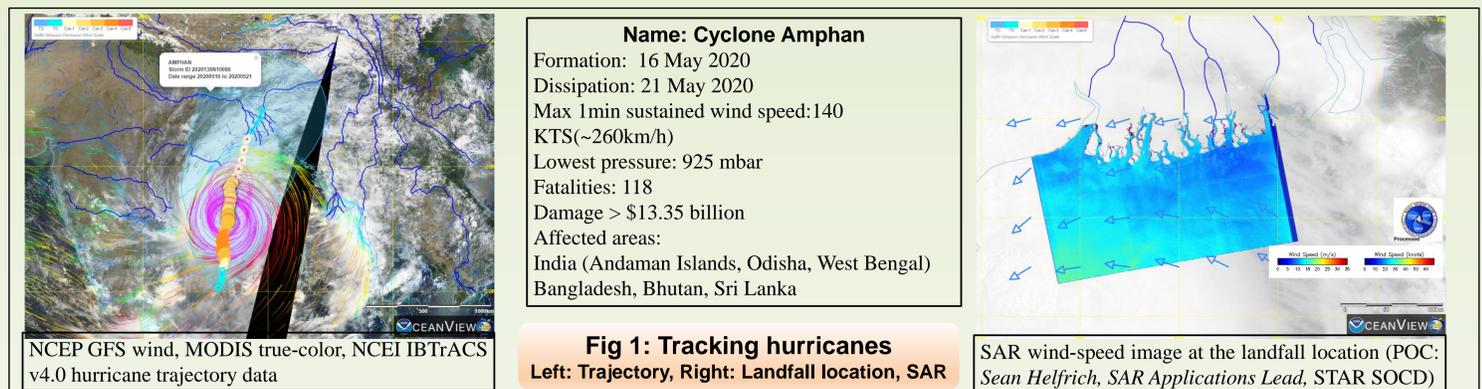
- deep-dive fronts (profiler)
- deep-dive polar flights (profiler)
- basic GIS operations
- searchable events/ fly. objects
- display of SOCD SAR event files

Technology

- opensource tools (OSGeo)
- client-side proc. architecture

Spin-off potential (being explored)

- support AquaWatch/GeoBluePlanet
- support polar Panarctic missions



Summary

A vast amount of information about the oceans is available, however, an integrated visualization of these datasets from an oceanographer's perspective is still non-trivial. The OceanView aims to fill this gap.

Planned release and full-demo/presentation: **Q1 2021**

Attribution/Acknowledgment

Sample flight data: **Laurence Connor**
SAR image: **Sean Helfrich**
RADS ocean currents: **Eric Leuliette**
Sample front data: **Marouan Bouali**
Useful discussions with colleagues at NASA JPL (**Ed Armstrong, Thomas Huang, Joe Roberts**); NASA GSFC (**Ryan Boller**)