

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

### 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)

## 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

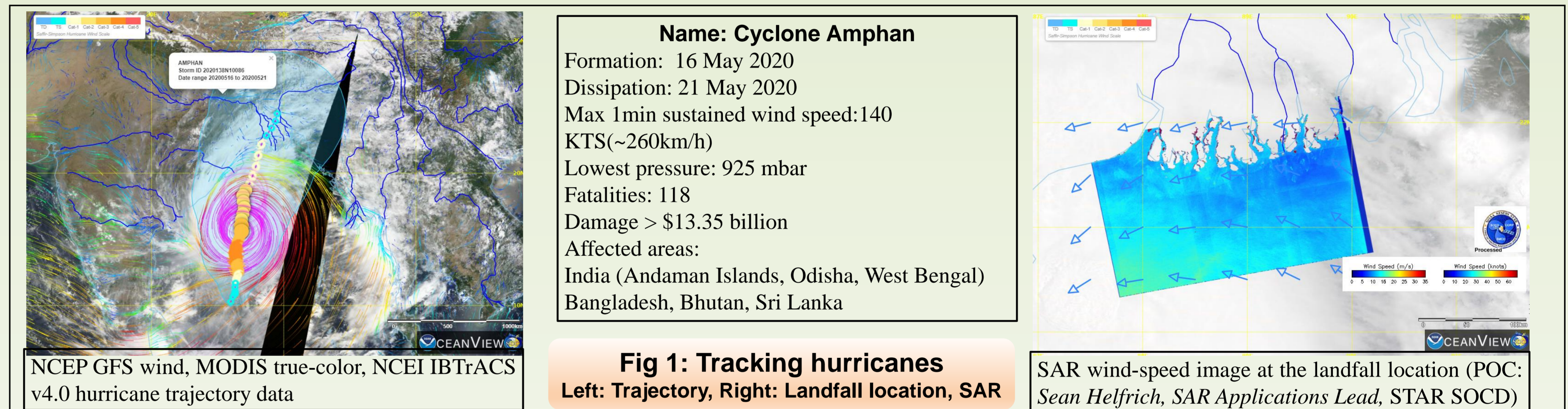
- deep-dive fronts (profiler)
- deep-dive polar flights (profiler)
- basic GIS operations
- searchable events/ fly. objects
- display of SOCD SAR event files

### Technology

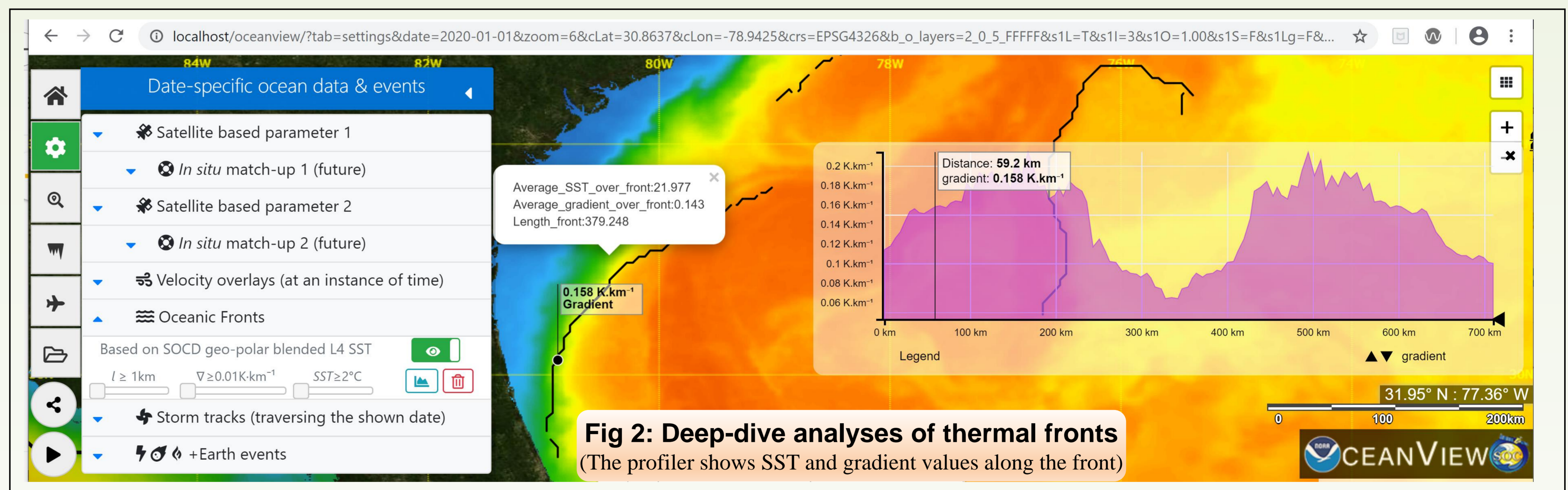
- opensource tools (OSGeo)
- client-side proc. architecture

### Spin-off potential (being explored)

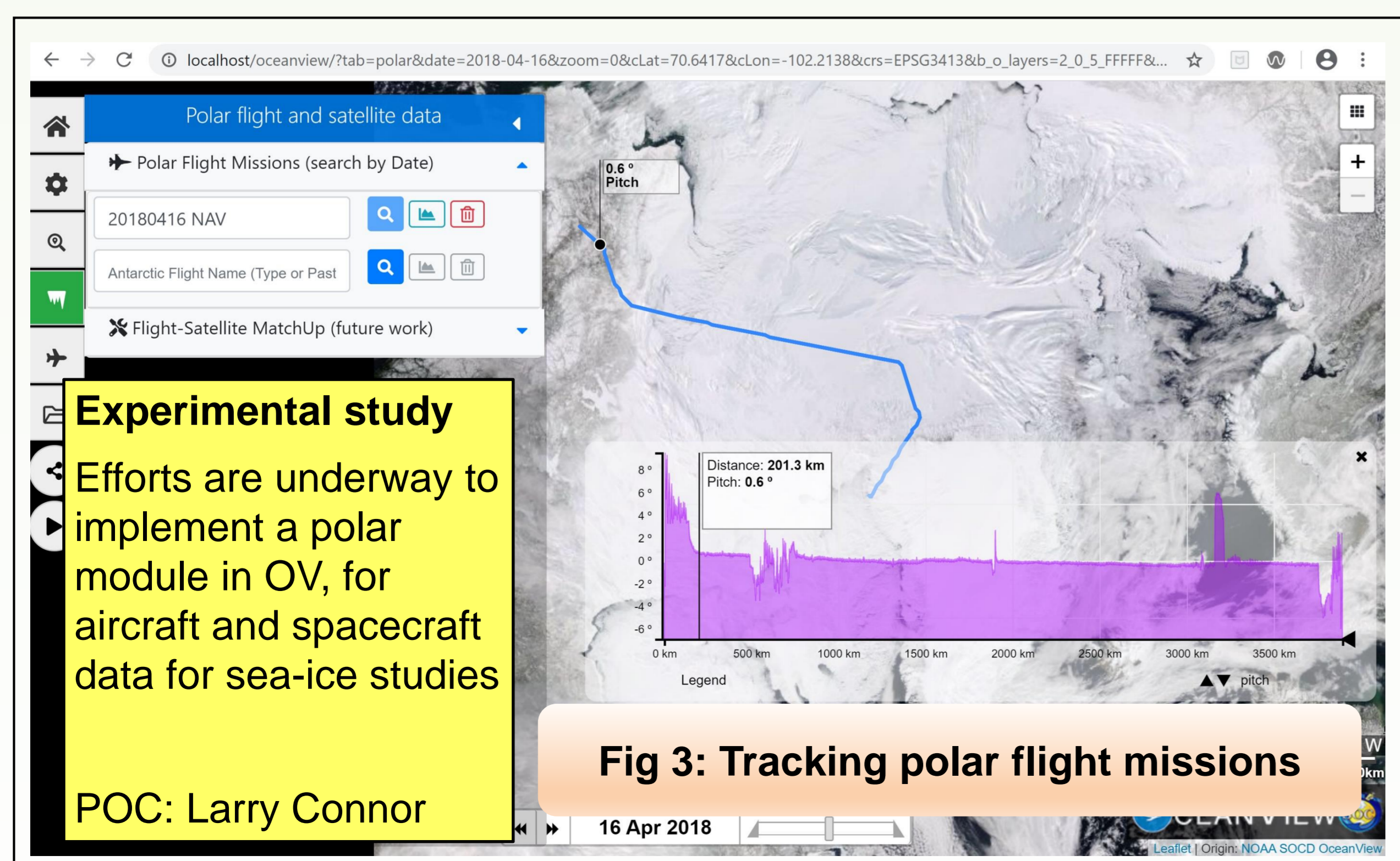
- support *AquaWatch/GeoBluePlanet*
- support *polar Panarctic* missions



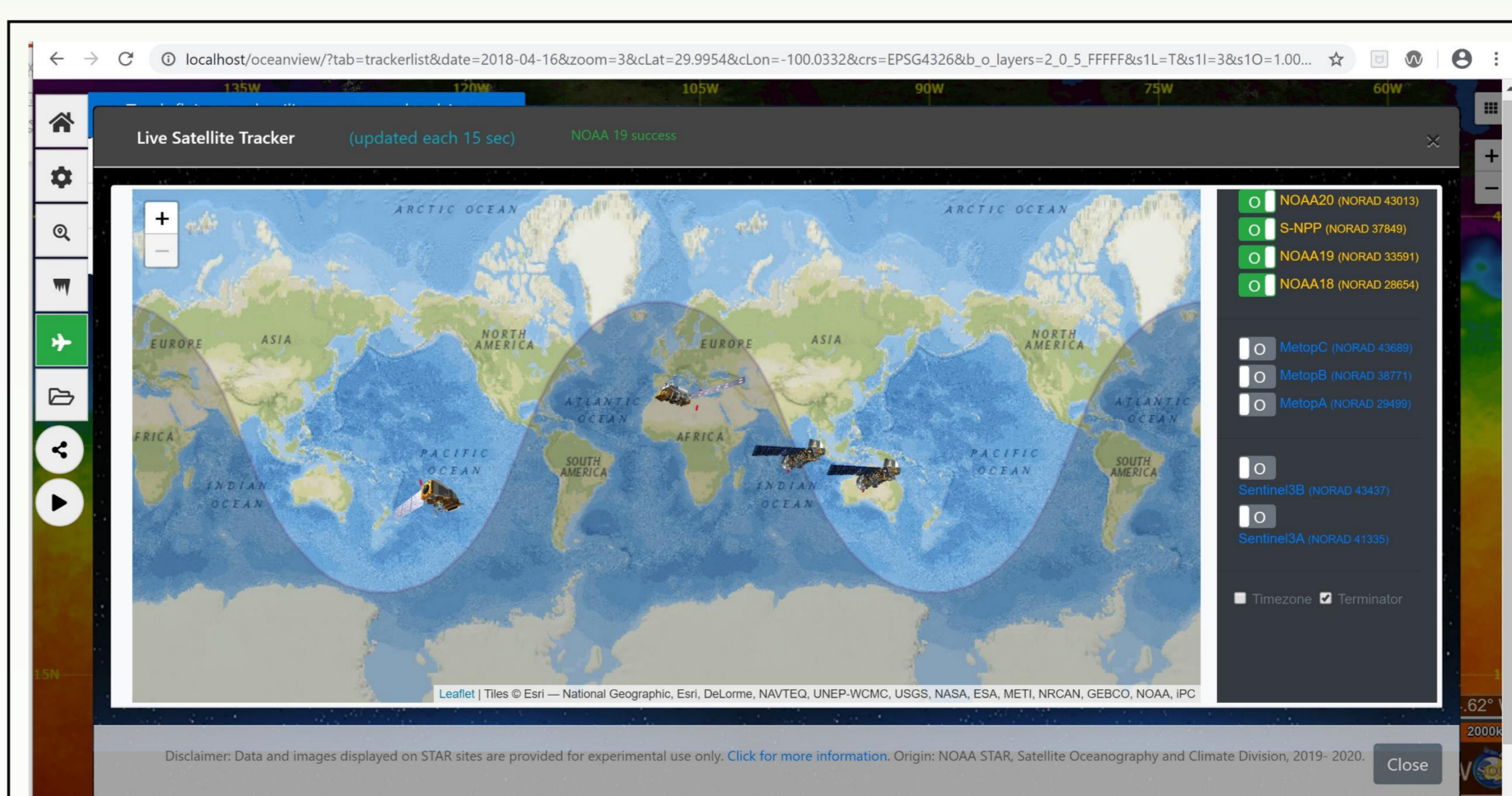
**Fig 1: Tracking hurricanes**  
Left: Trajectory, Right: Landfall location, SAR



**Fig 2: Deep-dive analyses of thermal fronts**  
(The profiler shows SST and gradient values along the front)



**Fig 3: Tracking polar flight missions**



**Fig 4: Live tracking of EO satellites.** We are considering to extend this technique for historical and current ship-tracks, saildrones or any sailing object with geolocation information.

## 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**)