NOAA Agency Updates

Land Surface Imaging and Analysis-Ready Data

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NOAA National Environmental Satellite, Data, and Information Service (NESDIS)

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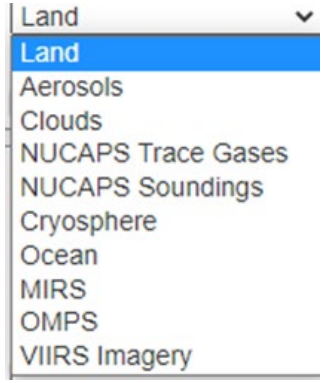
Land Surface Imaging

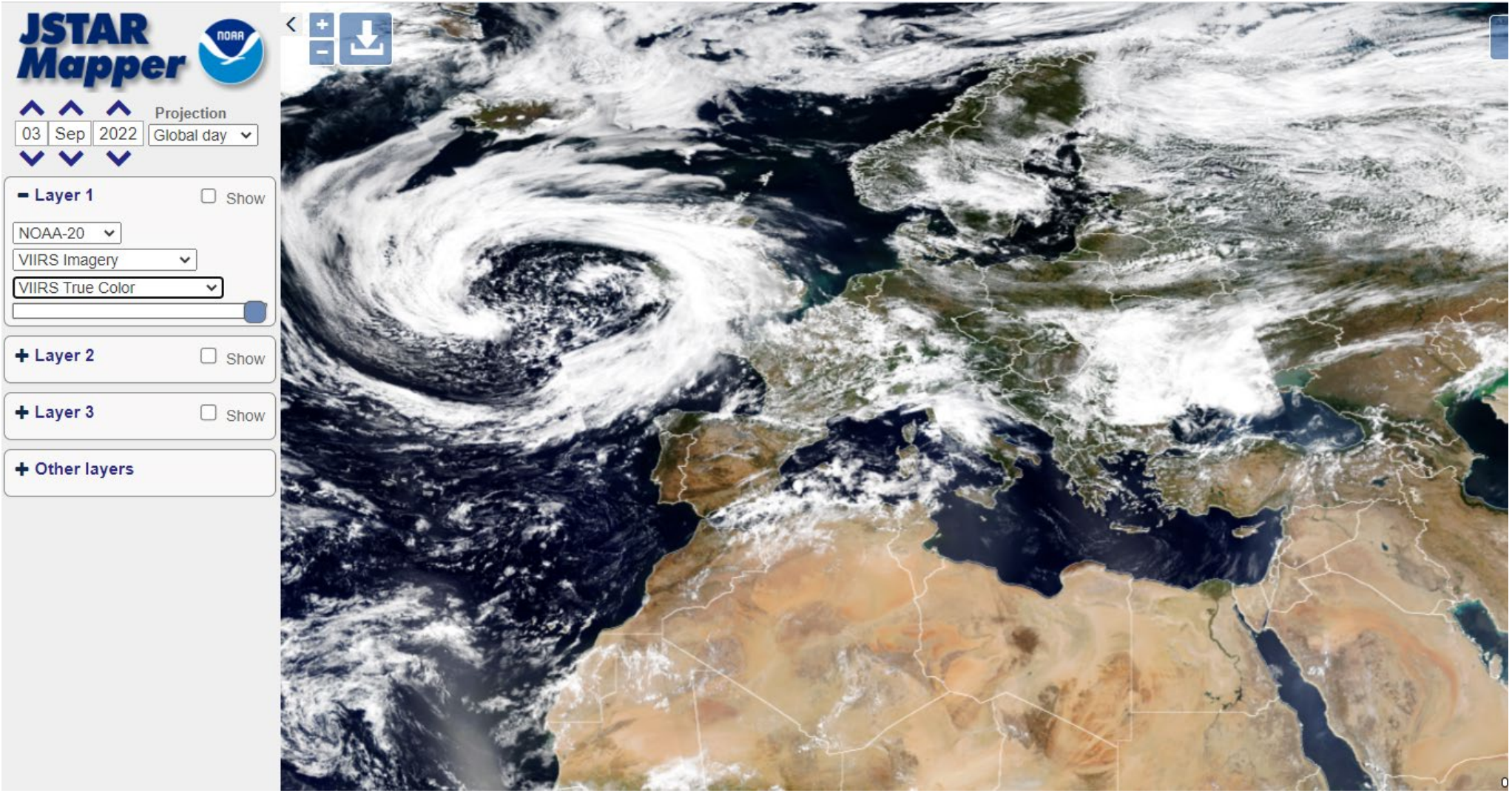
- JSTAR Mapper (*https://www.star.nesdis.noaa.gov/jpss/mapper/index.php*)
- GOES Image Viewer (*https://www.star.nesdis.noaa.gov/GOES/index.php*)
- ProxyVis (https://rammb2.cira.colostate.edu/research/goes-r-research/proxyvis/)
- NOAA Weather and Climate Toolkit (*https://www.ncdc.noaa.gov/wct/)*
- NOAA Open Data Dissemination Program (*https://www.noaa.gov/nodd/datasets)*

Image products available or planned from:

- NOAA-20
- Suomi NPP
- GCOM W-2
- Sentinel 5P

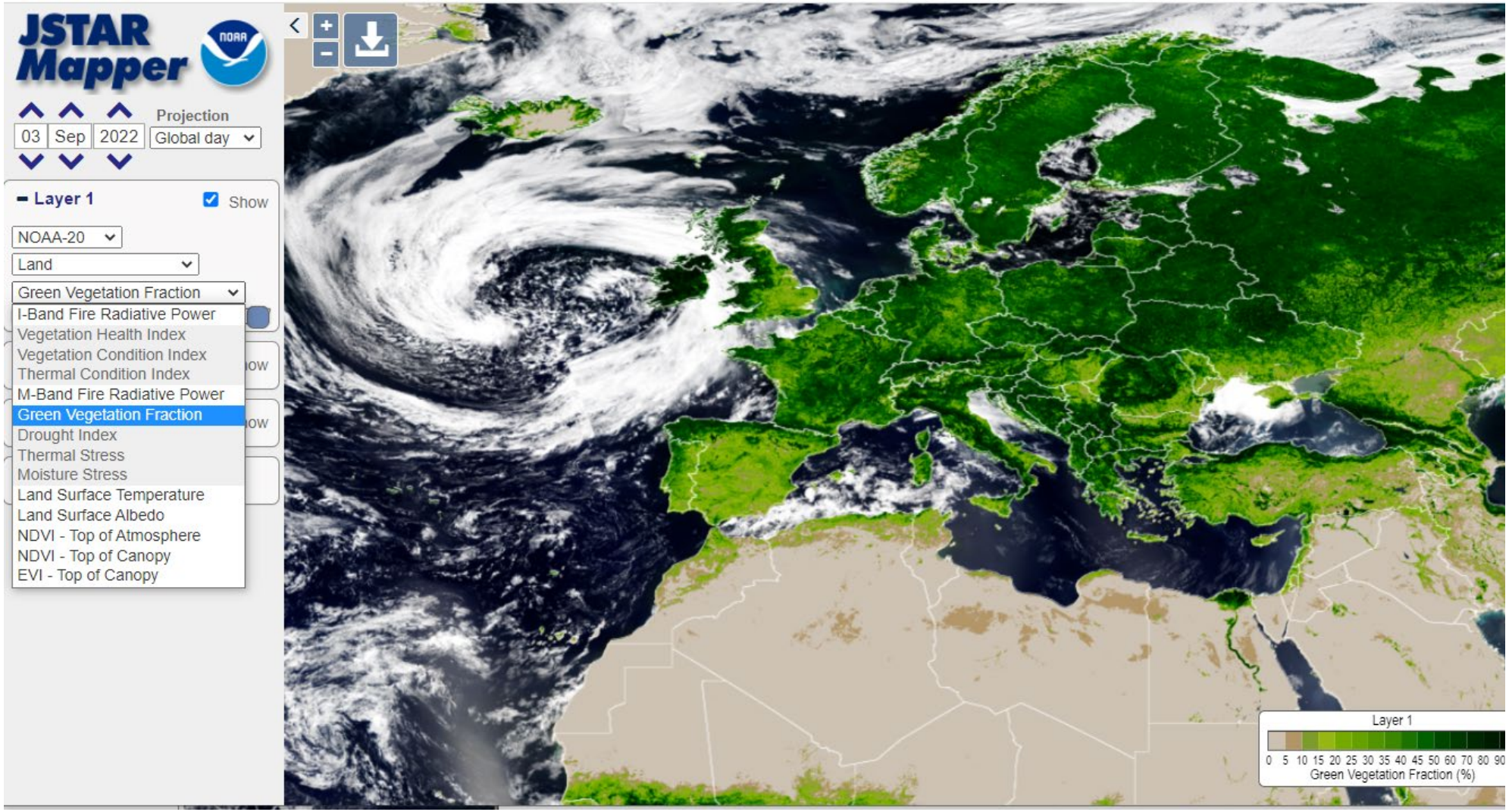
Product themes:





Land Product Example:

- Green Vegetation Fraction



Second layer added:

I-Band Fire Radiative Power

Next Steps:

An enhanced Environmental Mapping System is under development that will include data/product download capabilities.

Data/products currently available from NOAA CLASS:
https://www.class.noaa.gov/

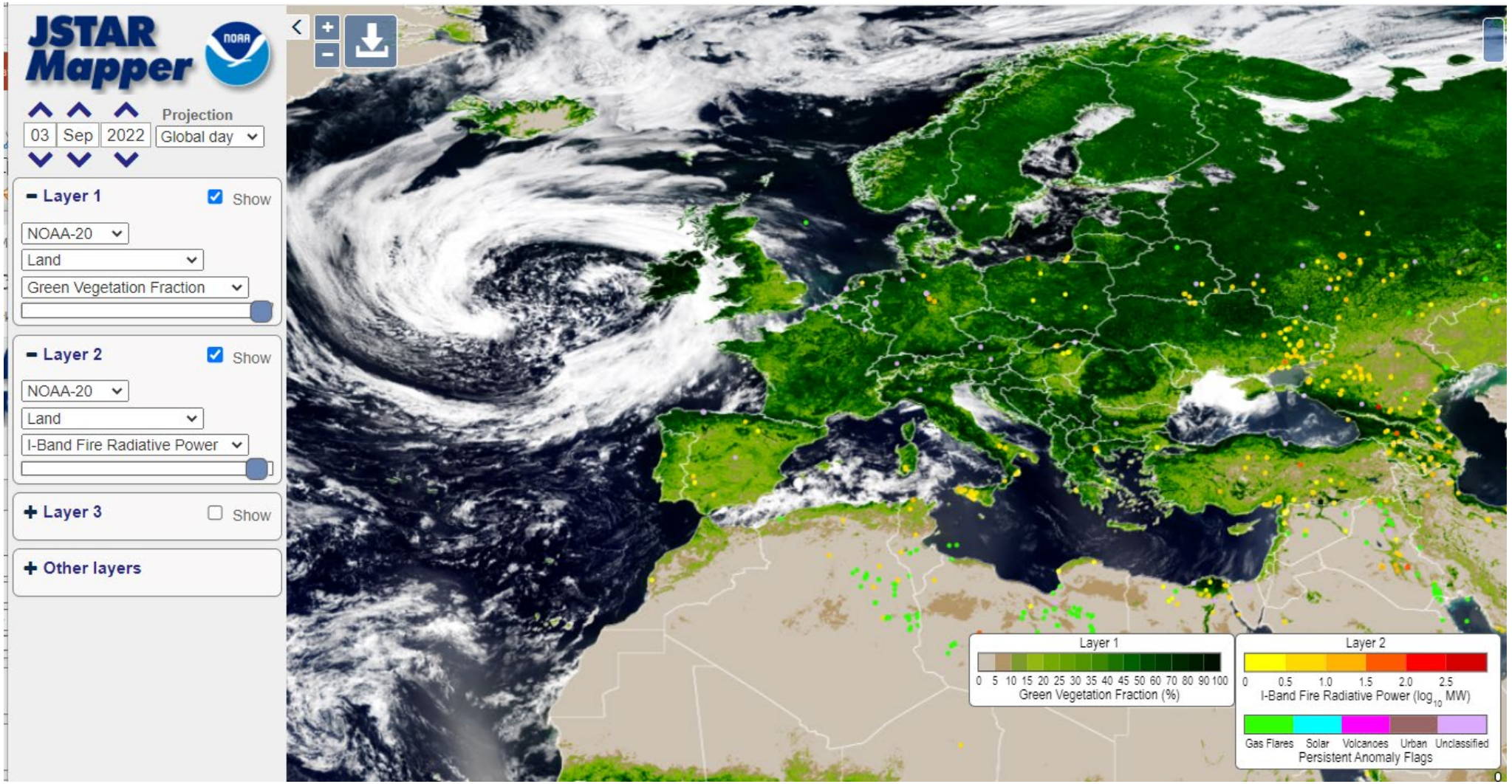
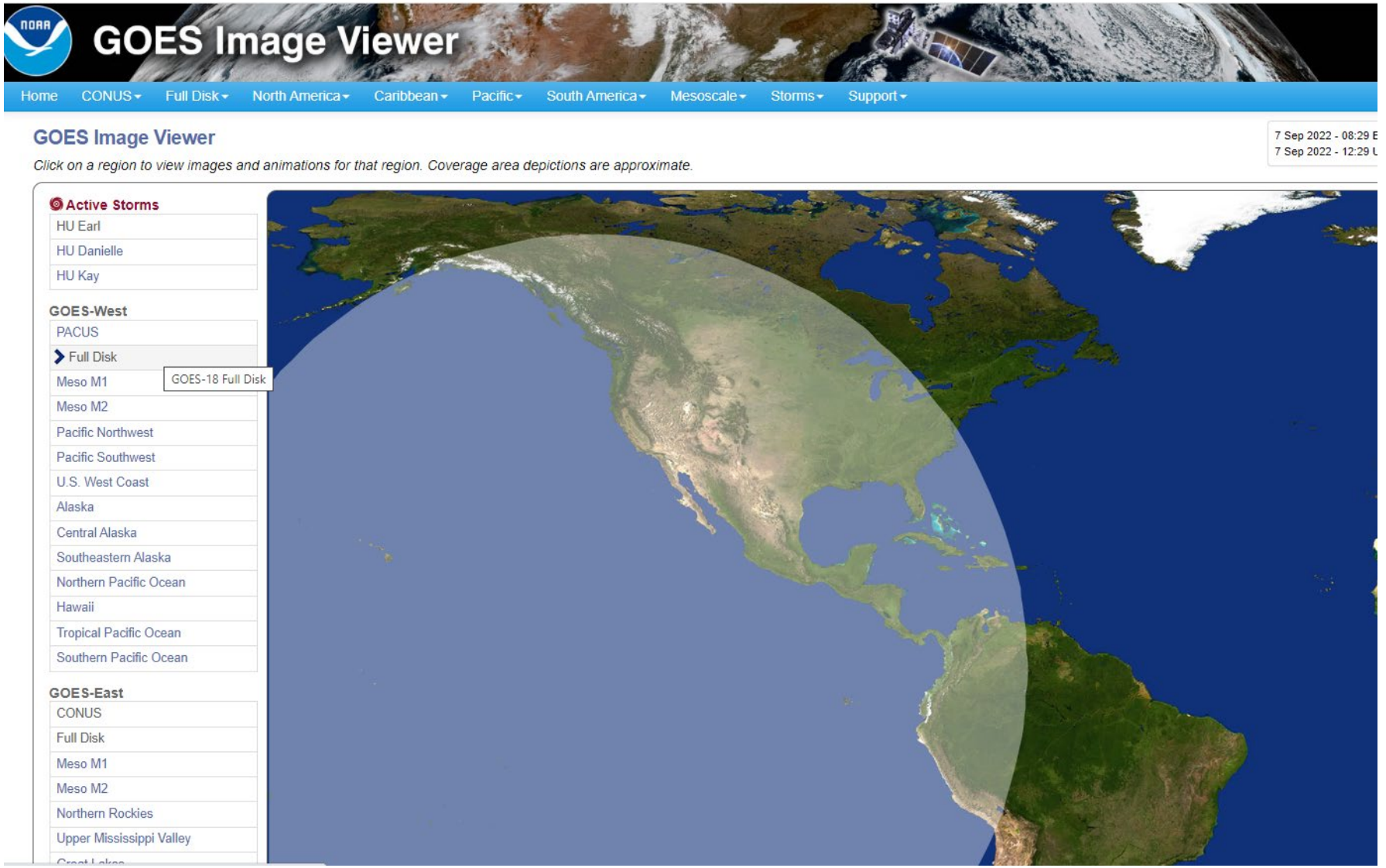
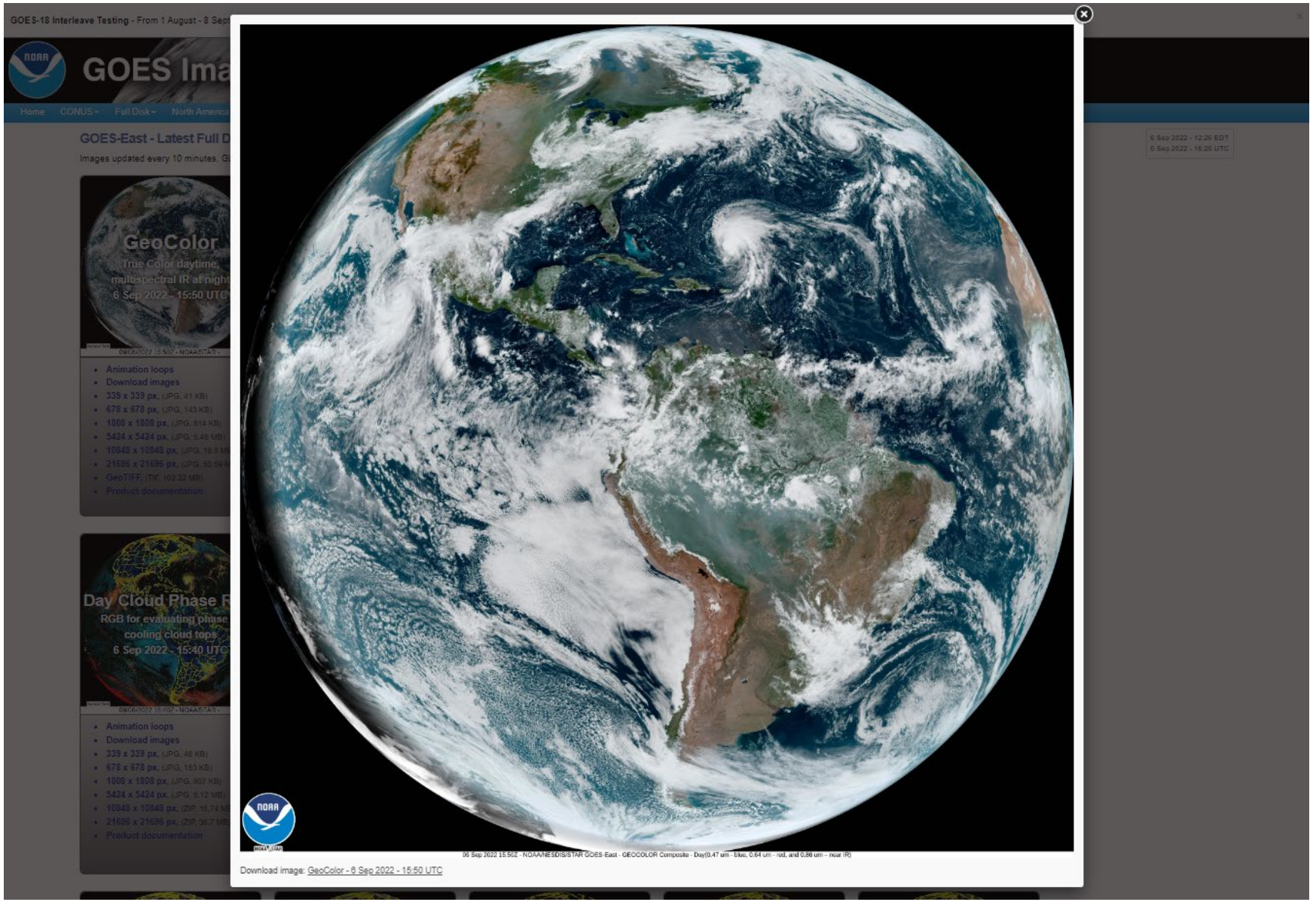


Image products available from:

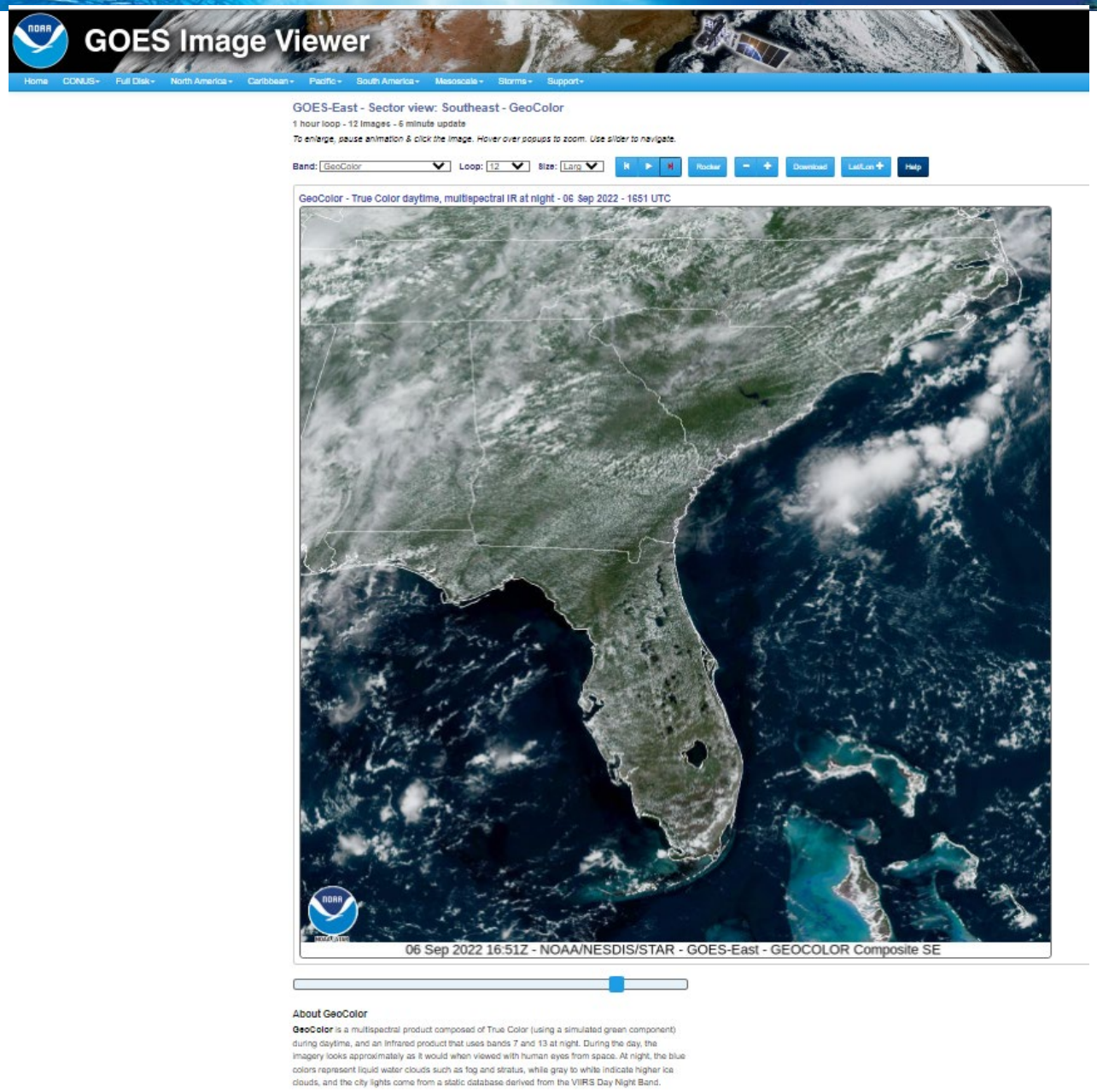
- GOES-16 (GOES-East) and
- GOES-18 (GOES-West)



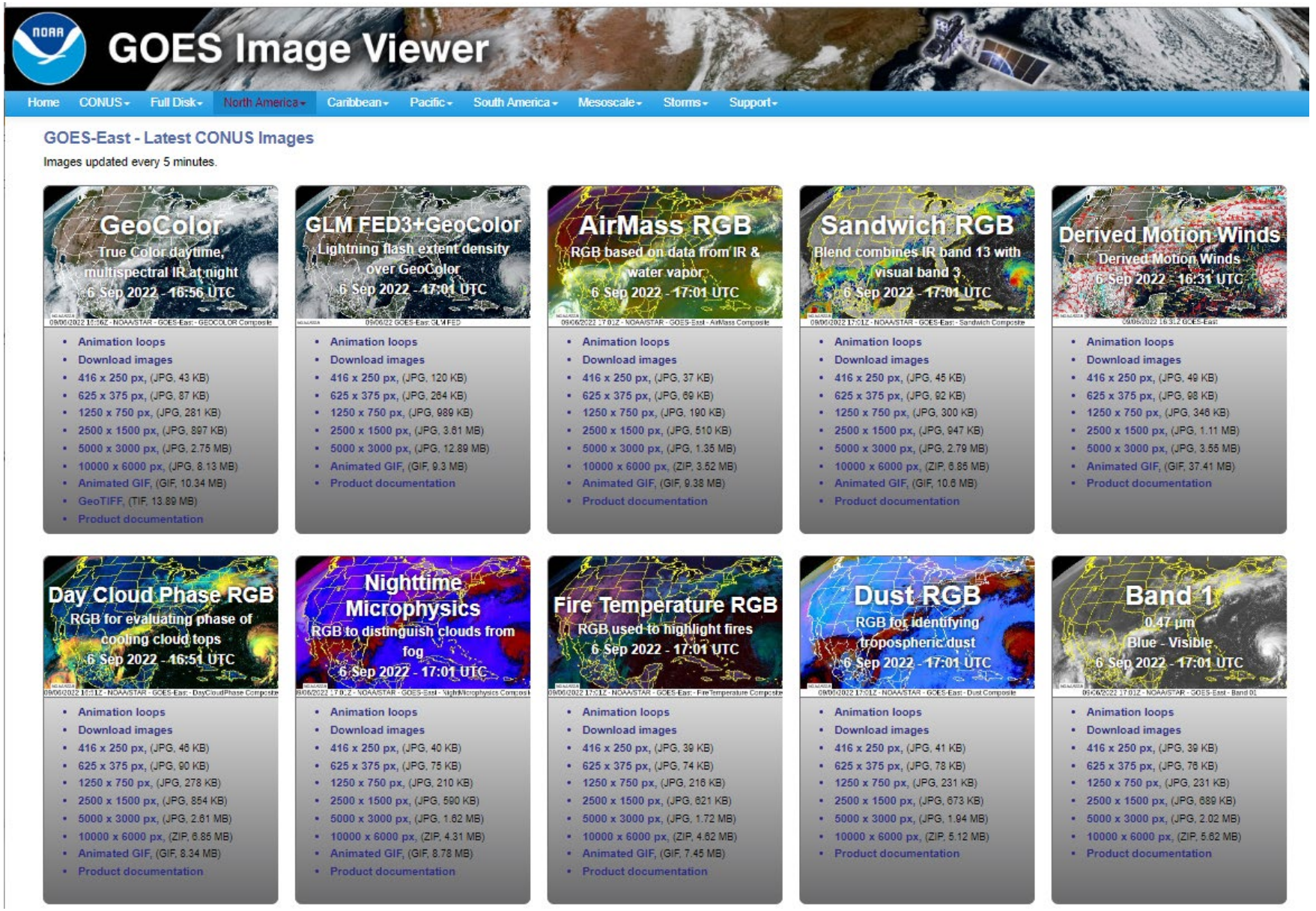
GOES-16 view (true color daytime)



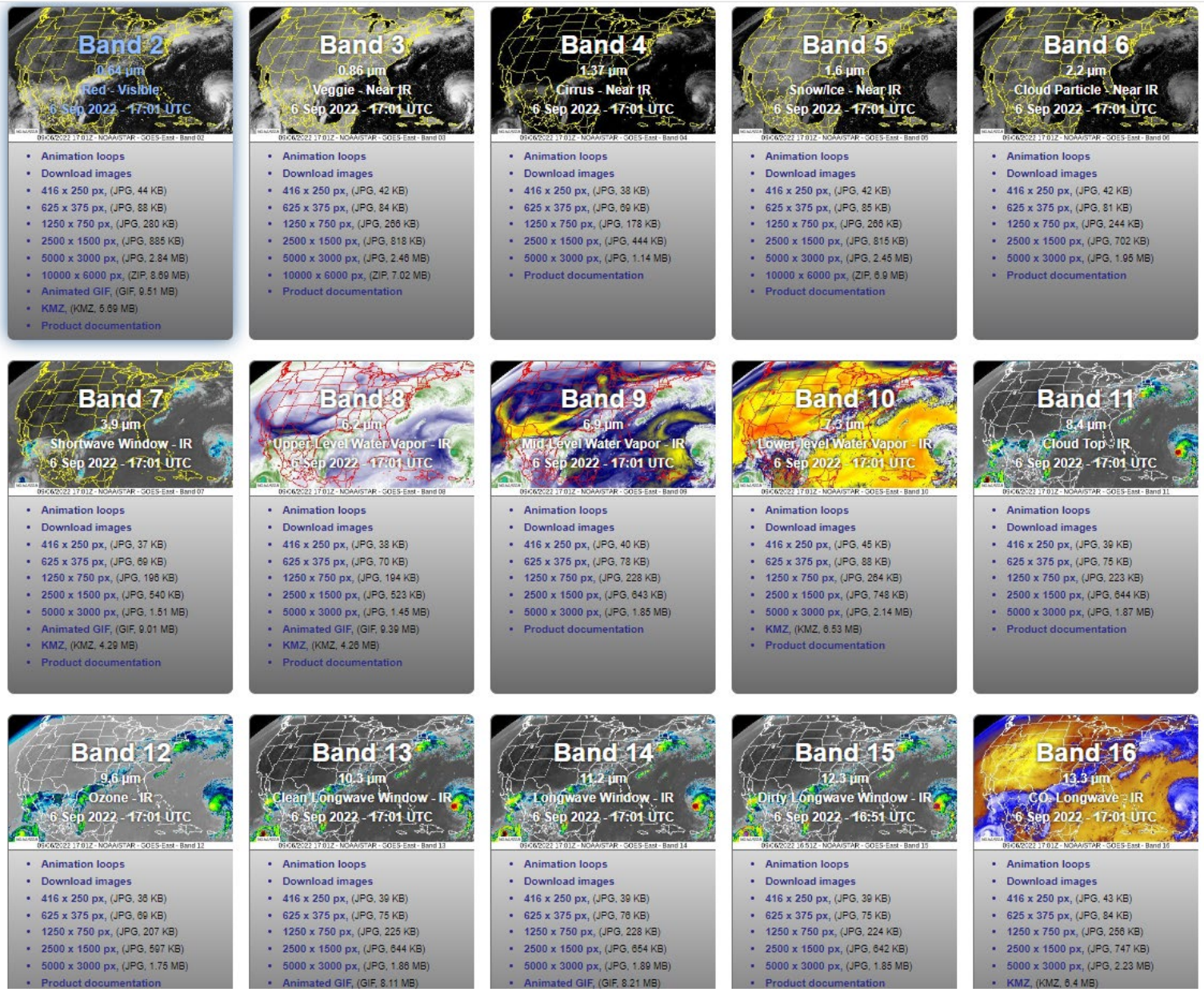
GOES-16 view (true color daytime)



GOES-East and GOES-West (several products and….



… individual bands are available).



Data/products currently available from NOAA CLASS:
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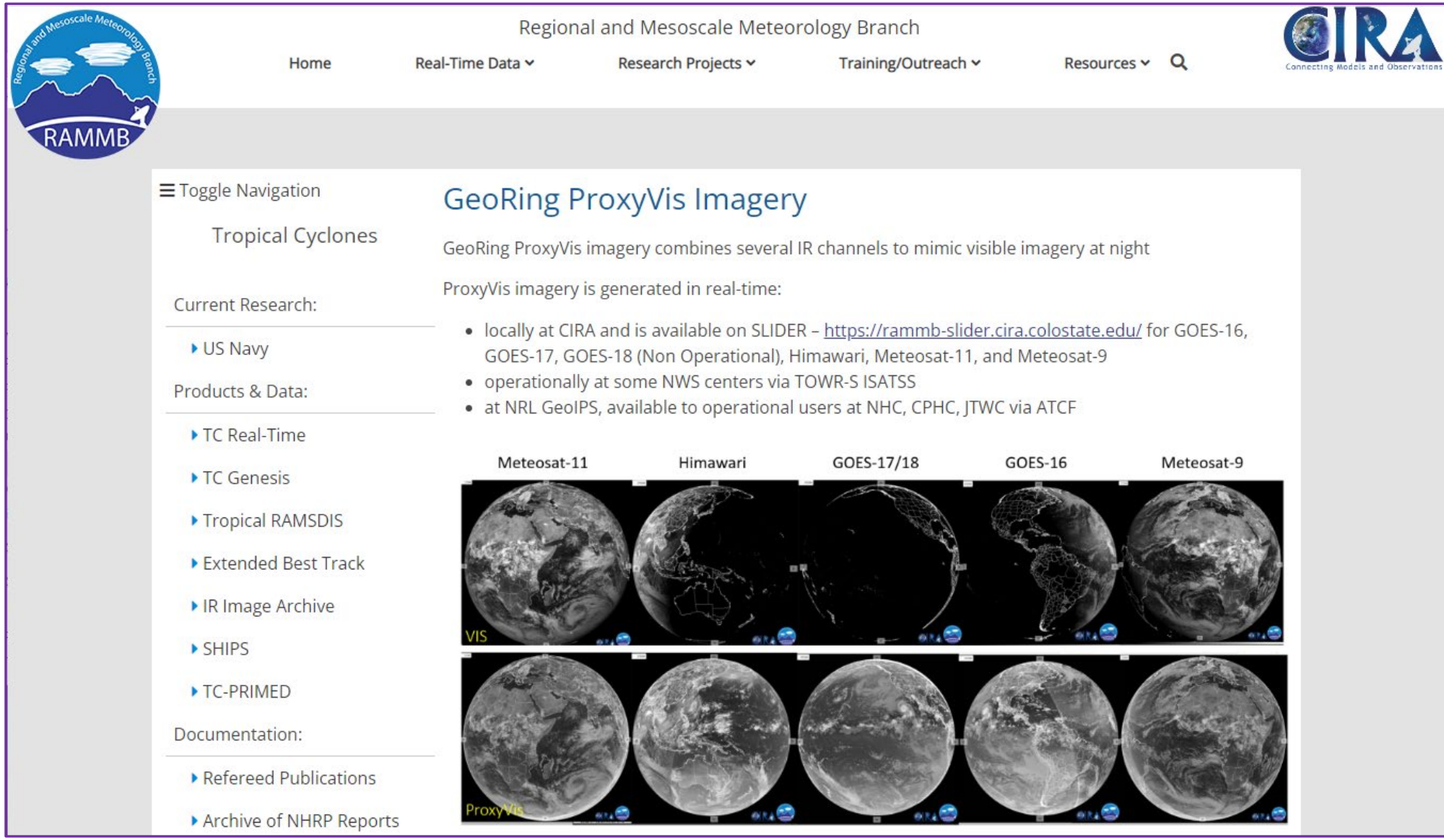
ProxyVis is currently an experimental product that includes full-disk GOES, Meteosat, and Himawari data adjusted to visible band imagery.

Primary use is currently within the Ocean community, Land applications are under consideration.



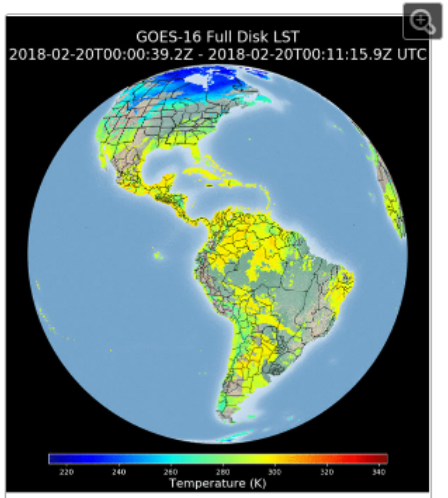
NOAA's Weather and Climate Toolkit

Imagery and data/products are currently available from GOES-16 and GOES-17. Products include most of GOES standard land products including Land Surface Albedo and Land Surface Temperature:

DATA PRODUCTS: LAND SURFACE TEMPERATURE (SKIN)

Download product algorithm theoretical basis document (ATBD)

The land surface temperature (LST) product is derived from GOES-R ABI longwave infrared spectral channels and is expected to be used in a number of applications in hydrology, meteorology, and climatology. Forecasters use it to forecast the occurrence of fog and frost. The land surface product is of fundamental importance to the net radiation budget at the Earth's surface and to monitoring the state of crops and vegetation. It is an important indicator of both the greenhouse effect and the energy flux between the atmosphere and ground. Furthermore, it can be assimilated into climate, atmospheric, and land surface models to estimate sensible heat flux and latent heat flux.



GOES-16 land surface temperature product, February 20, 2018.

NOAA NATIONAL CENTERS FOR ENVIRONMENTAL INFORMATION
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

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NOAA's Weather and Climate Toolkit

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Weather and Climate Toolkit Home

Data Access:
- Station
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- Satellite
- Model
- Severe Weather

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Batch Processing
Credits
API / Source Code

Documentation
User Guide/Tutorials
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Presentations

Introduction

NOAA's Weather and Climate Toolkit (WCT) is free, platform independent software distributed from NOAA's National Centers for Environmental Information (NCEI). The WCT allows the visualization and data export of weather and climate data, including Radar, Satellite and Model data. The WCT also provides access to weather/climate web services provided from NCEI and other organizations.

The WCT provides tools for background maps, animations and basic filtering. The export of images and movies is provided in multiple formats. The data export feature supports conversion of data to a variety of common formats including GeoJSON, KMZ, Shapefile, Well-Known Text, GeoTIFF, ESRI Grid and Gridded NetCDF. These data export features promote the interoperability of weather and climate information with various scientific communities and common software packages such as ArcGIS, Google Earth, MatLAB, QGIS, R and many more. Advanced data export support for Google Earth enables the 2-D and 3D export of rendered data and isosurfaces.

Current data types supported:

Download / Launch

- CF-compliant Gridded NetCDF
- Generic CF-compliant Irregularly-Spaced/Curvilinear Gridded NetCDF/HDF
- GRIB1, GRIB2, GINI, GEMPAK, HDF (CF-compliant) and more gridded formats
- GOES Satellite AREA Files
- NEXRAD Radar Data (Level-II and Level-III)
- U.S. Drought Monitor Service (from the National Drought Mitigation Center (NDMC))
- OPeNDAP support for Gridded Datasets

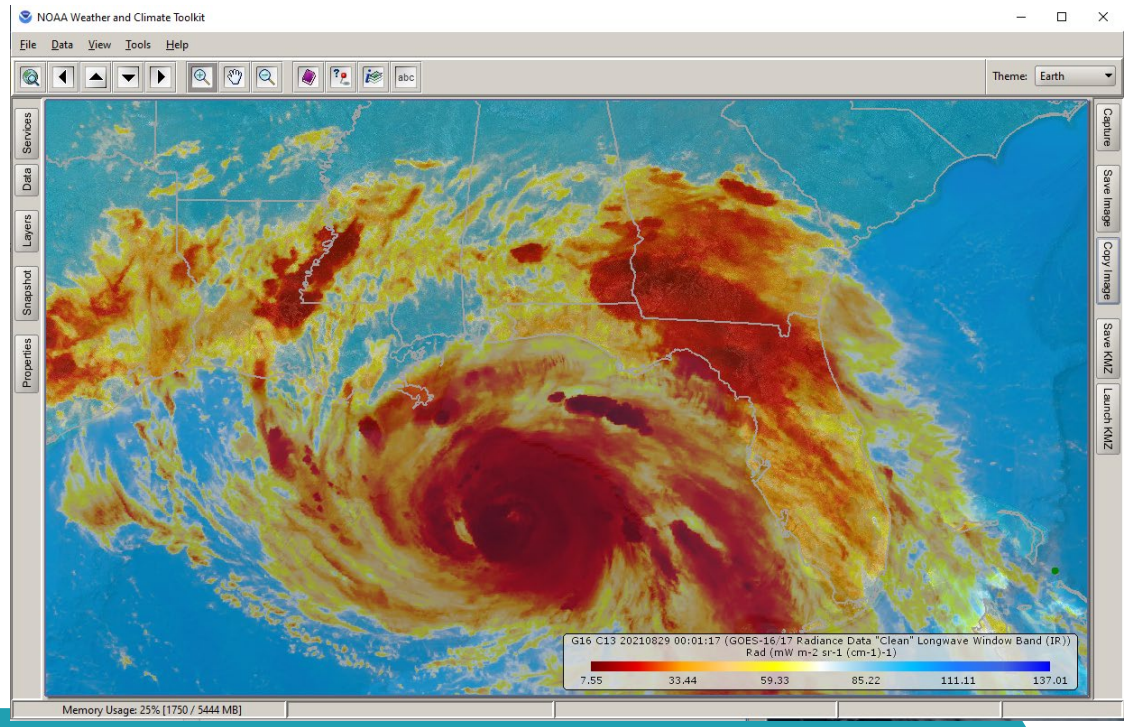
New Features / FAQ / Tutorials

NOAA Weather and Climate Toolkit

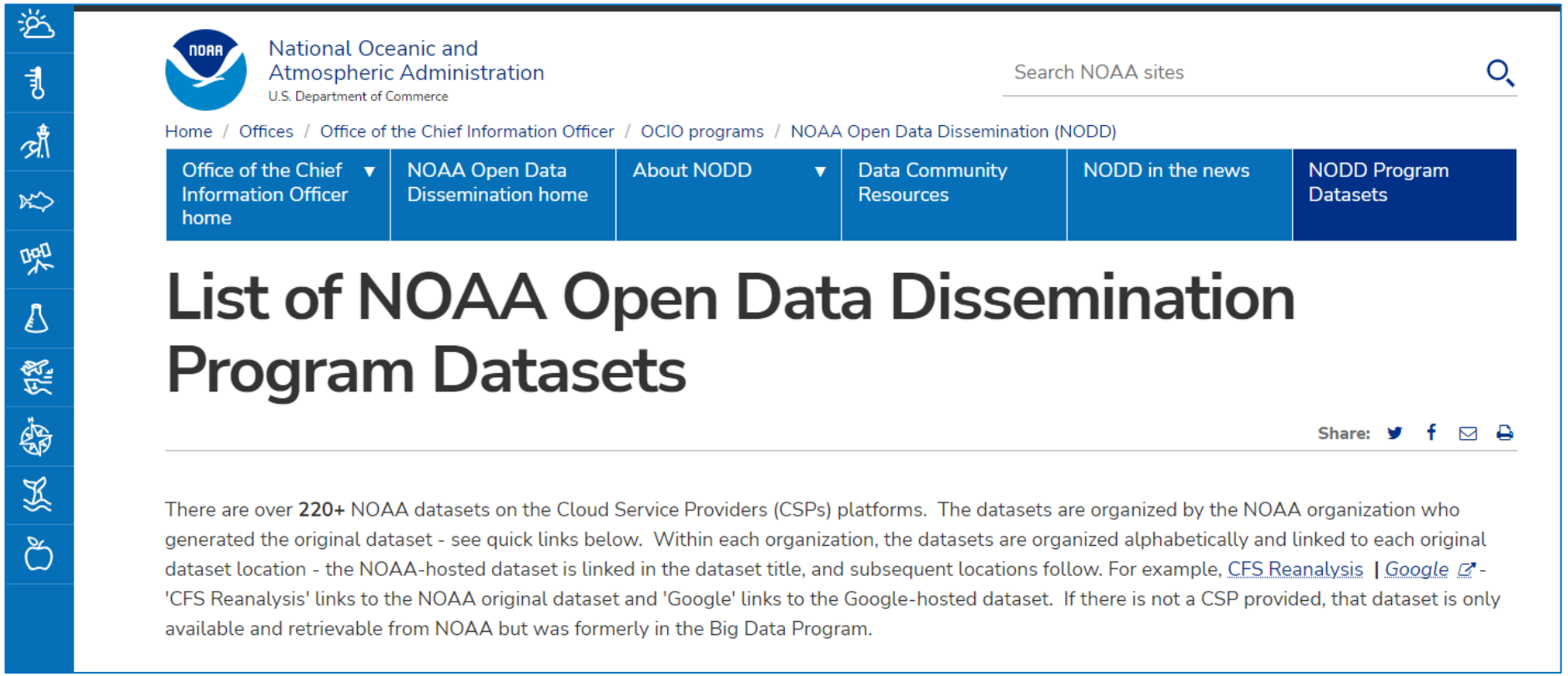
- Software from NOAA-NCEI to visualize and transform weather and climate data into common web and GIS-ready formats.
- Desktop software that runs on Windows, Mac and Linux, including interactive maps and command-line tools allow users to automate data processing.

- Supports common formats including:
  - NetCDF, GRIB, AREA, GeoTIFF (only 32 bit float), including local or remote data.

- Direct access to GOES data on the NOAA Open Data Dissemination cloud storage, and historical GOES data from CLASS orders.

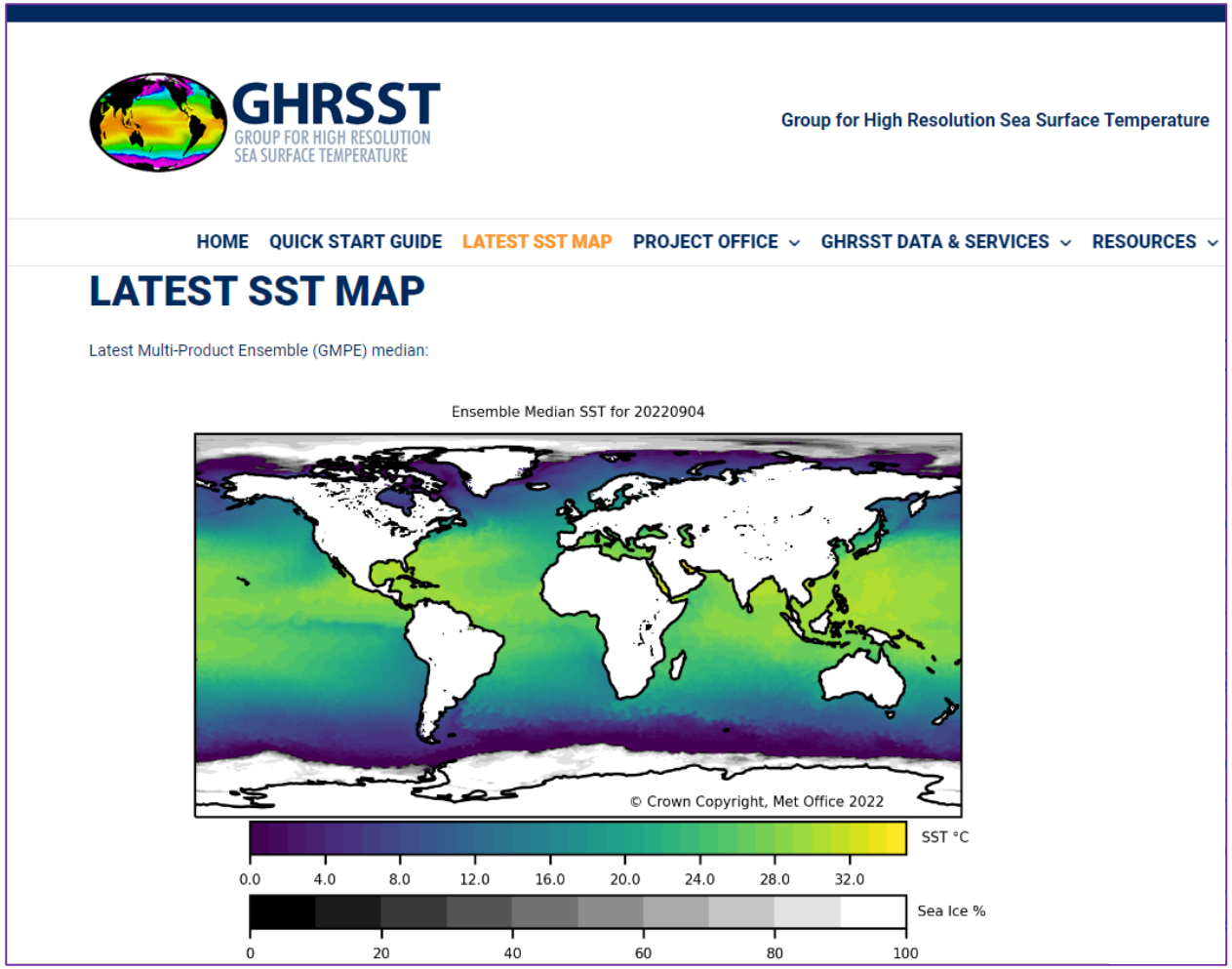


Links to NOAA satellite (and other) datasets available through cloud services are under development.



Analysis Ready Data

NOAA is a participant in the Group for High Resolution SST (GHRSST) and SST-VC efforts that include plans to submit several datasets and associated PFS for consideration of ARD compliance. This initial participation by NOAA may help chart a path for additional NOAA product submissions in the future.



JPSS-2 Launch planned for 1 November 2022

Similar to the instruments included on Suomi NPP and NOAA-20 (JPSS-1), JPSS-2 includes:

- Advanced Technology Microwave Sounder (ATMS),
- Cross-track Infrared Sounder (CrIS),
- Visible Infrared Imaging Radiometer Suite (VIIRS), and the
- Ozone Mapping and Profiler Suite (OMPS).

Planned ECT: 1330 local time