NOAA CoastWatch/ OceanWatch Ocean Color Data Dissemination

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STAR Center for Satellite Application and Research
National Environmental Satellite, Data, and Information Service (NESDIS)

NOAA CoastWatch/OceanWatch Team

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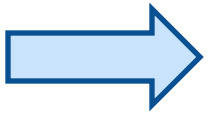
Michael Soracco	Ryan Wattam

Suomi NPP VIIRS OC Data Products

- Near Real Time (Days 1-14)
  - Global
  - Regional



Code has been transitioned, OSPO is now producing test data.

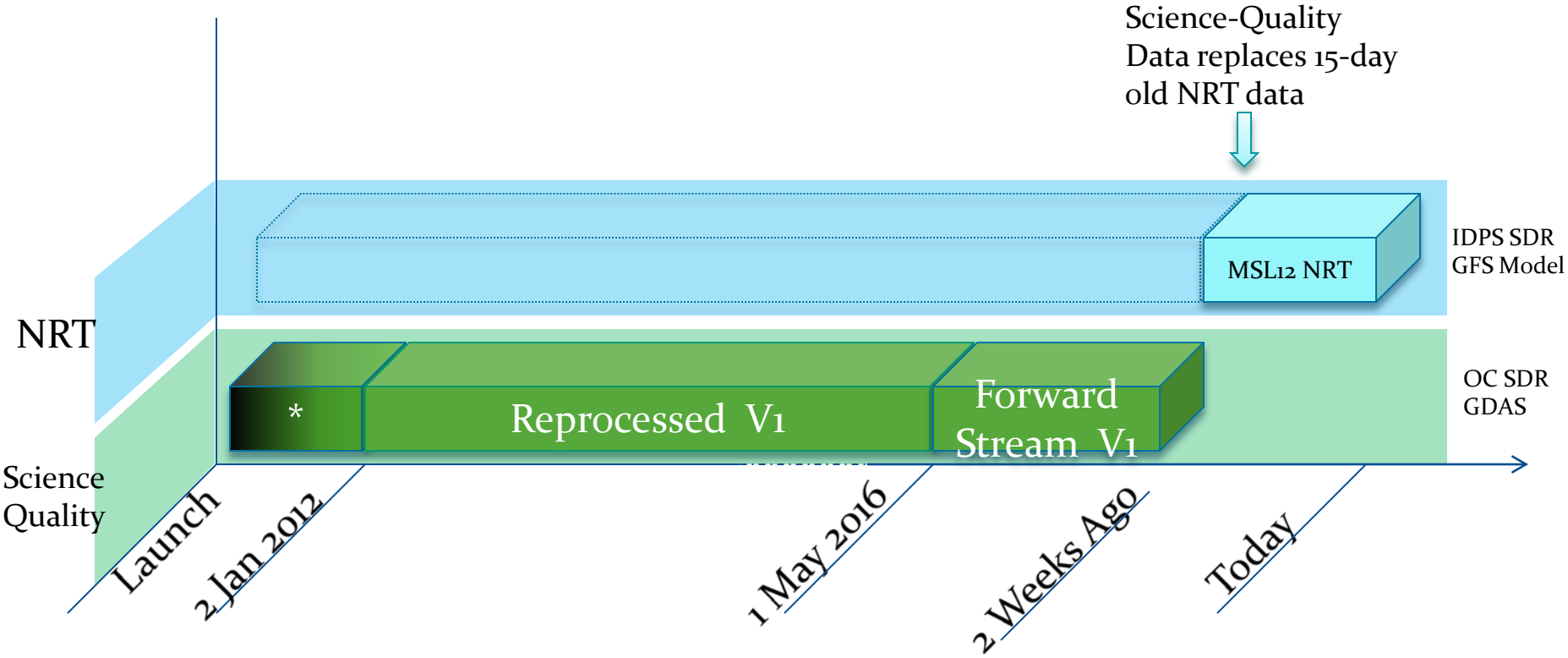
- Science Quality (Day 15 – 2 Jan 2012*)
  - Global
  - Regional

** Data from early mission (since launch Nov. 2011 to 2 Jan 2012) are available only upon special request and will be provided with a quality warning.*

NRT & Science Quality Data

Attribute	Near-Real Time	Delayed-Mode/Science-Quality
Latency:	Best effort, as soon as possible (~12-24h)	Best effort, on a 2-week delay
Processing System:	**MSL12**	**MSL12**
SDR:	**IDPS Operational SDR**	**OC-improved SDR**
Ancillary Data:	Global Forecast System (GFS) Model	Science quality (assimilated; GDAS) from NCEP
Spatial Coverage:	May be gaps due to various issues	Complete global coverage
Processed by:	CoastWatch, transferring to OSPO (operational) FY16	NOAA/STAR
Distributed by:	CoastWatch , OSPO	CoastWatch, NCEI
Archive Plans:	Yes, from OSPO to NCEI	Yes, from CoastWatch to NCEI
Full Mission Reprocessing:	No	Yes, every ~2-3 years or as needed

Example "Snapshot"



*Early mission data are not publically distributed due to quality issues. They can be specially requested but will come with a quality warning.

L2 & L3 Global Products

- Standard:
  - Chlorophyll-a
  - Kd490
  - KdPAR
  - nLw_412
  - nLw_445
  - nLw_488
  - nLw_555
  - nLw_672
  - L2_flags
  - Latitude
  - Longitude
- Experimental:
  - IOPs
  - PAR

Future inclusion as released by MECB

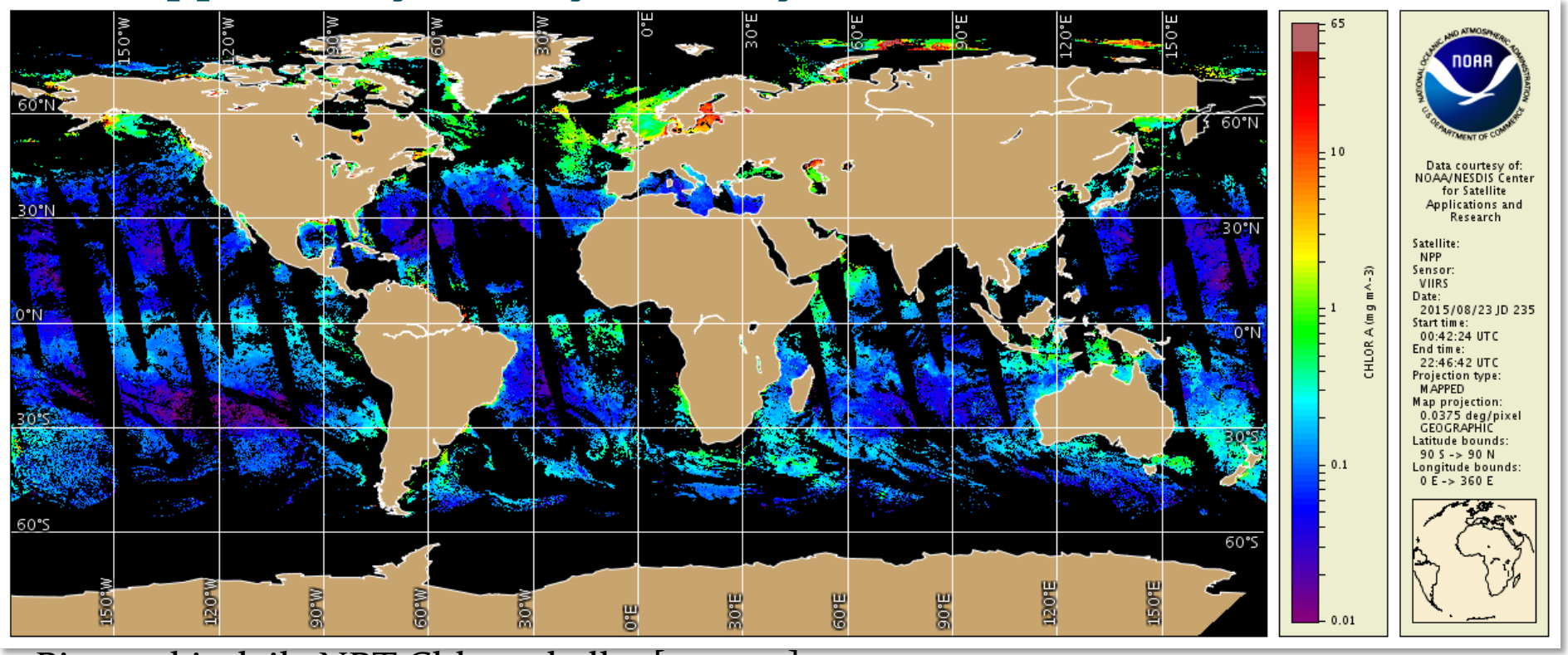
L2 & L3 Regional Products

- Standard:
  - Chlorophyll-a
  - Kd490
  - KdPAR
  - nLw_412
  - nLw_445
  - nLw_488
  - nLw_555
  - nLw_672
  - L2_flags
  - Latitude
  - Longitude
  - Edgemask
- Experimental:
  - IOPs
  - PAR

  Future inclusion as released by MECB
- User Driven ("Customized" routine production; considered upon request):
  - HAB anomaly product
  - R_{rs}
  - Special projections
  - Etc.

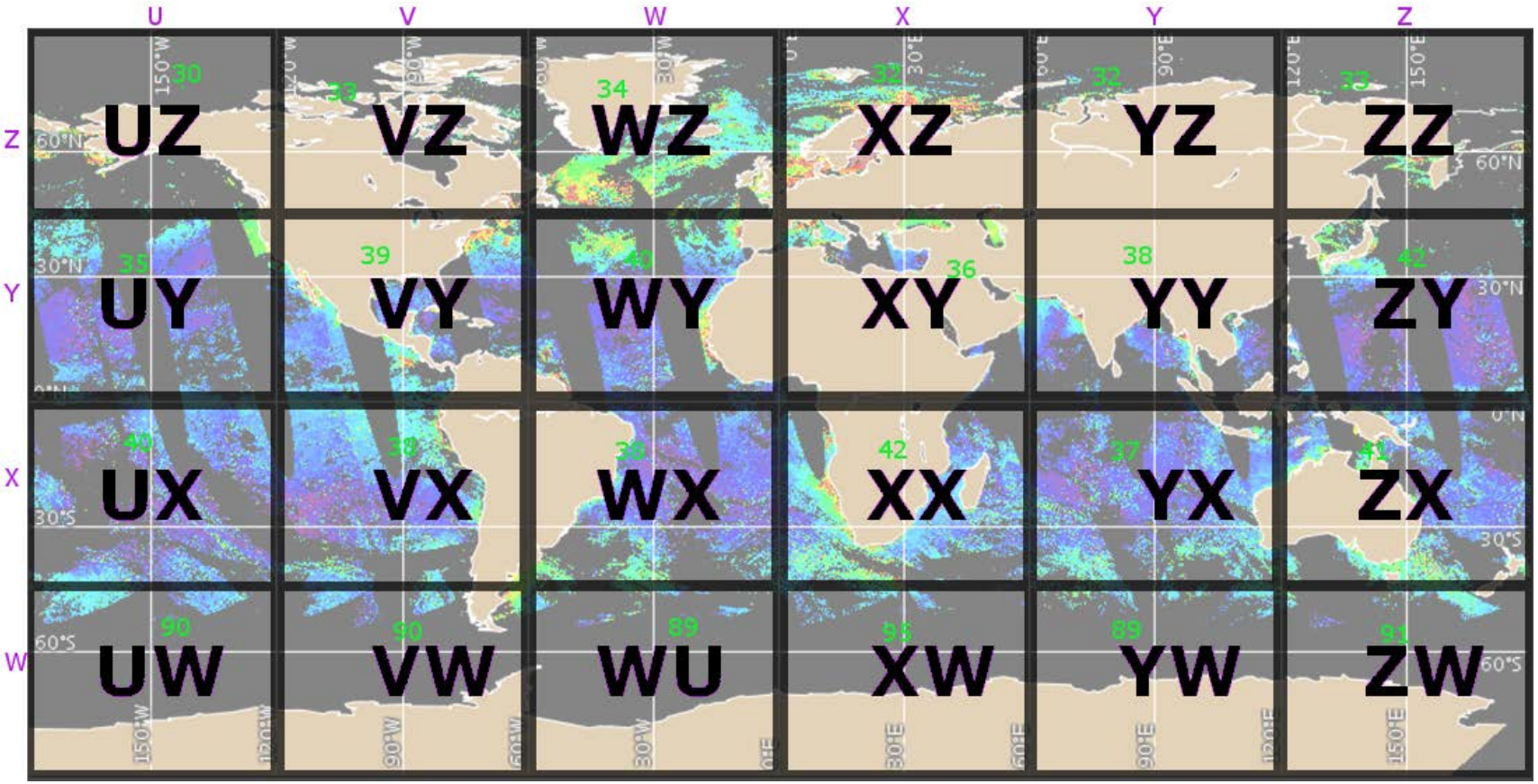
L3 Global 4km

(mapped, daily, weekly monthly)



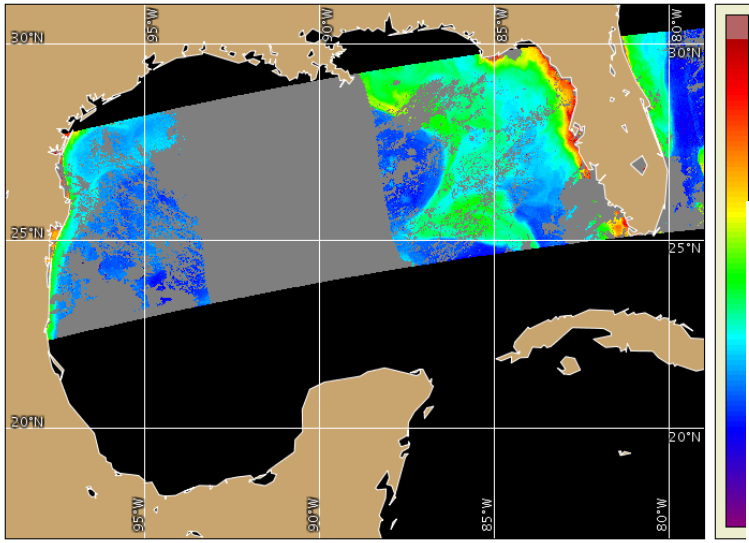
Pictured is daily NRT Chlorophyll-a [mg m^{-3}];

L3 Global 750m Sectors



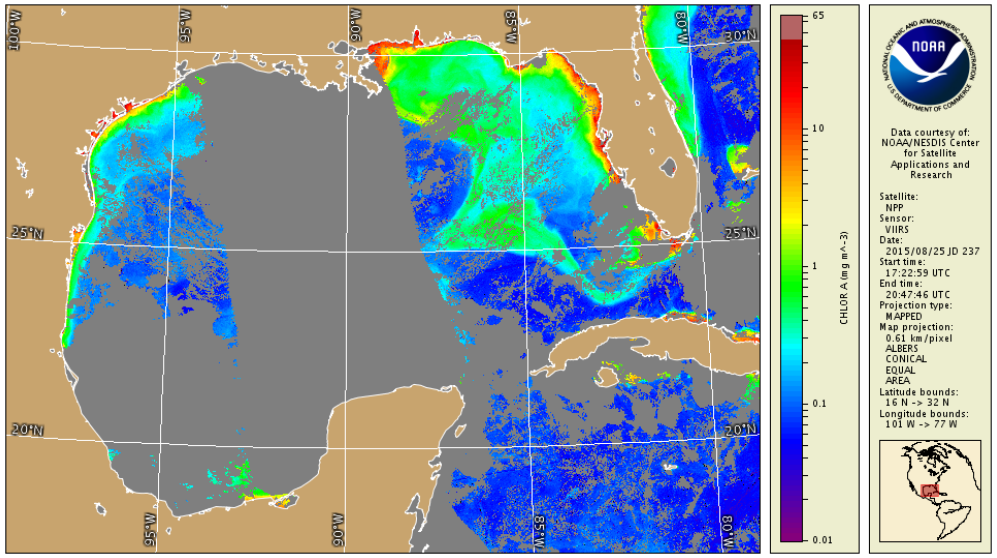
L3 Regional

- "CONUS" 750m regions: Hawaii, West Coast, Great Lakes, Northeast, Southeast, Gulf of Mexico, Caribbean



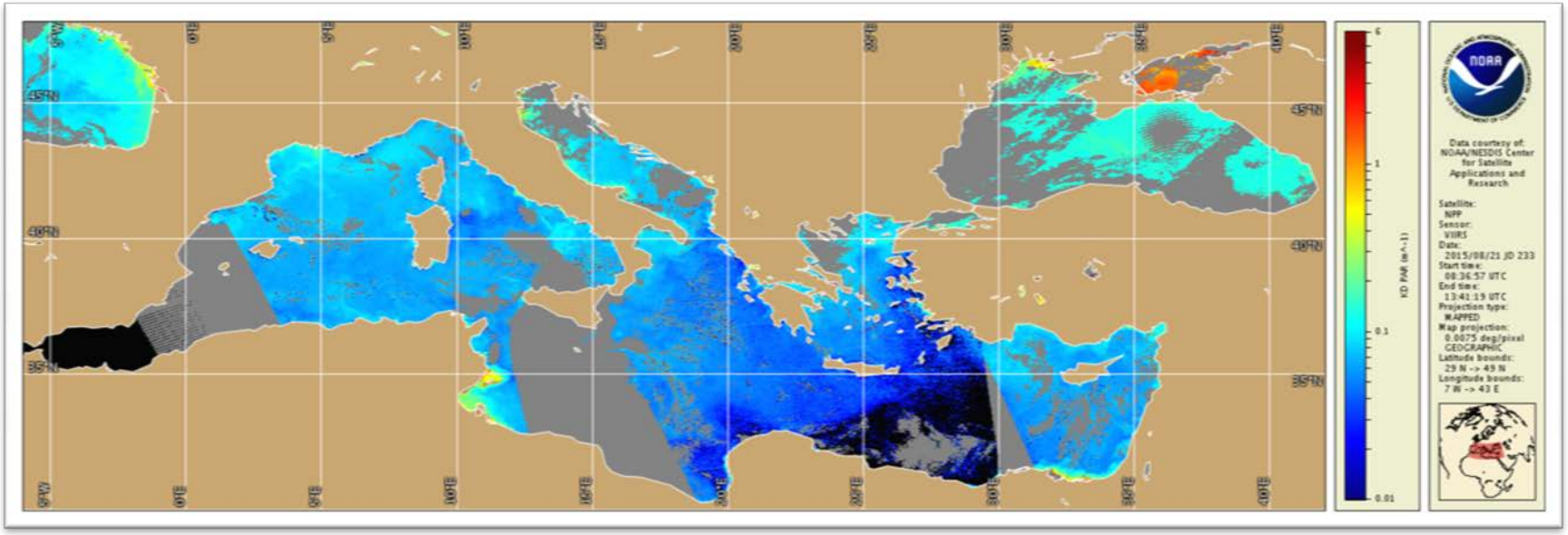
Granule

Daily Merge



L2 Regional Partners (1)

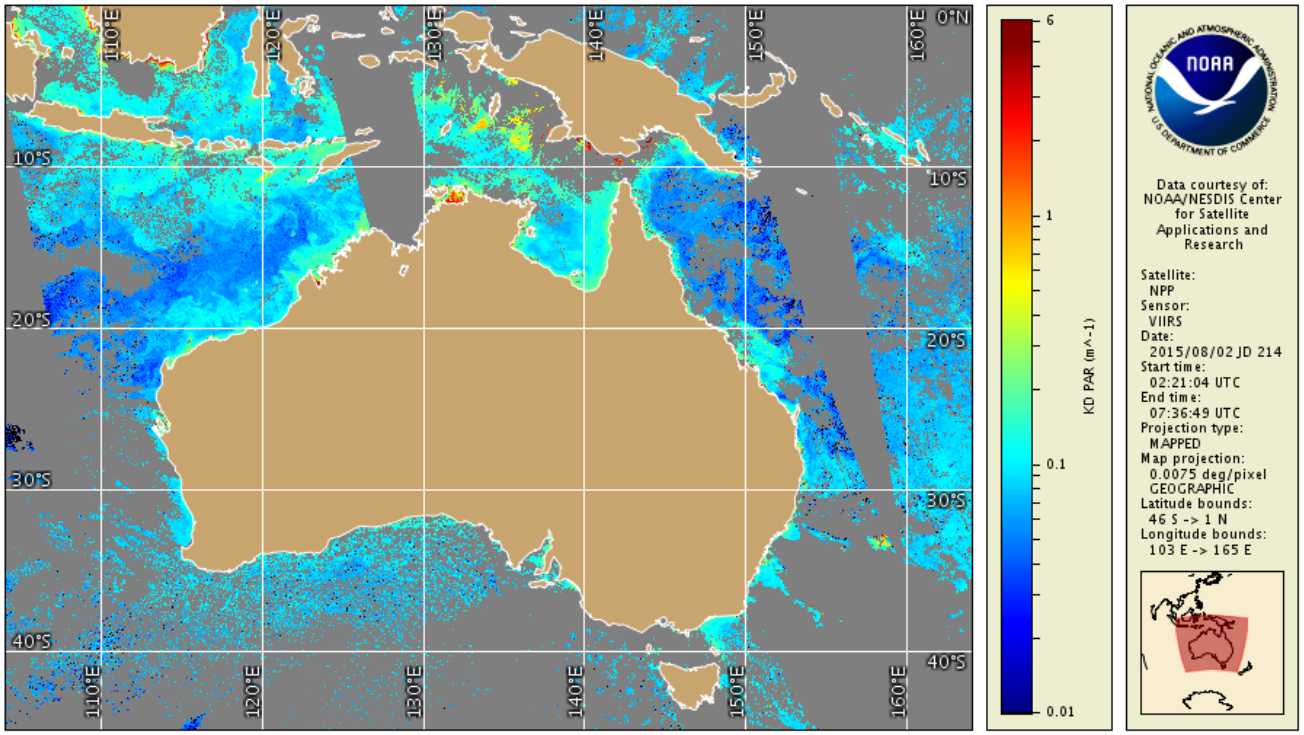
- EUMETSAT
  - Processing and staging of L2 750m Mediterranean datasets
  - EUMETcast (Copernicus Service) broadcasts VIIRS data to EU



Shown: L3 Daily merge, mapped, k_dPAR [m^{-1}]

L3 Regional Partners (2)

- CSIRO
  - Processing and staging of L3 Australia 750m datasets



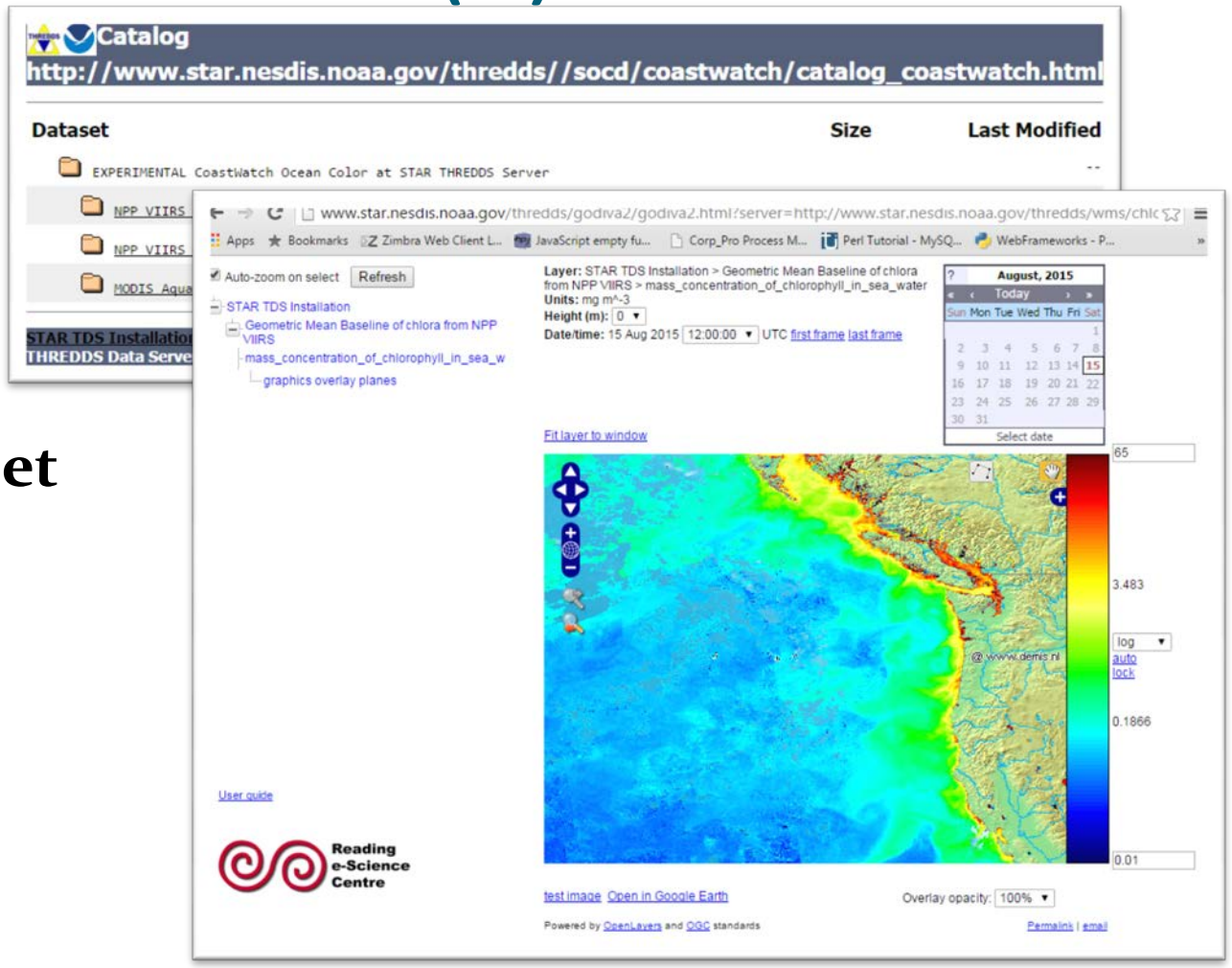
Daily Merge, mapped, k_dPAR [m^{-1}]

Data Formats

- Global / Sector:
  - NetCDF (v4 CF)
  - GeoTIFF & PNG
- Regional:
  - NetCDF(v4 CF)
  - GeoTIFF & PNG
  - HDF (v4 with CoastWatch metadata; to be phased out)

Access & Protocols (1)

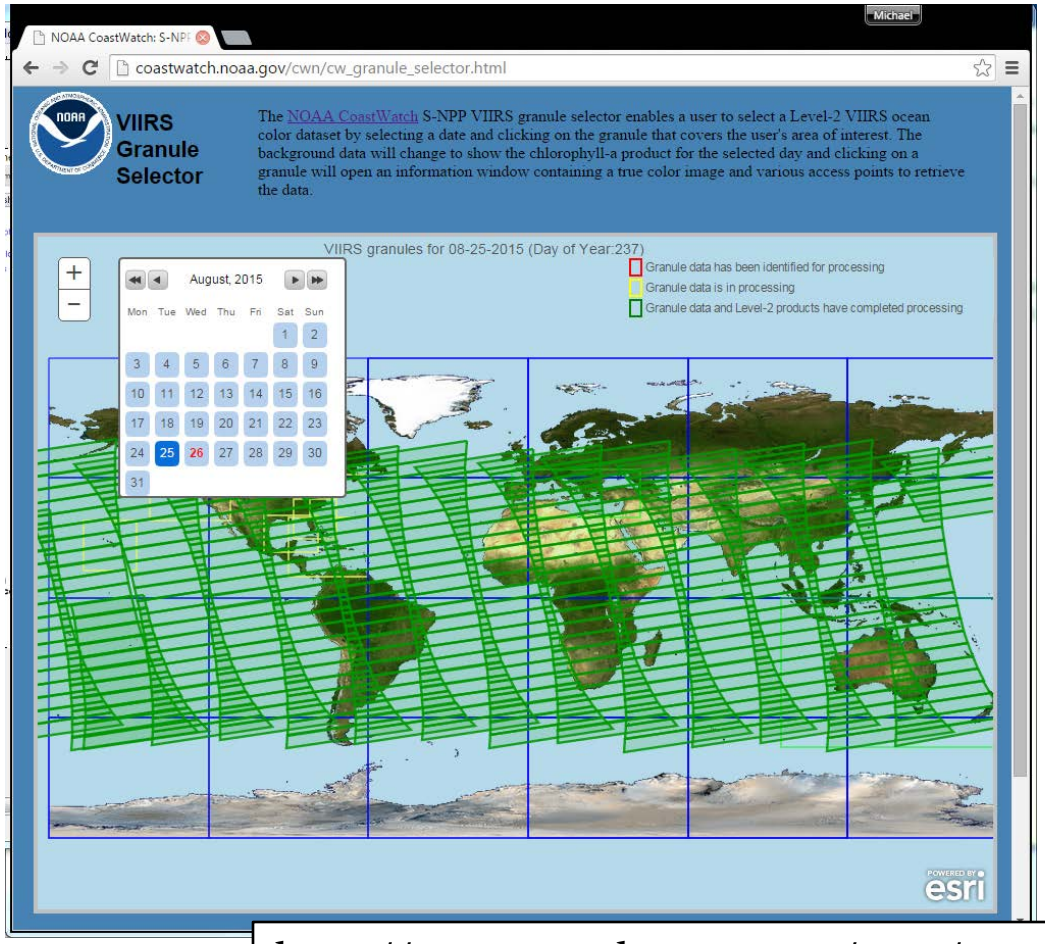
- HTTP
- FTP
- THREDDS
  - **OPENDAP**
  - **NetcdfSubset**
  - **WCS**
  - **WMS**
  - **NCML**
  - **ISO**
  - **UDDC**

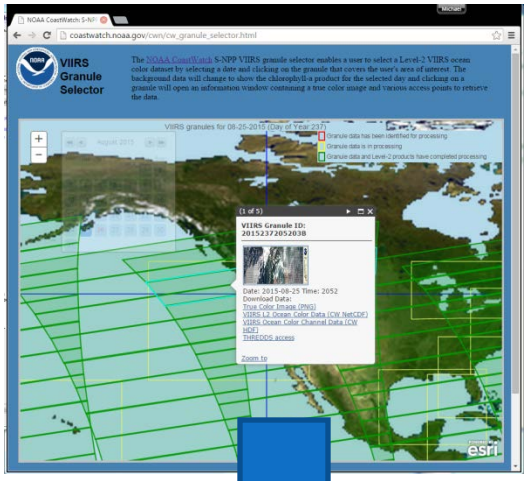


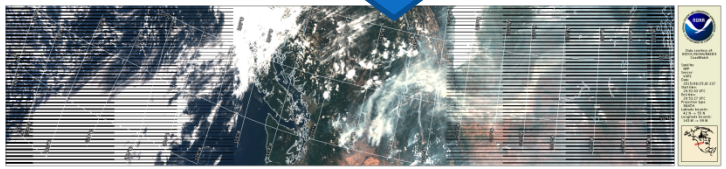
Access & Protocols (2)

- HTTP:
  - Present: http://coastwatch.noaa.gov
- FTP: ftp://star.nesdis.noaa.gov/pub/socd/mecb/coastwatch/viirs/
  - Present:
    - L2 datasets covering Mediterranean for EUMETSAT
    - L3 for Gulf of Mexico (CW HDF) for support of NOS HAB
  - Soon: FTP access to include THREDDS holdings (Q4 2015)
- THREDDS: http://coastwatch.noaa.gov/thredds

L2 Granule Selector



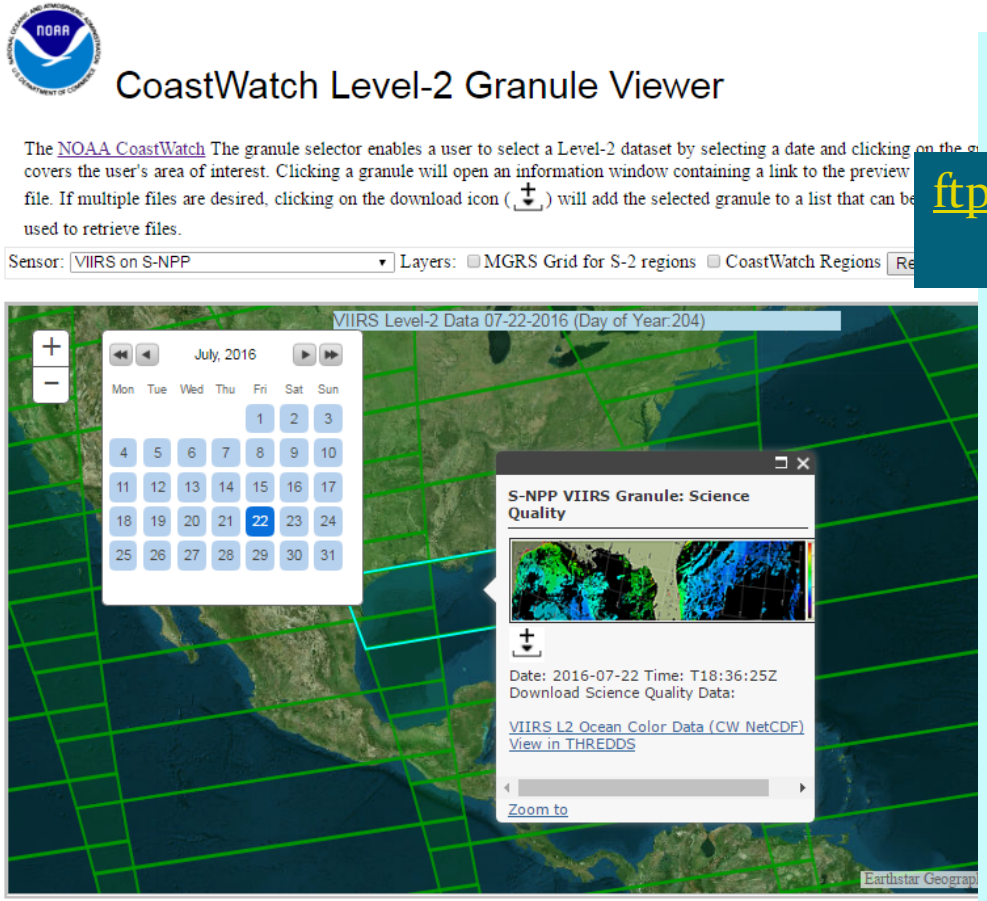




Date: 2015-08-25 Time: 2052
Download Data:
True Color Image (PNG)
VIIRS L2 Ocean Color Data (CW NetCDF)
VIIRS Ocean Color Channel Data (CW HDF)
THREDDS access

http://coastwatch.noaa.gov/cwn/cw_granule_selector.html

Science Quality 'Life-of-Mission'



- FTP OC 2012 to [Present – 15 days]:

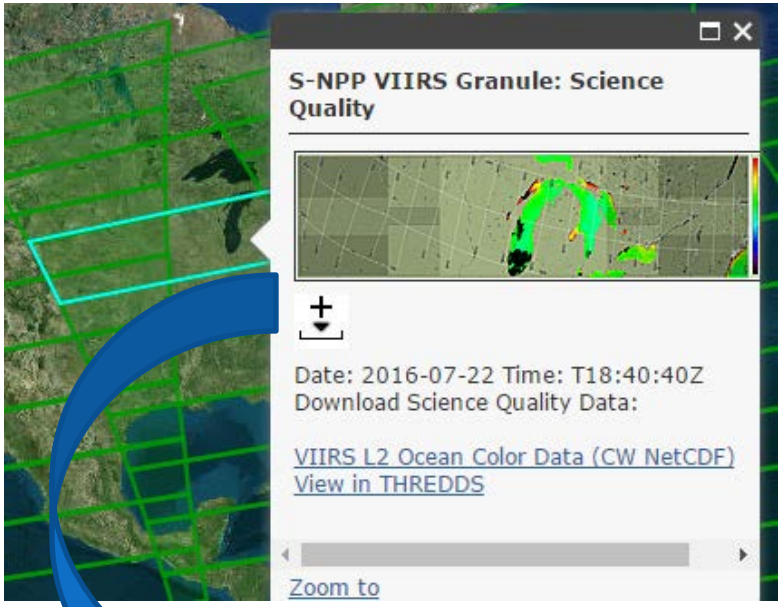
ftp://ftp.star.nesdis.noaa.gov/pub/socd1/mecb/coastwatch/viirs/science/L2/

- Integrated with the same L2 Granule Selector tool
  - Present – 15 days: NRT Granules
  - 15 days old and prior: Science Quality
  - Includes data preview and data cart
- VIIRS SST RAN1 will be included when ready
- OLCI OC will be included when ready for release

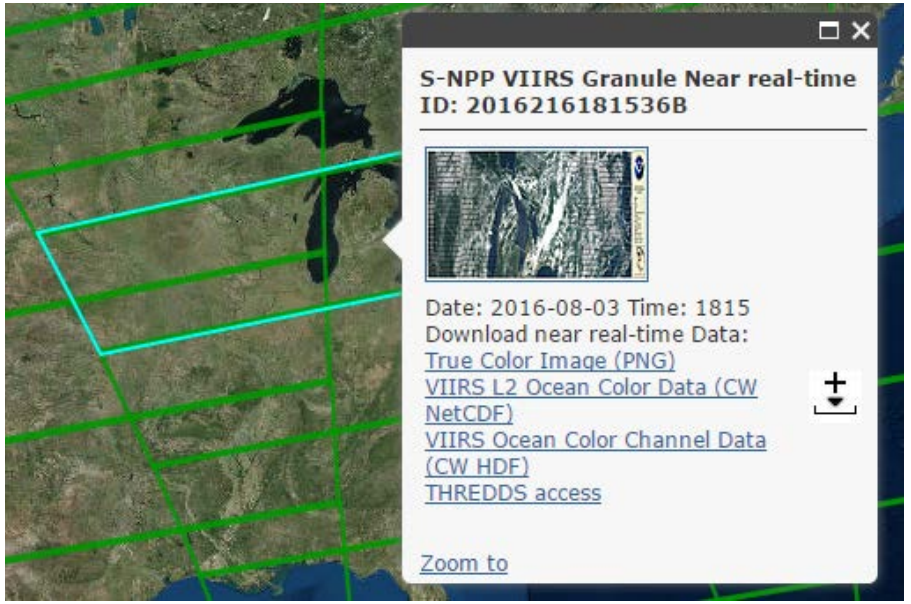
http://coastwatch.noaa.gov/cwn/cw_granule_selector.html

Example of VIIRS OC Data Cart

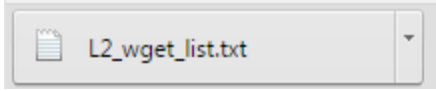
Science Quality (forward processing)



Near real-time



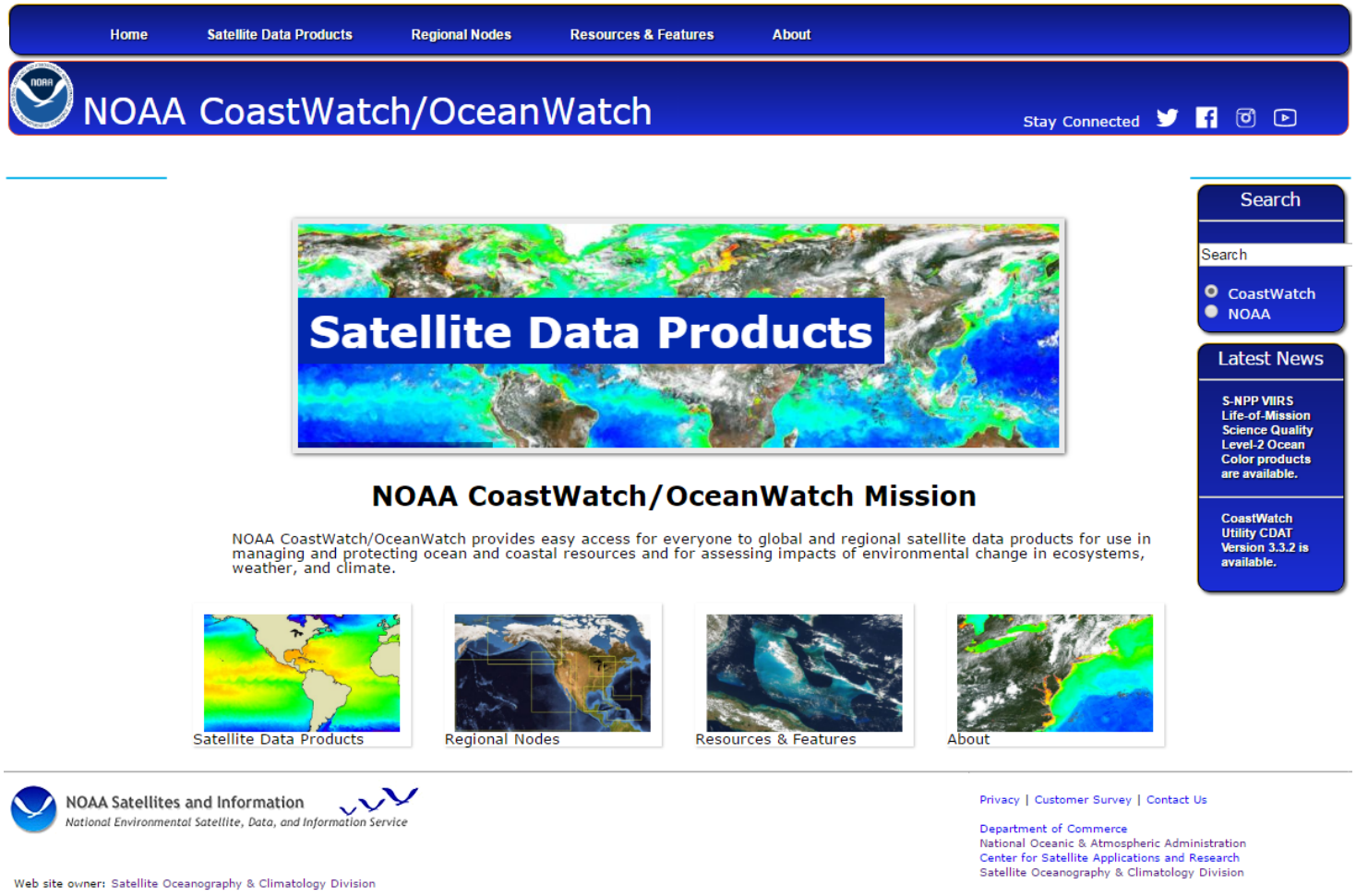
For batch download



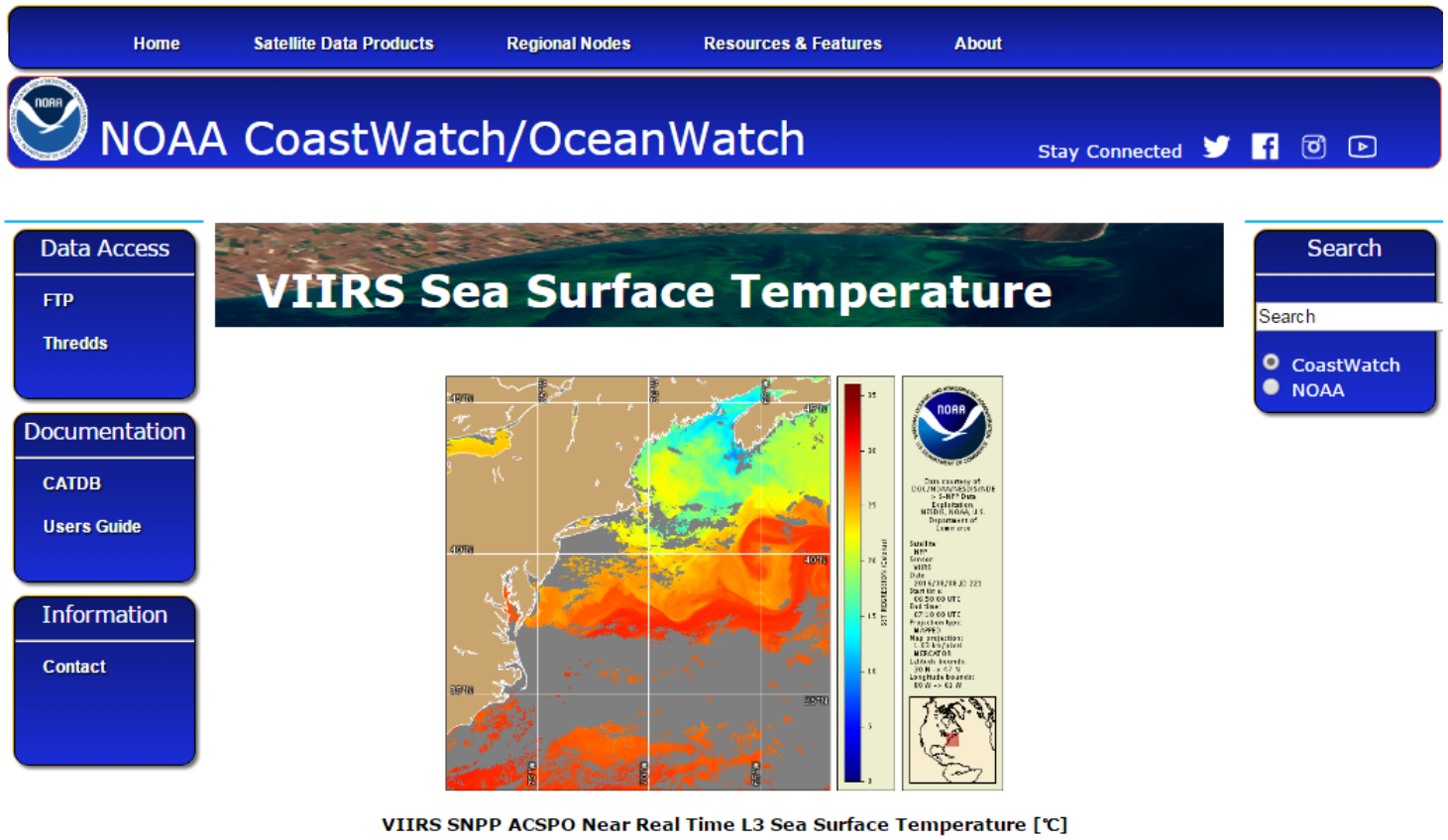
Data Stewardship and Long-Term Archive by NCEI

- NOAA CoastWatch/OceanWatch is prepared to deliver MSL12 full mission science quality data (L2 and L3) for data stewardship and long-term archiving by NCEI.
- Arrangements among STAR (via CoastWatch), NCEI and CLASS are in progress.

Website Revamp in Progress (1)



Website Revamp in Progress (2)



Sentinel-3A

- A Cooperative Arrangement between the United States and the European Commission and technical arrangements between NOAA and EUMETSAT (and NOAA and ESA for S1 and S2) are all complete.
- NOAA is primary outlet in US for Sentinel 3 marine data.
- EUMETSAT data transfer via terrestrial multicast to NOAA/STAR is now routine. Data will be publically available as soon as EUMETSAT declares so.
- NOAA CoastWatch/OceanWatch to provide near real-time access to global OLCI and SLSTR data products from EUMETSAT. SRAL data also coming into STAR.
- OLCI data complements existing JPSS sensors:
  - 300m spatial resolution
  - Spectral bands meeting NOAA NOS HAB requirements
  - Relieves single point-of-failure for HAB forecasting

Summary (1)

Both NRT and Science Quality VIIRS-SNPP Ocean Color data are now publically available through NOAA CoastWatch/OceanWatch.

Science Quality

L2 global, granules:

FTP:

ftp://ftp.star.nesdis.noaa.gov/pub/socd1/mecb/coastwatch/viirs/science/L2/

THREDDS:

http://www.star.nesdis.noaa.gov/thredds/catalog/swathNPPVIIRSSCIENCEL2WW00/catalog.html

Or, you can interactively select and download data (or get your file list for automated commands) using the Granule Selector Tool here:

http://coastwatch.noaa.gov/cwn/cw_granule_selector.html

L3 global 4km mapped:

FTP:

ftp://ftp.star.nesdis.noaa.gov/pub/socd2/mecb/coastwatch/viirs/science/L3/global/

Summary (2)

Both NRT and Science Quality VIIRS-SNPP Ocean Color data are now publically available through NOAA CoastWatch/OceanWatch.

Near Real Time

THREDDS OC NRT main page:
http://www.star.nesdis.noaa.gov/thredds/socd/coastwatch/catalog_coastwatch_viirs_global.html

Includes: L2 global granules (swath); L3 global 4km mapped, daily, weekly, monthly merged, and 750m regional sector files

Or, you can interactively select and download data (or get your file list for automated commands) using the Granule Selector Tool here:

http://coastwatch.noaa.gov/cwn/cw_granule_selector.html