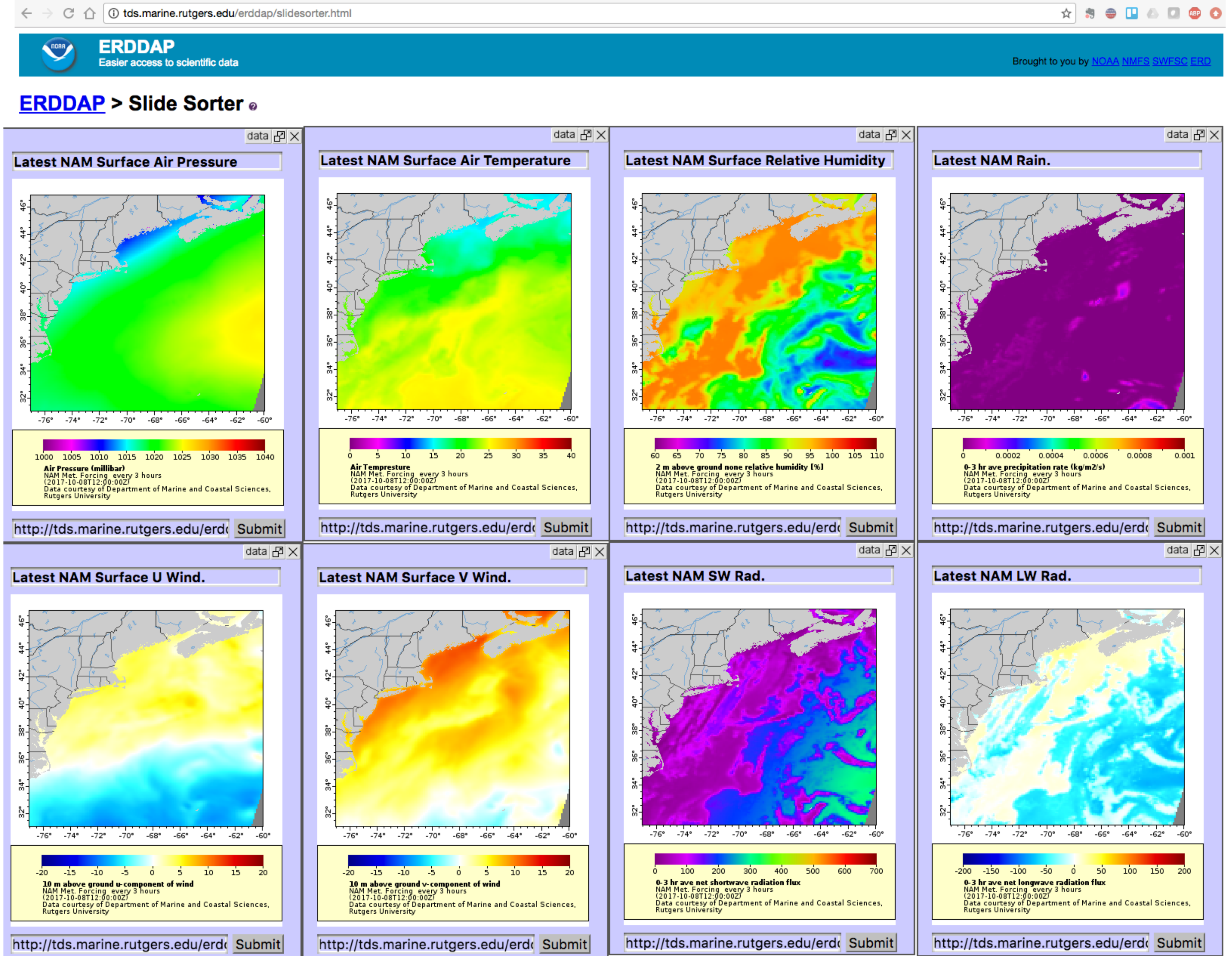
Monitoring an operational near-real-time system using ERDDAP

We monitor the observation and forcing data streams with ERDDAP control panels created using the ERDDAP *slide sorter* feature:
https://coastwatch.pfeg.noaa.gov/erddap/slidesorter.html
http://tds.marine.rutgers.edu/erddap/slidesorter.html

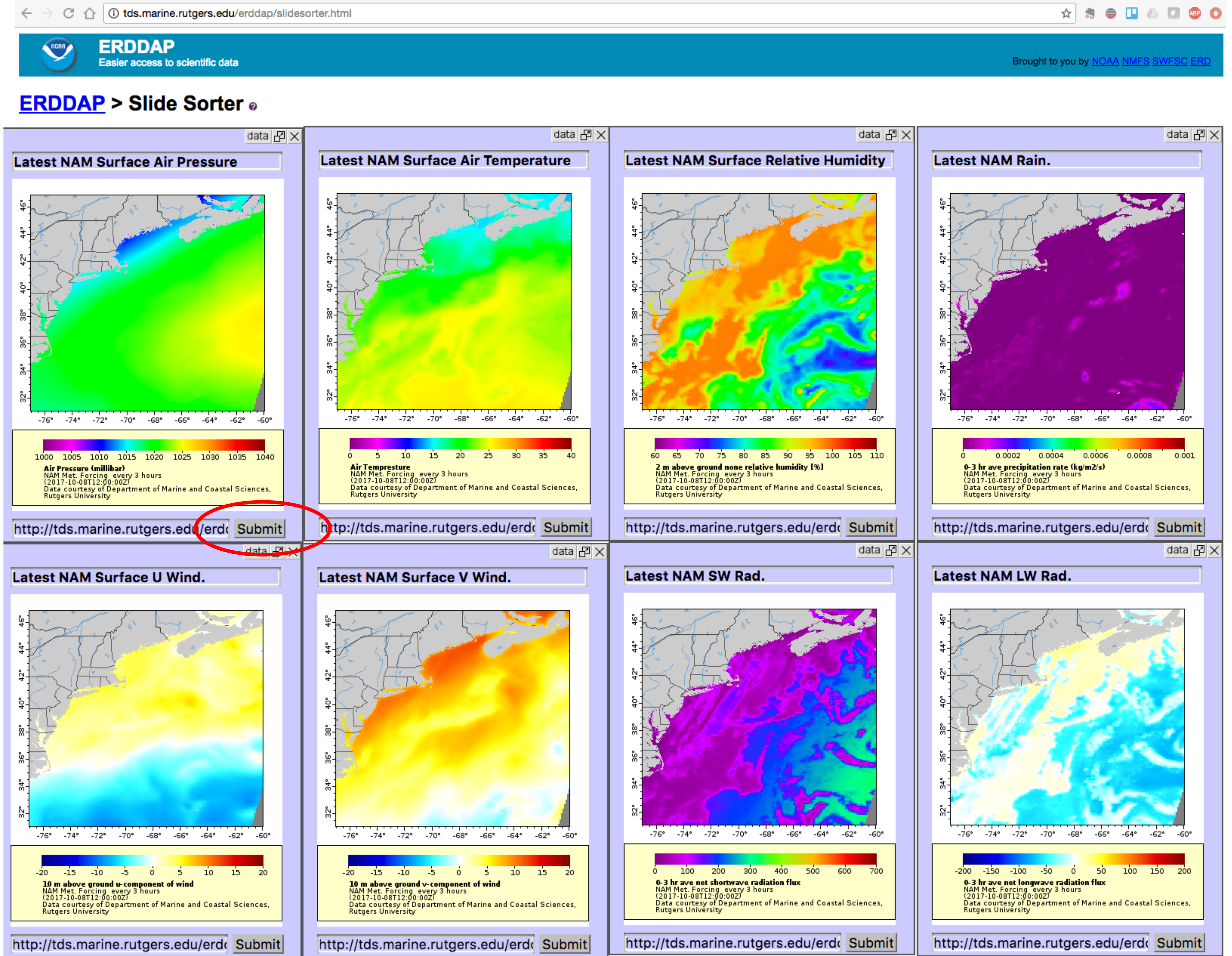
Visualizations of data served via ERDDAP can also be embedded as a graph in a web page
https://coastwatch.pfeg.noaa.gov/erddap/images/embed.html

When saved using an ERDDAP time constraint such as &time>now-7days a control page or visualization can be set to always show the most recent data when the page is reloaded.

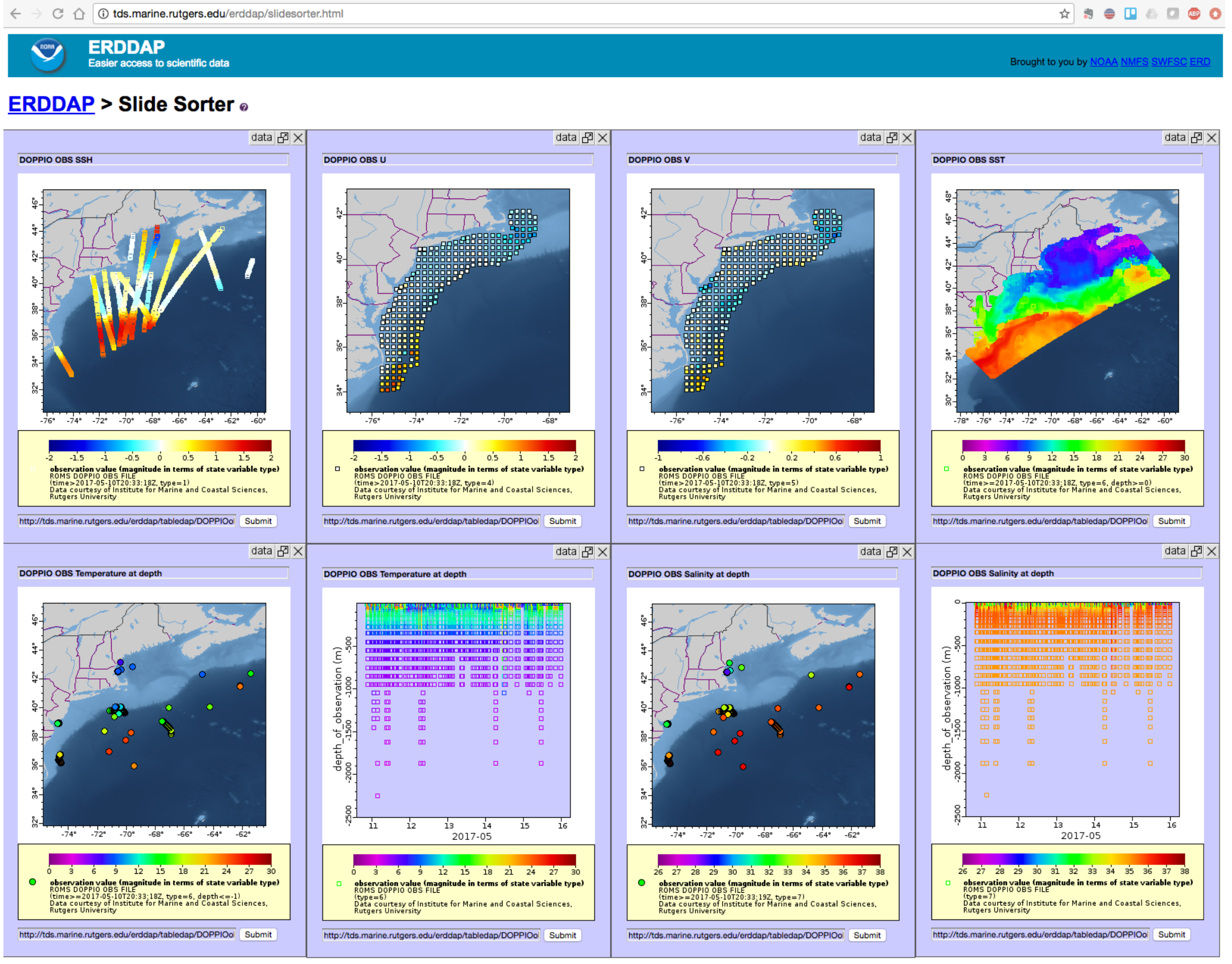
https://marine.rutgers.edu/~wilkin/erddap/DOPPIO_Forcing_Data.html



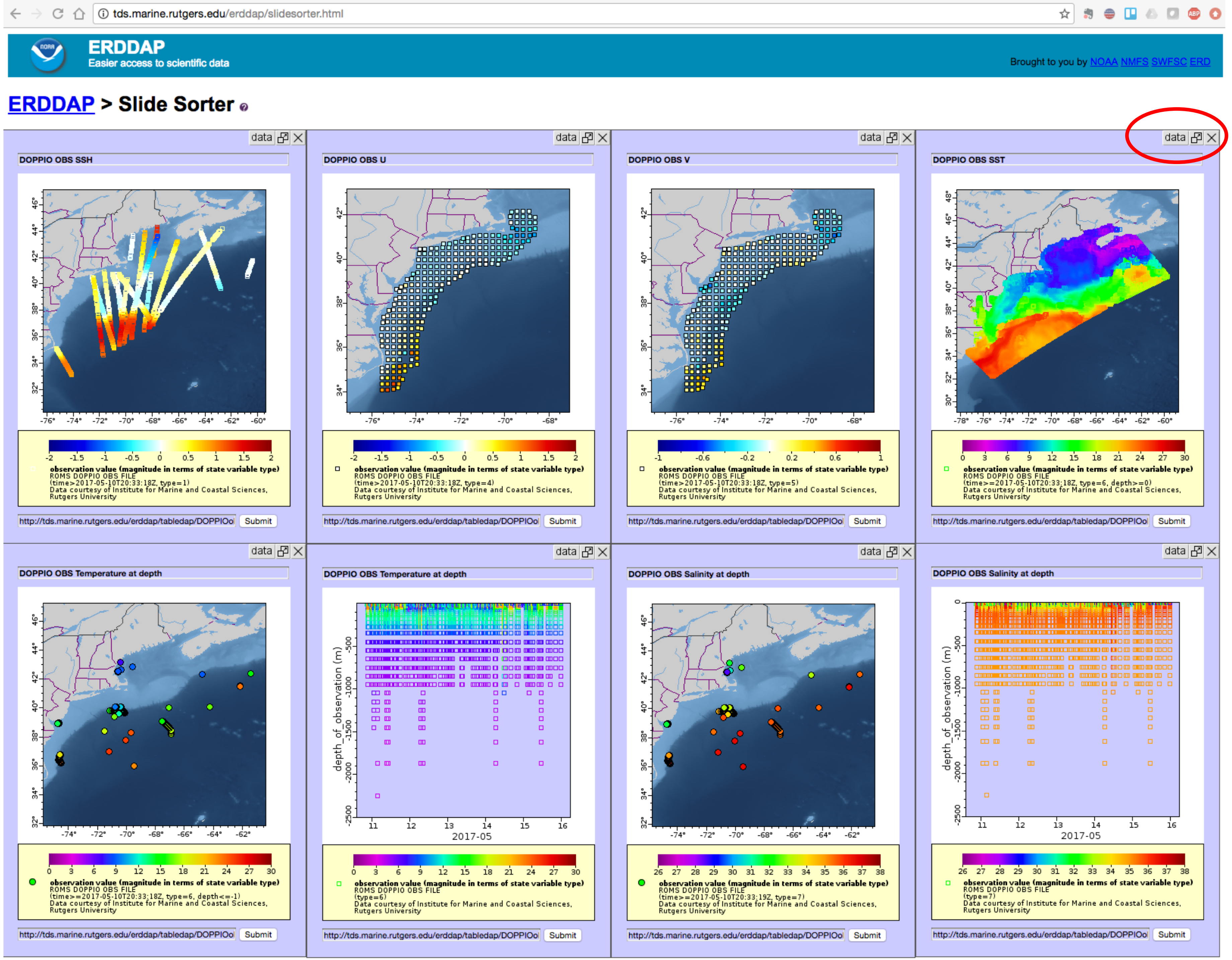
https://marine.rutgers.edu/~wilkin/erddap/DOPPIO_Forcing_Data.html



https://marine.rutgers.edu/~wilkin/erddap/DOPPIO_Control_Panel.html



https://marine.rutgers.edu/~wilkin/erddap/DOPPIO_Control_Panel.html



Can select subsets of the input data by provenance code

300	SST-superobs	super obs
302	AVHRR	AVHRR IR SST
303	GOES	GOES geostationary IR SST
304	TRMM	TRMM microwave SST
305	WSAT	WSAT microwave SST
306	AMSR	AMSR microwave SST
307	VIIRS	VIIRS infrared SST
351	REMSS	REMSS blended SST
352	JPLMURSST	JPL MUR SST

ERDDAP
Easier access to scientific data
Brought to you by NOAA NMFS SWFSC ERD

ERDDAP > tabledap > Make A Graph

Dataset Title: **ROMS DOPPIO OBS FILE** RSS
Institution: Institute for Marine and Coastal Sciences, Rutgers University (Dataset ID: DOPPIOobs)
Range: longitude = -79.62816 to -59.69028°E, latitude = 32.23944 to 46.61133°N, depth = -3250.0 to 0.0, time = 2016-06-12T00:00:00Z to 2019-07-23T23:45:10Z
Information: Summary | FGDC | ISO 19115 | Metadata | Background | Subset | Data Access Form

Graph Type: markers
X Axis: longitude
Y Axis: latitude
Color: value - +

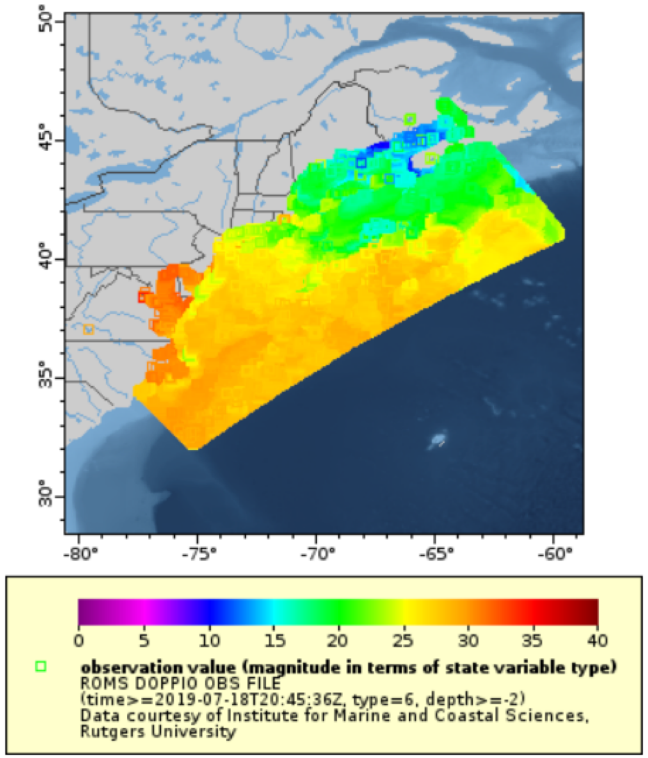
Constraints		**Optional Constraint #1**		**Optional Constraint #2**
time	>=	2019-07-18T20:45:3	<=	
type	=	6	<=	
		- +		
depth	>=	-2	<=	
	>=		<=	
	>=		<=	

Server-side Functions
distinct()
(" ")

Graph Settings
Marker Type: Square Size: 5
Color:
Color Bar: Continuity: Scale:
Min: Max: N Sections:
Draw the land mask:
Y Axis Minimum: Maximum: ascending

Redraw the Graph (Please be patient. It may take a while to get the data.)
Redraw the graph based on the settings above.
Optional:
Then set the File Type: .htmlTable and Download the Data or an Image
or view the URL: http://tds.marine.rutgers.edu/erddap/tabledap/DOPPIOobs.htmlTab
(Documentation / Bypass this form) (File Type information)

Click on the map to specify a new center point.
Zoom: Out 8x Out 2x Out Data In In 2x In 8x



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Constraints	Optional Constraint #1		Optional Constraint #2	
time	>=	2019-07-18T20:45:3	<=	
type	=	6	<=	
depth	>=	-2	<=	
	>=		<=	
	>=		<=	

Server-side Functions
distinct()
(" ")

Graph Settings
Marker Type: Square Size: 5
Color:
Color Bar: Continuity: Scale:
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Draw the land mask:
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(Documentation / Bypass this form) (File Type information)

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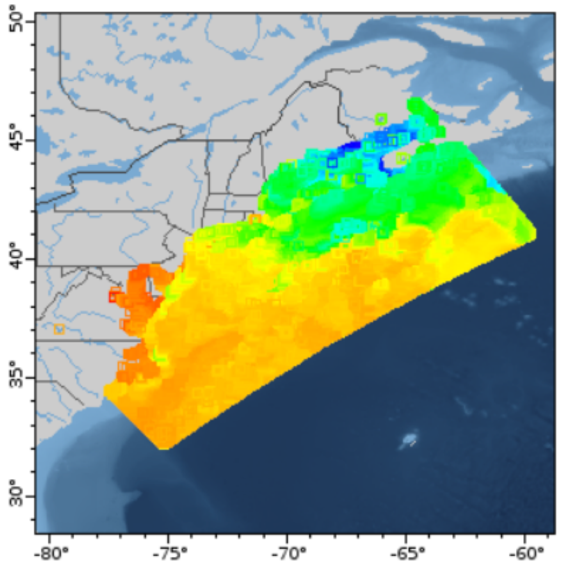

0 5 10 15 20 25 30 35 40
observation value (magnitude in terms of state variable type)
ROMS DOPPIO OBS FILE
(time>=2019-07-18T20:45:36Z, type=6, depth>=-2)
Data courtesy of Institute for Marine and Coastal Sciences, Rutgers University

Can select subsets of the input data by provenance code

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302	AVHRR	AVHRR IR SST
303	GOES	GOES geostationary IR SST
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Graph Type: markers
X Axis: longitude
Y Axis: latitude
Color: value

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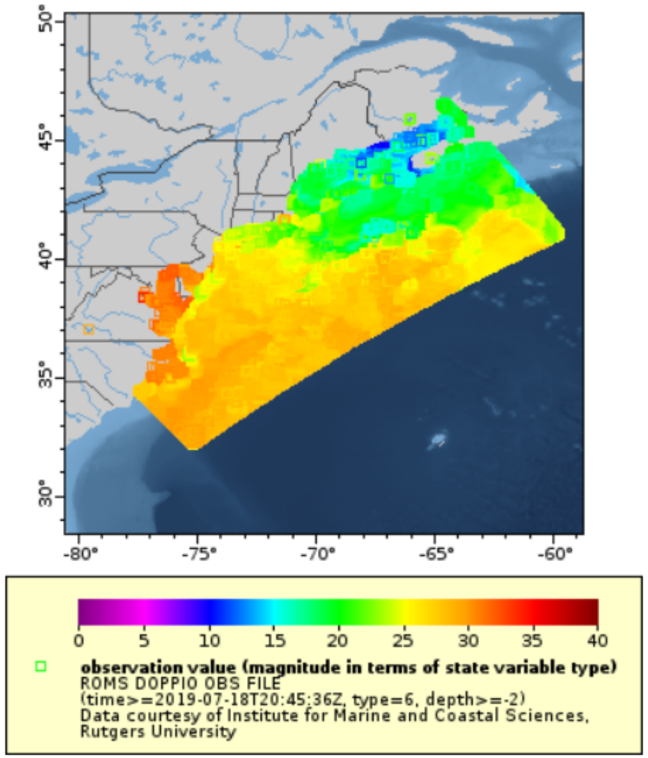
Zoom: Out 8x Out 2x Out Data In In 2x In 8x



Constraints	Optional Constraint #1		Optional Constraint #2	
time	>=	2019-07-18T20:45:3	<=	
type	=	6	<=	
depth	>=	-2	<=	
provenance	>=		<=	
	>=		<=	

Server-side Functions
distinct()

Graph Settings
Marker Type: Square Size: 5
Color:
Color Bar: Continuity: Scale:
Min: Max: N Sections:
Draw the land mask:
Y Axis Minimum: Maximum: ascending

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Optional: Redraw the graph based on the settings above.
Then set the File Type: .htmlTable and Download the Data or an Image
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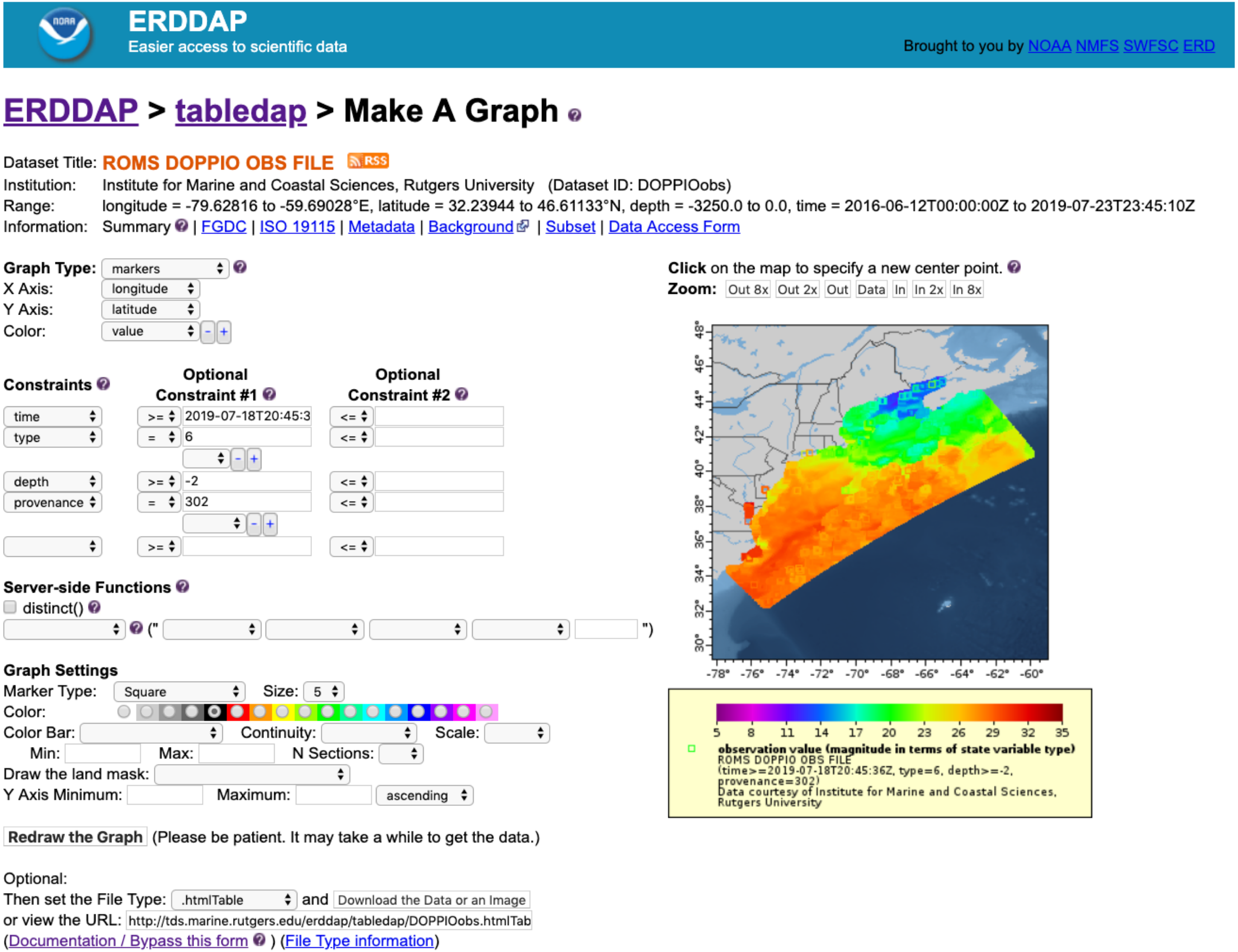

300	SST-superobs	super obs
302	AVHRR	AVHRR IR SST
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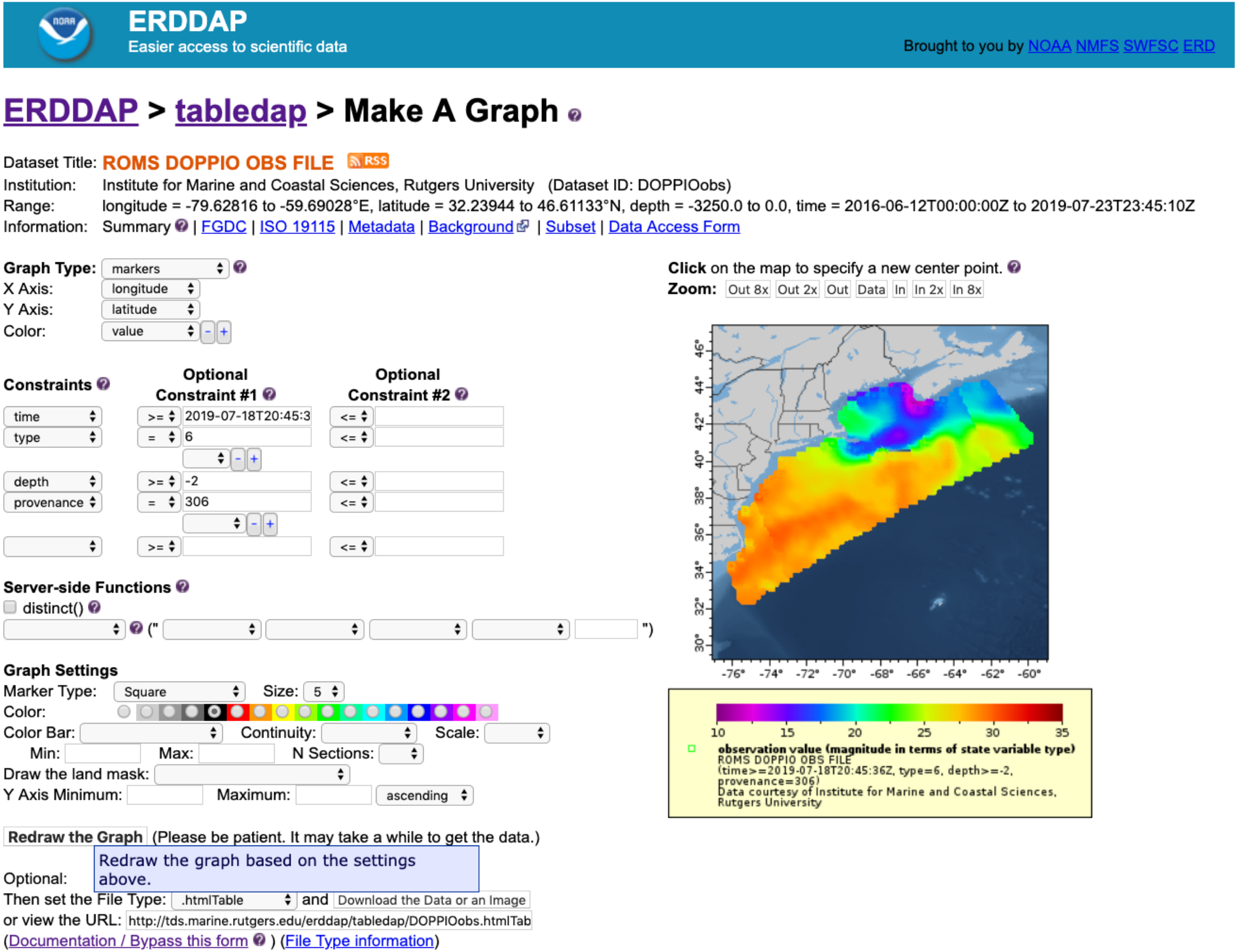
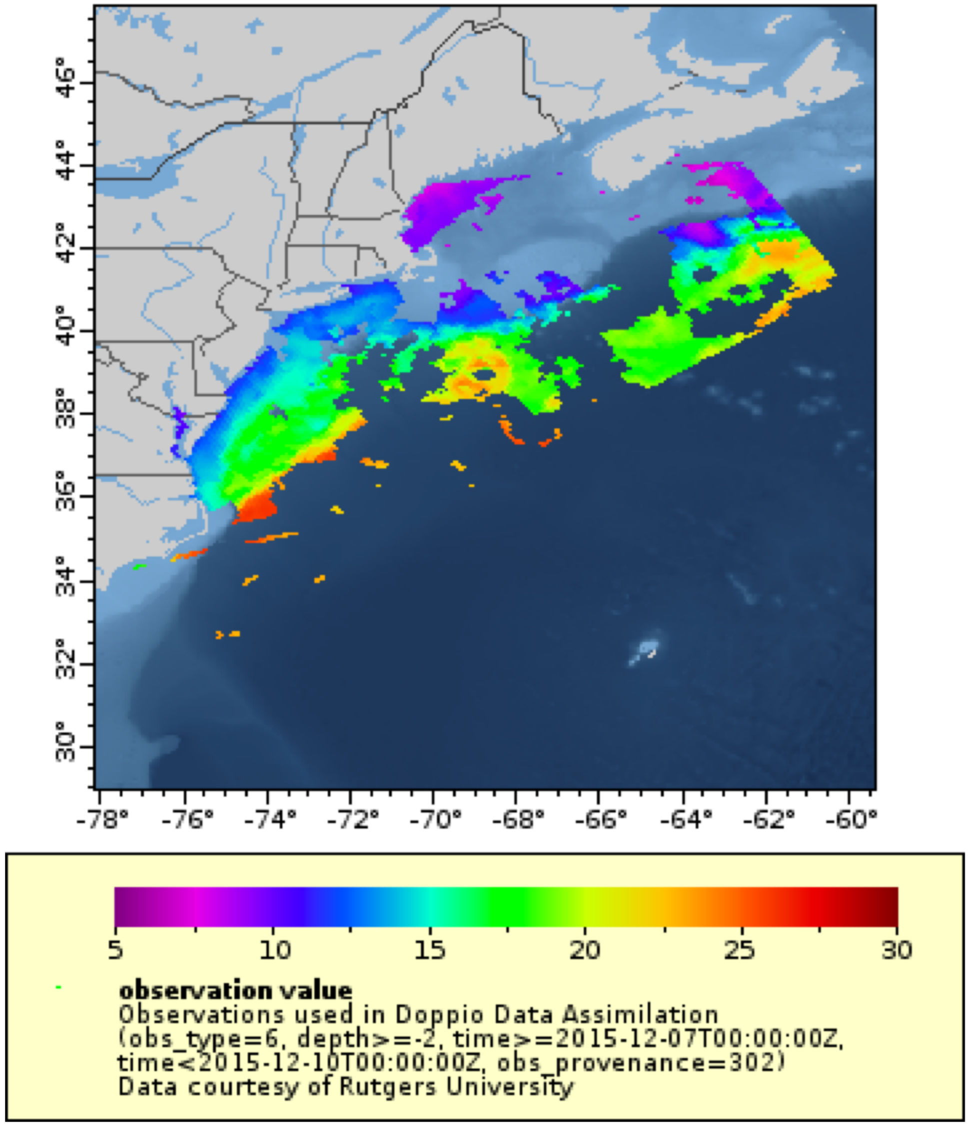
For convenience, we also maintain our database of provenance codes using ERDDAP (which reads a simple flat ascii text file)

http://tds.marine.rutgers.edu/erddap/tabledap/DOPPIO_PROVENANCE.html

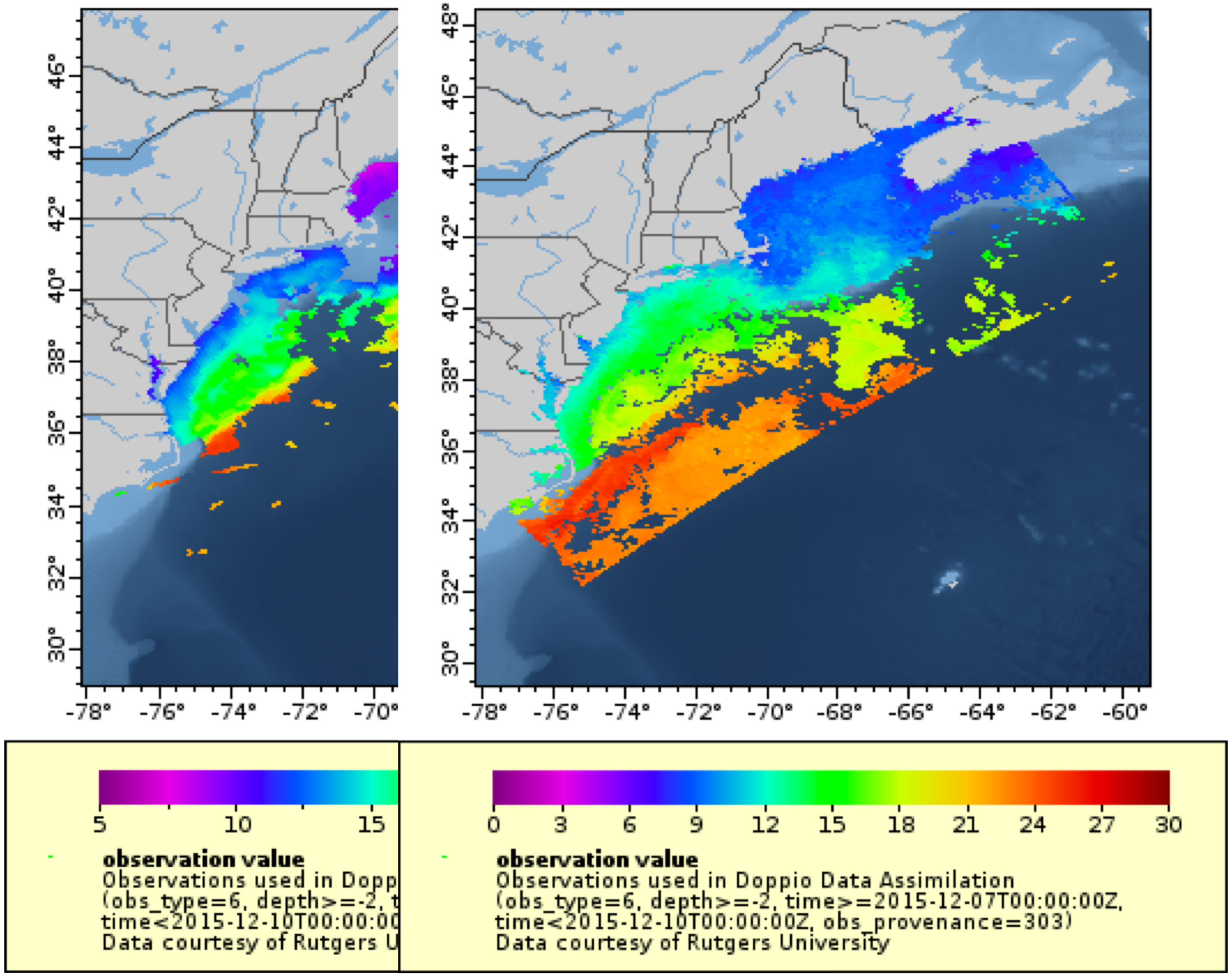


Monitoring an operational near-real-time system using ERDDAP



AVHRR

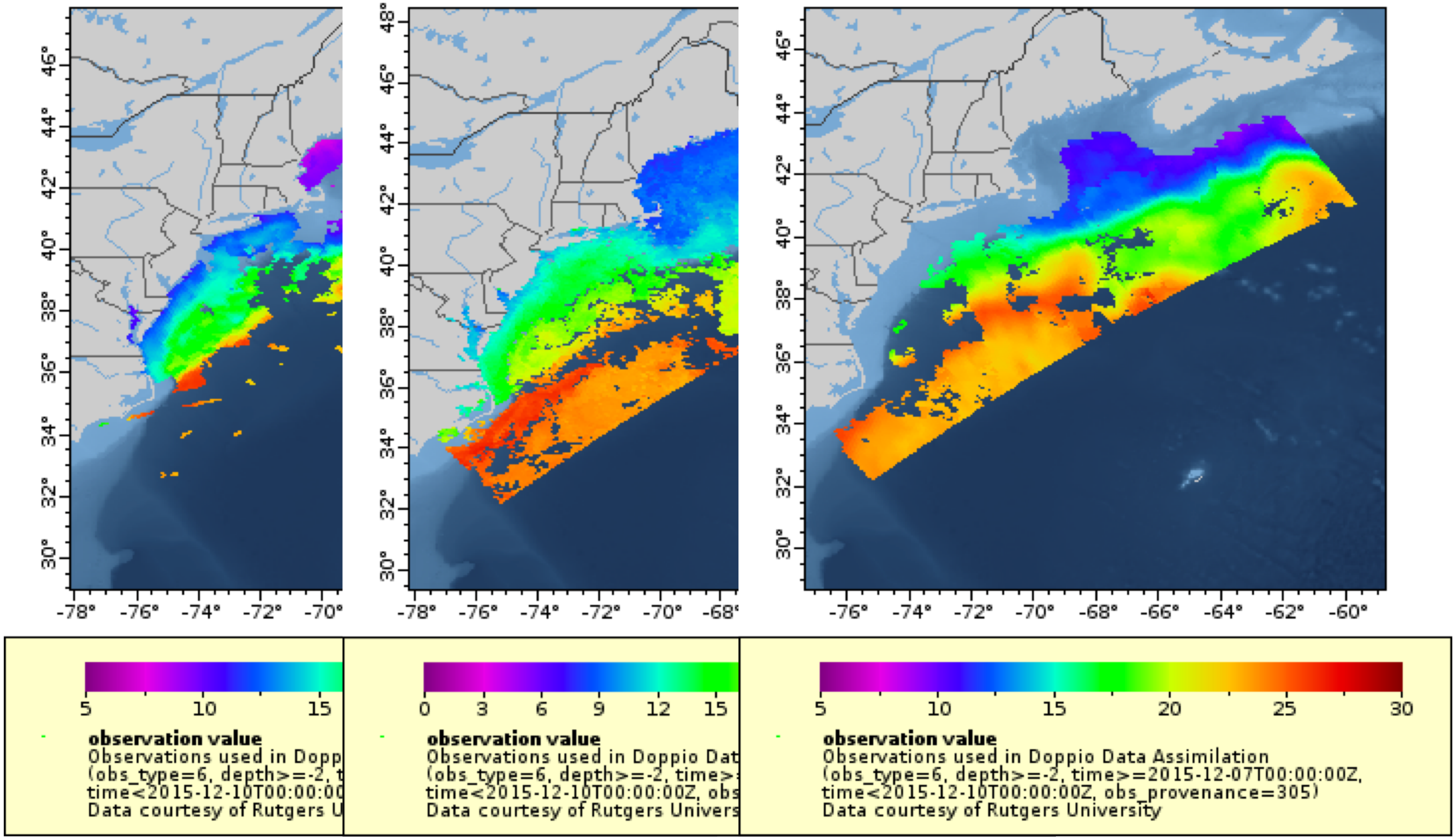
Monitoring an operational near-real-time system using ERDDAP



AVHRR

GOES 3-hour geostationary

Monitoring an operational near-real-time system using ERDDAP

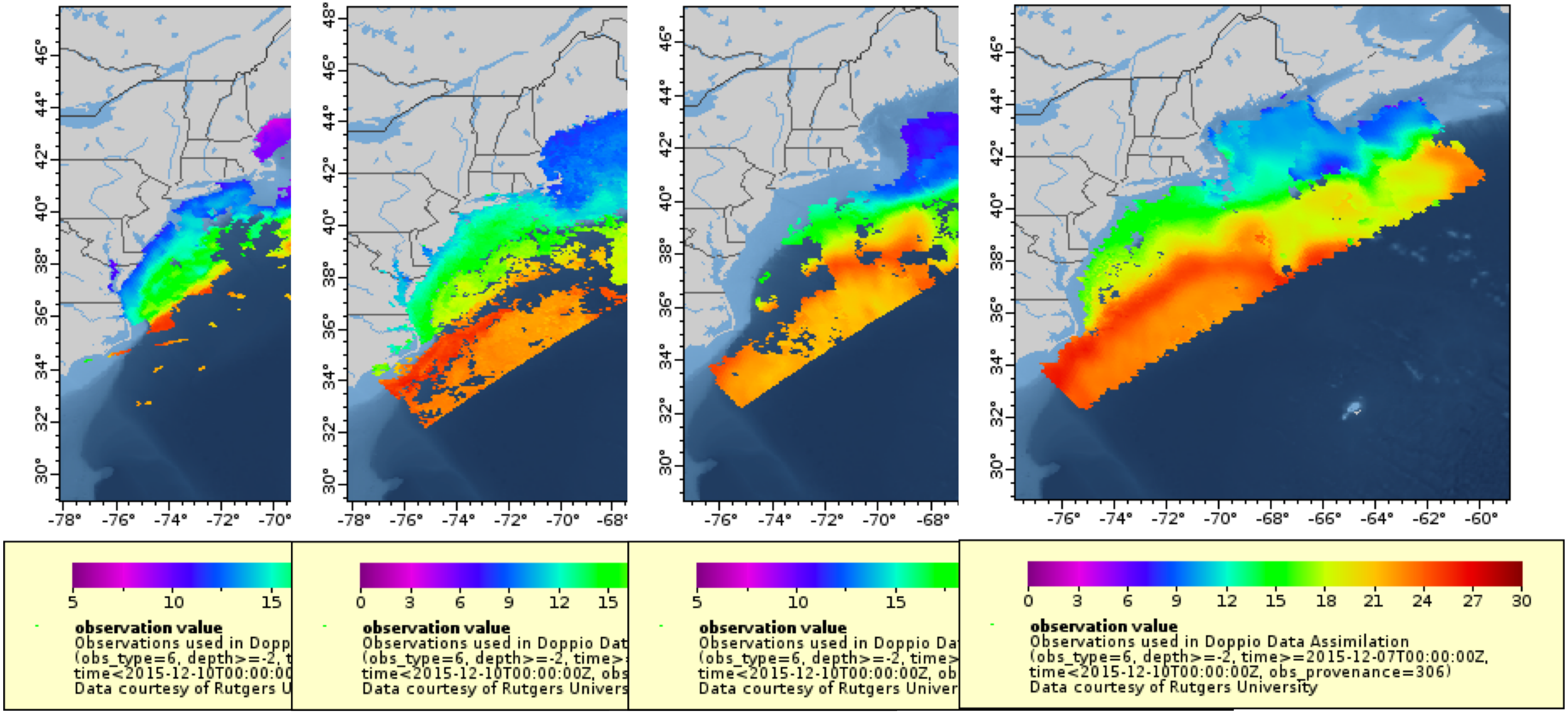


AVHRR

GOES 3-hour geostationary

WSAT microwave

Monitoring an operational near-real-time system using ERDDAP



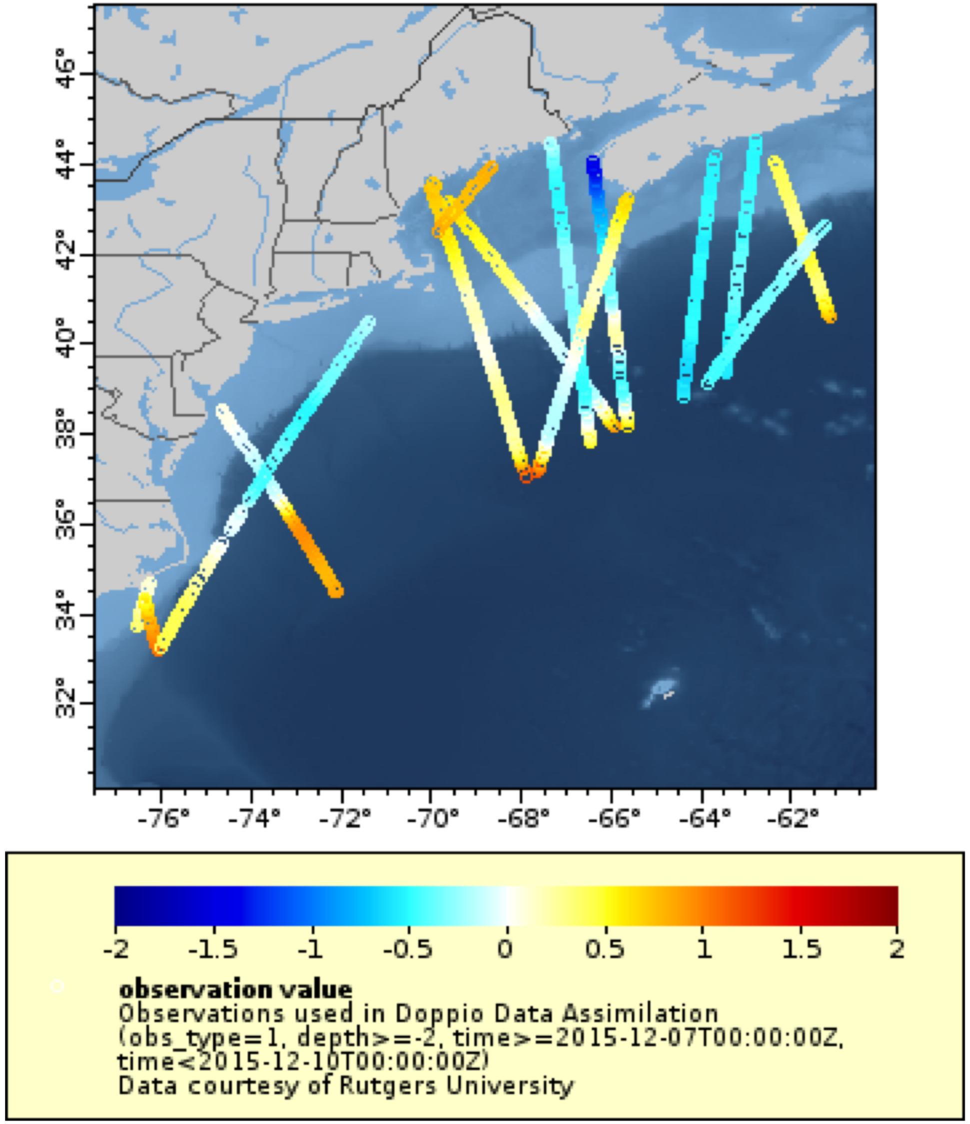
AVHRR

GOES 3-hour geostationary

WSAT microwave

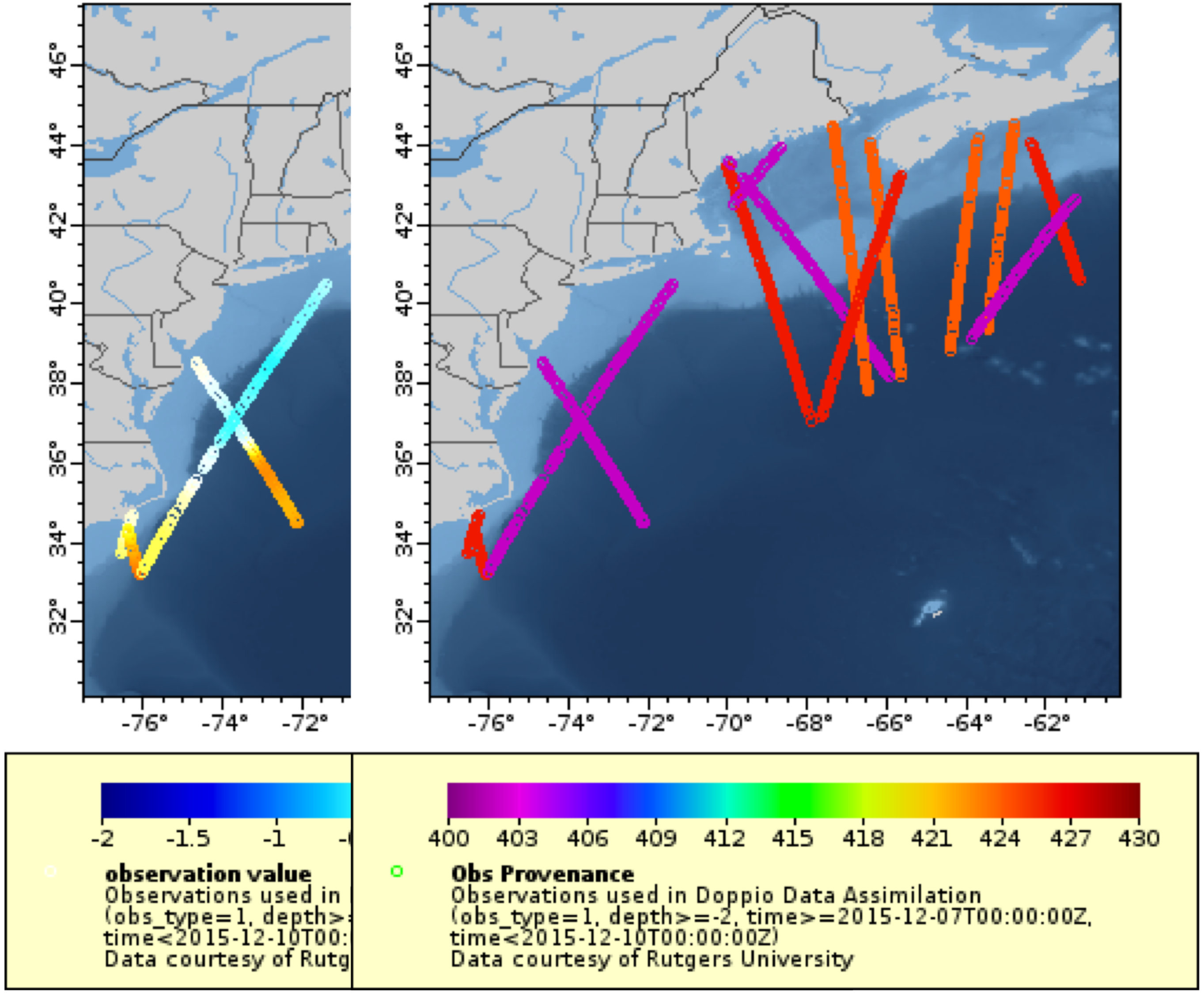
AMSR microwave SST

Monitoring an operational near-real-time system using ERDDAP



All SSH

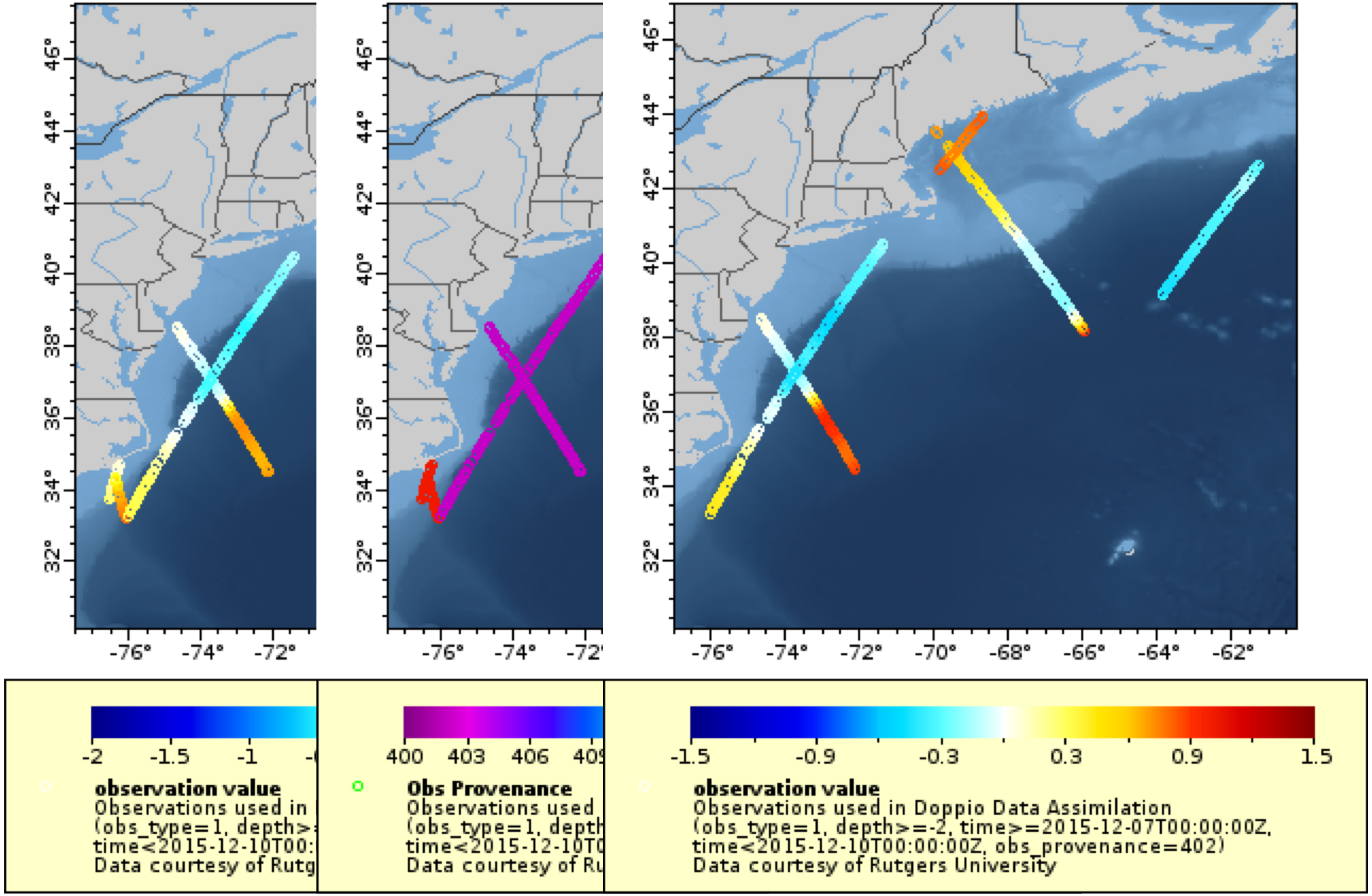
Monitoring an operational near-real-time system using ERDDAP



All SSH

Provenance code

Monitoring an operational near-real-time system using ERDDAP

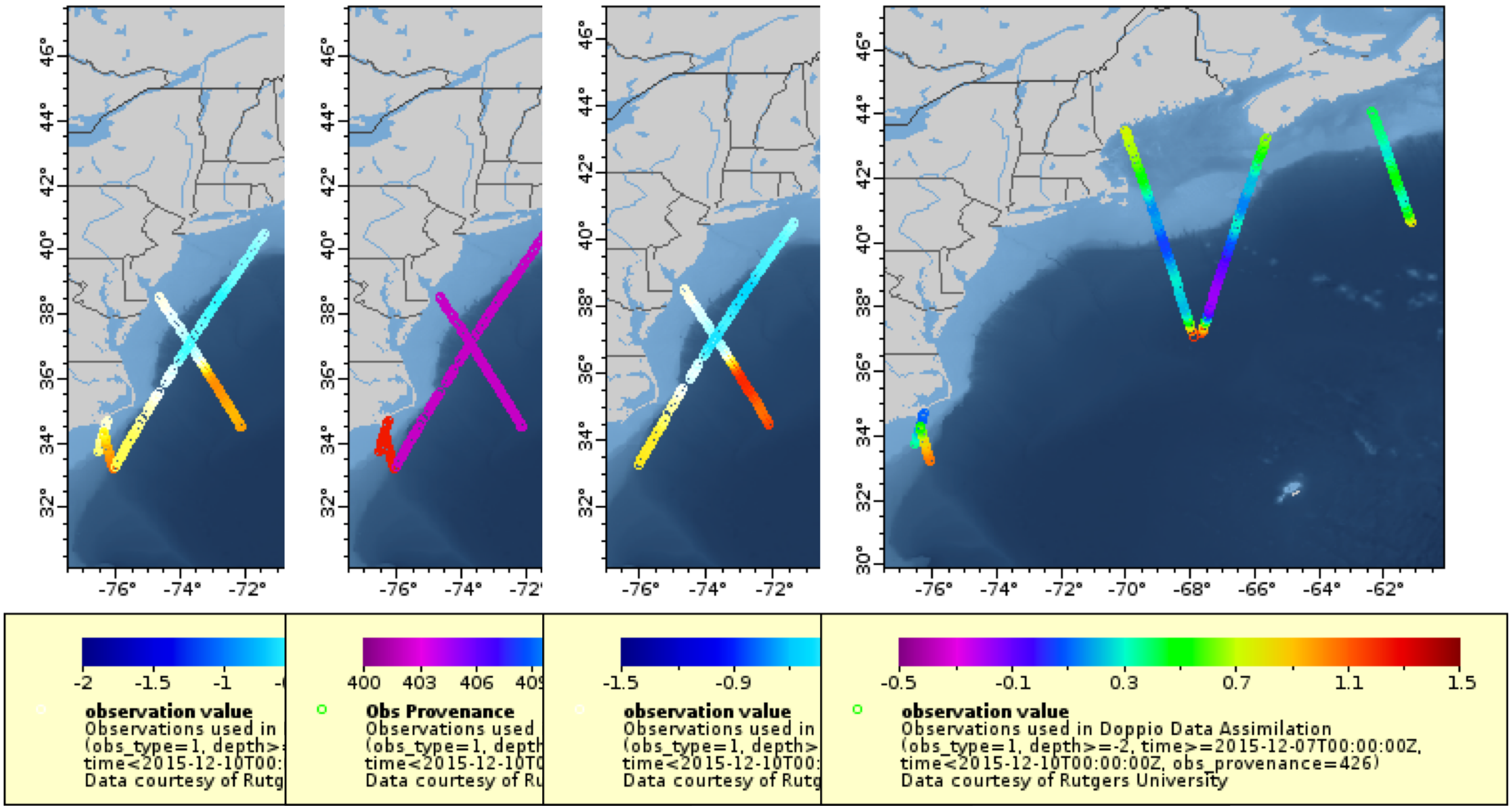


All SSH

Provenance code

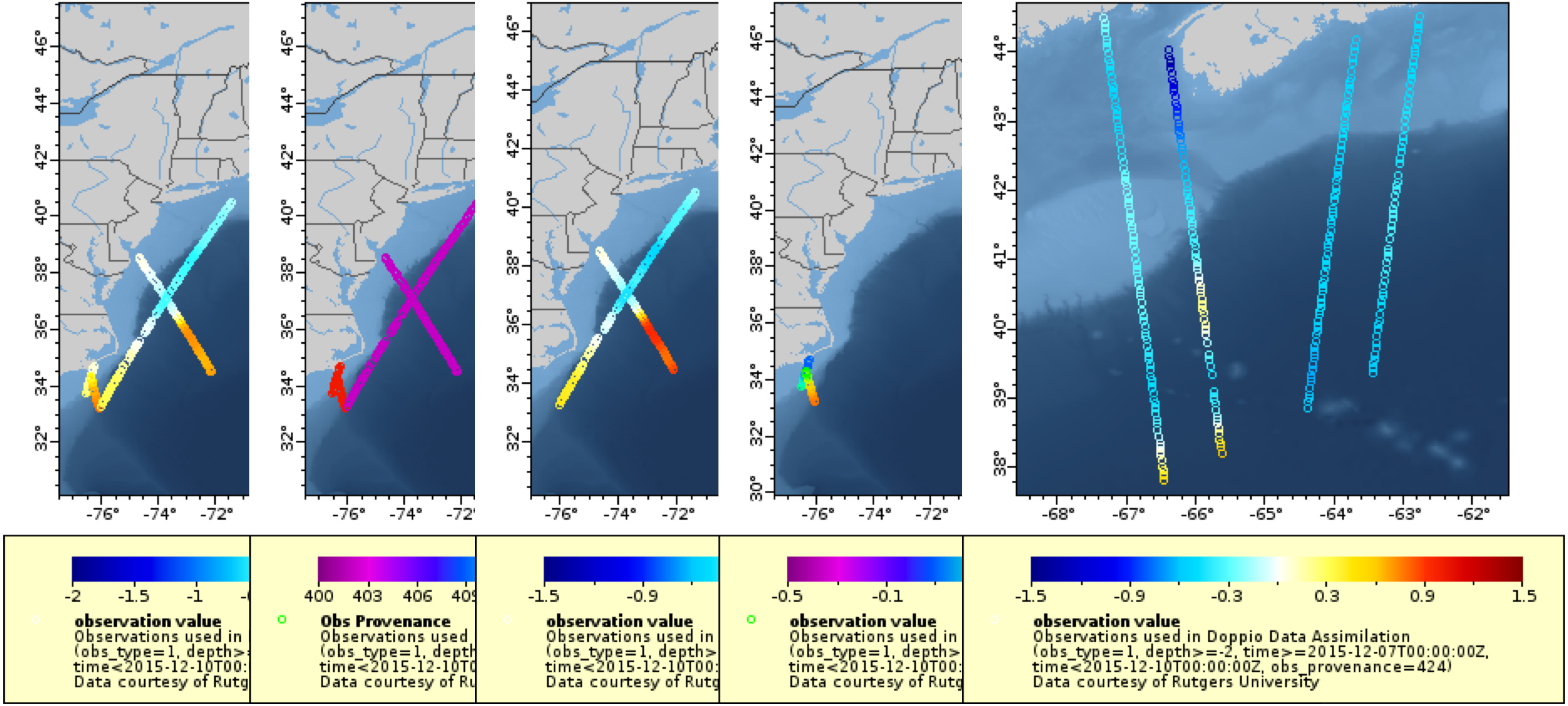
Jason-2

Monitoring an operational near-real-time system using ERDDAP



All SSH   Provenance code   Jason-2   AltiKa

Monitoring an operational near-real-time system using ERDDAP



All SSH   Provenance code   Jason-2   AltiKa   CryoSat

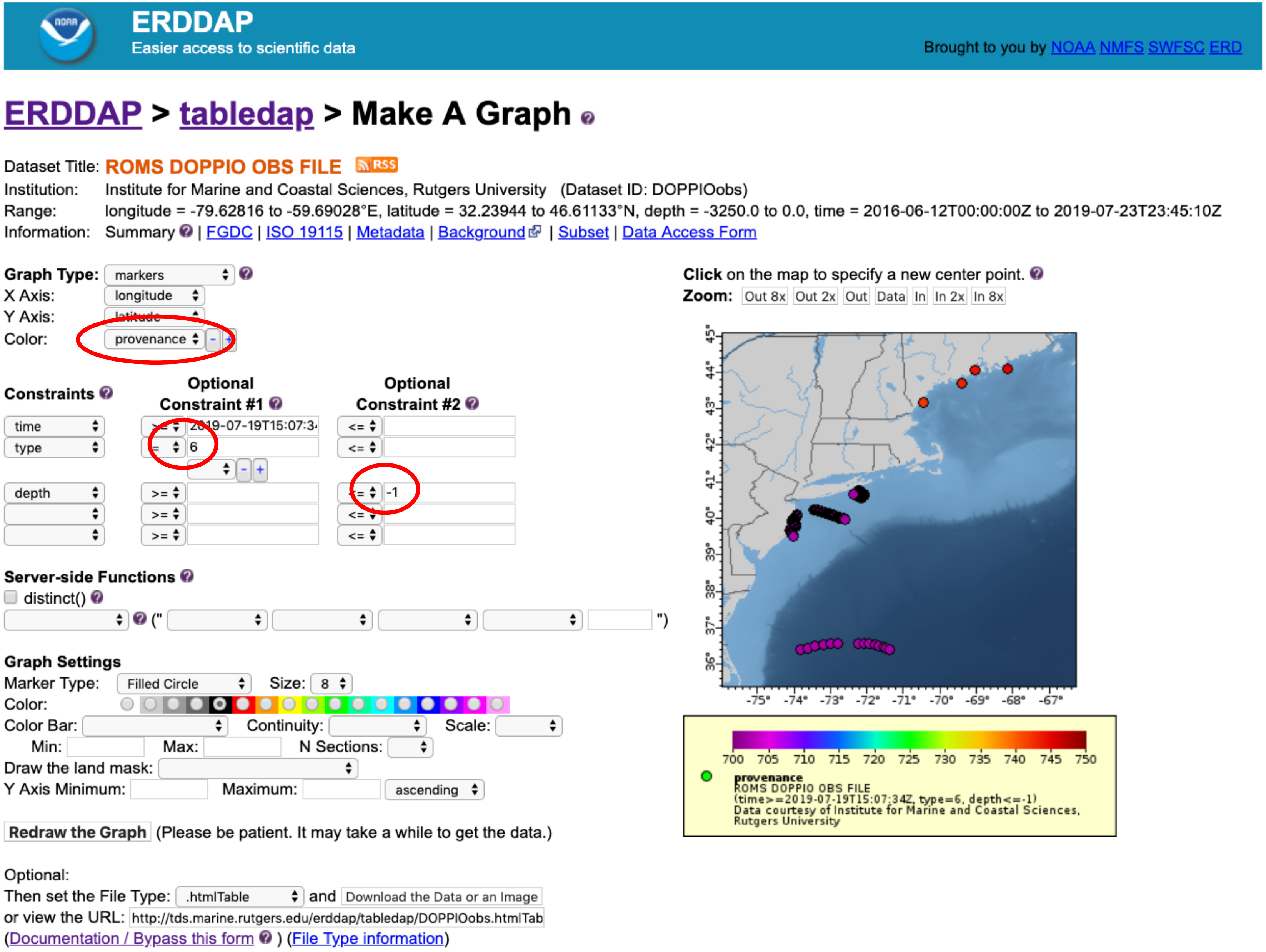
Monitoring an operational near-real-time system using ERDDAP

http://tds.marine.rutgers.edu/erddap/tabledap/DOPPIOobs.graph?longitude%2Clatitude%2Cvalue&time%3E=now-7days&type=6&depth%3C=-1&.draw=markers&.marker=7%7C8&.color=0x000000&.colorBar=%7C%7C%7C%7C%7C&.bgColor=0xffccccff

We might search on
- obs type
- depth range
- provenance

to distinguish various platforms, or display provenance in the plot to distinguish the data source.

Show full proveance list via ERDDDAP
- Create function to read in plotting



Monitoring an operational near-real-time system using ERDDAP

ERDDAP
Easier access to scientific data

Brought to you by NOAA NMFS SWFSC ERD

ERDDAP > Slide Sorter

Add a Slide

Title:

URL: Submit

Building a control panel with *slide sorter.*

Click on the documentation at **Find out more about ERDDAP** and go to the slide sorter page (ideally on your local ERDDAP but that's not essential)

http://tds.marine.rutgers.edu/erddap/slidesorter.html

Add a few slides.

Save the HTML to your personal computer or web server.

Submit

ERDDAP's Slide Sorter helps you build a personal web page that displays content from many other web pages, each in it's own, draggable slide.

To add a slide: Fill out the 'Add a Slide' form.

- For ERDDAP grid datasets, you will usually change the time constraint in the URL to `last` so the graph always shows the latest data.
- For ERDDAP tabular datasets, you will usually change the time constraint in the URL to something like `&time>now-7days` so the graph always shows recent data.
- 'file://' URL's won't work because of security restrictions.

To move a slide: Drag the slide with your mouse.

WARNING!!! Your slides will be lost when you close this browser window, unless you:

1. Scroll to the top of this document, then click on any `Submit` button so this document is up-to-date.
2. Use your browser's `File : Save As` to save this document to your hard drive.

Exercise: make a slide sorter of these sites

http://tds.marine.rutgers.edu/erddap/tabledap/USGS_MANVILLE_STATION.graph

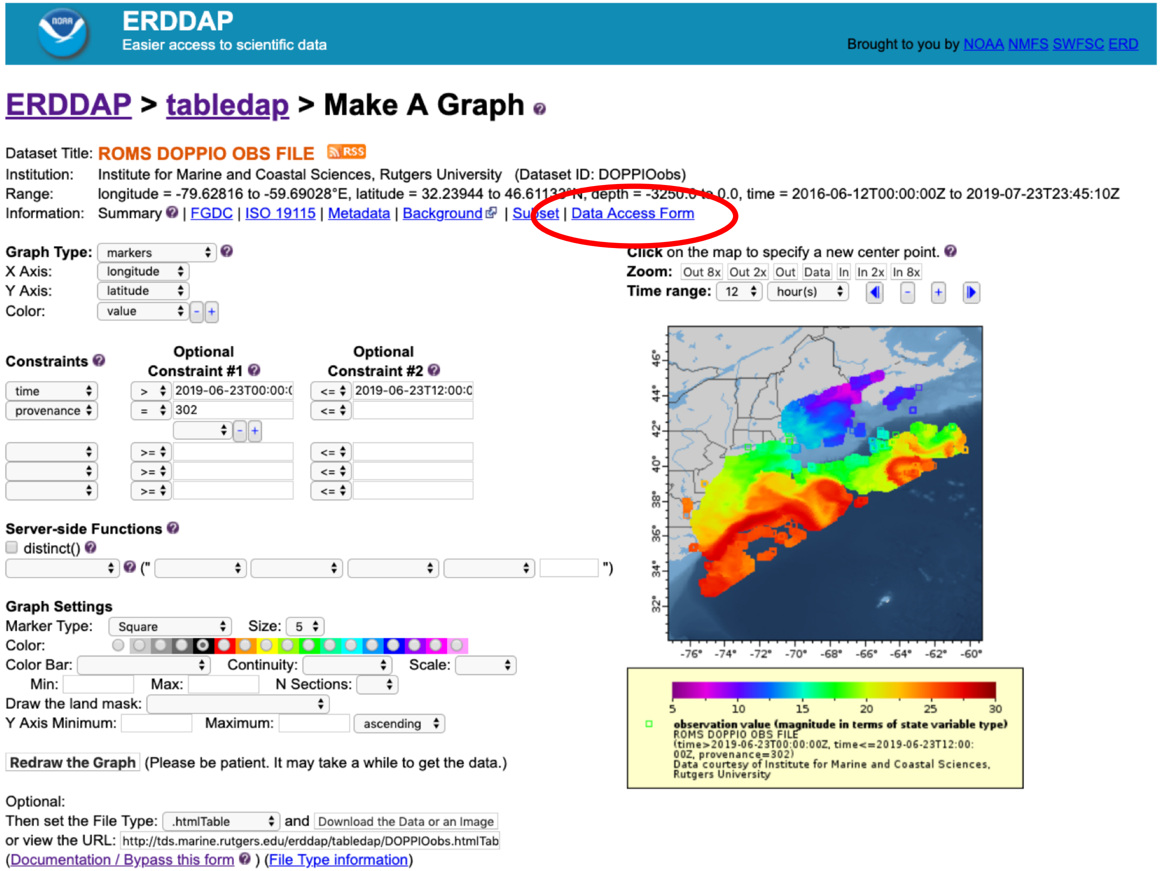
https://coastwatch.pfeg.noaa.gov/erddap/griddap/erdVHNchla8day.graph

http://tds.marine.rutgers.edu/erddap/tabledap/SAMOS_TSG_DATA_DOPPIO.graph?longitude%2Clatitude%2Cplatform&time%3E=2017-07-31T00%3A00%3A00Z&time%3C=2017-08-07T00%3A00%3A00Z&.draw=markers&.marker=6%7C5&.color=0x000000&.colorBar=%7C%7C%7C%7C%7C&.bgColor=0xffccccff

Once finished, Save as … web page, complete

Monitoring an operational near-real-time system using ERDDAP

Download data using the Data Access Form



http://tds.marine.rutgers.edu/erddap/tabledap/DOPPIOobs.graph?longitude%2Clatitude%2Cvalue&time%3E2019-06-23T00%3A00%3A00Z&time%3C=2019-06-23T12%3A00%3A00Z&provenance=302&.draw=markers&.marker=4%7C5&.color=0x000000&.colorBar=%7C%7C%7C%7C%7C&.bgColor=0xffccccff

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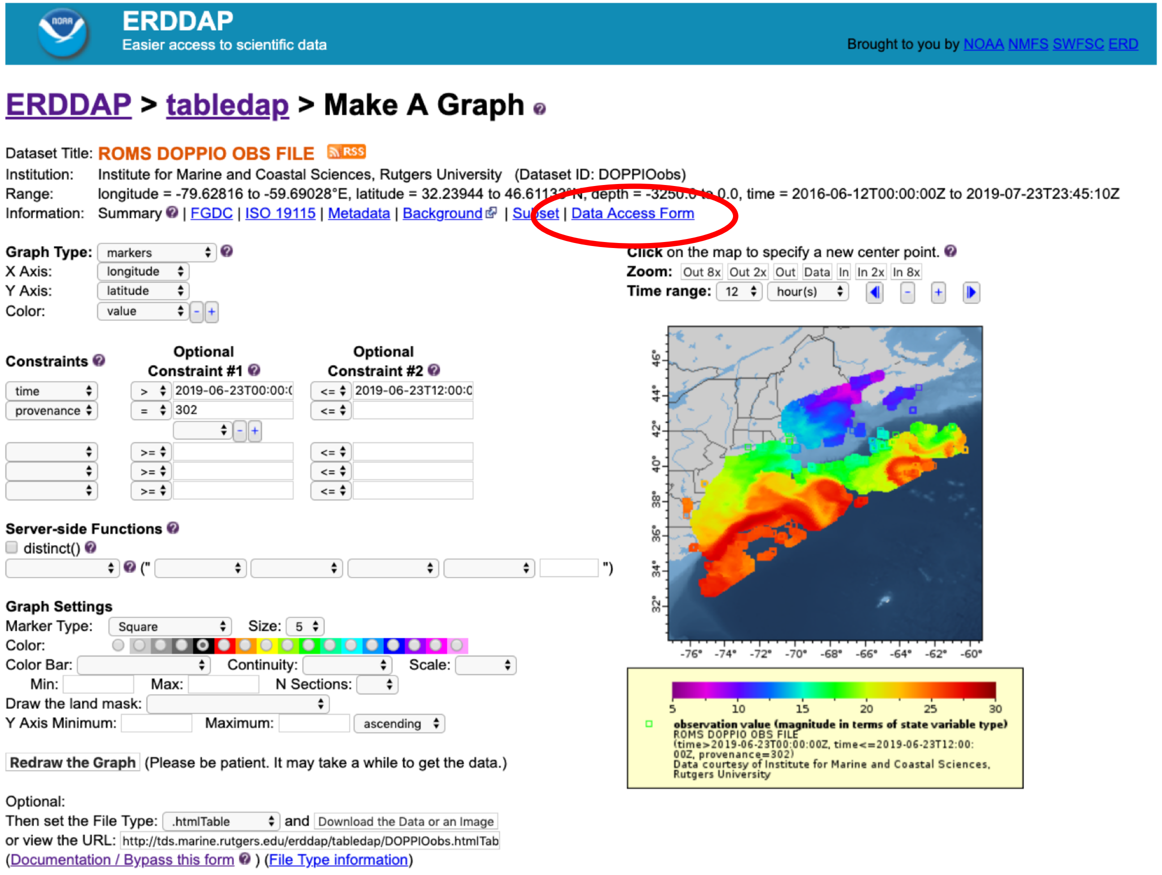

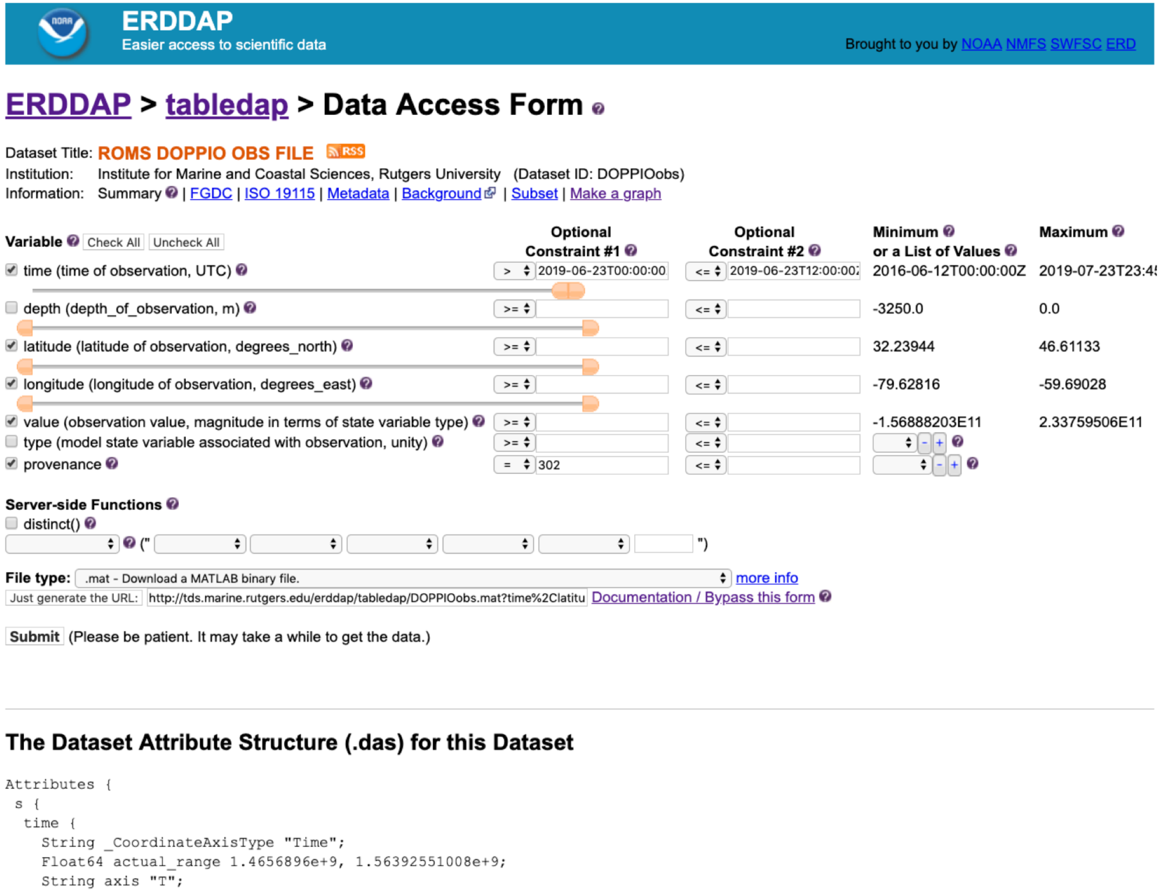

http://tds.marine.rutgers.edu/erddap/tabledap/DOPPIOobs.graph?longitude%2Clatitude%2Cvalue&time%3E2019-06-23T00%3A00%3A00Z&time%3C=2019-06-23T12%3A00%3A00Z&provenance=302&.draw=markers&.marker=4%7C5&.color=0x000000&.colorBar=%7C%7C%7C%7C%7C&.bgColor=0xffccccff

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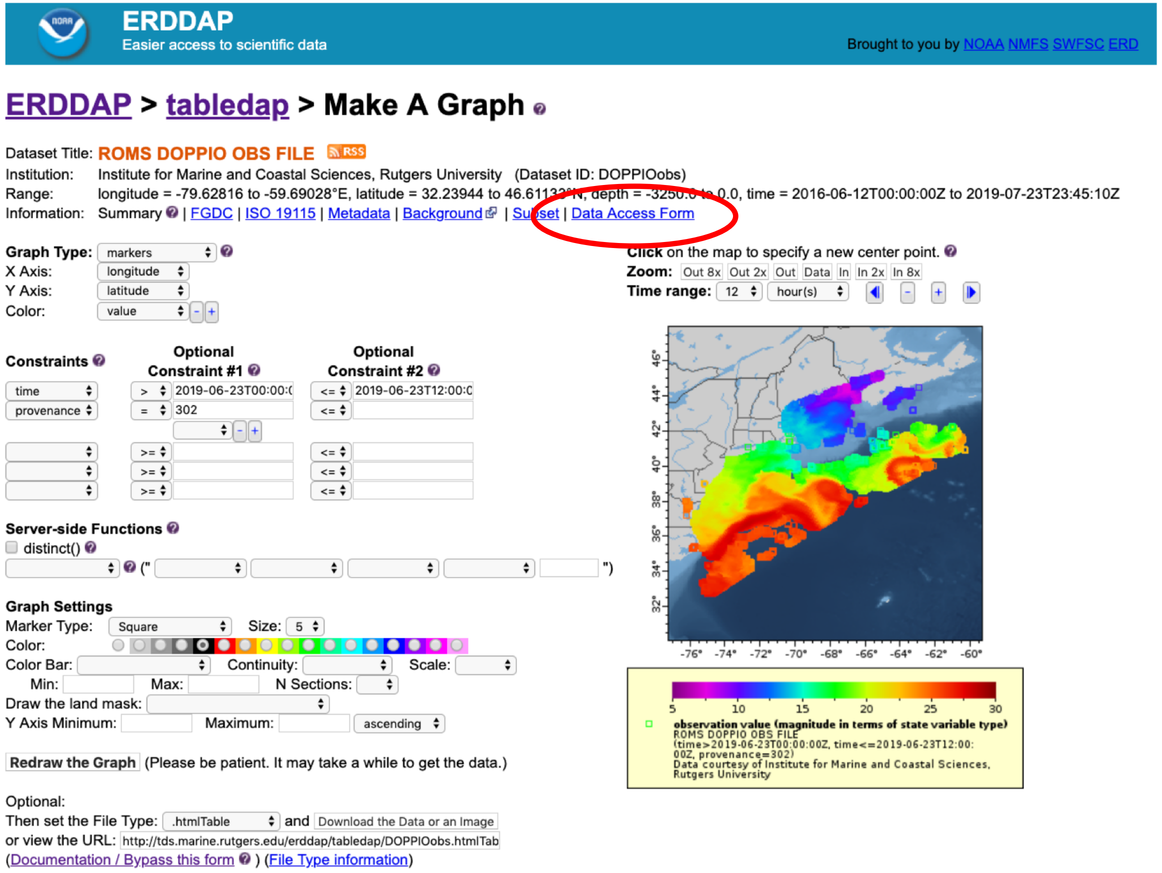

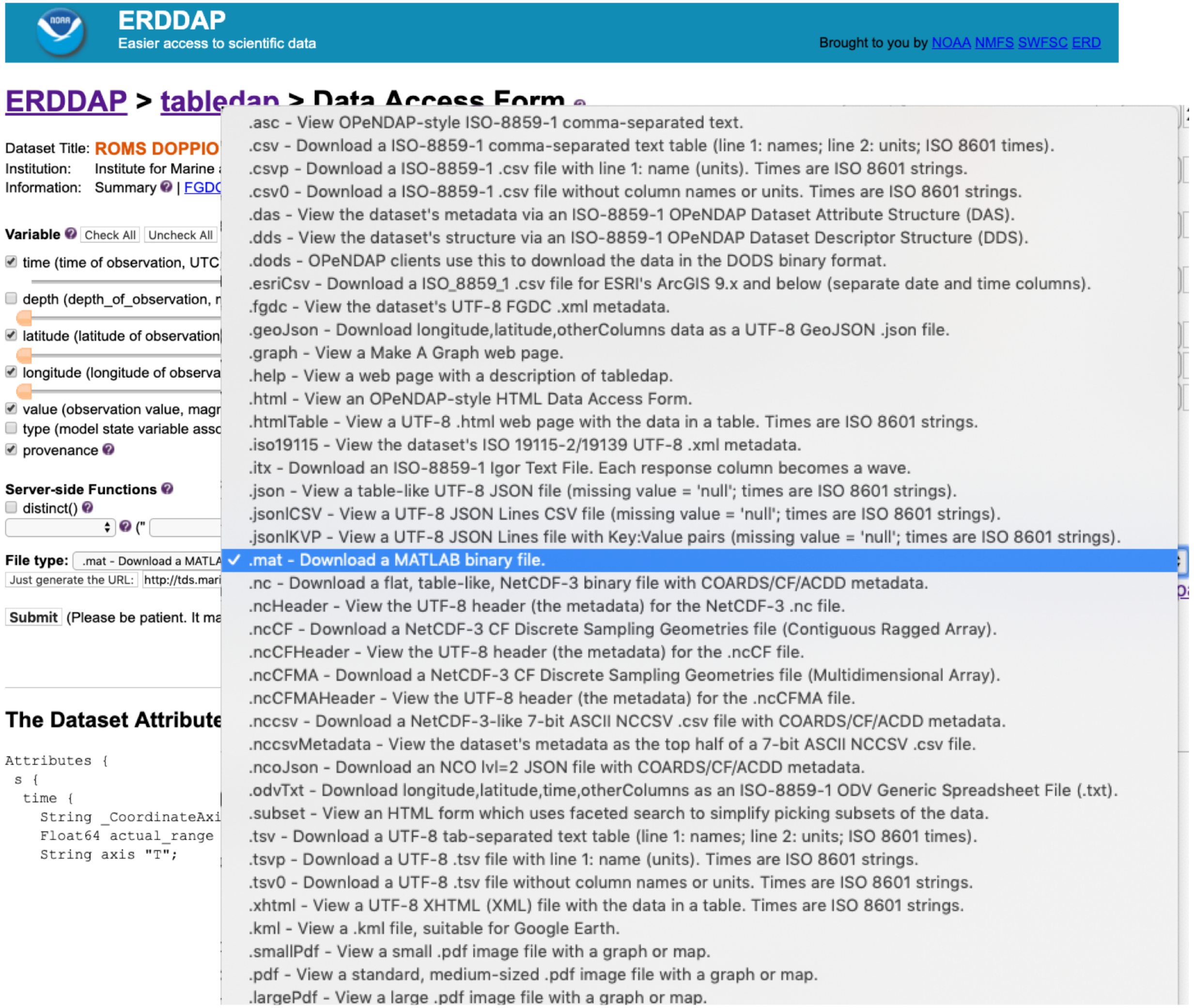

http://tds.marine.rutgers.edu/erddap/tabledap/DOPPIOobs.graph?longitude%2Clatitude%2Cvalue&time%3E2019-06-23T00%3A00%3A00Z&time%3C=2019-06-23T12%3A00%3A00Z&provenance=302&.draw=markers&.marker=4%7C5&.color=0x000000&.colorBar=%7C%7C%7C%7C%7C&.bgColor=0xffccccff

Monitoring an operational near-real-time system using ERDDAP

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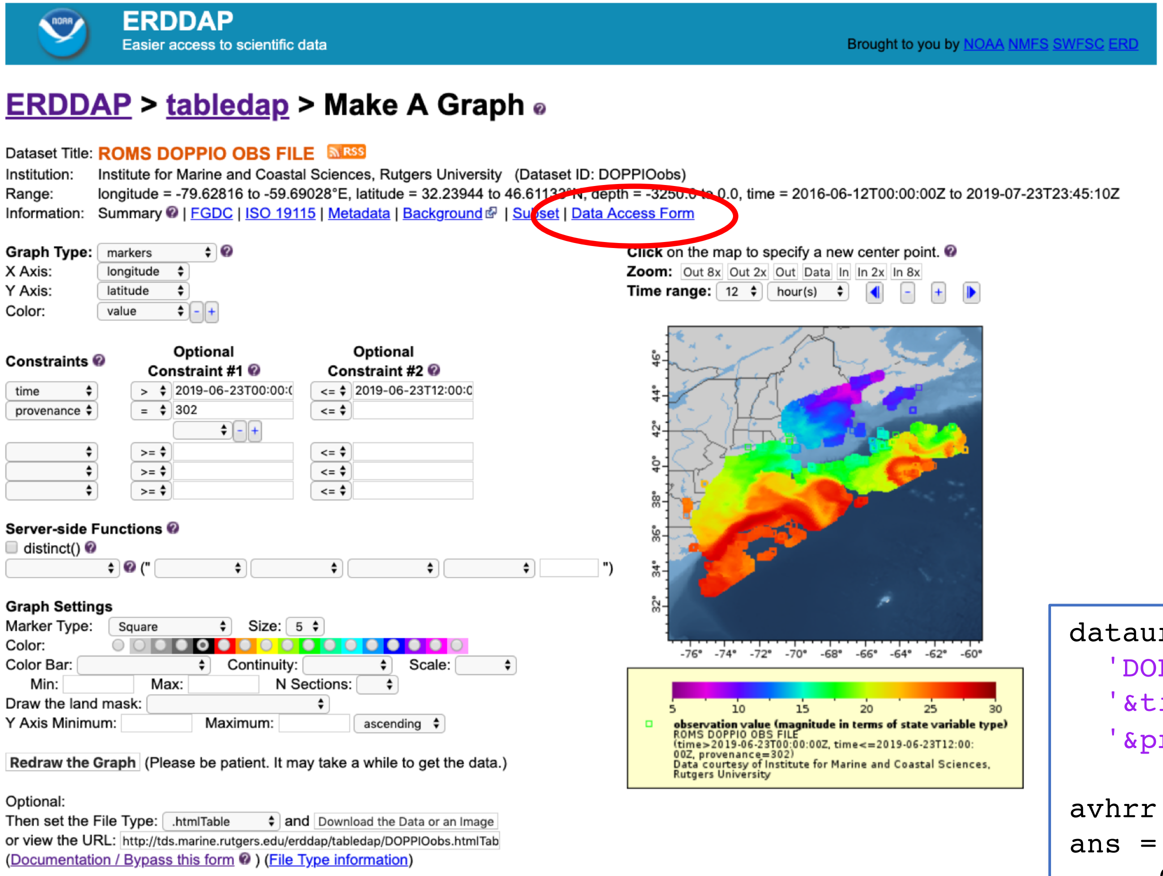

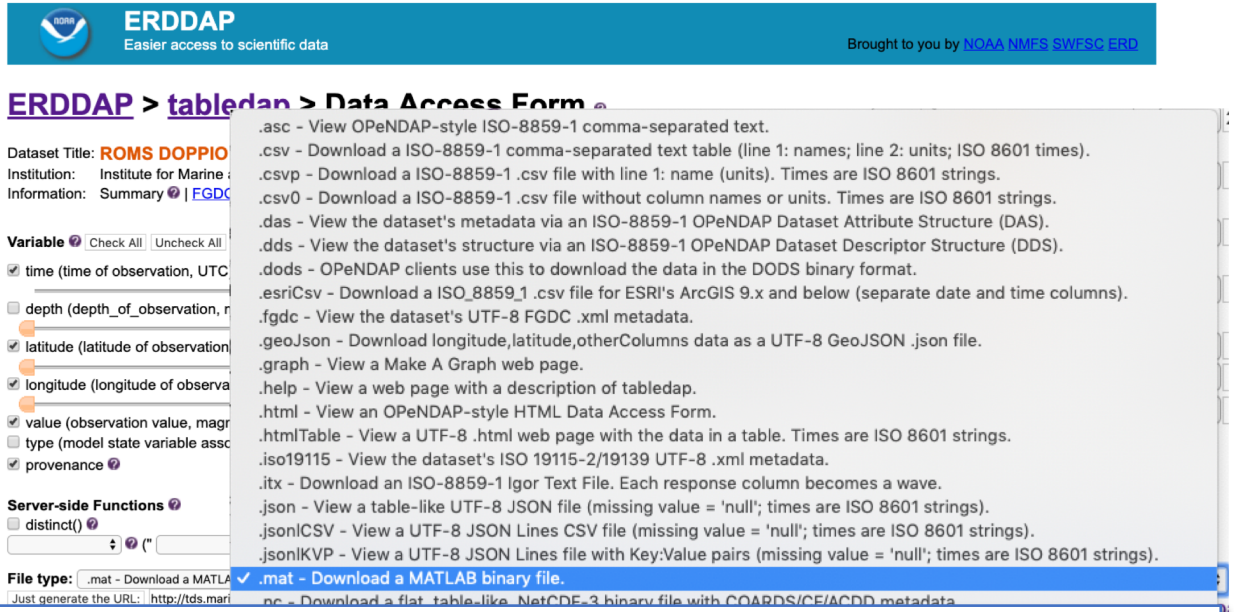


```
dataurl = ['http://tds.marine.rutgers.edu/erddap/tabledap/',...
  'DOPPIOobs.mat?time%2Clatitude%2Clongitude%2Cvalue%2Cprovenance',...
  '&time%3E2019-06-23T00%3A00%3A00Z&time%3C=2019-06-23T12%3A00%3A00Z',...
  '&provenance=302'];

avhrr = erddap_read(dataurl)
ans =
     0
avhrr =
  struct with fields:

        time: [15406×1 double]
    latitude: [15406×1 single]
   longitude: [15406×1 single]
       value: [15406×1 single]
  provenance: [15406×1 single]
```

http://tds.marine.rutgers.edu/erddap/tabledap/DOPPIOobs.graph?longitude%2Clatitude%2Cvalue&time%3E2019-06-23T00%3A00%3A00Z&time%3C=2019-06-23T12%3A00%3A00Z&provenance=302&.draw=markers&.marker=4%7C5&.color=0x000000&.colorBar=%7C%7C%7C%7C%7C&.bgColor=0xffccccff