

Hands-on intro to OOI data access

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- 25-min overview
 - Overview of means of data access and useful links
 - Discover, plot, and download data using OOI Data Portal
- 10-min for you to explore on your own the OOI Data Portal
- Re-group for 10-min to discuss additional means of data access
- I will stay for the remaining 15-min to help with individual questions

Overview of means of data access

4* ways to access OOI data:

- ➡ OOI Data Portal GUI: <https://ooinet.oceanobservatories.org/>
Primary means of exploring/viewing/accessing OOI data
- ➡ OOI THREDDS server: <http://oceanobservatories.org/thredds-server/>
OOI designates as “Preliminary Data”
- ➡ OOI Apache HTTP server: <https://rawdata.oceanobservatories.org/files/>
OOI designates as “Raw Data”

Not covered in today's tutorial:

uFrame Python API: (see poster by Mike Smith for 2016 Ocean Sciences Meeting
[OD14A-2396: The Ocean Observatories Initiative: Data Acquisition Functions and Its Built-In Automated Python Modules](#))

** Note: OOI recently de-activated the OPeNDAP server previously used for large format data sets.
Also, some data are available through other means, e.g., low-frequency hydrophones and
seismometer data available via [IRIS](#).*

Overview of useful links

Main OOI data webpage: <http://oceanobservatories.org/data/>

OOI Data Portal GUI: <https://ooinet.oceanobservatories.org/>

login upper right, select CILogon, select WHOI, use your LDAP pwd

(note: recommend Chrome; in Firefox you might have to clear Active Logins from History)

Site Code List: <http://oceanobservatories.org/site-list/>

Instrument Code List: <http://oceanobservatories.org/instruments/>

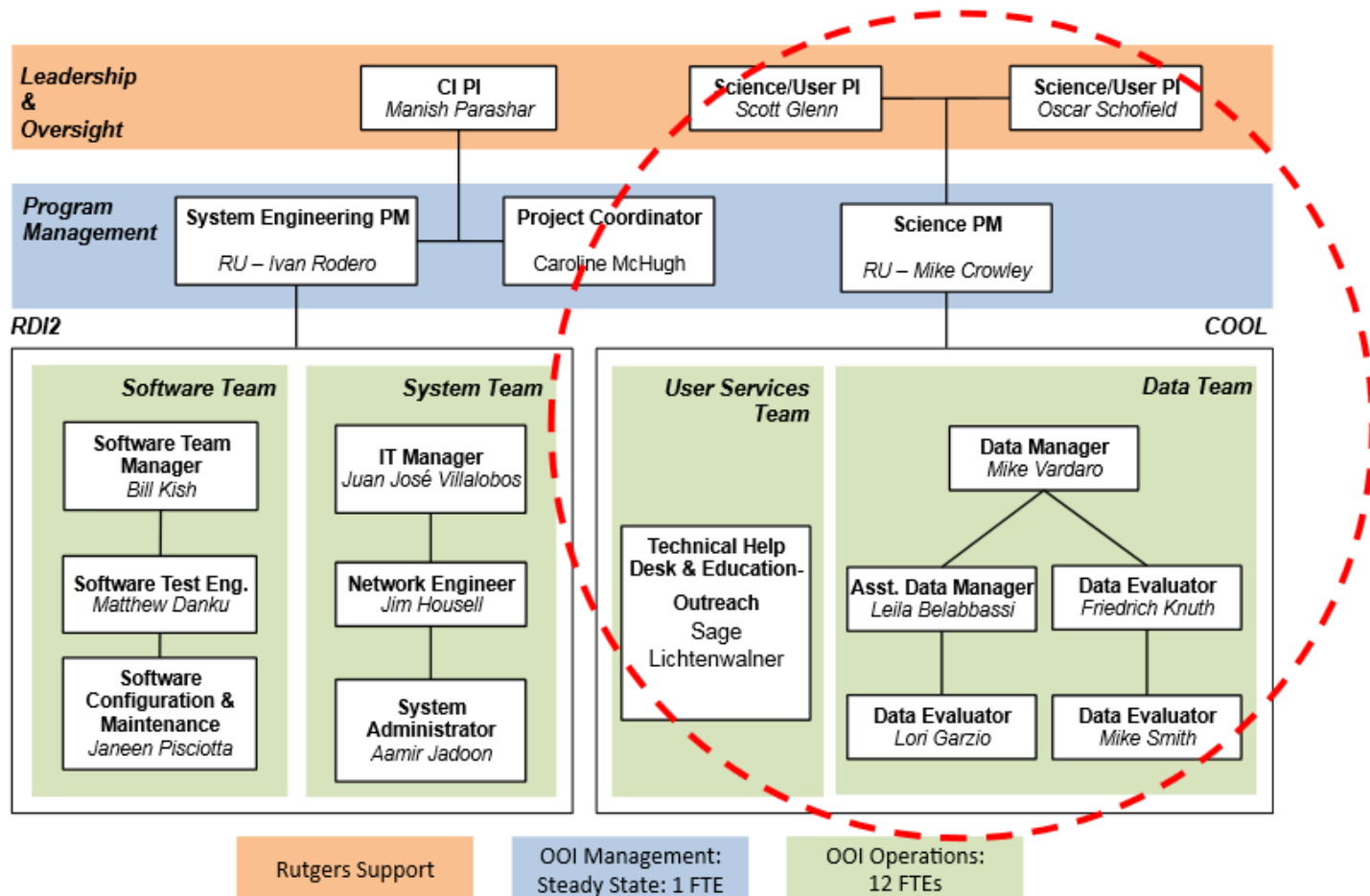
Data Product Code List: <http://oceanobservatories.org/data-products/>

Quality control: <http://oceanobservatories.org/quality-control/>

GitHub repositories of interest: <https://github.com/ooi-integration>
<https://github.com/ooi-data-review>

OOI CI & Data Team

Main OOI data webpage: <http://oceanobservatories.org/data/>



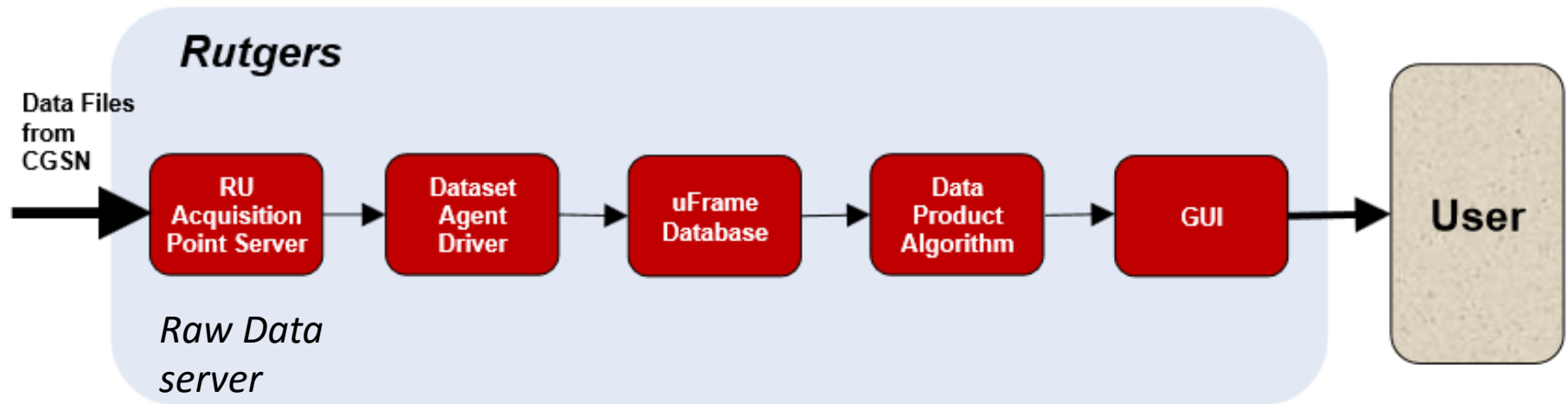
OOI Data Helpdesk

The OOI Data Team appreciates your input as the data are coming online. If you email their helpdesk (help@oceanobservatories.org), your issue will be tracked in Redmine.



<http://oceanobservatories.org/community-developed-tools/>

CI “back-end” infrastructure



“front-end” infrastructure
includes the Data Portal GUI

*Note: there is additional infrastructure
associated with the THREDDS server*

Diagram of end-to-end OOI Cyberinfrastructure

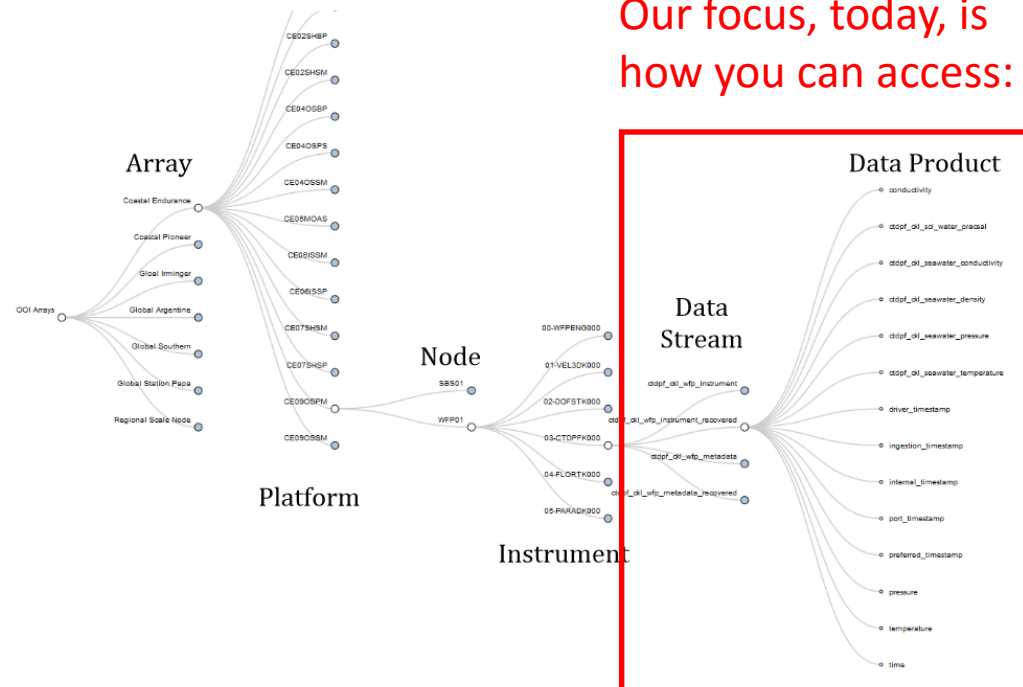
[Belabassi et al. \(2016\) Ocean Sciences Meeting OD14A-2399](#)

Asset Management Hierarchy

Site Code List: <http://oceanobservatories.org/site-list/>

Instrument Code List: <http://oceanobservatories.org/instruments/>

Data Product Code List: <http://oceanobservatories.org/data-products/>



List of data products: <http://oceanobservatories.org/data-products/>

Data Products

The following lists include the most significant science data products collected by the OOI system, broken up by their primary sampling regime. You can also view the expanded [Data Product list with descriptions](#).

Air-Sea Interface

- [Air Temperature](#) (TEMPAIR)
- [Air Temperature at 2 m](#) (TEMPA2M)
- [Barometric Pressure](#) (BARPRES)
- [CO2 Mole Fraction in Atmosphere](#) (XCO2ATM)
- [CO2 Mole Fraction in Surface Sea Water](#) (XCO2SSW)
- [Direct Covariance Flux of Heat](#) (FLUXHOT)
- [Direct Covariance Flux of Moisture](#) (FLUXWET)
- [Direct Covariance Flux of Momentum](#) (FLUXMOM)
- [Downwelling Longwave Irradiance](#) (LONGIRR)
- [Downwelling Shortwave Irradiance](#) (SHRTIRR)
- [Flux of CO2 from the Ocean into the Atmosphere](#) (CO2FLUX)
- [Freshwater Flux](#) (FRSHFLX)
- [Latent Heat Flux](#) (LATNFLX)
- [Mean Wind Velocity](#) (WINDAVG)
- [Momentum Flux \(Wind Stress\)](#) (MOMMFLX)
- [Net Heat Flux](#) (HEATFLX)
- [Net Longwave Irradiance](#) (NETLIRR)
- [Net Shortwave Irradiance](#) (NETSIRR)
- [Partial Pressure of CO2 in Atmosphere](#) (PCO2ATM)

Seafloor/Crust

- [16s rRNA sequence of filtered physical sample](#) (DNASAMP)
- [Benthic Flow Rates](#) (BENTHFL)
- [Broadband Acoustic pressure waves](#) (HYDAPBB)
- [Broadband Frequency](#) (HYDFRBB)
- [Broadband Ground Acceleration](#) (GRNDACC)
- [Broadband Ground Velocity](#) (GRNDVEL)
- [HD Video](#) (HDVIDEO)
- [Hydrogen Concentration](#) (THSPHHC)
- [Hydrogen Sulfide Concentration](#) (THSPHHS)
- [Low Frequency Acoustic pressure waves](#) (HYDAPLF)
- [Nano-resolution Bottom Pressure](#) (BOTPRES)
- [ORP Volts](#) (TRHPHVO)
- [pH](#) (THSPHPH)
- [Physical Fluid Sample – Diffuse fluid chemistry](#) (PHSSAMP)
- [Resistivity R1](#) (TRHPHR1)
- [Resistivity R2](#) (TRHPHR2)
- [Resistivity R3](#) (TRHPHR3)
- [Seafloor High-Resolution Tilt](#) (BOTTILT)
- [Seafloor Pressure](#) (SFLPRES)
- [Seafloor Uplift and Deflation](#) (BOTSFLU)
- [Short Period Ground Velocity](#) (SGRDVEL)

Water Column

- [Bottom Pressure](#) (IESPRES)
- [Conductivity](#) (CONDWAT)
- [Density](#) (DENSITY)
- [Downwelling Spectral Irradiance](#) (SPECTIR)
- [Echo Intensity](#) (ECHOINT)
- [Fluorometric CDOM Concentration](#) (CDOMFLO)
- [Fluorometric Chlorophyll-a Concentration](#) (CHLAFLC)
- [Horizontal Electric Fields](#) (IES_HEF)
- [Mean Point Water Velocity](#) (VELPTMIN)
- [Multi-Frequency Acoustic Backscatter](#) (SONBSCT)
- [Nitrate Concentration](#) (NITROPT)
- [Optical Absorbance Ratio at 434nm](#) (CO2ABS1)
- [Optical Absorbance Ratio at 620nm](#) (CO2ABS2)
- [Optical Absorbance Signal Intensity at 434nm](#) (PH434SI)
- [Optical Absorbance Signal Intensity at 578nm](#) (PH578SI)
- [Optical Absorption Coefficient](#) (OPTABSNT)
- [Optical Backscatter \(Red Wavelengths\)](#) (FLUBSCT)
- [Optical Beam Attenuation Coefficient](#) (OPTATTN)

Automated QC plus provenance

Quality control: <http://oceanobservatories.org/quality-control/>

GitHub repositories of interest: <https://github.com/ooi-integration>
<https://github.com/ooi-data-review>

The screenshot shows the GitHub interface for the repository `ooi-data-review / read_provenance`, which is forked from `najascutellatus/read_provenance`. The repository has 2 watchers, 0 stars, and 1 fork. The main branch is `master`, and there are 5 commits, 1 branch, 0 releases, and 1 contributor. A green button for "New pull request" is visible. Below the repository information, a table lists the commit history:

Commit	Message	Time
<code>20c0072</code>	Merge pull request #1 from najascutellatus/master	13 days ago
	Create README.md	13 days ago
	updated to clean up code	13 days ago
	updated to clean up code	13 days ago
	initial commit	13 days ago
	updated to clean up code	13 days ago

The repository contains the following files:

- `README.md`
- `provenance.py`
- `provenance_ncml.py`
- `read_provenance.ipynb`
- `test.py`

The `README.md` file is currently open, showing the title `read_provenance`.

Let's dive into the OOI Data Portal

4* ways to access OOI data:

➡ OOI Data Portal GUI: <https://ooinet.oceanobservatories.org/>
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** Note: OOI recently de-activated the OPeNDAP server previously used for large format data sets.
Also, some data are available through other means, e.g., low-frequency hydrophones and
seismometer data available via [IRIS](#).*

OOI Data Portal GUI: <https://ooinet.oceanobservatories.org/>

Discovery, Plotting, and Download

The screenshot shows the OOI Data Portal GUI. The top navigation bar includes links for Home, Science, Status, Asset Management, Command & Control, Infrastructure, Glossary, and FAQ. The user is logged in as sbeaulieu@whoi.edu. The main content area is divided into a left sidebar with a 'Table Of Contents' and a central map. The 'Table Of Contents' lists various moorings under 'Coastal Pioneer', including Central Surface Mooring, Central Surface Piercing Profiler Mooring, Central Inshore Profiler Mooring, Central Offshore Profiler Mooring, Upstream Inshore Profiler Mooring, Upstream Offshore Profiler Mooring, Inshore Surface Mooring, Inshore Surface Piercing Profiler Mooring, and Offshore Profiler Mooring. The map shows the North Atlantic Ocean with a marker for 'Coastal Pioneer' near New York.

The screenshot shows the OOI Data Portal GUI's 'Plotting' interface. The top navigation bar is the same as the previous screenshot. The main content area is divided into a left sidebar with a 'Table Of Contents' and a central plotting area. The 'Table Of Contents' lists various moorings under 'Coastal Pioneer', including Upstream Inshore Profiler Mooring, Offshore Surface Mooring, Offshore Profiler Mooring, Surface Buoy, Wire Following Profiler, 3-Wavelength Fluorometer, Photosynthetically Available Radiation, Dissolved Oxygen Fast Response, CTD Profiler, Upstream Offshore Profiler Mooring, Mobile Asset, Central Surface Mooring, Central Offshore Profiler Mooring, Central Inshore Profiler Mooring, Inshore Surface Mooring, Central Surface Piercing Profiler Mooring, and Inshore Surface Piercing Profiler Mooring. The plotting area shows a 'CTD Profiler' plot with a 'telemetered_ctdpf-cki-wfp-instrument' data series. The plot displays 'Sea Water Temperature (deg.C)' on the y-axis (ranging from 5 to 15) and 'Time Series' on the x-axis (ranging from 10:00 to 14:00). The plot shows several data points with error bars. The 'Plot Type' is set to 'Time Series'. The 'Start Time (UTC)' is 2016-04-27 09:33:25 and the 'End Time (UTC)' is 2016-04-28 09:33:25. The 'QA/QC Test' is set to 'OFF'. The plot area includes buttons for 'Plot', 'Add', 'Download Data', and 'Download Image'. A warning message states 'Warning: Data are decimated'.

Catalog http://opendap.oceanobservatories.org:8090/thredds/catalog/ooi/sbeaulieu-whoi-edu/20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_cki_wfp_instrument/catalog.html

Dataset	Size	Last Modified
20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_cki_wfp_instrument		--
status.txt	8.0 bytes	2016-04-28T19:42:04Z
deployment004_CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_cki_wfp_instrument_20160427T120002-20160428T093324_989975.ncml	12.89 Kbytes	2016-04-28T19:42:04Z
deployment004_CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_cki_wfp_instrument_20160427T120002-20160428T093324_989975.nc	792.4 Kbytes	2016-04-28T19:42:02Z
20160427T093325-20160428T093325-status.txt	9.0 bytes	2016-04-28T19:42:02Z

In order to download you must log in

<https://ooinet.oceanobservatories.org/>

(note: please use Chrome: in Firefox you might have to clear Active Logins from History and the Download pop-up might get blocked)

Not logged in. Need to see more options on top menu bar.

Log in

Table Of Contents

- Coastal Endurance ⓘ
- Global Station Papa ⓘ
- Coastal Pioneer ⓘ
- Global Argentine Basin ⓘ
- Global Irminger Sea ⓘ
- Global Southern Ocean ⓘ
- Cabled Array ⓘ

Map Labels: Station Papa, Endurance & Cabled Array, Coastal Pioneer, Irminger, Hudson Bay, Labrador Basin, Labrador Sea, North American Basin, Sargasso Sea, Mid-Atlantic Ridge, Gulf of Mexico, Gulf of Alaska, AMERICA, NORTH PACIFIC.

Buttons: Toggle Reference Designators, Data Stream Quick View.

Log in

<https://ooinet.oceanobservatories.org/>

Select CILogon, select WHOI, use your LDAP username/password

The screenshot shows the OOI (Ocean Observatories Initiative) website. The background features the OOI logo, navigation links (Home, Science Map), and a sidebar with a 'Table Of Contents' listing various ocean observatories. A modal window is centered on the screen, titled 'CILogon' (highlighted with a red oval). The modal contains an 'OR' separator, an 'Email' input field, a 'Password' input field, and a green 'Log In' button. A 'New User' link is visible at the bottom right of the modal. The background also includes logos for the Consortium for Ocean Leadership and NSF, and a map of the North Atlantic region.

Discover data using OOI Data Portal

Explore by array and platform (left menu) or map interface

The screenshot displays the OOI Science Map web application. The header features the OOI logo, the text "SCIENCE MAP", and logos for the Consortium for Ocean Leadership and NSF. A navigation bar includes links for Home, Science, Status, Asset Management, Command & Control, Infrastructure, Glossary, and FAQ, along with a user profile for sbeaulieu@whoi.edu.

On the left, a "Table Of Contents" menu lists various mooring types under the "Coastal Pioneer" section:

- Coastal Endurance ⓘ
- Global Station Papa ⓘ
- Coastal Pioneer ⓘ
 - Central Surface Mooring
 - Central Surface Piercing Profiler Mooring
 - Central Inshore Profiler Mooring
 - Central Offshore Profiler Mooring
 - Upstream Inshore Profiler Mooring
 - Upstream Offshore Profiler Mooring
 - Inshore Surface Mooring
 - Inshore Surface Piercing Profiler Mooring
 - Offshore Profiler Mooring

A "Toggle Reference Designators" button is located at the bottom of the menu.

The main map area shows a bathymetric map of the North Atlantic Ocean. A black circular icon with a network symbol is placed over the "Coastal Pioneer" array location. A "Data Stream Quick View" button is visible at the bottom left of the map. The map includes labels for "Chicago", "New York", "Gulf of Mexico", "Hatteras Plain", "Sohm Plain", "North American Basin", "Newfoundland Basin", and "Atlantic".

Discover data using OOI Data Portal

Let's look specifically for **near real-time temperature data from Pioneer Array**

Upper left: Science > Data Catalog, enter search term Pioneer

The screenshot shows the OOI Data Catalog interface. The search bar at the top contains the term 'Pioneer'. The left sidebar lists various data categories, including 'Coastal Pioneer'. The main table displays search results for 'Pioneer' data. The table has columns for Array, Site Name, Platform Name, Node, Instrument, Stream Identifier, Stream Type, Depth, Lat / Lon, Start Time, End Time, and Reference Designator. The results are sorted by end date, most recent first. The first row shows data for the Pioneer array, Offshore Profiler Mooring, Wire-Following Profiler, Dissolved Oxygen Fast Response instrument, with a stream identifier of 'telemetered_dofst-k-wfp-instrument'. The second row shows data for the Pioneer array, Offshore Profiler Mooring, Wire-Following Profiler, CTD Profiler instrument, with a stream identifier of 'telemetered_ctdpf-cl-wfp-instrument'. The third row shows data for the Pioneer array, Offshore Profiler Mooring, Wire-Following Profiler, 3-D Single Point Velocity Meter instrument, with a stream identifier of 'telemetered_vel3d-k-wfp-stc-instrument'. The fourth row shows data for the Pioneer array, Offshore Profiler Mooring, Wire-Following Profiler, 3-D Single Point Velocity Meter instrument, with a stream identifier of 'telemetered_vel3d-k-wfp-stc-metadata'. The fifth row shows data for the Pioneer array, Offshore Profiler Mooring, Wire-Following Profiler, Dissolved Oxygen Fast Response instrument, with a stream identifier of 'telemetered_dofst-k-wfp-metadata'. The table also includes a 'Download' link for each row. The page number '15' is visible at the bottom right.

		Array	Site Name	Platform Name	Node	Instrument	Stream Identifier	Stream Type	Depth (m)	Lat / Lon (ddm)	Start Time	End Time	Reference Designator
Plot	Download	Pioneer	Offshore Profiler Mooring	Offshore Profiler Mooring	Wire-Following Profiler	Dissolved Oxygen Fast Response	telemetered_dofst-k-wfp-instrument		NaN		April 15th 2014, 8:00:03 pm	April 28th 2016, 9:33:25 am	CP04OSPM-WFP01-02-DOFSTK000
Plot	Download	Pioneer	Offshore Profiler Mooring	Offshore Profiler Mooring	Wire-Following Profiler	CTD Profiler	telemetered_ctdpf-cl-wfp-instrument		NaN		April 15th 2014, 8:00:03 pm	April 28th 2016, 9:33:25 am	CP04OSPM-WFP01-03-CTDPFK000
Plot	Download	Pioneer	Offshore Profiler Mooring	Offshore Profiler Mooring	Wire-Following Profiler	3-D Single Point Velocity Meter	telemetered_vel3d-k-wfp-stc-instrument		NaN		April 15th 2014, 8:00:03 pm	April 28th 2016, 9:33:07 am	CP04OSPM-WFP01-01-VEL3DK000
Plot	Download	Pioneer	Offshore Profiler Mooring	Offshore Profiler Mooring	Wire-Following Profiler	3-D Single Point Velocity Meter	telemetered_vel3d-k-wfp-stc-metadata		NaN		April 15th 2014, 8:00:03 pm	April 28th 2016, 9:00:02 am	CP04OSPM-WFP01-01-VEL3DK000
Plot	Download	Pioneer	Offshore Profiler Mooring	Offshore Profiler Mooring	Wire-Following Profiler	Dissolved Oxygen Fast Response	telemetered_dofst-k-wfp-metadata		NaN		April 15th 2014, 8:00:03 pm	April 28th 2016, 9:00:02 am	CP04OSPM-WFP01-02-DOFSTK000

Types of data 'streams' in GUI

Uncabled Assets:

Telemetered data refers to data that has been streamed in over satellite. These data also go through automated QC as they are processed, but the big difference is that not every data point collected is telemetered. ...some platforms ...send back decimated data (one point per minute, instead of the full sampling rate of 0.5 Hz for gliders, for example).

Recovered data ...only become available after an instrument is recovered, but will include all data points collected by the instrument. These data undergo QA/QC as well.

Cabled Assets:

Streamed data

Email from Leslie Smith @ OOI Helpdesk, 28 April 2016

Plot data using OOI Data Portal

Click “Plot” to open a plotting interface

The screenshot displays the OOI Data Catalog interface. The header includes the OOI logo, 'DATA CATALOG', and navigation links. A sidebar on the left lists various data categories. The main content area shows a table of data records, with the second row highlighted. The 'Plot' link in the first column of the second row is circled in red, as is the 'Stream Identifier' 'telemetered_ctdpf-cl-wfp-instrument' in the same row.

Table of Contents:

- Coastal Endurance
- Global Station Papa
- Coastal Pioneer
- Global Argentine Basin
- Global Irminger Sea
- Global Southern Ocean
- Cabled Array

Table Headers:

		Array	Site Name	Platform Name	Node	Instrument	Stream Identifier	Stream Type	Depth (m)	Lat / Lon (ddm)	Start Time	End Time	Reference Designator
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Table Data (Row 2):

Plot	Download	Pioneer	Offshore Profiler Mooring	Offshore Profiler Mooring	Wire-Following Profiler	Dissolved Oxygen Fast Response	telemetered_dofst-k-wfp-instrument		NaN		April 15th 2014, 8:00:03 pm	April 28th 2016, 9:33:25 am	CP04OSPM-WFP01-02-DOFSTK000
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Table Data (Row 3):

Plot	Download	Pioneer	Offshore Profiler Mooring	Offshore Profiler Mooring	Wire-Following Profiler	CTD Profiler	telemetered_ctdpf-cl-wfp-instrument		NaN		April 15th 2014, 8:00:03 pm	April 28th 2016, 9:33:25 am	CP04OSPM-WFP01-03-CTDPFK000
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Table Data (Row 4):

Plot	Download	Pioneer	Offshore Profiler Mooring	Offshore Profiler Mooring	Wire-Following Profiler	3-D Single Point Velocity Meter	telemetered_vel3d-k-wfp-stc-instrument		NaN		April 15th 2014, 8:00:03 pm	April 28th 2016, 9:33:07 am	CP04OSPM-WFP01-01-VEL3DK000
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Table Data (Row 5):

Plot	Download	Pioneer	Offshore Profiler Mooring	Offshore Profiler Mooring	Wire-Following Profiler	3-D Single Point Velocity Meter	telemetered_vel3d-k-wfp-stc-metadata		NaN		April 15th 2014, 8:00:03 pm	April 28th 2016, 9:00:02 am	CP04OSPM-WFP01-01-VEL3DK000
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Table Data (Row 6):

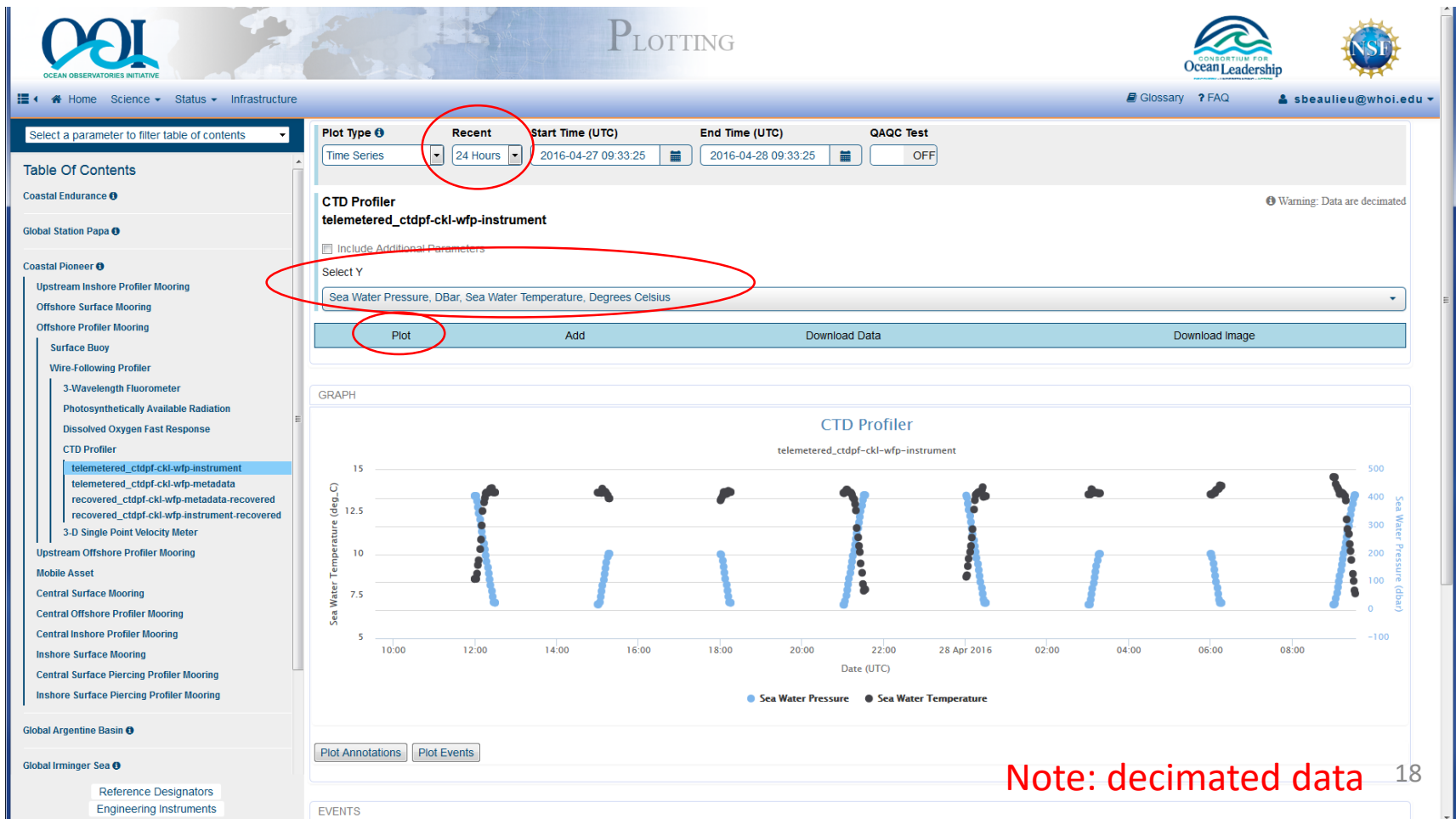
Plot	Download	Pioneer	Offshore Profiler Mooring	Offshore Profiler Mooring	Wire-Following Profiler	Dissolved Oxygen Fast Response	telemetered_dofst-k-wfp-metadata		NaN		April 15th 2014, 8:00:03 pm	April 28th 2016, 9:00:02 am	CP04OSPM-WFP01-02-DOFSTK000
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Reference Designators: Engineering Instruments

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Plot data using OOI Data Portal

Under “Select Y” select parameters you want to plot
Select a time period under “Recent”, e.g., 24 hrs
Click “Plot”



Plot data using OOI Data Portal

In the map interface: click plot symbol for same instrument

The screenshot displays the OOI Science Map interface. On the left is a 'Table Of Contents' sidebar with categories like Coastal Endurance, Global Station Papa, Coastal Pioneer, Global Argentine Basin, Global Irminger Sea, Global Southern Ocean, and Cabled Array. The main map area shows a network of mooring stations. A pop-up window titled 'Offshore Profiler Mooring' is open, displaying details for a specific mooring. The window includes tabs for Plotting, Data Catalog, and Asset Management. It shows the mooring's location (Latitude: 39.9357, Longitude: -70.88) and a table of instruments. The 'CTD Profiler' instrument is highlighted, and its 'Plot' icon (a small bar chart) is circled in red. Below the instruments table, there are 'Deployment Event(s)' for two different periods. The bottom of the interface shows a 'Data Stream Quick View' button and a reference designators section.

Table Of Contents

- Coastal Endurance ⓘ
- Global Station Papa ⓘ
- Coastal Pioneer ⓘ
- Global Argentine Basin ⓘ
- Global Irminger Sea ⓘ
- Global Southern Ocean ⓘ
- Cabled Array ⓘ

Offshore Profiler Mooring

[Plotting](#) | [Data Catalog](#) | [Asset Management](#)

Latitude: 39.9357 Longitude: -70.88 ☐ Engineering Instruments

Instruments

Node	Name	Controls
Surface Buoy	3-Axis Motion Pack	Plot Data Asset
Wire-Following Profiler	3-Wavelength Fluorometer	Plot Data Asset
Wire-Following Profiler	Photosynthetically Available Radiation	Plot Data Asset
Wire-Following Profiler	Dissolved Oxygen Fast Response	Plot Data Asset
Wire-Following Profiler	CTD Profiler	Plot Data Asset
Wire-Following Profiler	3-D Single Point Velocity Meter	Plot Data Asset

Deployment Event(s)

Previous	Previous
ID: 7051	ID: 6805
Start: 2015-04-29	Start: 2014-04-15
End: 2015-10-12	End: 2014-10-04

Data Stream Quick View

Reference Designators

40.37375 -70.86182

Leaflet | Tiles © Esri — Sources: GEBCO, NOAA, CHS, OSU, UNH, CSUMB, National Geographic, DeLorme, NAVTEQ, and Esri

Download data using OOI Data Portal

Click “Download Data” in plotting interface

(**does not appear to work in Firefox**... use Chrome browser)

The screenshot displays the OOI Data Portal plotting interface. The top navigation bar includes the OOI logo, a search bar, and links for Home, Science, Status, and Infrastructure. The right side of the header features logos for the Consortium for Ocean Leadership and NSF, along with a user profile for sbeaulieu@whoi.edu.

The main content area is titled "PLOTTING" and contains a "Table Of Contents" on the left sidebar. The sidebar lists various data sources, including Coastal Endurance, Global Station Papa, Coastal Pioneer, and Global Argentine Basin. The "CTD Profiler" section is selected, showing a list of instruments. The "telemetered_ctdpf-ckl-wfp-instrument" is highlighted.

The main plotting area shows a "CTD Profiler" plot for the instrument "telemetered_ctdpf-ckl-wfp-instrument". The plot displays "Sea Water Pressure (dbar)" and "Sea Water Temperature (deg_C)" over time. The "Download Data" button is circled in red. Other buttons include "Plot", "Add", and "Download Image".

The plot shows data for the period from 10:00 to 08:00 UTC on 28 Apr 2016. The y-axis for Sea Water Pressure ranges from -100 to 500 dbar, and for Sea Water Temperature from 5 to 15 deg_C. The x-axis is labeled "Date (UTC)".

At the bottom of the plot area, there are buttons for "Plot Annotations" and "Plot Events". The "EVENTS" section is visible at the very bottom.

Check your Delivery Email address

Check your File Type (NetCDF has all the metadata; note CSV was activated last Friday – try it out)

Click the box for provenance if NetCDF or JSON not CSV (annotations not available yet)

Click “Download” at bottom of pop-up (then pop-up disappears)

This is asynchronous download, and it might take a few minutes

Check your email for “[AUTO] OOI Message Service”



The screenshot shows the OOI Data Catalog plotting interface. A pop-up window titled "Streams being downloaded:" is centered on the screen. The pop-up contains the following information:

- Data:** Pioneer Offshore Profiler Mooring Wire-Following Profiler CTD Profiler
- Previous:** 24 Hours
- Start Date:** 2016-04-27 09:33:25
- End Date:** 2016-04-28 09:33:25
- Delivery Email:** sbeaulieu@whoi.edu
- File Type:** NetCDF (.nc)
- Include Provenance:** ☐ **Include Annotations:** ☐
- Download:** A button circled in red.


The background interface shows a "Table Of Contents" on the left with various data categories. The main plot area displays a "CTD Profiler" graph for "telemetered_ctdpf-cki-wfp-instrument". The graph shows "Sea Water Temperature (deg_C)" on the left y-axis (ranging from 5 to 15) and "Sea Water Pressure (dbar)" on the right y-axis (ranging from -100 to 500). The x-axis is "Date (UTC)" from 10:00 to 08:00. The graph shows several vertical data series for temperature and pressure over time. A yellow banner at the bottom of the screenshot contains the text: "Note: You might get failure message, but check your email".

What if I had clicked “Download” in catalog interface?

The same pop-up appears, just be sure to enter the time period that you want



DATA CATALOG



Home Science Status Infrastructure

Glossary FAQ sbeaulieu@whoi.edu

Select a parameter to filter table of contents

PINNAP

Table Of Contents

- Coastal Endurance
- Global Station Papa
- Coastal Pioneer
- Global Argentine Basin
- Global Irminger Sea
- Global Southern Ocean
- Cabled Array

< 1 2 3 4 .. 77 >

12 HOURS 24 HOURS OLDER THAN 24 HOURS DATA ARE SORTED BY END DATE, MOST RECENT FIRST

		Array	Site Name	Platform Name	Node	Instrument	Stream Identifier	Stream Type	Depth (m)	Lat / Lon (ddm)	Start Time	End Time	Reference Designator
Plot	Download	Pioneer	Offshore Profiler Mooring	Offshore Profiler Mooring	Wire-Following Profiler	Dissolved Oxygen Fast Response	telemetered_dofst-k-wfp-instrument		NaN		April 15th 2014, 8:00:03 pm	April 28th 2016, 9:33:25 am	CP04OSPM-WFP01-02-DOFSTK000
Plot	Download	Pioneer	Offshore Profiler Mooring	Offshore Profiler Mooring	Wire-Following Profiler	CTD Profiler	telemetered_ctdpf-cl-k-wfp-instrument		NaN		April 15th 2014, 8:00:03 pm	April 28th 2016, 9:33:25 am	CP04OSPM-WFP01-03-CTDPFK000
Plot	Download	Pioneer	Offshore Profiler Mooring	Offshore Profiler Mooring	Wire-Following Profiler	3-D Single Point Velocity Meter	telemetered_vel3d-k-wfp-stc-instrument		NaN		April 15th 2014, 8:00:03 pm	April 28th 2016, 9:33:07 am	CP04OSPM-WFP01-01-VEL3DK000
Plot	Download	Pioneer	Offshore Profiler Mooring	Offshore Profiler Mooring	Wire-Following Profiler	3-D Single Point Velocity Meter	telemetered_vel3d-k-wfp-stc-metadata		NaN		April 15th 2014, 8:00:03 pm	April 28th 2016, 9:00:02 am	CP04OSPM-WFP01-01-VEL3DK000
Plot	Download	Pioneer	Offshore Profiler Mooring	Offshore Profiler Mooring	Wire-Following Profiler	Dissolved Oxygen Fast Response	telemetered_dofst-k-wfp-metadata		NaN		April 15th 2014, 8:00:03 pm	April 28th 2016, 9:00:02 am	CP04OSPM-WFP01-02-DOFSTK000

Reference Designators
Engineering Instruments

22

What is “Asynchronous download”?

...might take a few minutes

Check your email for “[AUTO] OOI Message Service”

From asadev@ooiufs01.ooi.rutgers.edu

Subject [AUTO] OOI Message Service

To Me

Reply Forward Archive Junk De

sbeaulieu-who-educ,

A request has completed fully.

Request Id:	baacb43a-5316-4d20-b465-21df29bcc257
Reference Designator:	CP040SPM-WFP01-03-CTDPFK000
Stream:	ctdpf_ckl_wfp_instrument
Method:	telemetered
Format:	application/octet-stream

[File Download Repository](#) (available for 2 weeks)

If you are having difficulty using the link in this message, the link url is copied below.

http://opendap.oceanobservatories.org:8090/thredds/catalog/ooi/sbeaulieu-who-educ/20160428T074158-CP040SPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument/catalog.html

~~[File Download Repository](#)~~

If you are having difficulty using the link in this message, the link url is copied below.


http://opendap.oceanobservatories.org:8080/opendap/hyrax/async_results/sbeaulieu-who-educ/20160428T074158-CP040SPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument

NOTE: This is an EDEX auto-generated message. Please do not reply to this message.

My download results (available for 2 weeks)

When you click on any of the 4 listed results, you'll open a THREDDS catalog webpage

The “*.nc” file(s) is the NetCDF file access

Catalog http://opendap.oceanobservatories.org:8090/thredds/catalog/ooi/sbeaulieu-who-educ/20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument/catalog.html		
Dataset	Size	Last Modified
 20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument		--
status.txt	8.0 bytes	2016-04-28T19:42:04Z
deployment0004_CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument_20160427T120002-20160428T093324.989975.ncml	12.89 Kbytes	2016-04-28T19:42:04Z
deployment0004_CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument_20160427T120002-20160428T093324.989975.nc	792.4 Kbytes	2016-04-28T19:42:02Z
20160427T093325-20160428T093325-status.txt	9.0 bytes	2016-04-28T19:42:02Z
Ocean Observatories Initiative TDS at Oceans Observatories Institute see Info THREDDS Data Server [Version 4.6.5-SNAPSHOT - 2016-03-09T13:13:52-0700] Documentation		

If you see more than one “*.nc,” then use the “*.ncml” aggregated file access;
note aggregated file only returns metadata for the last of the aggregated *.nc files

THREDDS catalog webpage for my NetCDF file (available for 2 weeks)

Easiest way for me to save the file locally is via HTTP Server option
(I could also call to this unique URL from within a script)



Ocean Observatories Initiative TDS

THREDDS Data Server

Catalog http://opendap.oceanobservatories.org:8090/thredds/catalog/ooi/sbeaulieu-whoi-edu/20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument/catalog.html

Dataset: 20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument/deployment0004_CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument_20160427T120002-20160428T093324.989975.nc

- Data size: 792.4 Kbytes
- ID: ooi/sbeaulieu-whoi-edu/20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument/deployment0004_CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument_20160427T120002-20160428T093324.989975.nc

Access:

1. OPENDAP: /thredds/dodsC/ooi/sbeaulieu-whoi-edu/20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument/deployment0004_CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument_20160427T120002-20160428T093324.989975.nc
2. HTTP Server: /thredds/fileServer/ooi/sbeaulieu-whoi-edu/20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument/deployment0004_CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument_20160427T120002-20160428T093324.989975.nc
3. ISO: /thredds/iso/ooi/sbeaulieu-whoi-edu/20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument/deployment0004_CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument_20160427T120002-20160428T093324.989975.nc
4. UDDC: /thredds/uddc/ooi/sbeaulieu-whoi-edu/20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument/deployment0004_CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument_20160427T120002-20160428T093324.989975.nc
5. NCML: /thredds/ncml/ooi/sbeaulieu-whoi-edu/20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument/deployment0004_CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument_20160427T120002-20160428T093324.989975.nc
6. NetcdfSubset: /thredds/ncss/ooi/sbeaulieu-whoi-edu/20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument/deployment0004_CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument_20160427T120002-20160428T093324.989975.nc

Dates:

- 2016-04-28T19:42:02Z (modified)

Viewers:

- NetCDF-Java ToolsUI (webstart)

I could not launch this Unidata app from either
Firefox or Chrome, even after updating Java

How can I work with “NetCDF files”?...

Quick display for NetCDF files using Panoply:

Click for
basic plot

<http://www.giss.nasa.gov/tools/panoply/>

The screenshot shows the Panoply software interface. The 'Sources' window is open, displaying a list of variables under the 'deployment0004_CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument_20160427T120002' file. The 'Create Plot' button is highlighted with a red circle. The 'File' menu is open, showing the file path and the hierarchical data format (version 5). The 'Variables' list includes:

Name	Long Name	Type
deployment0004_CP04OSPM-WFP01-03-CT...	deployment0004_CP04OSPM-WFP01-03-CTDPFK00...	Local File
computed_provenance	Computed Provenance Information	—
computed_provenance_dim	computed_provenance_dim	—
conductivity	Seawater Conductivity Measurement	—
ctdpf_ckl_sd_water_pracsal	Practical Salinity	—
ctdpf_ckl_sd_water_pracsal_qc_executed	ctdpf_ckl_sd_water_pracsal_qc_executed	—
ctdpf_ckl_sd_water_pracsal_qc_results	ctdpf_ckl_sd_water_pracsal_qc_results	—
ctdpf_ckl_seawater_conductivity	Seawater Conductivity	—
ctdpf_ckl_seawater_conductivity_qc_e...	ctdpf_ckl_seawater_conductivity_qc_executed	—
ctdpf_ckl_seawater_conductivity_qc_re...	ctdpf_ckl_seawater_conductivity_qc_results	—
ctdpf_ckl_seawater_density	Seawater Density	—
ctdpf_ckl_seawater_density_qc_executed	ctdpf_ckl_seawater_density_qc_executed	—
ctdpf_ckl_seawater_density_qc_results	ctdpf_ckl_seawater_density_qc_results	—
ctdpf_ckl_seawater_pressure	Seawater Pressure	—
ctdpf_ckl_seawater_pressure_qc_exec...	ctdpf_ckl_seawater_pressure_qc_executed	—
ctdpf_ckl_seawater_pressure_qc_results	ctdpf_ckl_seawater_pressure_qc_results	—
ctdpf_ckl_seawater_temperature	Seawater Temperature	—
ctdpf_ckl_seawater_temperature_qc_e...	ctdpf_ckl_seawater_temperature_qc_executed	—
ctdpf_ckl_seawater_temperature_qc_r...	ctdpf_ckl_seawater_temperature_qc_results	—
deployment	deployment	—
driver_timestamp	Driver Timestamp, UTC	—
id	id	—
ingestion_timestamp	Ingestion Timestamp, UTC	—
instrument_provenance	Instrument Provenance Information	—
instrument_provenance_dim	instrument_provenance_dim	—
internal_timestamp	Internal Timestamp, UTC	—
l0_provenance	l0_provenance	—
l0_provenance_data	l0 Provenance Entries	—
l0_provenance_information	l0 provenance data	—
l0_provenance_keys	l0 Provenance Keys	—
lat	latitude	—
lon	longitude	—
obs	obs	—
port_timestamp	Port Timestamp, UTC	—
preferred_timestamp	Preferred Timestamp	—
pressure	Seawater Pressure Measurement	—
provenance	provenance	—
quality_flag	quality_flag	—

The 'File' menu is open, showing the file path and the hierarchical data format (version 5). The 'Variables' list includes:

```
netcdf file:/C:/Users/Stace/Downloads/deployment0004_CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_in-  
dimensions:  
  string2 = 2;  
  string36 = 36;  
  string18 = 18;  
  obs = 11606;  
  string126 = 126;  
  l0_provenance = 8;  
  computed_provenance_dim = 1;  
  string6603 = 6603;  
  query_parameter_provenance_dim = 1;  
  string370 = 370;  
  instrument_provenance_dim = 1;  
  string2321 = 2321;  
variables:  
  char quality_flag(obs=11606, string2=2);  
    :Netcdf4Dimid = 0; // int  
    :name = "quality_flag";  
    :coordinates = "time lat lon";  
  double ingestion_timestamp(obs=11606);  
    :_FillValue = -9999.0; // double  
    :comment = "The NTP Timestamp for when the granule was ingested";  
    :units = "seconds since 1900-01-01";  
    :coordinates = "time lat lon";  
    :long_name = "Ingestion Timestamp, UTC";  
    :_Netcdf4Dimid = 0; // int  
  double port_timestamp(obs=11606);  
    :_FillValue = -9999999.0; // double  
    :comment = "Port timestamp, UTC";  
    :units = "seconds since 1900-01-01";  
    :coordinates = "time lat lon";  
    :long_name = "Port Timestamp, UTC";  
    :_Netcdf4Dimid = 0; // int  
  int pressure(obs=11606);  
    :_FillValue = -9999999; // int  
    :comment = "Seawater Pressure refers to the pressure exerted on a sensor in situ by the weight of the co-"
```

Work with NetCDF files using Matlab or IPython Notebook

Working with NetCDF file in MATLAB:

<http://oceanobservatories.org/thredds-quick-start/#matlab>

netcdf library in recent versions MATLAB

Working with NetCDF file in IPython (Jupyter) Notebook:

<http://oceanobservatories.org/thredds-quick-start/#python> (uses pydap library)

<https://github.com/ooi-data-review/plot-nc-ooi> (uses netCDF4 library)

<http://nbviewer.jupyter.org/gist/rsignell-usgs/149776634965c6d2671f> (example from Rich Signell, using xray library)

Use the NetCDF subset service for CSV output to your browser



Ocean Observatories Initiative TDS

THREDDS Data Server

Catalog http://opendap.oceanobservatories.org:8090/thredds/catalog/ooi/sbeaulieu-who-educ/20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument/catalog.html

Dataset: 20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument/deployment0004_CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument_20160427T120002-20160428T093324.989975.nc

- Data size: 792.4 Kbytes
- ID: ooi/sbeaulieu-who-educ/20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument/deployment0004_CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument_20160427T120002-20160428T093324.989975.nc

Access:

1. **OPENDAP:** [/thredds/dodsC/ooi/sbeaulieu-who-educ/20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument/deployment0004_CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument_20160427T120002-20160428T093324.989975.nc](http://thredds.dodsC/ooi/sbeaulieu-who-educ/20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument/deployment0004_CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument_20160427T120002-20160428T093324.989975.nc)
2. **HTTPServer:** [/thredds/fileServer/ooi/sbeaulieu-who-educ/20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument/deployment0004_CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument_20160427T120002-20160428T093324.989975.nc](http://thredds/fileServer/ooi/sbeaulieu-who-educ/20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument/deployment0004_CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument_20160427T120002-20160428T093324.989975.nc)
3. **ISO:** [/thredds/iso/ooi/sbeaulieu-who-educ/20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument/deployment0004_CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument_20160427T120002-20160428T093324.989975.nc](http://thredds/iso/ooi/sbeaulieu-who-educ/20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument/deployment0004_CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument_20160427T120002-20160428T093324.989975.nc)
4. **UDDC:** [/thredds/uddc/ooi/sbeaulieu-who-educ/20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument/deployment0004_CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument_20160427T120002-20160428T093324.989975.nc](http://thredds/uddc/ooi/sbeaulieu-who-educ/20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument/deployment0004_CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument_20160427T120002-20160428T093324.989975.nc)
5. **NCML:** [/thredds/ncml/ooi/sbeaulieu-who-educ/20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument/deployment0004_CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument_20160427T120002-20160428T093324.989975.nc](http://thredds/ncml/ooi/sbeaulieu-who-educ/20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument/deployment0004_CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument_20160427T120002-20160428T093324.989975.nc)
6. **NetcdfSubset:** [/thredds/ncss/ooi/sbeaulieu-who-educ/20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument/deployment0004_CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument_20160427T120002-20160428T093324.989975.nc](http://thredds/ncss/ooi/sbeaulieu-who-educ/20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument/deployment0004_CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument_20160427T120002-20160428T093324.989975.nc)

Dates:

- 2016-04-28T19:42:02Z (modified)

Viewers:

- NetCDF-Java ToolsUI (webstart)

Use the NetCDF subset service for CSV output to your browser

Netcdf Subset Service for

← → ↻ opendap.oceanobservatories.org:8090/thredds/ncss/ooi/sbeaulieu-whoi-edu/20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-tele

NCSS for Points

THREDDS data server NetCDF Subset Service

Dataset: /thredds/ncss/ooi/sbeaulieu-whoi-edu/20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument/deployment0004_CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument_20160427T120002-20160428T093324.989975.nc ([Dataset Description](#))

Base Time: 2016-04-27T12:00:02Z

Select Variable(s):

- ☐ conductivity
- ☐ ctdpf_ckl_sci_water_pracsal
- ☐ ctdpf_ckl_sci_water_pracsal_qc_executed
- ☐ ctdpf_ckl_sci_water_pracsal_qc_results
- ☐ ctdpf_ckl_seawater_conductivity
- ☐ ctdpf_ckl_seawater_conductivity_qc_executed
- ☐ ctdpf_ckl_seawater_conductivity_qc_results
- ☐ ctdpf_ckl_seawater_density
- ☐ ctdpf_ckl_seawater_density_qc_executed
- ☐ ctdpf_ckl_seawater_density_qc_results
- ☒ ctdpf_ckl_seawater_pressure
- ☐ ctdpf_ckl_seawater_pressure_qc_executed
- ☐ ctdpf_ckl_seawater_pressure_qc_results
- ☒ ctdpf_ckl_seawater_temperature
- ☐ ctdpf_ckl_seawater_temperature_qc_executed
- ☐ ctdpf_ckl_seawater_temperature_qc_results
- ☐ deployment
- ☐ driver_timestamp
- ☐ id
- ☐ ingestion_timestamp
- ☐ internal_timestamp
- ☐ io_provenance_information
- ☐ obs
- ☐ port_timestamp
- ☐ preferred_timestamp
- ☐ pressure
- ☐ provenance
- ☐ quality_flag
- ☐ temperature

Choose Spatial Subset:

Bbox subset

Bounding box, in decimal degrees (initial extents are approximate):

north
39.936651

west -70.879984 -70.878982 east
39.935649

south
reset to full extension

Choose Time Subset:

Time range Single time

Start: 2016-04-27T12:00:02Z

End: 2016-04-28T09:33:24.989Z

reset to full extension

Choose Output Format:

Format: csv

NCSS Request URL:

http://opendap.oceanobservatories.org:8090/thredds/ncss/ooi/sbeaulieu-whoi-edu/20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument/deployment0004_CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument_20160427T120002-20160428T093324.989975.nc?req=point&var=ctdpf_ckl_seawater_pressure&var=ctdpf_ckl_seawater_temperature&north=39.936651&west=-70.879984&east=-70.878982&south=39.935649&time_start=2016-04-27T12%3A00%3A02Z&time_end=2016-04-28T09%3A33%3A24.989Z&accept=csv

[NetCDF Subset Service Documentation](#)

opendap.oceanobservatories.org:8090/thredds/ncss/ooi/sbeaulieu-whoi-edu/20160428T074158-CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument/deployment0004_CP04OSPM-WFP01-03-CTDPFK000-telemetered-ctdpf_ckl_wfp_instrument_20160427T120002-20160428T093324.989975.nc

```
time,latitude[unit="degrees_north"],longitude[unit="degrees_east"],ctdpf_ckl_seawater_pressure[unit="dbar"],ctdpf_ckl_seawater_temperature[unit="deg_C"]
2016-04-27T12:00:02Z,39.935,-70.879,407.9,8.5235
2016-04-27T12:00:03.005Z,39.935,-70.879,407.9,8.5251
2016-04-27T12:00:04.010Z,39.935,-70.879,407.9,8.526
2016-04-27T12:00:05.015Z,39.935,-70.879,407.9,8.5296
2016-04-27T12:00:06.020Z,39.935,-70.879,407.9,8.5296
2016-04-27T12:00:07.025Z,39.935,-70.879,407.9,8.5297
2016-04-27T12:00:08.030Z,39.935,-70.879,407.9,8.5299
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2016-04-27T12:00:10.040Z,39.935,-70.879,407.9,8.5265
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2016-04-27T12:00:18.080Z,39.935,-70.879,407.89,8.5276
2016-04-27T12:00:19.085Z,39.935,-70.879,407.89,8.5315
2016-04-27T12:00:20.090Z,39.935,-70.879,407.89,8.5332
2016-04-27T12:00:21.095Z,39.935,-70.879,407.91,8.5324
2016-04-27T12:00:22.100Z,39.935,-70.879,407.9,8.5317
2016-04-27T12:00:23.105Z,39.935,-70.879,407.9,8.5282
2016-04-27T12:00:24.110Z,39.935,-70.879,407.89,8.5282
2016-04-27T12:00:25.115Z,39.935,-70.879,407.9,8.5282
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2016-04-27T12:00:27.125Z,39.935,-70.879,407.89,8.5281
2016-04-27T12:00:28.130Z,39.935,-70.879,407.89,8.5279
2016-04-27T12:00:29.135Z,39.935,-70.879,407.89,8.5283
2016-04-27T12:00:30.140Z,39.935,-70.879,407.91,8.5281
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2016-04-27T12:00:35.165Z,39.935,-70.879,407.88,8.5287
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2016-04-27T12:00:40.190Z,39.935,-70.879,407.88,8.5241
```

Now onto your own exploration...

Re-group to discuss additional means of data access

4* ways to access OOI data:

OOI Data Portal GUI: <https://ooinet.oceanobservatories.org/>

Primary means of exploring/viewing/accessing OOI data

➡ OOI THREDDS server: <http://oceanobservatories.org/thredds-server/>

OOI designates as “Preliminary Data”

➡ OOI Apache HTTP server: <https://rawdata.oceanobservatories.org/files/>

OOI designates as “Raw Data”

Not covered in today’s tutorial:

uFrame Python API: (see poster by Mike Smith for 2016 Ocean Sciences Meeting
[OD14A-2396: The Ocean Observatories Initiative: Data Acquisition Functions and Its Built-In Automated Python Modules](#))

** Note: OOI recently de-activated the OPeNDAP server previously used for large format data sets.
Also, some data are available through other means, e.g., low-frequency hydrophones and
seismometer data available via [IRIS](#).*

“Raw” vs. “Preliminary”

OOI THREDDS server: <http://oceanobservatories.org/thredds-server/>

OOI designates as **“Preliminary Data”**

Preliminary data was a term that we used before the system when online. These were data that were ...(in the early days) viewed through excel files and downloaded from the OOI website, and then later displayed through THREDDS. These data received no quality control ... Now that the Data Portal is online ...we are not generating any new "preliminary" data.

OOI Apache HTTP server: <https://rawdata.oceanobservatories.org/files/>

OOI designates as **“Raw Data”**

Raw data are simply the data in their native format as they come in off of the instrument ... So no calibrations applied, no algorithms applied to generate any data products, etc. For example, this would mean these data might be in counts or volts instead of community standard scientific units.

Email from Leslie Smith @ OOI Helpdesk, 28 April 2016

Access data from OOI THREDDS server

<http://oceanobservatories.org/thredds-server/>

First, how to figure out file naming:

It is helpful to have two browser windows open

The screenshot shows the OOI THREDDS server interface. On the left, a 'Table Of Contents' lists various mooring types under 'Coastal Pioneer'. A red arrow points to the 'Toggle Reference Designators' button at the bottom of this list. In the center, a map of the Great Lakes region is displayed. On the right, a catalog page is open, showing a list of datasets. A red circle highlights the 'CP02PMUI/' dataset, with a red arrow pointing to it and the text 'Match to THREDDS'. The catalog page also shows the 'Coastal Pioneer' dataset and other mooring types like 'CP02PMCI/', 'CP02PMCO/', 'CP04QSPM/', and 'CP05MOAS/'.

Table Of Contents

- Coastal Endurance
- Global Station Papa
- Coastal Pioneer
 - Central Surface Mooring
 - CP01CNSM
 - Central Surface Piercing Profiler Mooring
 - CP01CNSP
 - Central Inshore Profiler Mooring
 - CP02PMCI
 - Central Offshore Profiler Mooring
 - CP02PMCO
 - Upstream Inshore Profiler Mooring
 - CP02PMUI
 - Upstream Offshore Profiler Mooring
 - CP02PMUO
 - Inshore Surface Mooring
 - CP03ISSM

Toggle Reference Designators

Dataset

Dataset	Size
Coastal_Pioneer	
CP02PMCI/	
CP02PMCO/	
CP02PMUI/	
CP04QSPM/	
CP05MOAS/	

Match to THREDDS

Ocean Observatories Initiative TDS at Oceans Observatories Institute see Info
THREDDS Data Server [Version 4.6.3 - 2015-08-31T15:28:06-0600] Documentation

Click "Toggle Reference Descriptors"
(same as Site Code List:
<http://oceanobservatories.org/site-list/>)

Access data from OOI Apache HTTP server

<https://rawdata.oceanobservatories.org/files/>

“Raw” Data Access for all OOI Arrays

File hierarchy:

Uncabled Assets: Site → Deployment (e.g. D00001) → Data Logger → Instrument/Profiler

Cabled Assets: Site → Node

D = deployed (aka telemetered), R = recovered, X = test data (not part of the science time series)

Email 28 April 2016: a Read-Me file should be available very soon for this server

Name	Last modified	Size	Description
Parent Directory		-	
CE01ISSM/	08-Oct-2015 23:25	-	Coastal Endurance - OR Inshore Surface Mooring
CE01ISSP/	28-Jan-2015 19:13	-	Coastal Endurance - OR Inshore Surface Piercing Profiler Mooring
CE02SHBP/	03-Feb-2015 19:38	-	Coastal Endurance - OR Shelf Cabled Benthic Experiment Package
CE02SHSM/	08-Oct-2015 00:25	-	Coastal Endurance - OR Shelf Surface Mooring
CE02SHSP/	21-Mar-2016 19:25	-	Coastal Endurance - OR Shelf Surface Piercing Profiler Mooring
CE04OSBP/	24-Mar-2016 19:08	-	Coastal Endurance - OR Offshore Cabled Benthic Experiment Package
CE04OSPD/	25-Mar-2016 23:39	-	Coastal Endurance - OR Offshore Cabled Deep Profiler Mooring
CE04OSPS/	25-Mar-2016 23:39	-	Coastal Endurance - OR Offshore Cabled Shallow Profiler Mooring
CE04OSSM/	11-Oct-2014 19:14	-	Coastal Endurance - OR Offshore Surface Mooring
CE05MOAS-GL247/	25-Apr-2014 14:51	-	Coastal Endurance - Mobile Asset - Coastal Glider 247
CE05MOAS-GL311/	25-Apr-2014 14:51	-	Coastal Endurance - Mobile Asset - Coastal Glider 311
CE05MOAS-GL312/	25-Apr-2014 15:58	-	Coastal Endurance - Mobile Asset - Coastal Glider 312
CE05MOAS-GL319/	12-Oct-2015 03:10	-	Coastal Endurance - Mobile Asset - Coastal Glider 319
CE05MOAS-GL320/	25-Apr-2014 14:51	-	Coastal Endurance - Mobile Asset - Coastal Glider 320
CE05MOAS-GL326/	17-Feb-2016 18:25	-	Coastal Endurance - Mobile Asset - Coastal Glider 326
CE05MOAS-GL327/	21-Oct-2015 18:55	-	Coastal Endurance - Mobile Asset - Coastal Glider 327
CE05MOAS-GL381/	25-Apr-2014 14:51	-	Coastal Endurance - Mobile Asset - Coastal Glider 381
CE05MOAS-GL382/	30-Oct-2015 23:07	-	Coastal Endurance - Mobile Asset - Coastal Glider 382
CE05MOAS-GL383/	30-Oct-2015 22:35	-	Coastal Endurance - Mobile Asset - Coastal Glider 383
CE05MOAS-GL384/	05-Nov-2015 21:07	-	Coastal Endurance - Mobile Asset - Coastal Glider 384
CE05MOAS-GL386/	12-Oct-2015 03:10	-	Coastal Endurance - Mobile Asset - Coastal Glider 386
CE06ISSM/	02-Oct-2015 14:25	-	Coastal Endurance - WA Inshore Surface Mooring
CE06ISSP/	28-Jan-2015 19:12	-	Coastal Endurance - WA Inshore Surface Piercing Profiler Mooring

For those interested in video from Axial Seamount

<http://oceanobservatories.org/streaming-underwater-video/>

Note: the OOI website appears to be optimized for Chrome. I was not able to view Live Video from Firefox.

Previously recorded video on Raw Data server:

Navigate to folder “RS03ASHS” for Cabled Axial Seamount – ASHS

ASHES vent field

Then folder “PN03B” primary node

Then folder “06-CAMHDA301”, choose next folders by date

https://rawdata.oceanobs: X

https://rawdata.oceanobservatories.org/files/RS03ASHS/PN03B/06-CAMHDA301/2016/04/29/

Ocean Observatories Initiative

The OOI is funded by the National Science Foundation

Documentation

Name	Last modified	Size	Description
Parent Directory	-	-	-
CAMHDA301-20160429T000000Z.mov	29-Apr-2016 00:33	13G	
CAMHDA301-20160429T000000Z.mp4	29-Apr-2016 00:18	1.0G	
CAMHDA301-20160429T030000Z.mov	29-Apr-2016 03:32	13G	
CAMHDA301-20160429T030000Z.mp4	29-Apr-2016 03:19	1.0G	
CAMHDA301-20160429T060000Z.mov	29-Apr-2016 06:30	13G	
CAMHDA301-20160429T060000Z.mp4	29-Apr-2016 06:19	1.0G	
CAMHDA301-20160429T090000Z.mov	29-Apr-2016 09:29	13G	
CAMHDA301-20160429T090000Z.mp4	29-Apr-2016 09:19	1.0G	
CAMHDA301-20160429T120000Z.mov	29-Apr-2016 12:31	13G	
CAMHDA301-20160429T120000Z.mp4	29-Apr-2016 12:19	1.0G	
CAMHDA301-20160429T150000Z.mov	29-Apr-2016 15:32	13G	
CAMHDA301-20160429T150000Z.mp4	29-Apr-2016 15:18	971M	

mov (large, 13 GB files) or mp4 (compressed to 1 GB)

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Future means of data access

Email from Mike Vardaro, 19 April 2016:

OOI will implement data access via ERDDAP in ~late summer 2016.

From OOI website, <http://oceanobservatories.org/data/raw-data/>

“The integration of Raw Data Access into the GUI is currently in progress and should be in place by summer 2016. Additionally, the Apache server will eventually use CILogon for authentication. This will allow tracking of user downloads and protection of the system from being overloaded by large data requests. Authentication should also be in place by summer 2016.”