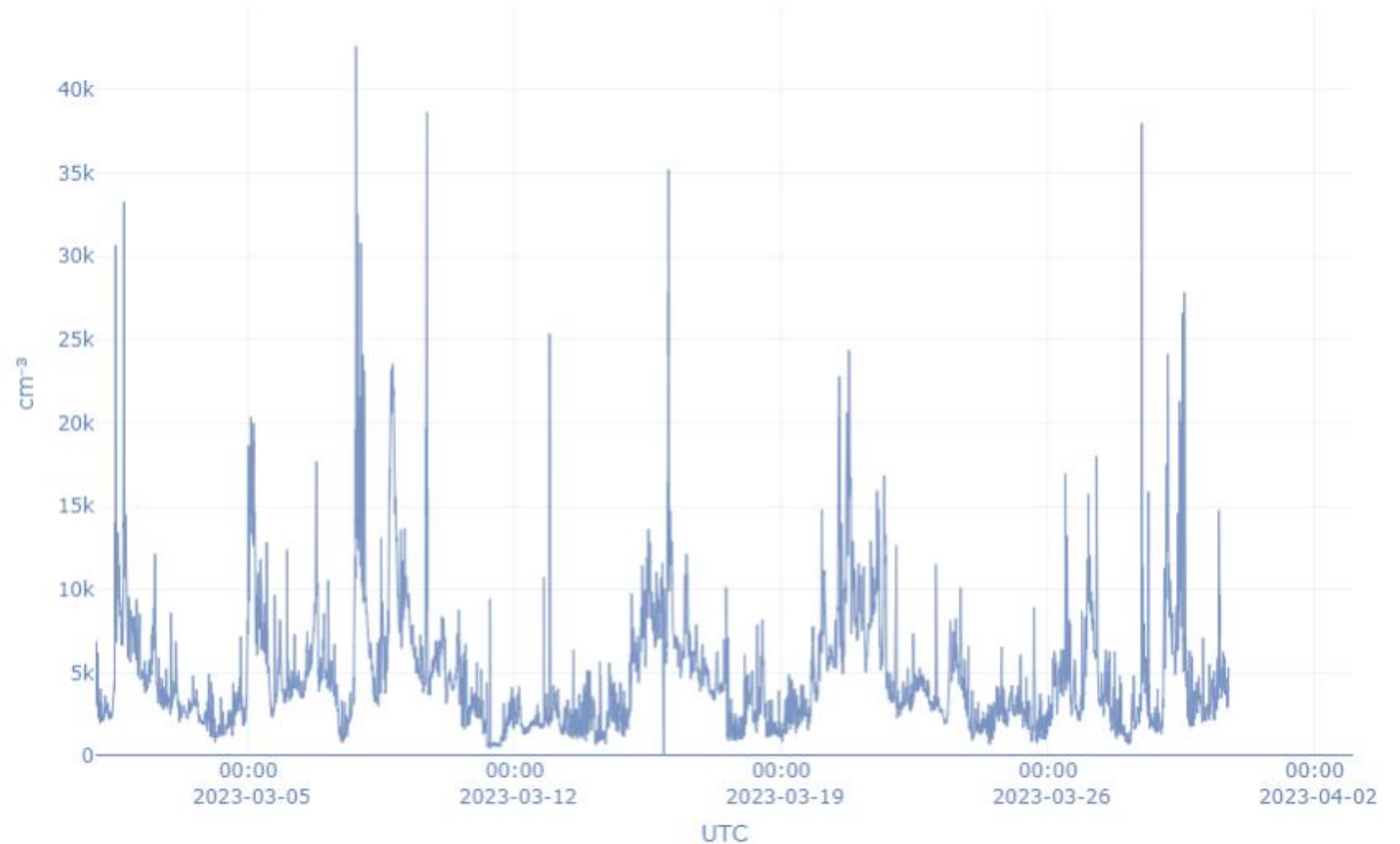


Welcome to Forge

- Basic Navigation
- Visualizing Your Data
- Introduction to Editing
- “Passing” Your Data



Station ID

Data Form

Time Range

General Menu

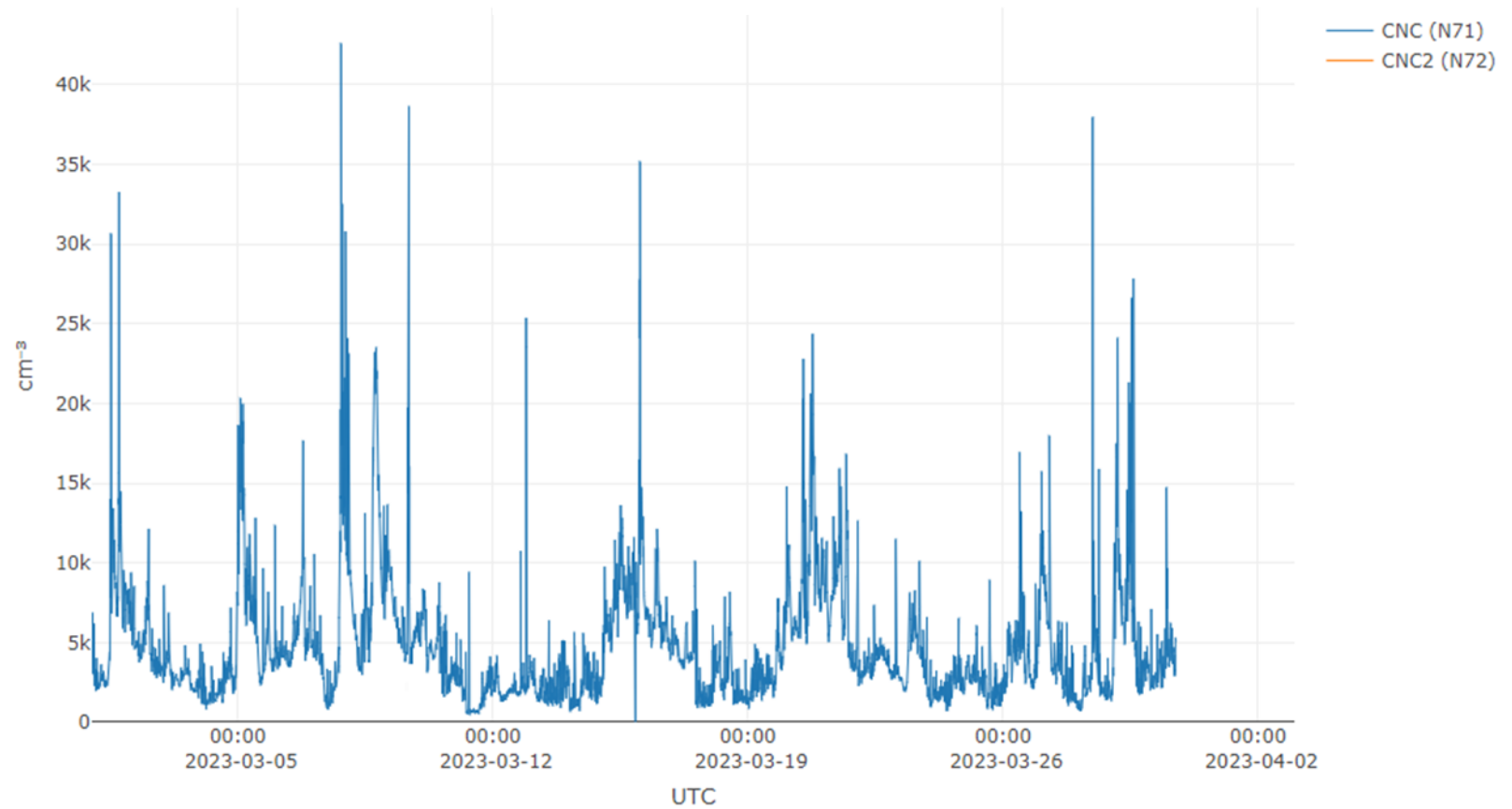
WPB ▾ Raw ▾ 2023-03-01T00:00:00Z to 2023-04-03T00:00:00Z

- Counts
- Optical
- Green Adjusted
- Aethalometer
- Intensive
- Wind
- Flow
- Temperature and RH
- Pressure
- Nephelometer Zero
- Nephelometer Status
- CLAP Status
- Aethalometer Status
- CPC Status
- Second CPC Status
- μMAC Status

~ ≡ ▾ ~

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Data Visualization Tools



Data Sets

Time and Date Selection

The screenshot displays a data visualization interface for "Particle Concentration". The top navigation bar shows "WPB" and "Raw" dropdown menus, followed by a date range selector: "2023-03-01T00:00:00Z to 2023-04-03T00:00:00Z". A sidebar on the left lists various data sources: Counts, Optical, Green Adjusted, Aethalometer, Intensive, Wind, Flow, Temperature and I, Pressure, Nephelometer Zer, Nephelometer Sta, CLAP Status, Aethalometer Status, CPC Status, Second CPC Status, and μMAC Status. The main area shows a line graph with two series: "CNC (N71)" (blue) and "CNC2 (N72)" (orange). A modal dialog box is open, showing the "Start" and "End" date selection fields. Below the modal, a blue bar contains four buttons: "Un-passed", "Default", "Reset", and "Apply".

Field	Value
Start	2023-03-01T00:00:00Z
End	2023-04-03T00:00:00Z

Buttons: Un-passed, Default, Reset, Apply

Legend: CNC (N71), CNC2 (N72)

Graph Title: Particle Concentration

Y-axis: 0, 5k, 10k, 40k

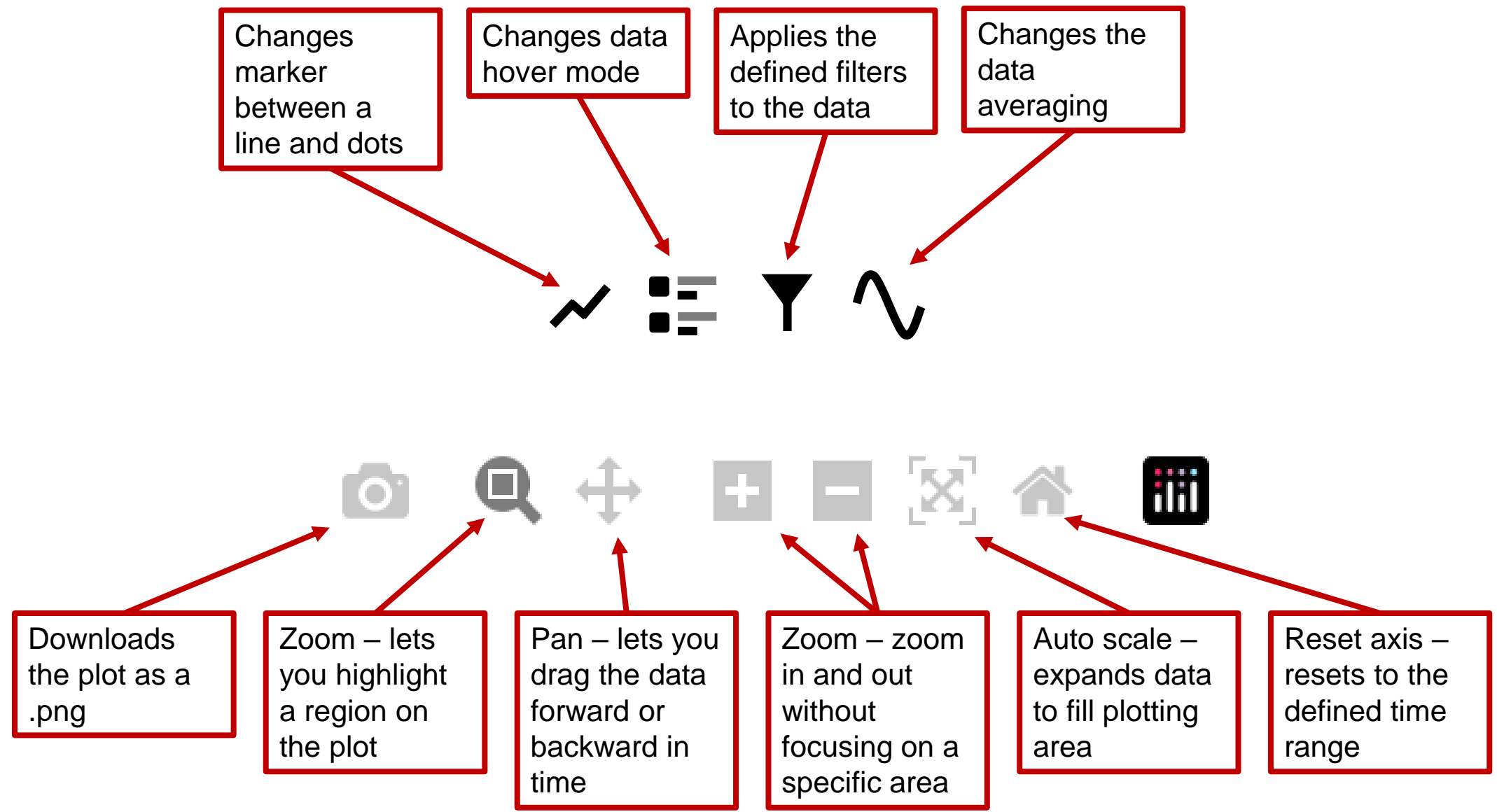
X-axis: 00:00, 2023-03-

Takes you to the last week that hasn't been passed
Get messed up if you skip a week

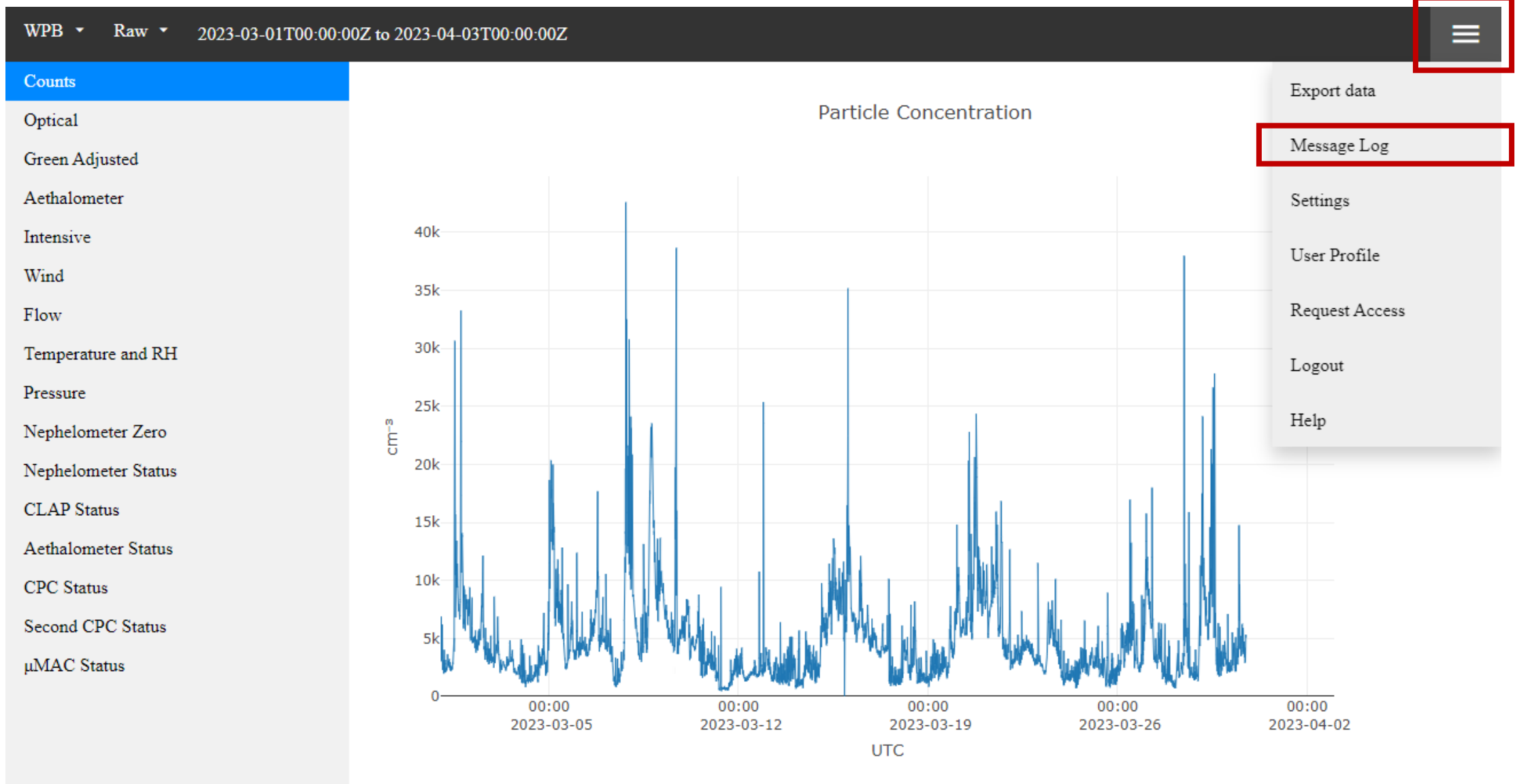
Displays the current week of data
Automatically applies the range

Displays the time range that was previously applied
Automatically applies the range

Data Visualization Tools



The Message Log



Time	Author	Event	<input type="checkbox"/> Show acquisition events <input type="button" value="Export CSV"/> <input type="button" value="Export JSON"/>
2023-03-02 17:08:44Z	kjk	2023-03-02.1708UTC. Stopped SMPS, d	
2023-03-02 17:21:34Z	kjk	2023-03-02. 1721UTC. Stopped CLAP tc	
2023-03-02 17:27:15Z	kjk	2023-03-02. 1727UTC. End CLAP filter	
2023-03-02 17:43:20Z	kjk	2023-03-02. 1742 UTC. Restarted SMPS	
2023-03-07 18:27:15Z	kjk	2023-03-07. 1825UTC. Stopped SMPS to download logger and clean impactor plate.	
2023-03-07 18:59:07Z	kjk	2023-03-07. 1857UTC. Restarted SMPS	
2023-03-09 14:49:55Z	JPS	Changing CLAP Filter	
2023-03-09 14:58:30Z	JPS	Clap Filter Change Complete	
2023-03-09 15:06:44Z	JPS	Starting impactor servicing	
2023-03-09 15:07:04Z		Bypass flag set by an external source	
2023-03-09 15:27:41Z		Bypass flag cleared by an external source	
2023-03-09 15:28:34Z	JPS	System back online after impactor servicing and zeroing	
2023-03-09 15:54:58Z	kjk	2023-03-09. 1555UTC. Stopped SMPS to service wick; download logger	
2023-03-09 16:17:38Z	kjk	2023-03-09. 1617UTC. Restarted SMPS.	
2023-03-15 20:48:40Z	kjk	2023-03-15.2047UTC. Stopped SMPS to download data and service.	
2023-03-15 21:55:41Z	kjk	2023-03-15. 2152UTC restarted smps	
2023-03-15 21:58:30Z	kjk	2023-03-15. 2156UTC. Stopped cpc to check flow	
2023-03-15 22:10:10Z	kjk	2023-03-15.2209UTC. Restarted cpc count after flow check	
2023-03-15 22:20:01Z	kjk	2023-03-15. 2219UTC. Restarted system for 3rd time to get acq config to "take".	
2023-03-20 16:22:34Z	JPS	CLAP Filter Change complete	
2023-03-27 15:58:33Z	JPS	CLAP Filter Change complete	
2023-03-30 16:45:22Z	kjk	2023-03-30. 1644UTC. Stopped SMPS to download datalogger, clean impactor	
2023-03-30 17:15:24Z	kjk	2023-03-30. 1715UTC. Stopped CPC to service Nafion assembly.	

The message log has every comment you entered into cpd and more!

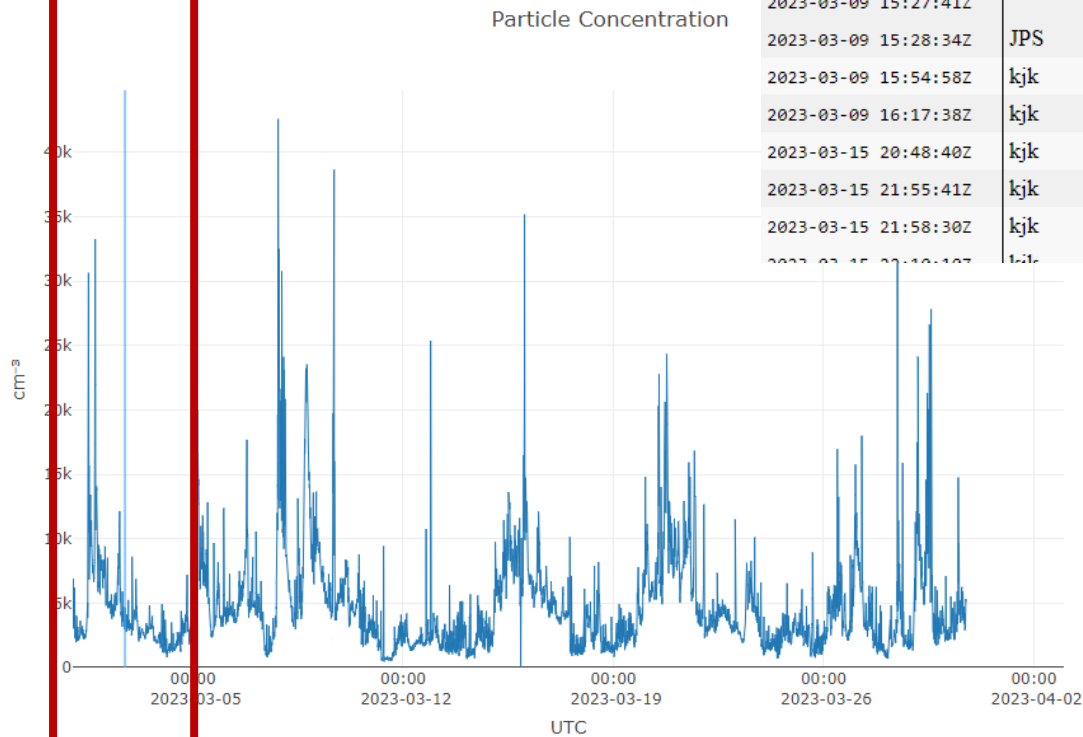
All events / messages are time stamped and have a corresponding author

You can export your message log and keep a backup or if you are sharing your data, send it along with it!

Selecting a message from the log puts a marker on that time stamp in the data plot!

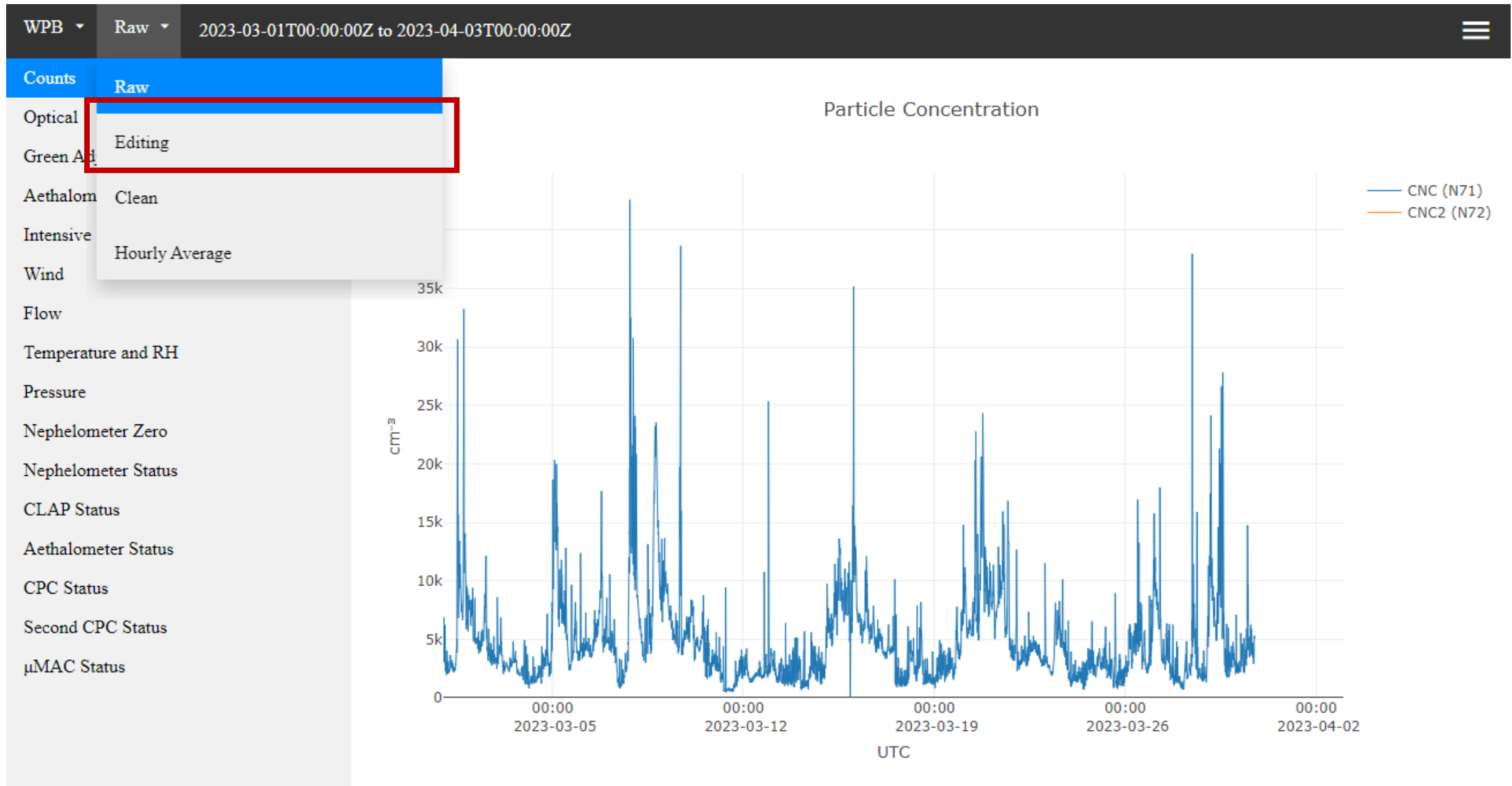
WPB Raw 2023-03-01T00:00:00Z to 2023-04-03T00:00:00Z

- Counts
- Optical
- Green Adjusted
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- Intensive
- Wind
- Flow
- Temperature and RH
- Pressure
- Nephelometer Zero
- Nephelometer Status
- CLAP Status
- Aethalometer Status
- CPC Status
- Second CPC Status
- µMAC Status

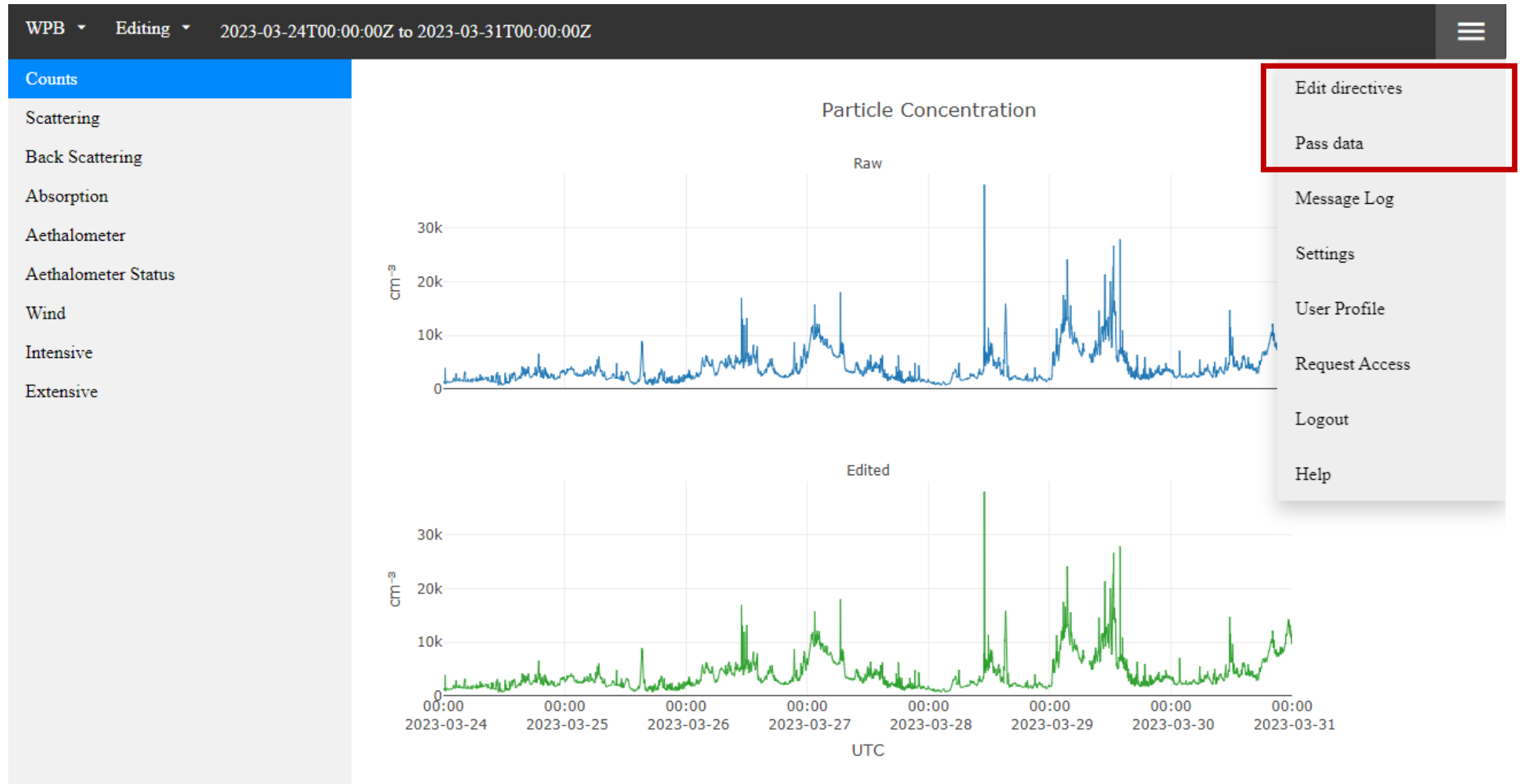


Time	Author	Event
2023-03-02 17:08:44Z	kjk	2023-03-02.1708UTC. Stopped SMPS, downloaded datalogger.
2023-03-02 17:21:34Z	kjk	2023-03-02. 1721UTC. Stopped CLAP to change filter
2023-03-02 17:27:15Z	kjk	2023-03-02. 1727UTC. End CLAP filter change
2023-03-02 17:43:20Z	kjk	2023-03-02. 1742 UTC. Restarted SMPS
2023-03-07 18:27:15Z	kjk	2023-03-07. 1825UTC. Stopped SMPS to download logger and clean impactor plate.
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2023-03-09 14:58:30Z	JPS	Clap Filter Change Complete
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2023-03-15 21:55:41Z	kjk	2023-03-15. 2152UTC restarted smps
2023-03-15 21:58:30Z	kjk	2023-03-15. 2156UTC. Stopped cpc to check flow
2023-03-15 22:10:10Z	kjk	2023-03-15. 2200UTC. Restarted cpc count after flow check

Editing Your Data



In Editing mode you have options for adding mentor edits and passing the data



Adding an edit to your data

Takes initial time range from the plot

Initials of the editor

What instruments/variables are affected

Notes about why the edit is being made

What kind of edit is being made, and if it has a conditional application

The screenshot shows a web-based interface for adding an edit to data. At the top, there is a dark header with the word "Add" on the left and a hamburger menu icon on the right. Below the header, there is a form with two rows: "Start" and "End". The "Start" row has two input fields, both containing the ISO 8601 timestamp "2023-03-24T00:00:00Z". The "End" row has two input fields, both containing "2023-03-31T00:00:00Z". Below these fields is a text input area with the placeholder text "Enter the reason for the edit and any additional information about why it is needed." Underneath the text area is an "Author" field containing the initials "EB". At the bottom of the form, there is a table with two columns: "Action" and "Condition". The "Action" column has a blue button labeled "Invalidate". The "Condition" column contains the text "Choose specific data to mark as missing in the final output. This should be used on any instrument anomalies or other data that does not represent a valid measurement." Below the "Invalidate" button is a "Selection" dropdown menu that is open, showing a list of instrument and variable categories: "Instrument", "Scattering", "Absorption", "Counts", "Scattering, Absorption, and Counts", "Nephelometer P, T, and RH", "Concentration (EBC, Aethalometer)", "Wind speed and direction", and "System flags". At the bottom right of the form, there are "Cancel" and "Ok" buttons.

Types of Edits

Invalidate

Choose specific data to mark as missing in the final output. This should be used on any instrument anomalies or other data that does not represent a valid measurement.

Contaminate

Mark the whole data stream as not representative of ambient conditions (e.g. a nearby truck emitting aerosol). The data are considered valid in high resolution (1-minute) but are not included in the final averages for analysis.

Calibration

Apply a calibration polynomial to data values. This is used to adjust values based by applying a polynomial to the original data (e.g. using a slope and offset).

$$\text{[0]} + \text{[1]} \times \text{[+ ...]}$$

Recalibrate

Reverse a calibration polynomial and apply a new one. This is used to reverse an old calibration polynomial applied to values and then apply an updated one.

Reverse: $\text{[0]} + \text{[1]} \times \text{[+ ...]}$

Apply: $\text{[0]} + \text{[1]} \times \text{[+ ...]}$

Flow Correction

Reverse a calibration polynomial applied to a measurement flow and then apply a new one. This is used to simultaneously correct a measurement flow and parameters derived from the sampled air volume (e.g. a CLAP flow).

Reverse: $\text{[0]} + \text{[1]} \times \text{[+ ...]}$

Apply: $\text{[0]} + \text{[1]} \times \text{[+ ...]}$

Size Cut Fix

Apply a fix to the size cut of the data. This is used to alter or invalidate data when a specific cut size is active (e.g. invalidate a leaking impactor or change the effective size when it is stuck).

Original: **PM1**

Updated: **Invalidate**

Types of Conditions

None

The edit is unconditionally applied.

Threshold

Compare a value to threshold limits and apply the edit only when those limits are met. The edit is applied when a value is inside a range (e.g. transmittance less than 0.5).

< x <

Selection

Ba1_A81

Ba2_A81

Ba3_A81

Ba4_A81

Ba5_A81

Ba6_A81

Periodic

Divide time into periodic (UTC) intervals and apply the edit only for certain points in the period. The edit is applied when the current time is within one of the selected moments in the total period.

Hourly

By Minute

00:00:00

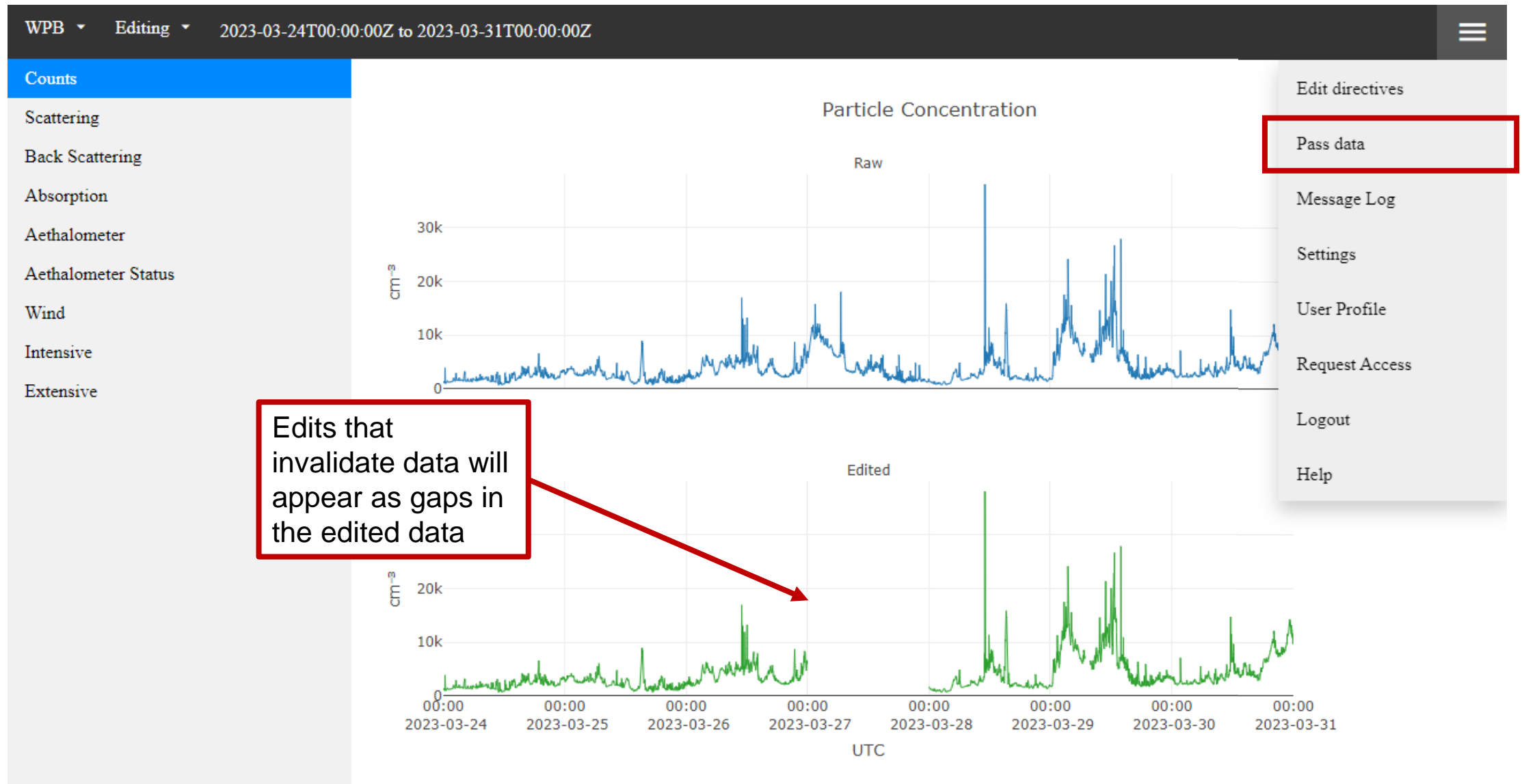
00:01:00

00:02:00

00:03:00

00:04:00

Once you have finished adding edits you can pass your data



Notes and Caveats about Passing Data

- Once you pass your data, you'll be able to see it in the “clean” and “hourly average” data format types on forge (passed data = clean data), which is a great place to check that all of your edits saved and applied correctly
- Data can be passed over any time range
- ***Please do not pass a year of data at once – it slows the system down for everyone who is trying to edit / pass data***
- Data can be passed multiple times – if you miss an edit that you need to go back and add its not an issue
- ***Once you pass data from the very end of the year the data formatting for the WDC starts, and re-passing resends them the data which complicates the system – this can be disabled if you anticipate needing have multiple passes over a year of data***

Questions, comments, concerns?

