

Read and Write Data

Viewing NetCDF: Ncview and ncBrowse

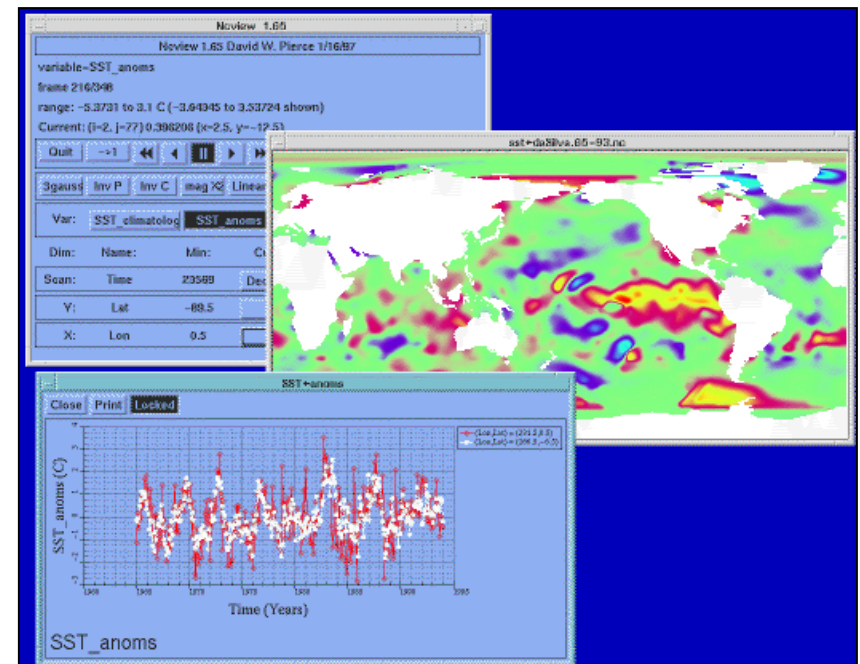
Tools, tools, tools

- NetCDF is such a popular format that there are thousands of tools that can read it.
- Here are a couple that allow you to quickly plot and view the contents of a NetCDF file.
- They both allow selection and quick view/plotting functionality that can be useful when working with data.

ncview

ncview:

- Visual browser for netCDF
- View simple animations along various dimensions
- Change look of graphs/maps



ncview – getting started

- To run ncview type:

```
$ ncview <data_file>
```

- E.g.:

```
$ ncview example_data/ggas2014121200_00-18.nc &
```

ncview – getting started

You are presented with:

- An information panel
- A control panel for visualization
- A variable selection panel
- Details of dimensions for the selected variable

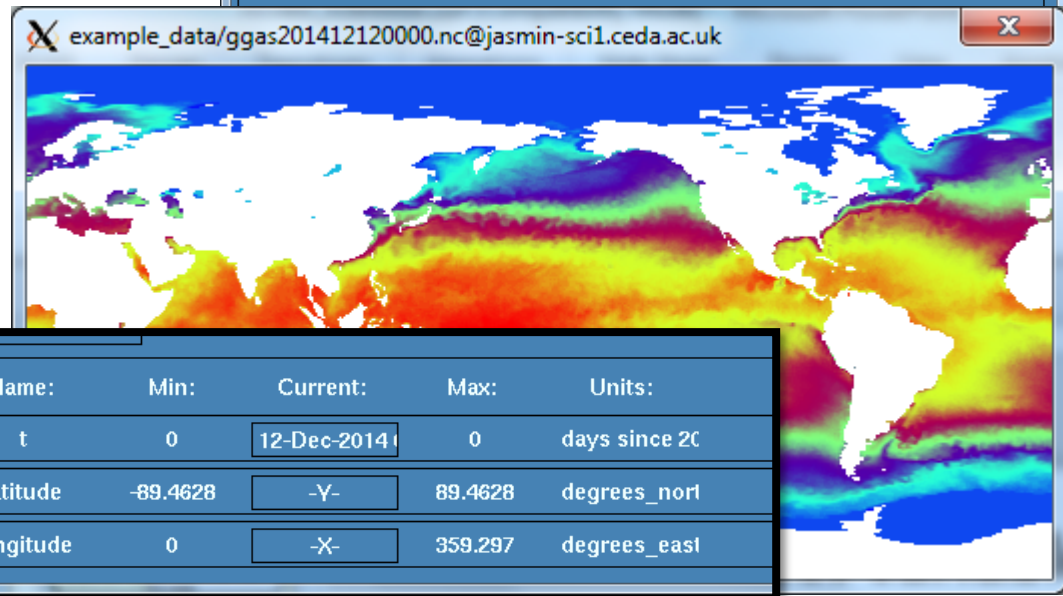
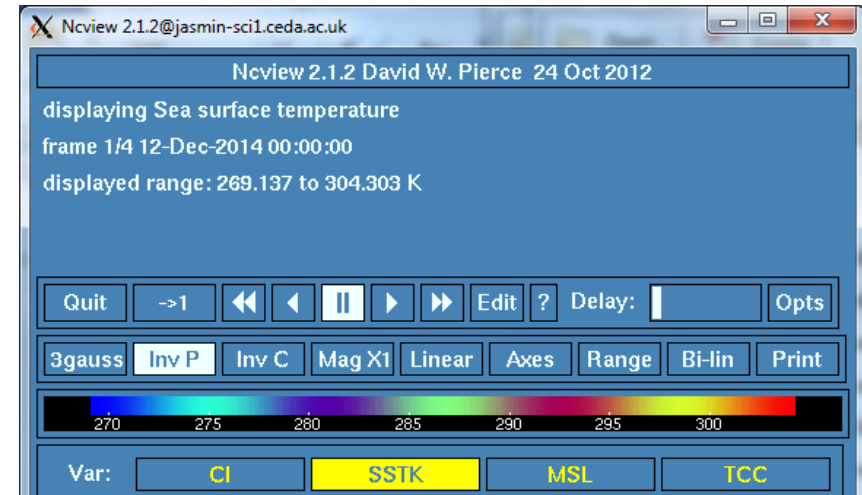


ncview – select variable

Select variable: in this case we have selected Sea Surface Temperature ("SSTK").

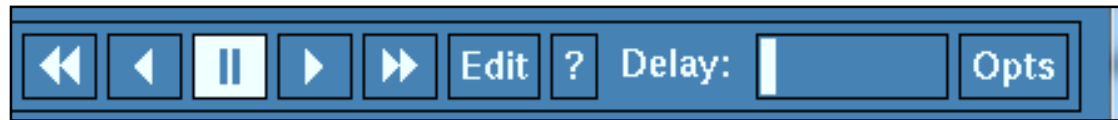
ncview:


- displays information in the top panel
- Populates the colour bar
- Plots the first time step of the variable
- Displays information about dimensions



ncview – animate

Use the animation panel to click through time steps or animate the plot.



Press the  button to run the animation. Adjust the "Delay" to slow it down.

ncview – other options

The plotting panel has a range of useful functions that are best investigated by manually testing each.



E.g.: **3gauss**: click to select a different colour scale

Inv P: Invert the plot.

Inv C: Invert the colour scale

Mag X1: right/left click to zoom in/out

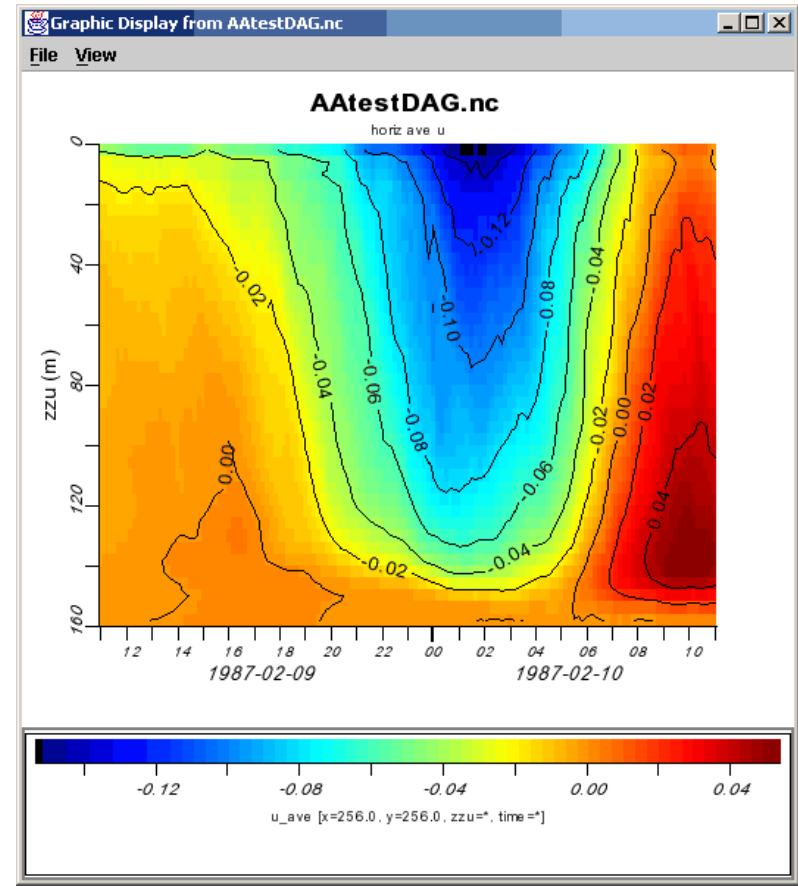
Axes: modify axes of plot

Print: print to a file or printer

ncBrowse

ncBrowse:

- Visual browser for netCDF
- View/select contents of files
- Tree View of file contents
- Various plotting options



ncBrowse – getting started

- To run ncBrowse type:

```
$ ncBrowse <data_file>
```

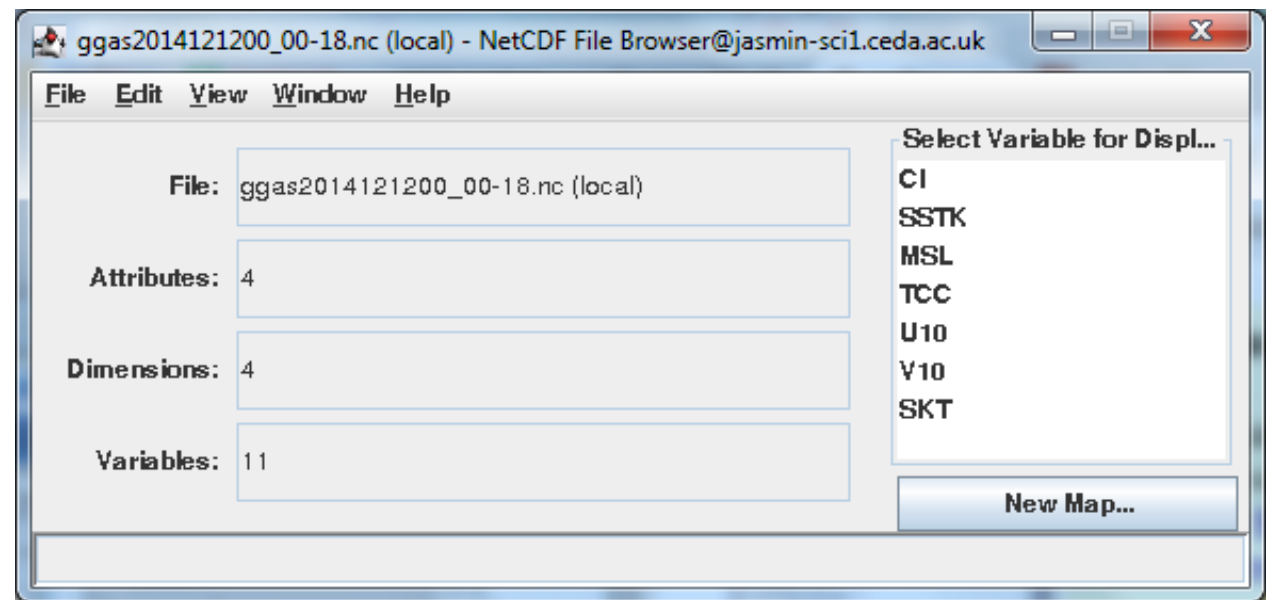
- E.g.:

```
$ ncBrowse example_data/ggas2014121200_00-18.nc &
```

ncBrowse – getting started

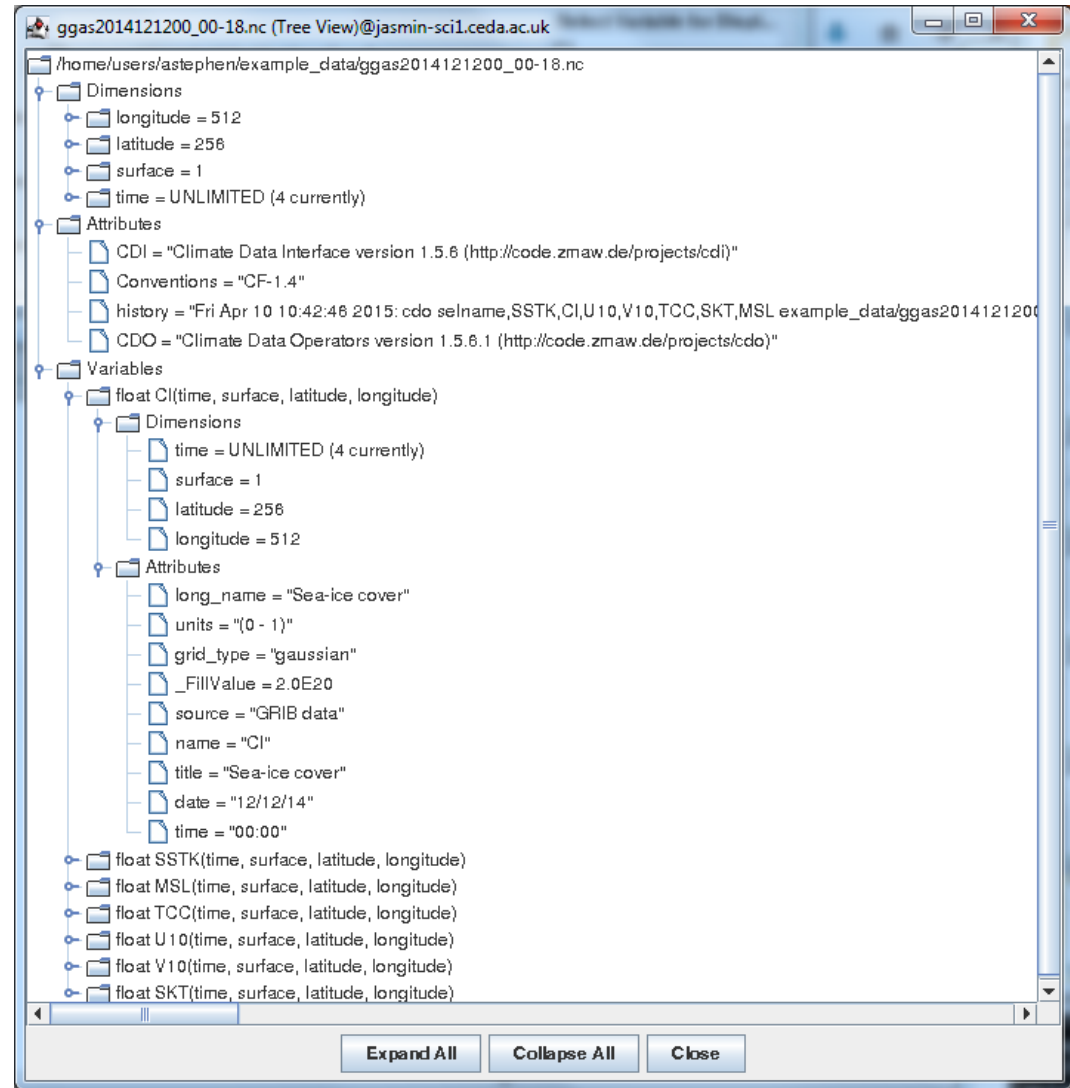
You are presented with:

- Basic file information
- A variable selection panel



ncBrowse – view file as Tree

Click View → As Tree:



ncBrowse – examine a variable

Double click a variable to open the Domain Selector.

The image shows two windows from the ncBrowse application. The top window, titled 'ggas2014121200_00-18.nc (local) - NetCDF File Browser@jasmin-sci1.ceda.ac.uk', displays file information: File: ggas2014121200_00-18.nc (local), Attributes: 4, and Dimensions: 4. A yellow arrow points from the text 'Double click a variable to open the Domain Selector.' to the 'U10' variable in the 'Select Variable for Display' list on the right. The bottom window, titled 'U10 from ggas2014121200_00-18.nc (Domain Selector)@jasmin-sci1.ceda.ac.uk', shows the domain selection interface. It includes a text area with metadata for 'U10' and a table for defining the domain axes.

float U10(time=4, surface=1, latitude=256, longitude=512);
:standard_name = "eastward_wind";
:long_name = "10 metre U wind component";
:units = "m s**-1";
:grid_type = "gaussian";
:_FillValue = 2.0E20f; // float
:source = "GRIB data";

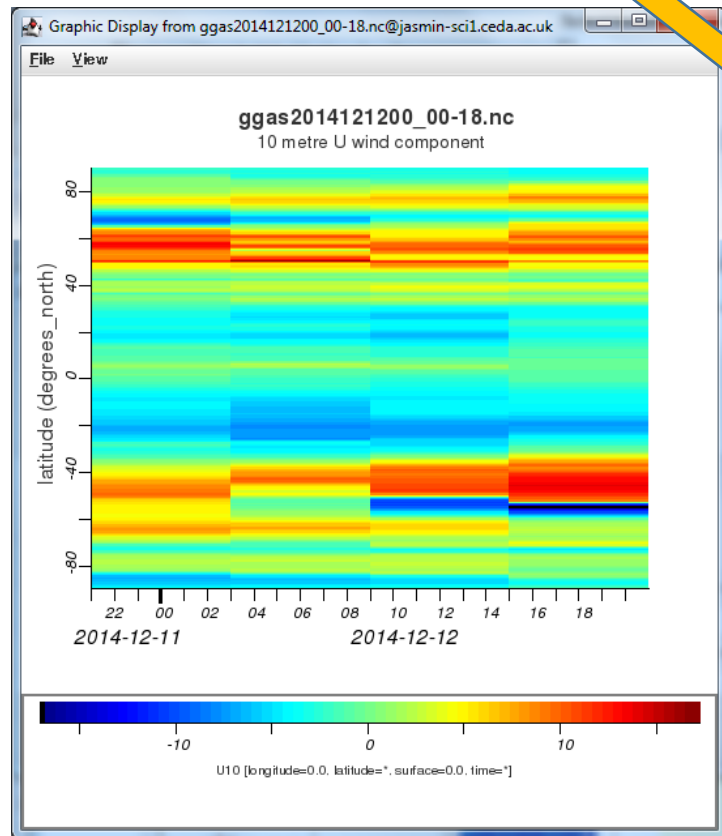
Axes

Name	Units	Dependent Variable		Reverse	Start		End	
		x	y					
time	days since 2014-12-12 00:00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2014-12-12 00:00:00	...	2014-12-12 18:00:00	...
surface	level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0.0	...	0.0	...
latitude	degrees_north	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	89.46282	...	-89.46282	...
longitude	degrees_east	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0.0	...	359.29688	...

Buttons: Graph Variable, Close

ncBrowse – plot a variable

Click "Graph Variable" to plot



U10 from ggas2014121200_00-18.nc (Domain Selector)@jasmin-sci1.ceda.ac.uk

```
float U10(time=4, surface=1, latitude=258, longitude=512);
:standard_name = "eastward_wind";
:long_name = "10 metre U wind component";
:units = "m s**-1";
:grid_type = "gaussian";
:_FillValue = 2.0E20f; // float
:source = "GRIB data";
```

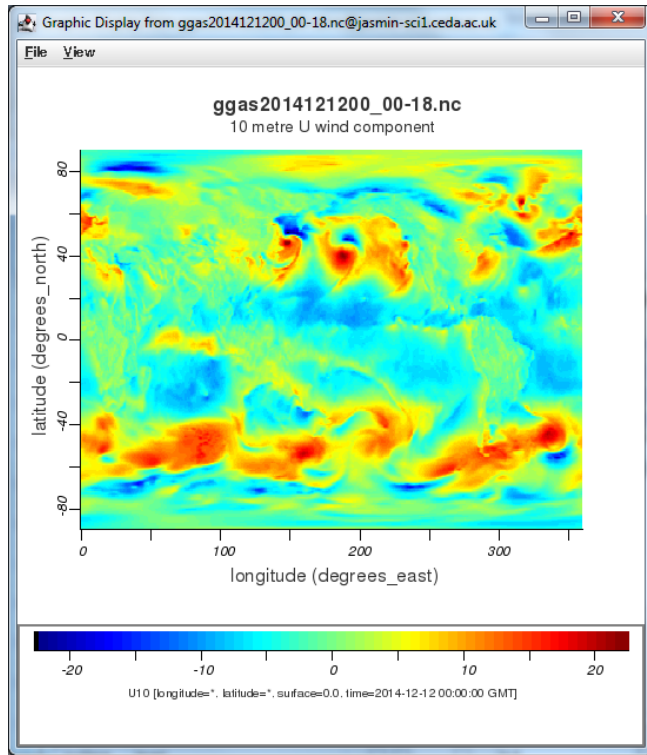
Axes

Name	Units	Dependent Variable		Reverse	Start	End
		x	y			
time	seconds since 2014-12-12 00:00:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2014-12-12 00:00:00 ...	2014-12-12 18:00:00 ...
surface	level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0.0 ...	0.0 ...
latitude	degrees_north	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	89.46282 ...	-89.46282 ...
longitude	degrees_east	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0.0 ...	359.29688 ...

Graph Variable **Close**

ncBrowse – plot a variable (2)

Modify the axes selected and click "Graph Variable"



U10 from ggas2014121200_00-18.nc (Domain Selector)@jasmin-sci1.ceda.ac.uk

```
float U10(time=4, surface=1, latitude=256, longitude=512);  
:standard_name = "eastward_wind";  
:long_name = "10 metre U wind component";  
:units = "m s**-1";  
:grid_type = "gaussian";  
:_FillValue = 2.0E20f; // float  
:source = "GRIB data";
```

Axes

Name	Units	Dependent Variable		Reverse	Start	End
		x	y			
time	days since 2014-12-12 00:00:00	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2014-12-12 00:00:00 ...	2014-12-12 18:00:00 ...
surface	level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0.0 ...	0.0 ...
latitude	degrees_north	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	89.46282 ...	-89.46282 ...
longitude	degrees_east	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0.0 ...	359.29688 ...

Graph Variable **Close**

Further reading

- ncview:

http://meteora.ucsd.edu/~pierce/ncview_home_page.html

- ncBrowse:

https://www.nodc.noaa.gov/woce/woce_v3/wocedata_1/utis/netcdf/ncbrowse/index.htm