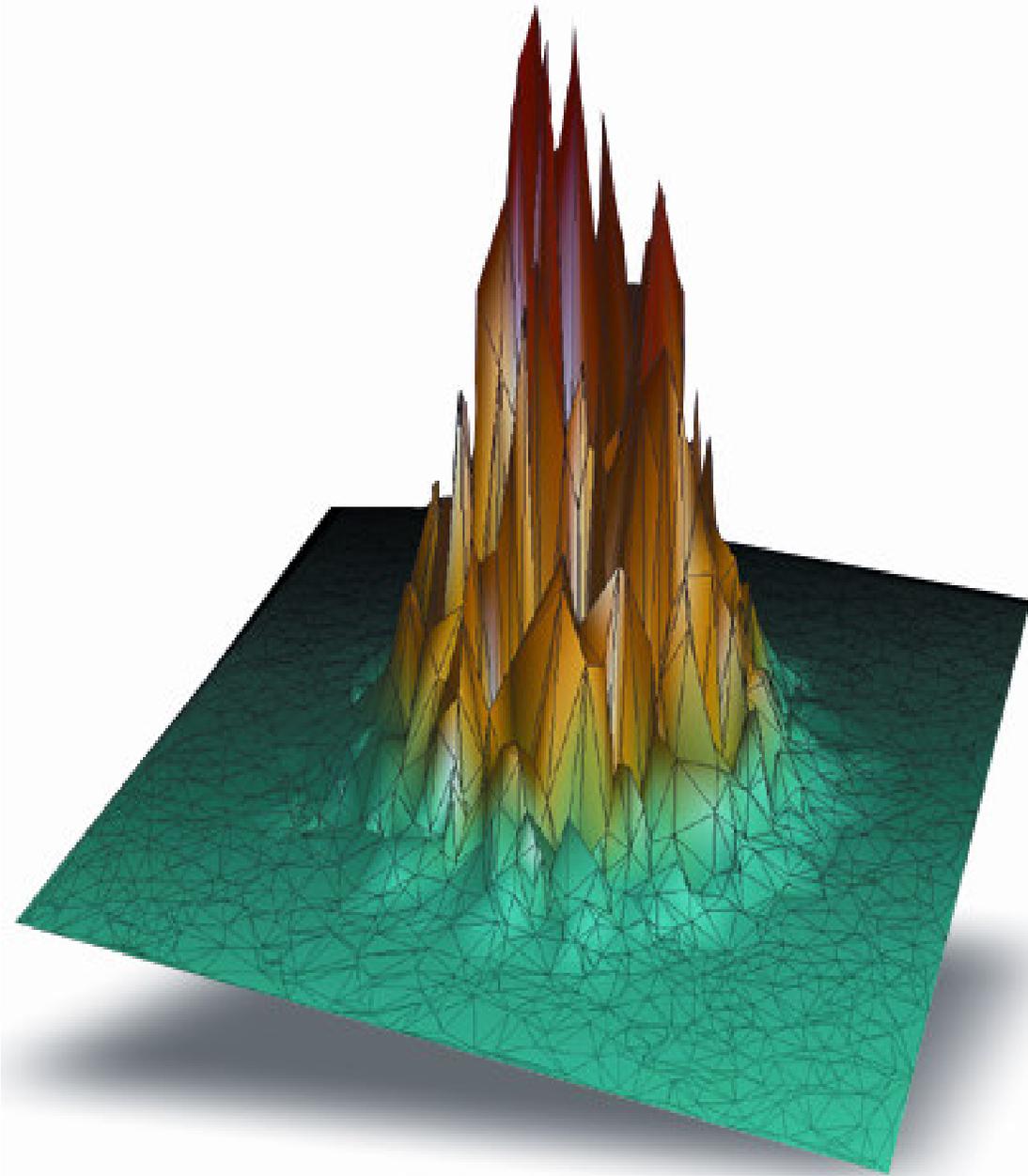


iTools Tutorial Four



Using Colorbars with iMap

Using Colorbars with iMap

This tutorial assumes the user has a basic understanding of iTools. If you are a beginning iTools user, it is recommended that you first review Tutorial 1 : **Using iTools**.

When displaying images it is often desired to display a corresponding color bar that accurately reflects the data being displayed along with a realistic representation of the data range. This tutorial will take you through the steps of loading and displaying an image with the iMap tool, inserting the corresponding color bar and customizing the colorbar appearance.

Part 1: Setup

The specific instructions on the use of the colorbar will also apply to using colorbars with the IMAGE tool.

Begin at the IDL command line by restoring the sample data used in the tutorial:

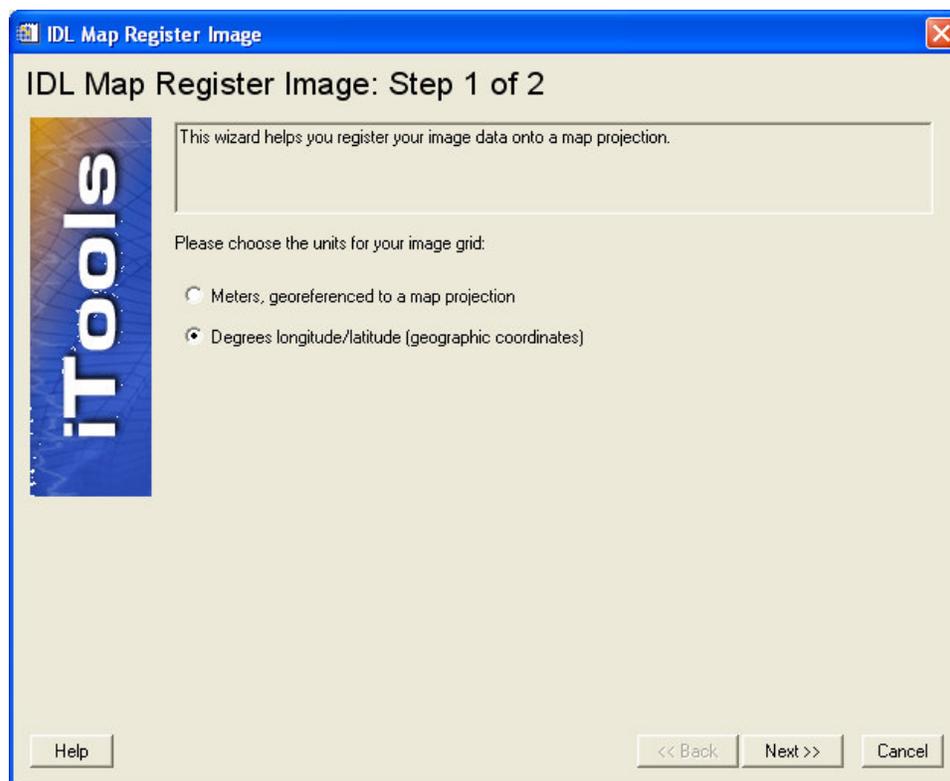
1) RESTORE, 'WorldTS.sav'

Depending on where the file is located on your system, you may need to use a fully qualified path in the above command.

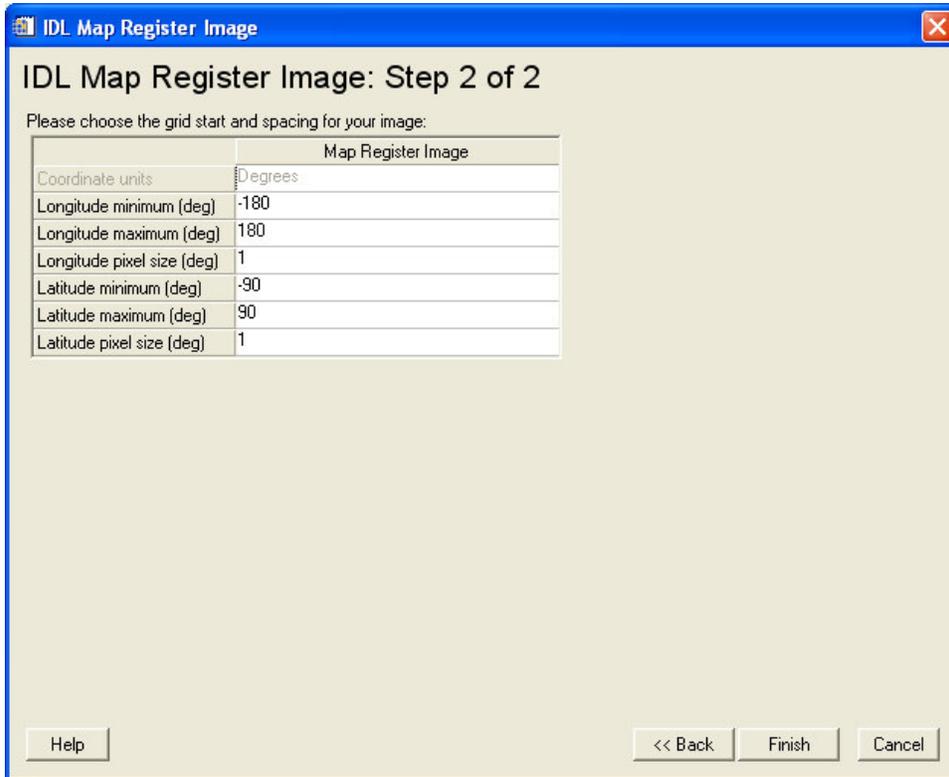
Next, type the command "IMAP", and pass in the variable "worldts".

2) IMAP, worldts

When you hit return, an iMap window displaying the "worldts" variable will appear. In addition the user will be presented with a Map Register wizard as shown below.



3) Accept the default settings by selecting “Next>>“ which will now display the dialog window for Step 2 of the map register dialog.

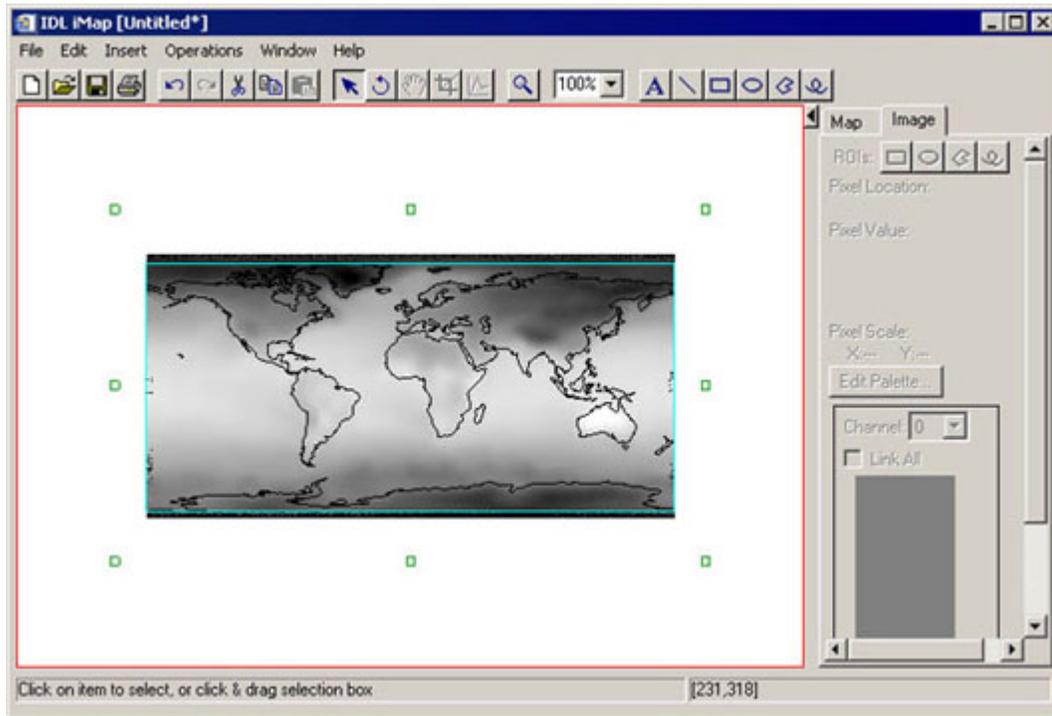


4) Again accept the default settings by selecting “Finish”. The following window should now be visible.



The data being used for this tutorial is mean surface temperatures of the earth. In order to more clearly define the regions in the image, continental outlines will be added.

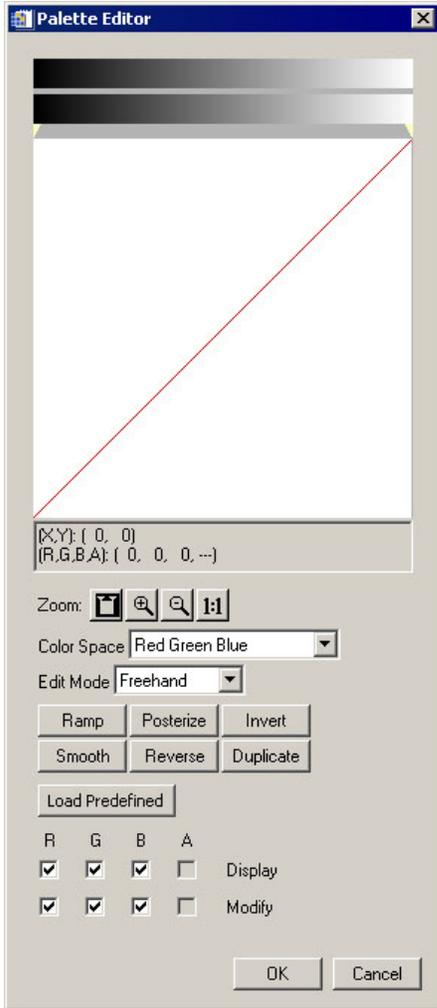
5) Select Insert -> Map -> Continents. The visualization should now appear as shown below.



Before the colorbar is added a color table will be applied to this image.

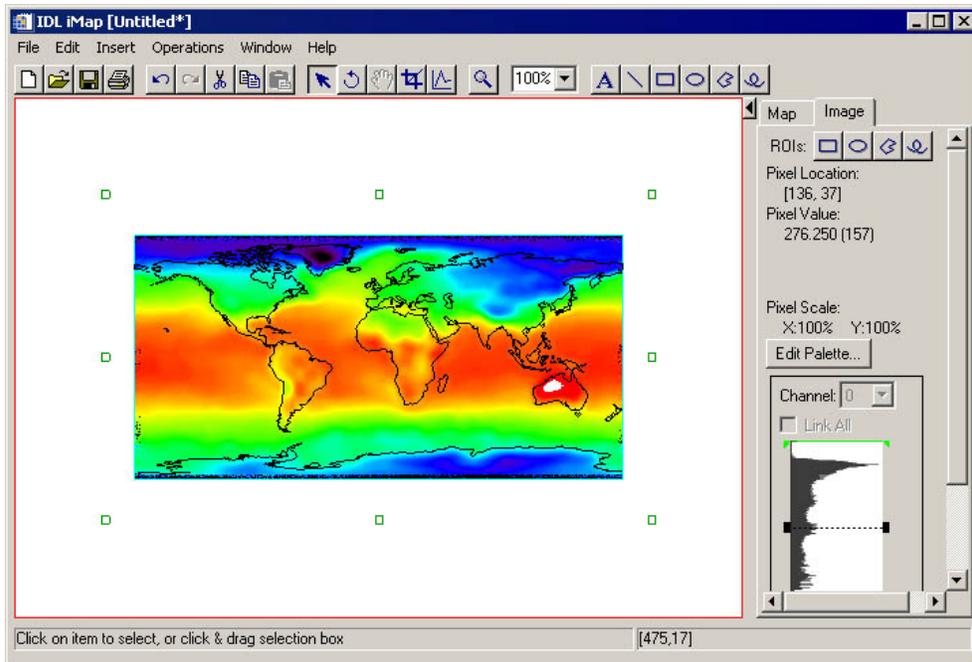
6) To activate the Image controls on the right side panel of this iMap window select 'Window -> Visualization Browser...'. Selecting the 'Image' branch under 'Data Space' will activate the controls needed for the steps below.

7) Select “Edit Palette” located on the right side under the Image tab. This will then display the Palette Editor window shown below.



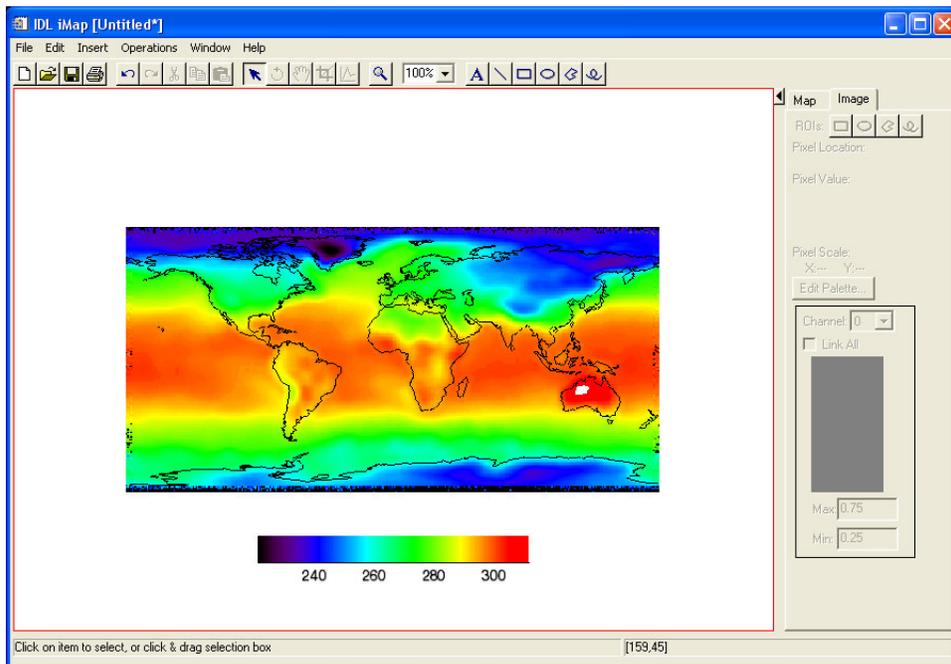
8) Select “Load Predefined” to list out the available color tables.

9) Select “Rainbow + white” which is second from the bottom on the list and then Hit “OK”. The color image should now appear as shown below.



Now that a color table has been applied to the image the colorbar can be added.

10) Select Insert -> Colorbar.

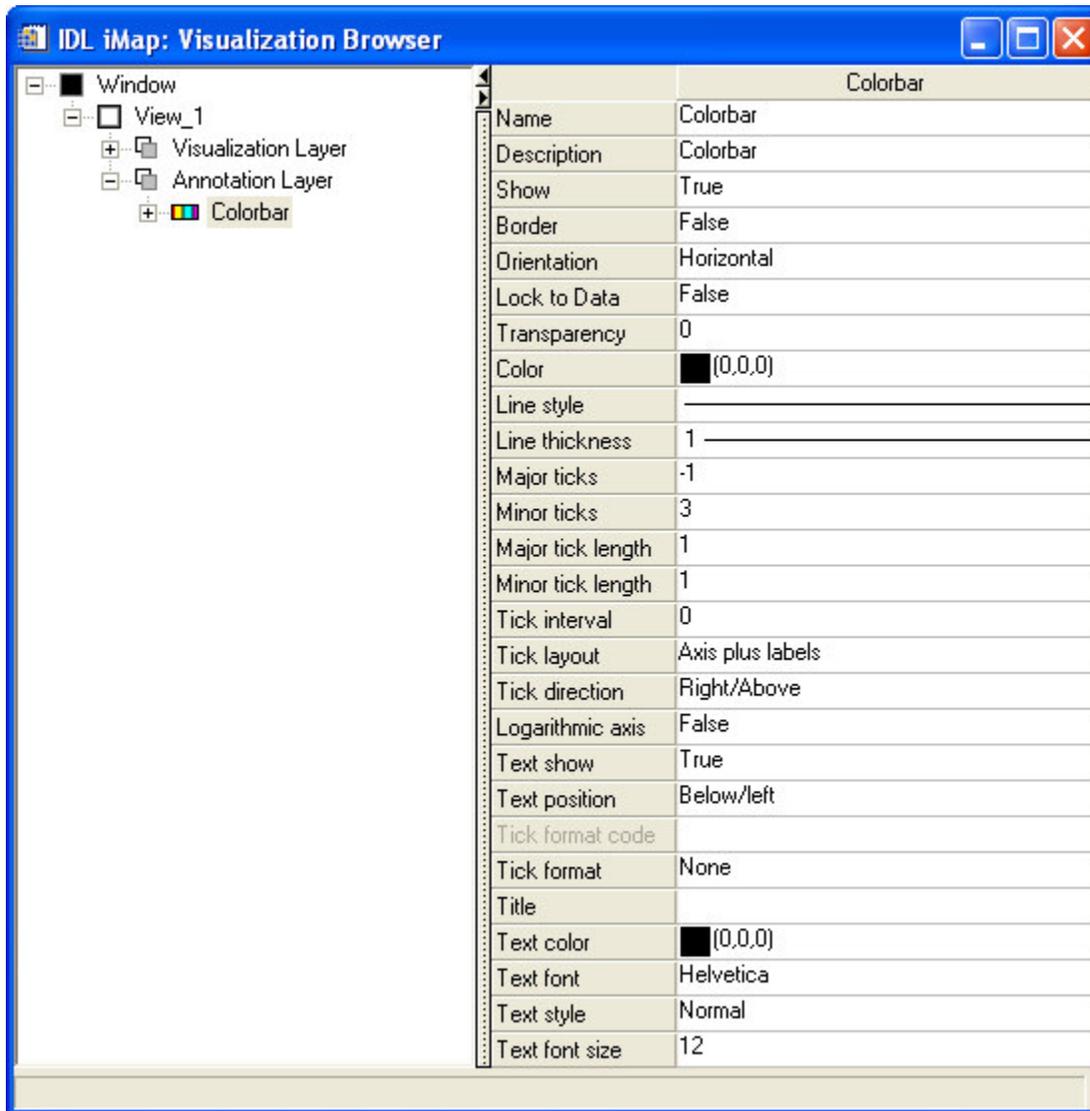


The range of temperature for this image is 221° – 311° Kelvin. Notice that the colorbar tick labels reflect the real values of the data.

Part 2: Modifying Properties

The following section will highlight some of the key properties that can be adjusted to modify the look of the colorbar. This is done with the Visualization Browser.

11) Select Window -> Visualization Browser... When displayed, double-click the colorbar object. The following window will be displayed showing the default values for the colorbar properties. (It has been expanded for clarity.)



The range of our data is 90.0°, 311.0° – 221.0°. This works out nicely to have 6 major intervals of 15° and 3 minor intervals of 5°. The major intervals will be defined with full-length tick marks; the minor interval tick marks will be 20% of the full length. The tick marks will be drawn with a thickness of 2. A title will also be added and the font used for the title and tick mark text will be blue, 14pt Times. All these property settings are shown in the next window.

12) Set Major Ticks = 7. This will give 6 equally spaced intervals of 15°.

13) Set Minor Ticks = 2. This will give 3 equally spaced intervals of 5° within each major interval.

14) Set Major tick length = 1. (Note: The displayed value of 1 is incorrect. The actual value is 0.05. Click and drag the selection slider to the left and release. Now click and drag again to the right until the slider is at 1. Release). This should now draw full-length tick marks.

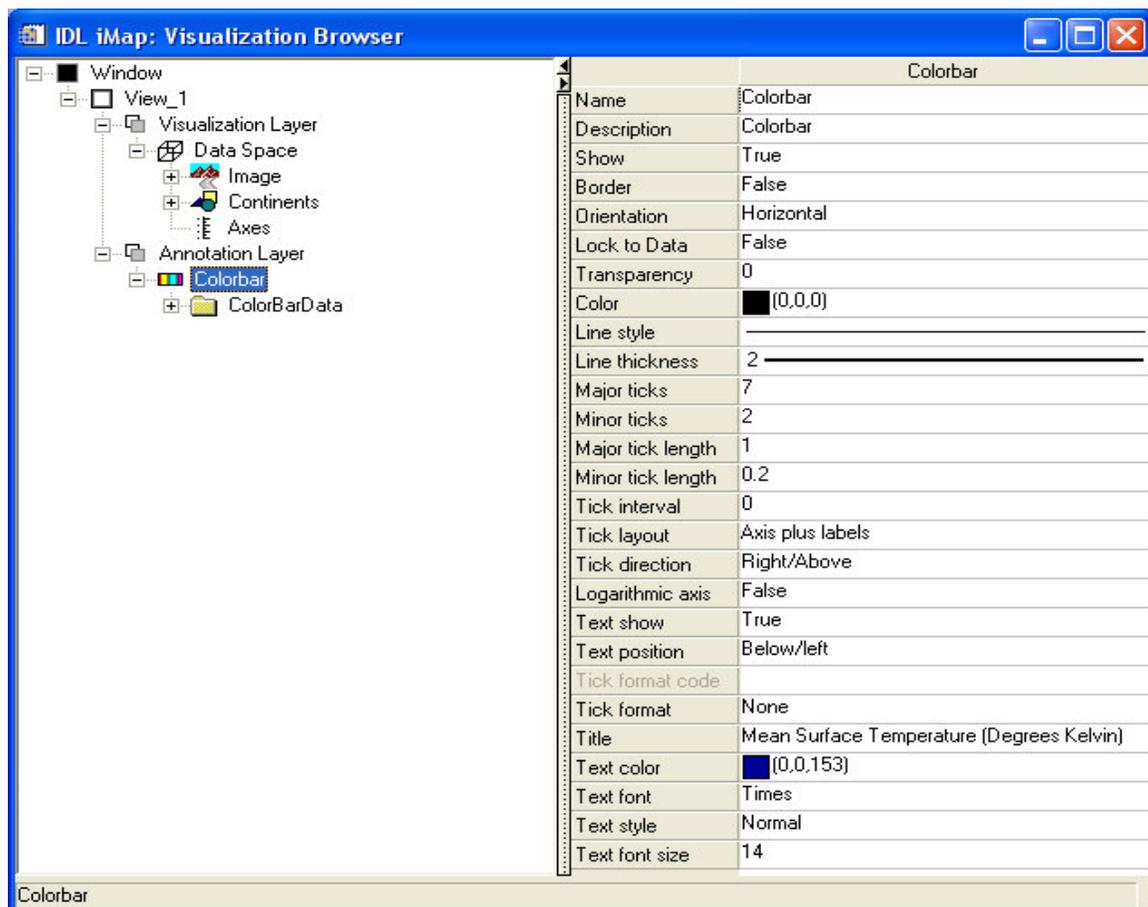
15) Set Minor tick length = 0.2. This makes the minor tick marks 20% of the height of the major tick marks.

16) Enter the title “Mean Surface Temperature (Degrees Kelvin)”.

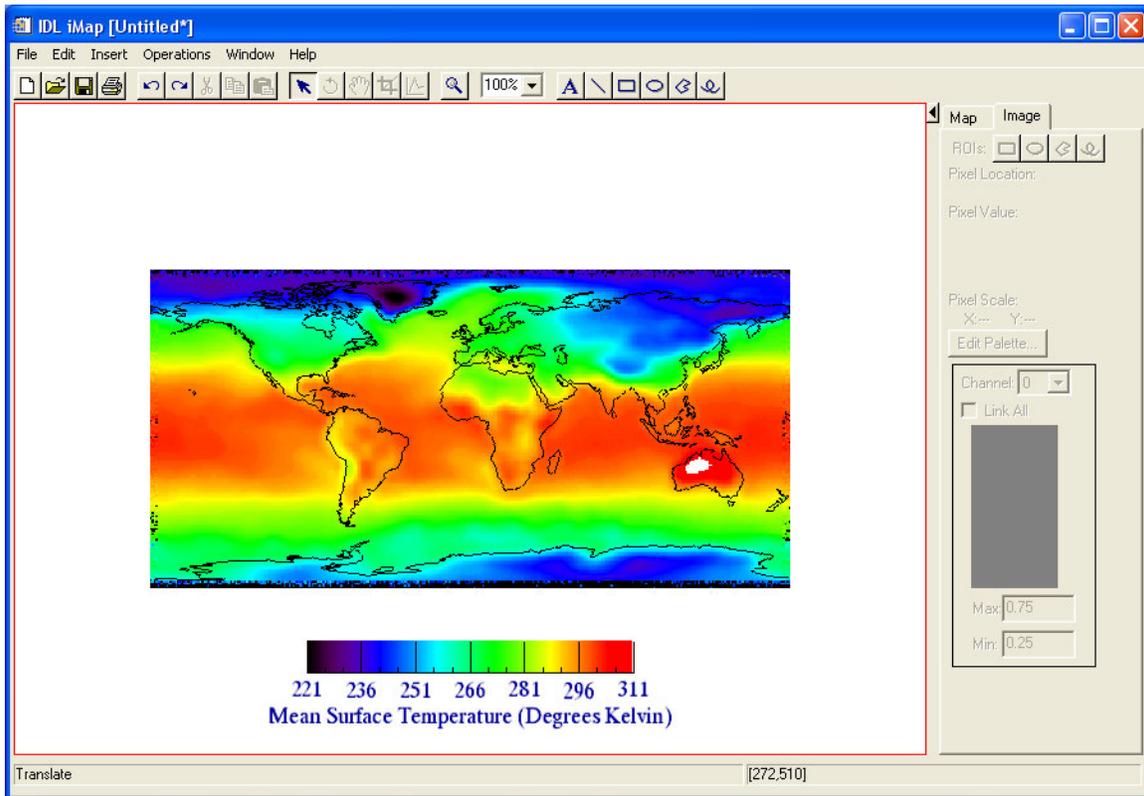
17) For Text color select a darker blue from the drop-down color palette.

18) Set Text font to “Times”.

19) Set Text font size = 14.



On completion the colorbar should now appear as shown below.



20) Experiment with other properties to get a sense of the level of customization that is available. Properties such as Name and Description are handy if working with multiple colorbars in an iTool since they can help uniquely identify them.

Additional Notes: The following properties listed in the Visualization Browser are not documented in the IDL Online Documentation.

- a) Lock to Data – inactive
- b) Logarithmic Axes – always set to False
- c) Transparency – sets the transparency of the lines that form the tick marks and axis
- d) Tick format code – user settable format code when the Tick format property is set to “Use tick format code”