FAULKES TELESCOPE

Astronomical Imaging

Mosaics

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Mosaics

Getting Started

To make a mosaic you will need images taken of different regions of the same object. You can find these yourself in the Archive or download the packages that come with this course.

Create New Canvas

Open GIMP or GIMPshop and create a new canvas by going to **File > New**. The canvas size will depend on how many individual images you have, a rough size of **3000 pixels square** is enough to get you started. The size isn't too crucial at this point as you can adjust the canvas size at any point after its creation.

At the bottom of the box that appears, there should be an extension button called **Advanced Options**. Expand this option and click on the drop down arrow next to **Fill with:** - change this to **Transparency**.

Now click **OK** to create the canvas. This is the canvas that the individual images will be copied into.

Open the first two images and copy and paste them into the new canvas.

N.B. *Remember to rename each image in the Layers window when you paste them into the canvas.*
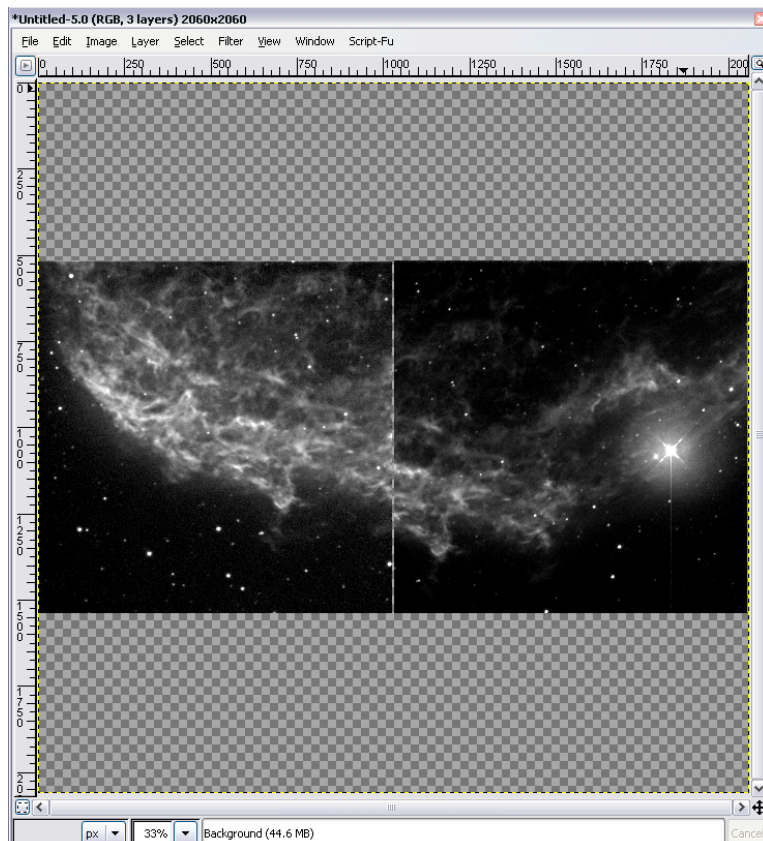
Arrange the images on the new canvas so they are side-by-side.

Astronomical Imaging

Aligning the Images

Look carefully at both images to find where they overlap. The easiest way to do this is to find the matching star patterns.
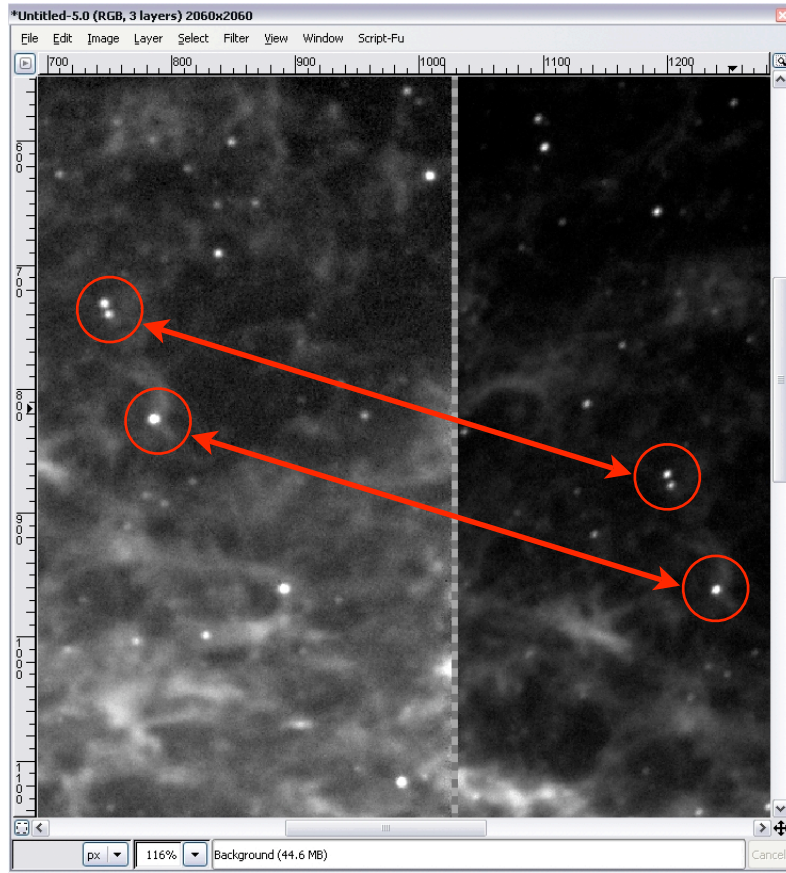

Now to align the images, lower the **Opacity** of the second image to about **70%** (in the layers window), and use the Move Tool to align them. Setting the opacity of one image allows you to slightly see through it, meaning you can align the images perfectly.

When they are aligned, the image should look like this.
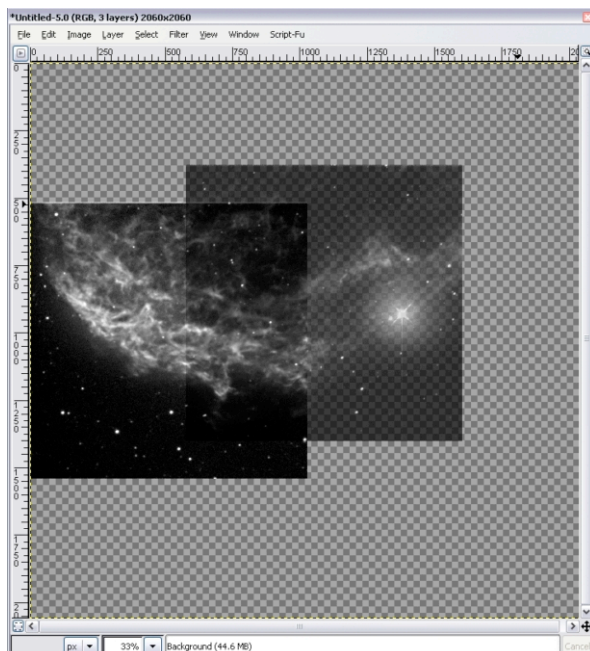
Now return the opacity to **100%**.

As you can see, the two images don't merge very well, because one is darker than the other, you can see a vivid black edge where they overlap.
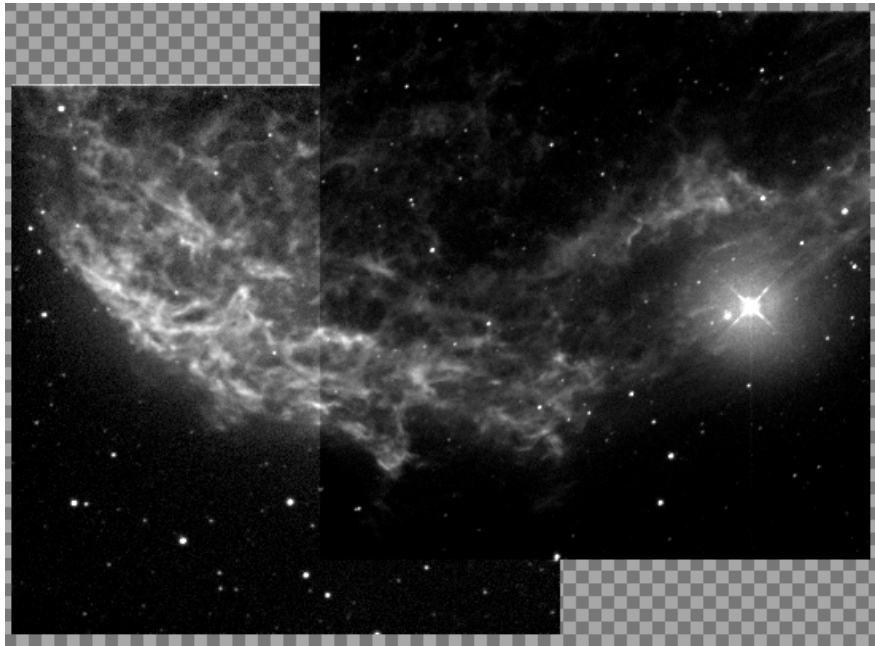

Blending the Images

Select the second image and go to **Layer > Mask > Add Layer Mask**, select **White (full opacity)** and click **OK**.

A new thumbnail will appear next to the image in the Layers window.

Next select the **Gradient Tool**

Click and hold the left mouse button outside and left of the second image and drag the cursor across to the point where the first image reaches beneath it.

Astronomical Imaging
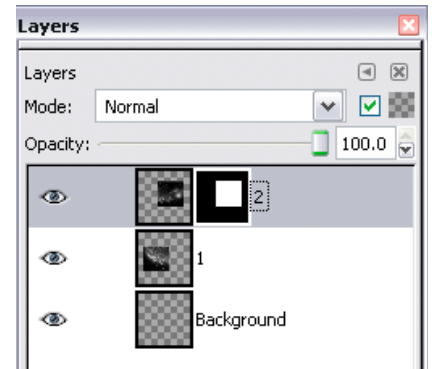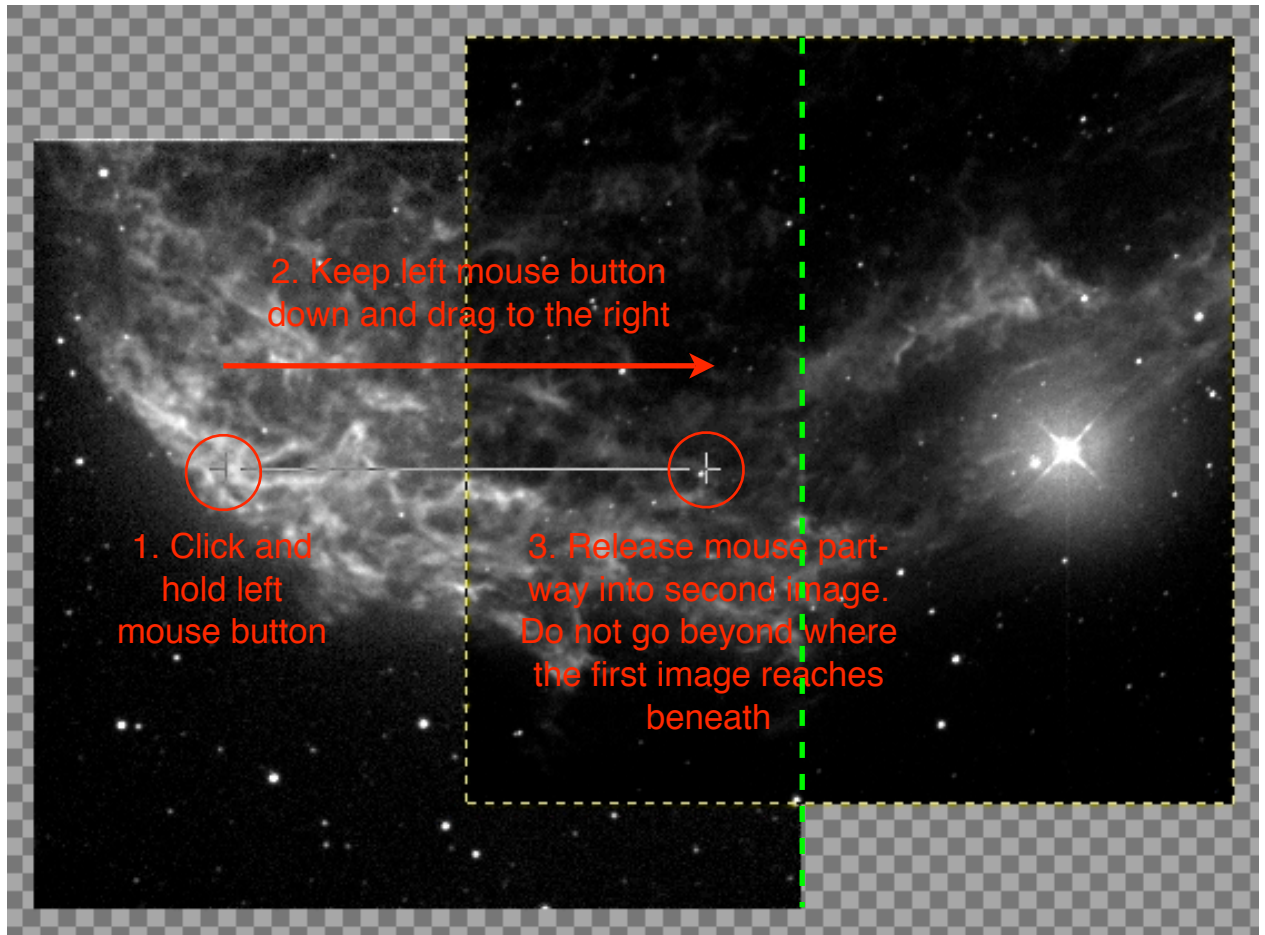
Repeat this action 3 or 4 times and it will blend out the image on the right-hand side so that is matches more closely with the image on the left.
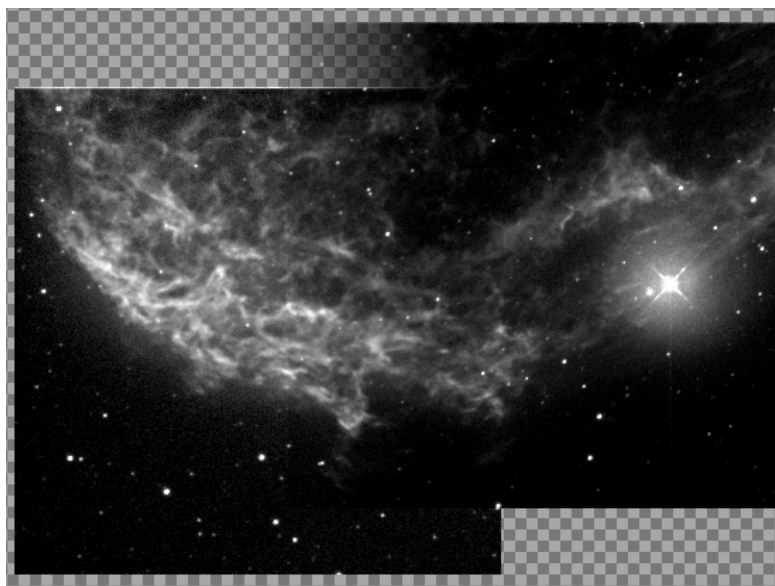

However, it has also removed parts of the image that are unnecessary, for example the top of the image. To correct this, select the **Eraser Tool** - it will make it easier to create a larger brush size for this task, there are details on how to do this at the end of this document.

Make sure that the **Fade out** is unchecked, and simply erase the top of the image. This does not remove the image, but the blending mask.

The final adjustments to make are the levels of the image. The image on the right is still darker than the image on the left. So with the second image selected in the Layers window, go to **Image > Adjustments > Levels**.

Below the histogram are three arrows, move the arrow on the far right to the left to make the image brighter. Alternatively, if this image was brighter, move the arrow on the far left to the right.

Adjust the levels until the background sky and the object appear to be the same brightness in both images.
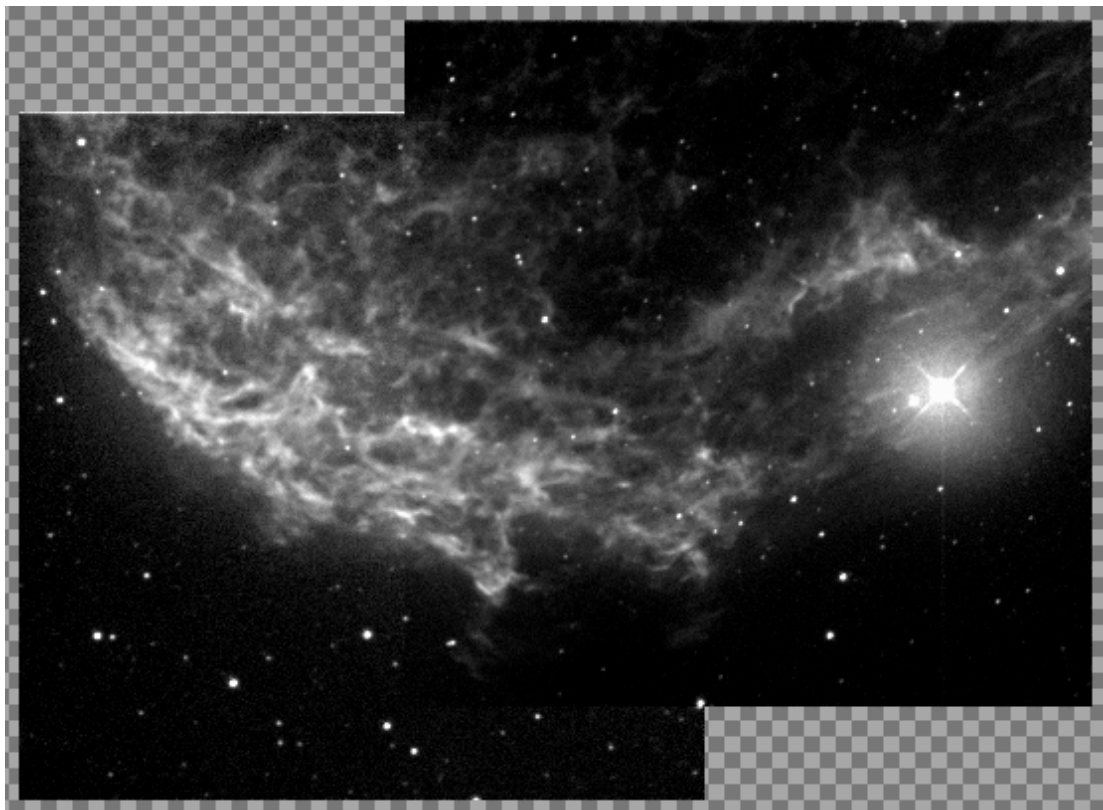
Merge the Images

The final step for these two images is to merge them. Select the image which is highest in the Layers window, and go to **Layer > Merge Down**. This will merge the top two layers, which should be your two images.

You can now open your third image, and blend it to this one by repeating the steps above.

Example of finished image.