This document is a brief outline of how to process a captured image using GIMP. The image processed is from a Revolution Imager 2 camera. It was produced as 368 frames in a SharpCap Live Stack session by SharpCap Forum user @donstim. There was no requirement to use *Curves* in GIMP to stretch the image.

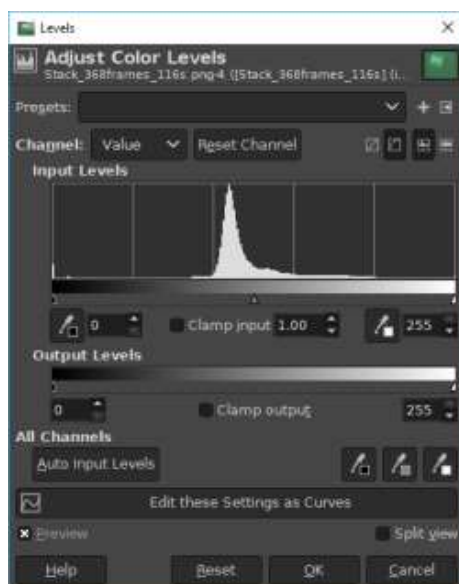| Captured image	Processed in GIMP

The captured image has two areas to be considered:

1. The colour-balance – this can be addressed by image processing software such as GIMP (free), FastStone Image Viewer (free), PhotoShop (££££s) and others.
2. The shape of the histogram – this needs to be worked on at image capture time.

Download GIMP from https://www.gimp.org/ . GIMP 2.10 (preferred) can handle 16-bit images. [Note: Gimp 2.8 will convert 16-bit images to 8-bit and thus reduce detail].
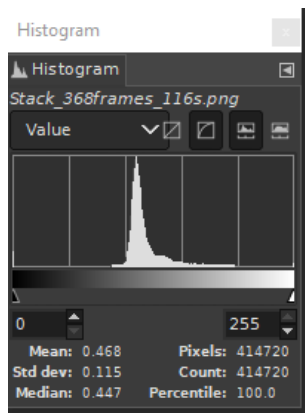
1   Getting Started
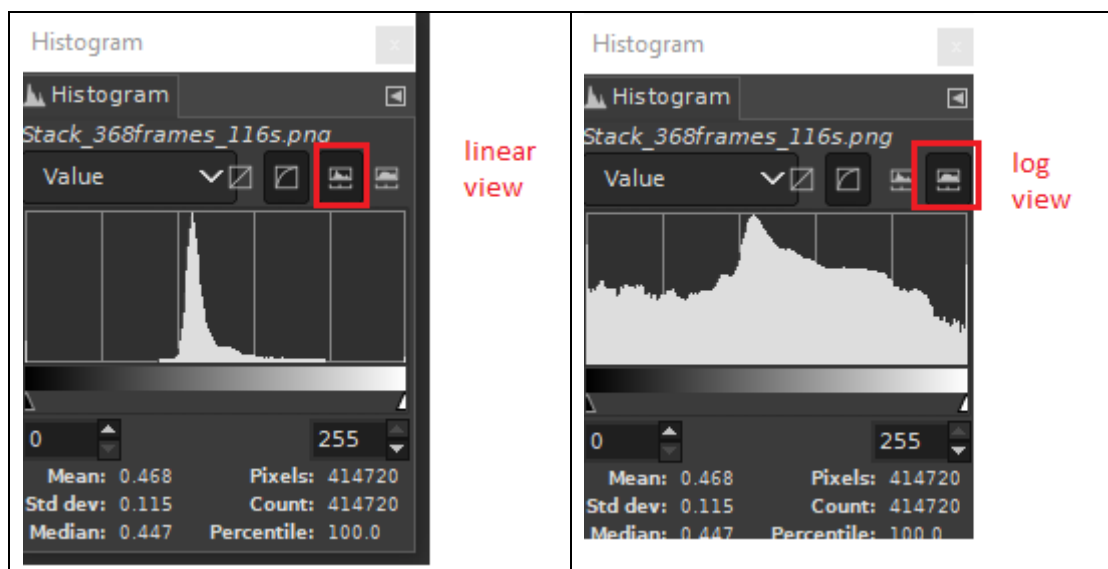
1. Start GIMP.

2. Choose *Colour > Levels*.

3.   The histogram is also required. If the histogram is not visible, then from the menu select:
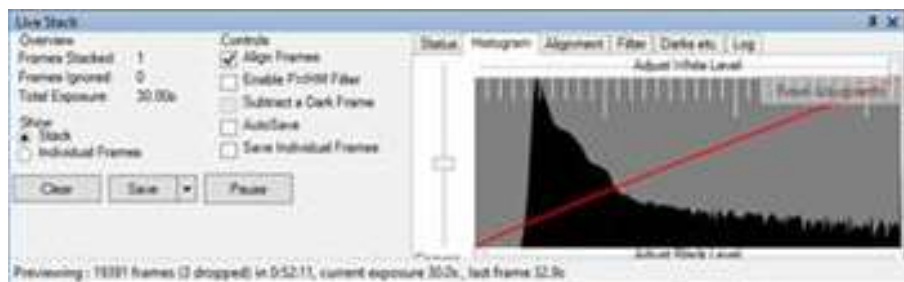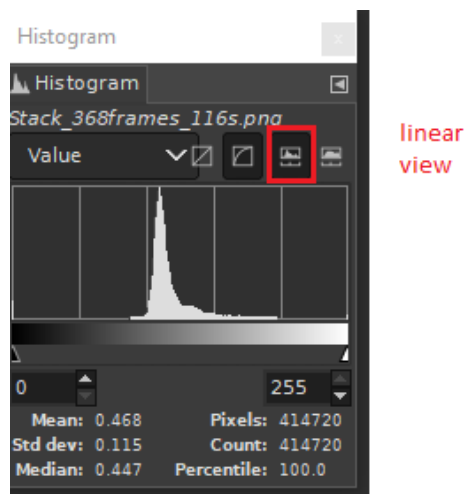
Windows > Dockable Dialogs > Histogram

4.   The histogram can be displayed in 2 ways – *logarithmic* and *linear* using the buttons shown.

5.   The *log view* shows that the histogram is hitting both the left-hand and right-hand side. This would be what to aim for in Live Stack or conventional imaging.
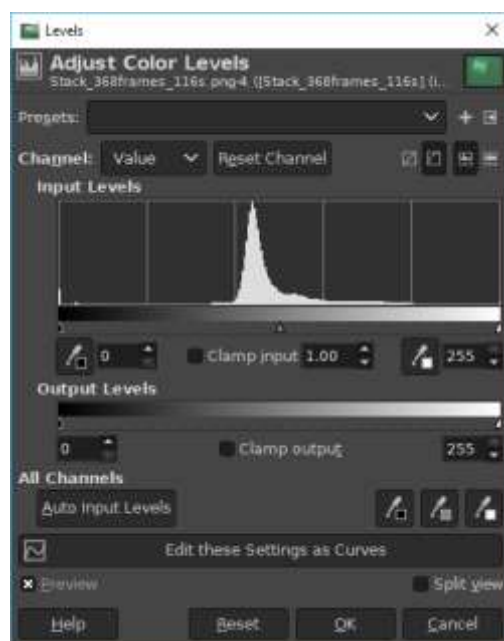
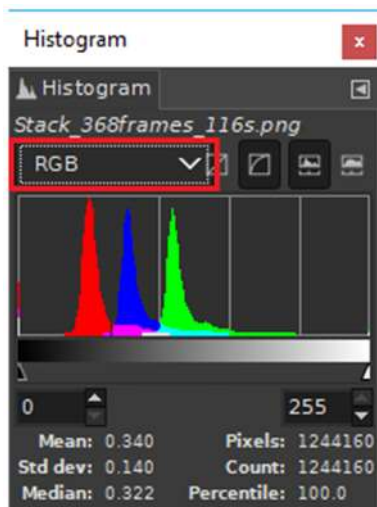6. For the next steps, set the histogram to *linear mode*.

2   Balance Colour levels

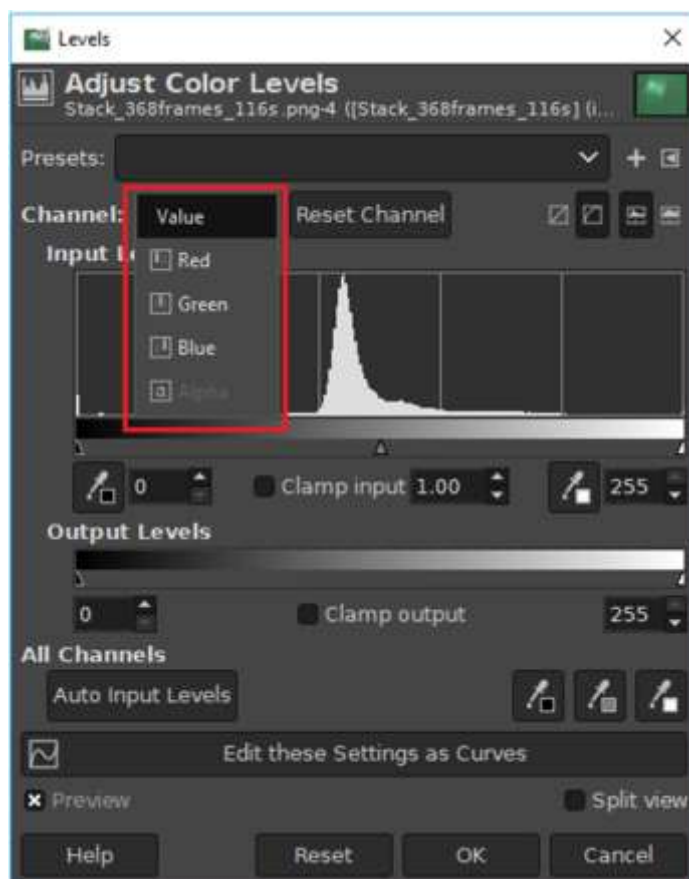These steps describe how to address colour balance issues.
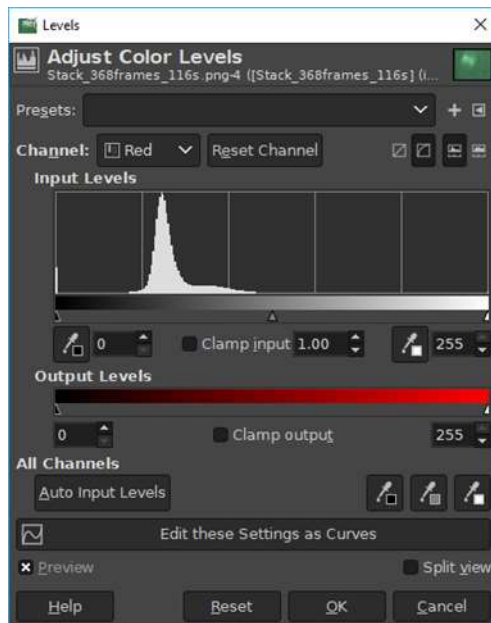
1. From the menu, select *Colour > Levels*.

2. From the histogram select *RGB*. This demonstrates the lack of colour balance as the Red, Green and Blue histograms should be stacked on top of each other.

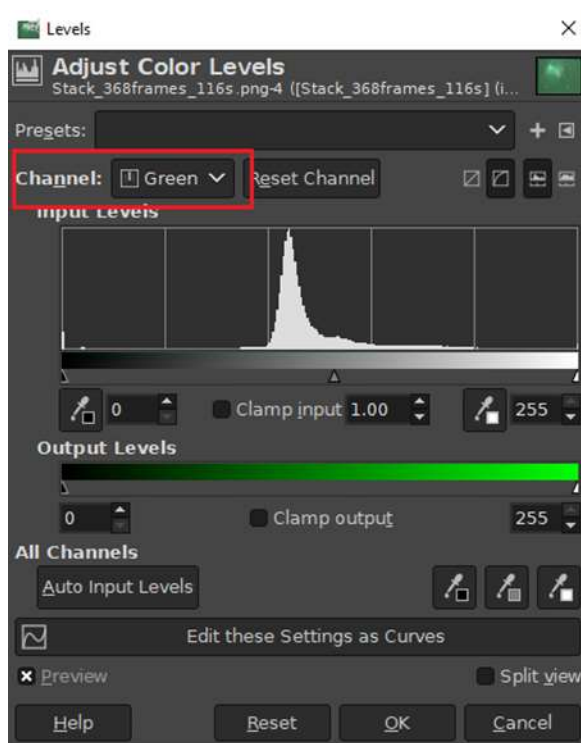3. The *Channel* dropdown is used to select the colour to work on.
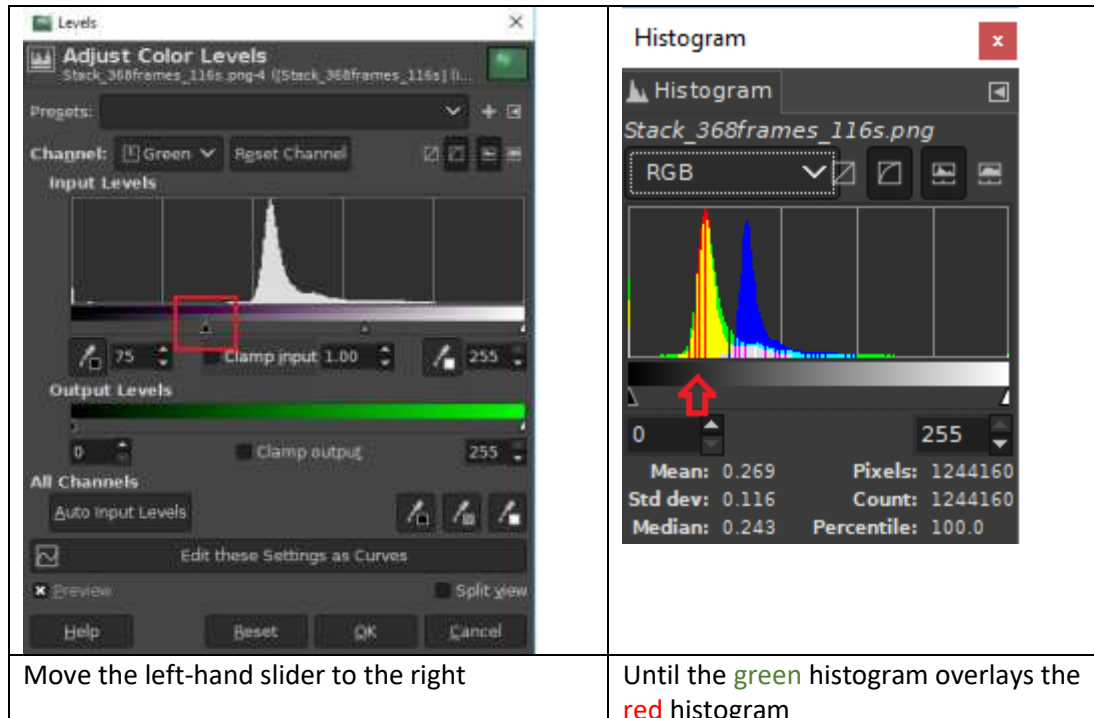
4. In the *Channel* dropdown, select Red.

5. Adjust the red channel.

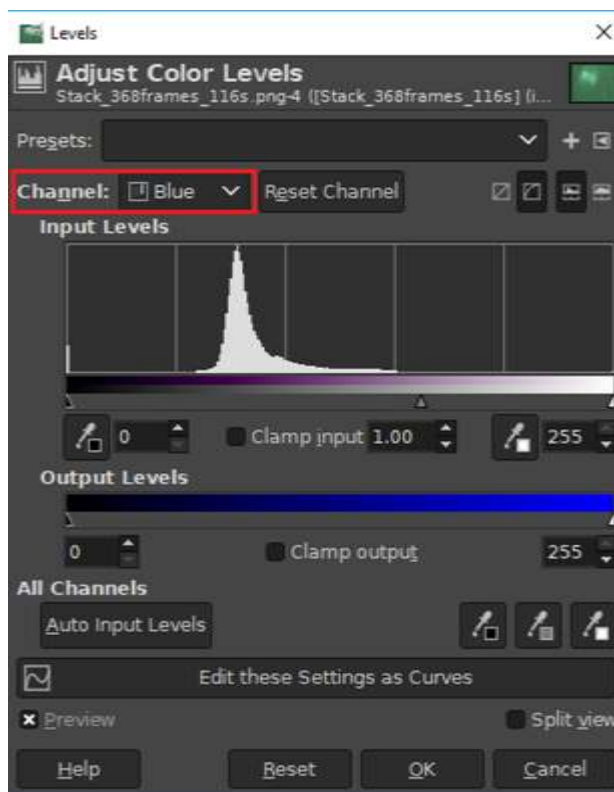| Move the left-hand slider to the right	Until the red histogram is at 20% (first vertical white line from left)

6. In the *Channnel* dropdown select Green.

7. Adjust the green channel.

Move the left-hand slider to the right	Until the green histogram overlays the red histogram

8. In the *Channnel* dropdown select Blue.

9. Adjust the blue channel.

| Move the left-hand slider to the right | Until the blue histogram overlays the red & green histograms |

10. The colour channels are now in balance.

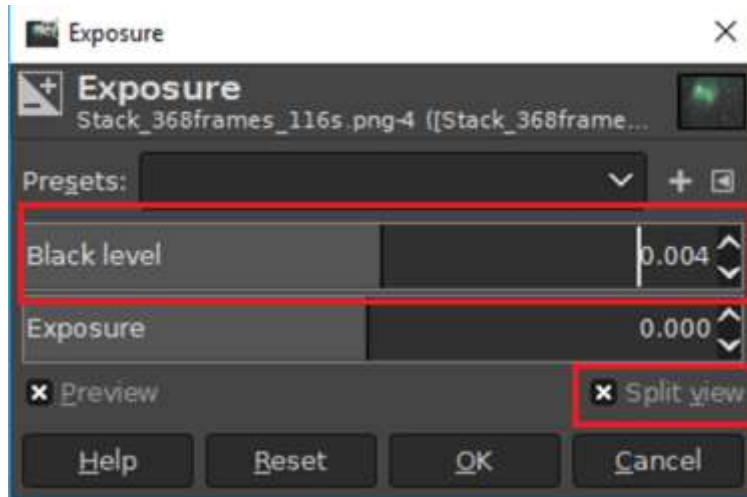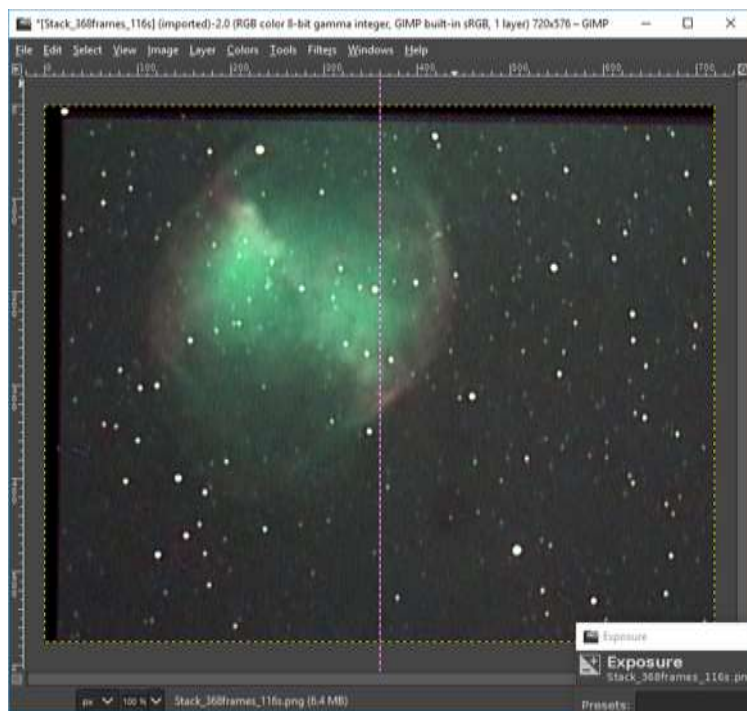
11. The green cast has been removed.

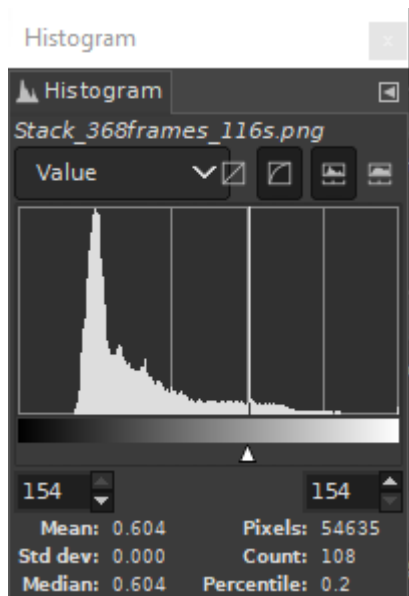# 3   Adjust the Black Level

1. From the menu select *Colours > Exposure*. Click the *Split View* – the screen to the left-hand side of the vertical dotted line is after adjustment has been made, the right-hand side is before adjustment.

2. Adjust *Black Level* to taste – it needs to be less than black because the sky is not black.
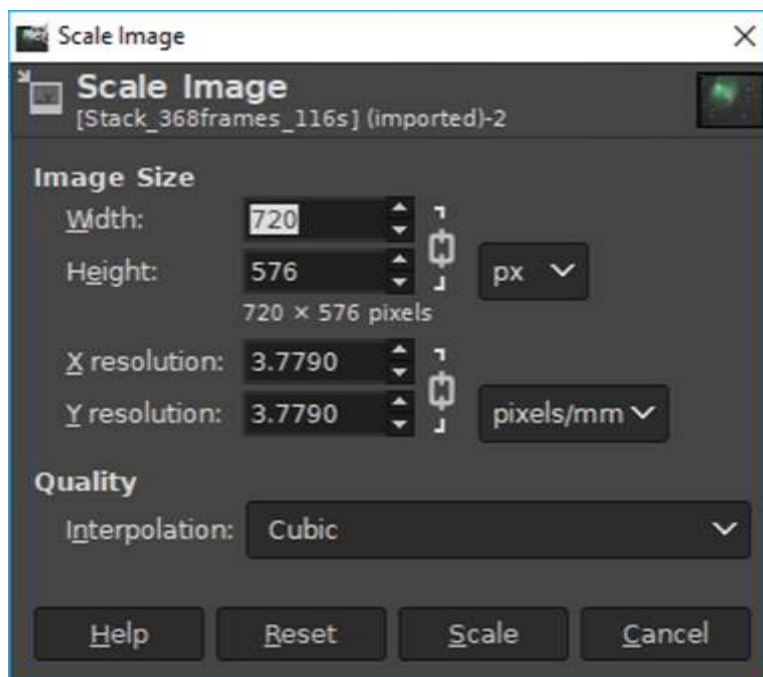
3. When doing this, keep an eye on the histogram to ensure it does not touch the left-hand side of the histogram (black level clipping).
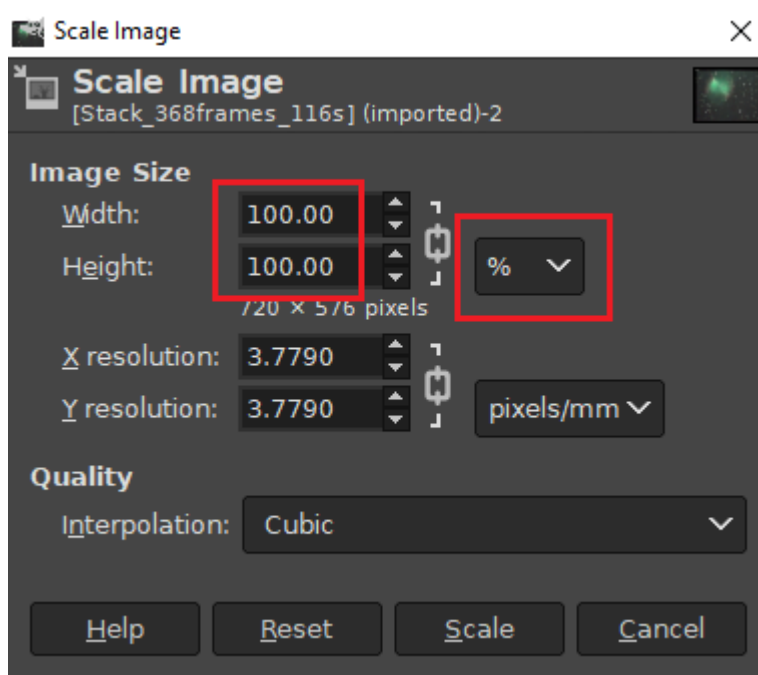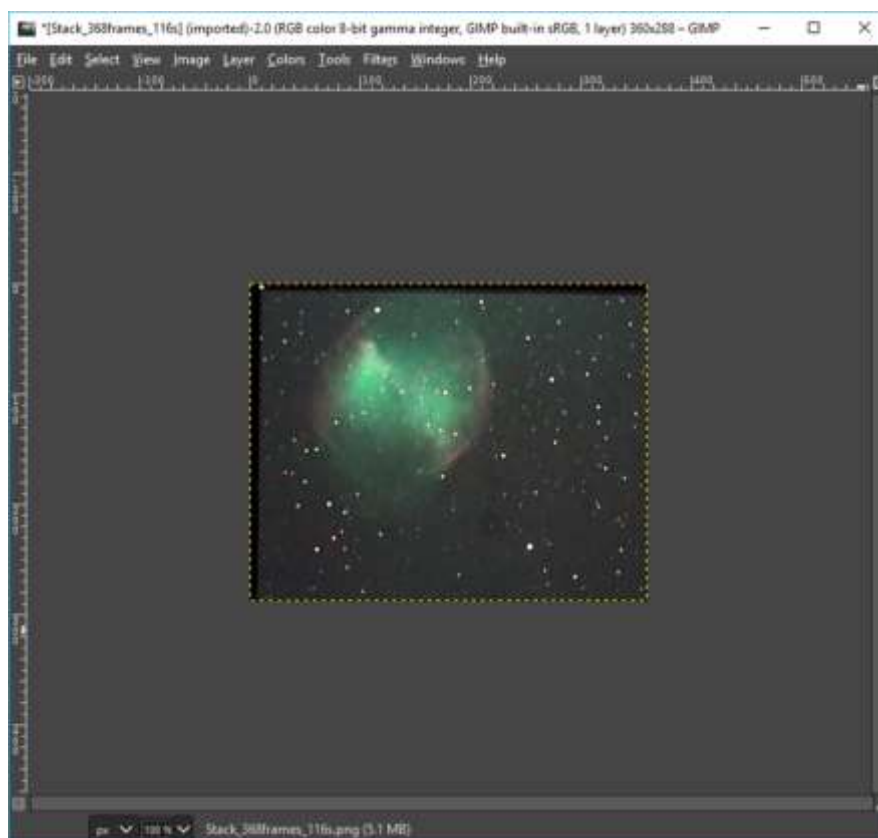

4   Scale the image

1. From the menu, select *Image > Scale Image*.

2. Choose *%* and set the *Width* and *Height* to 50

3. This results in 'tighter' stars.

5   Crop Stacking Artefacts

The black lines at the top and left of the image are artefacts and have several possible causes:

- Less than perfect polar alignment
- Less than perfect tracking
- Less than perfect stacking

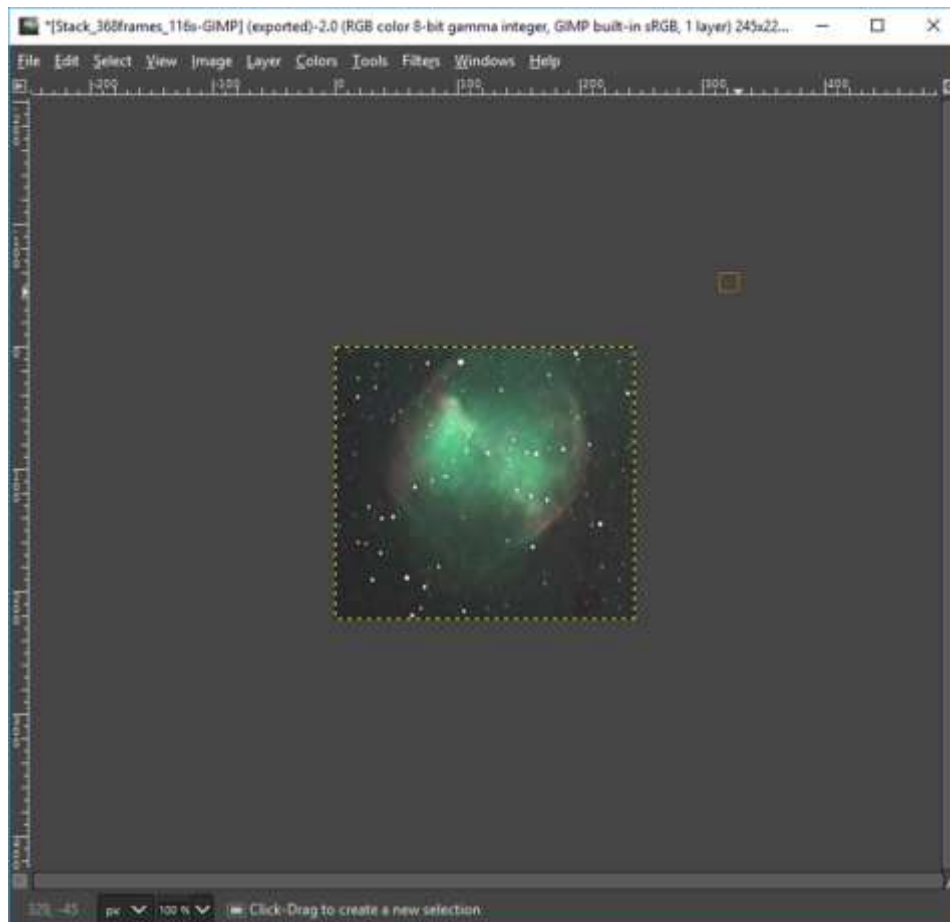The firs two can be addressed at the start of a session and will help with the third.

1. If the *Toolbox* panel is not visible, the from the menu select *Windows > Toolbox*.

2. Use the *Rectangle Select Tool* and drag a suitable rectangle on the image leaving out the stacking artefacts.

3. From the menu select *Image > Crop to Selection*.

4. This is the final cropped image.

6 Save the Processed Image

1. From the menu, *File > Save* will save the image in GIMP format (an XCF file) for future editing.

2. From the menu, *File > Export* As will save the file in a format such as PNG or JPG.