

How to Measure Brightness

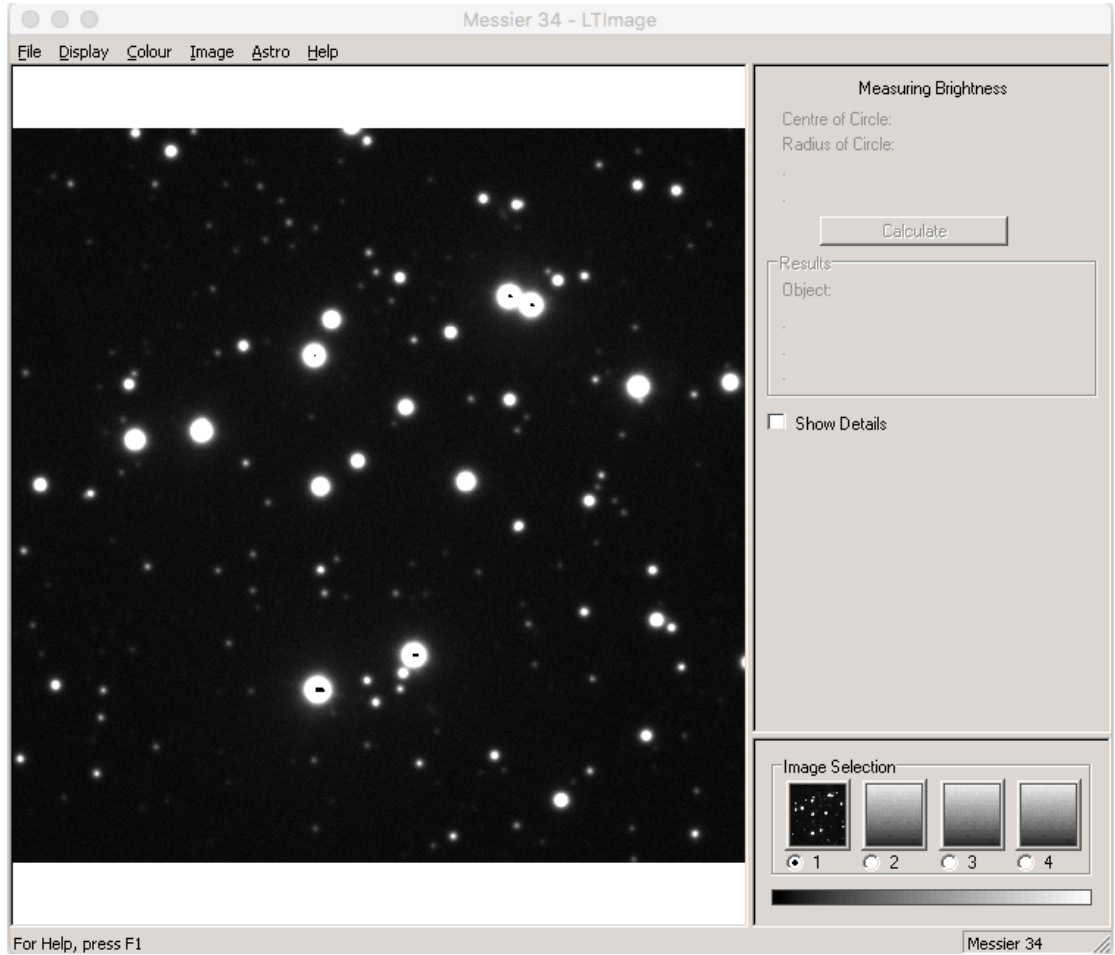
LT Image allows the user to measure the brightness of objects such as stars.

Stages:

1. Open the brightness measurement tool
2. Set your measuring area
3. Obtain your results

1. Open the Brightness Measurement Tool

Once you have opened and scaled your image, select 'Astro' from the menu at the top of the LT Image window, followed by 'Brightness Measurement'.

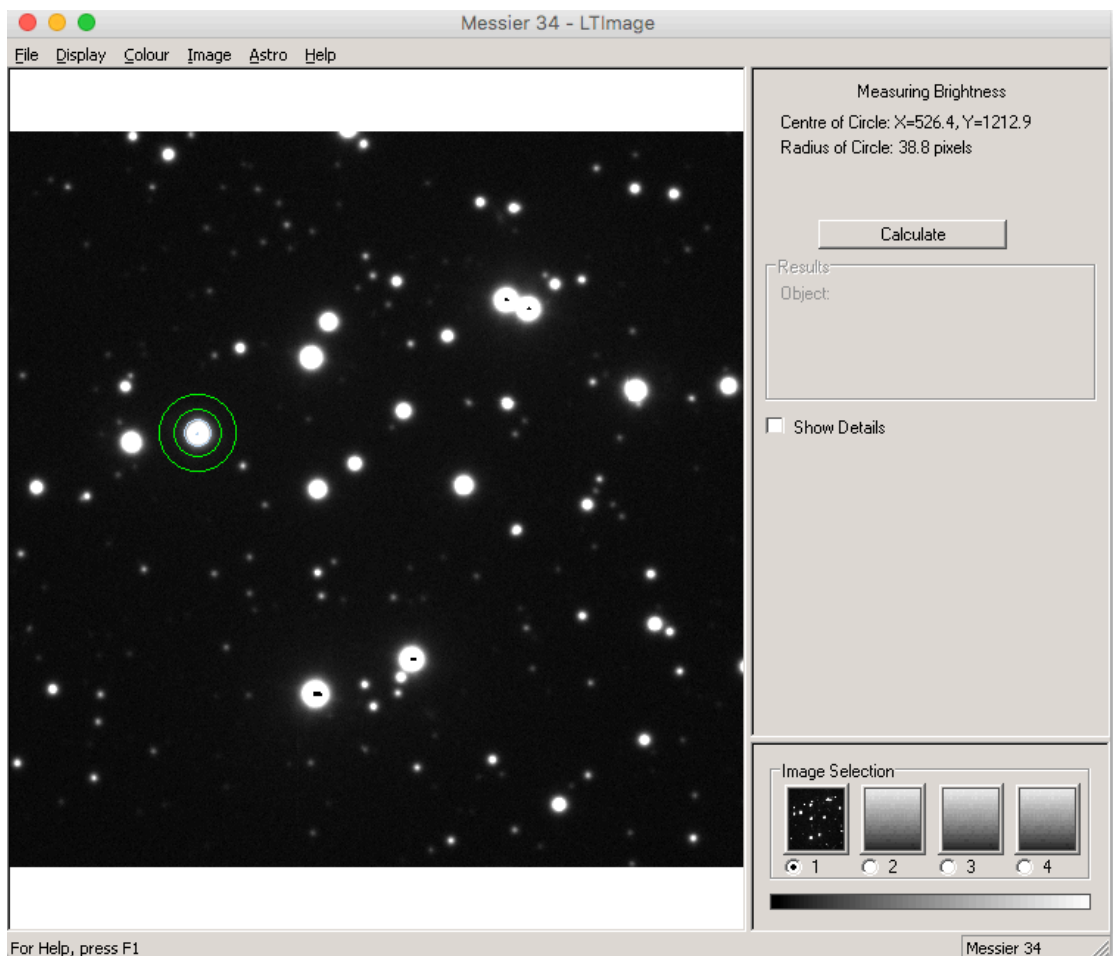


2. Set Your Measuring Area

We now need to tell LT Image where we would like to measure the brightness. By clicking and holding the mouse button down we can create set of concentric circles around an object in our image.

We are aiming to contain the object within the inner most circle (yellow). The two outer circles (green) are used to measure the brightness of the surrounding sky, this is to ensure that these sky levels (or noise) is subtracted from the brightness of the object we're measuring, thus providing more accuracy to our result.

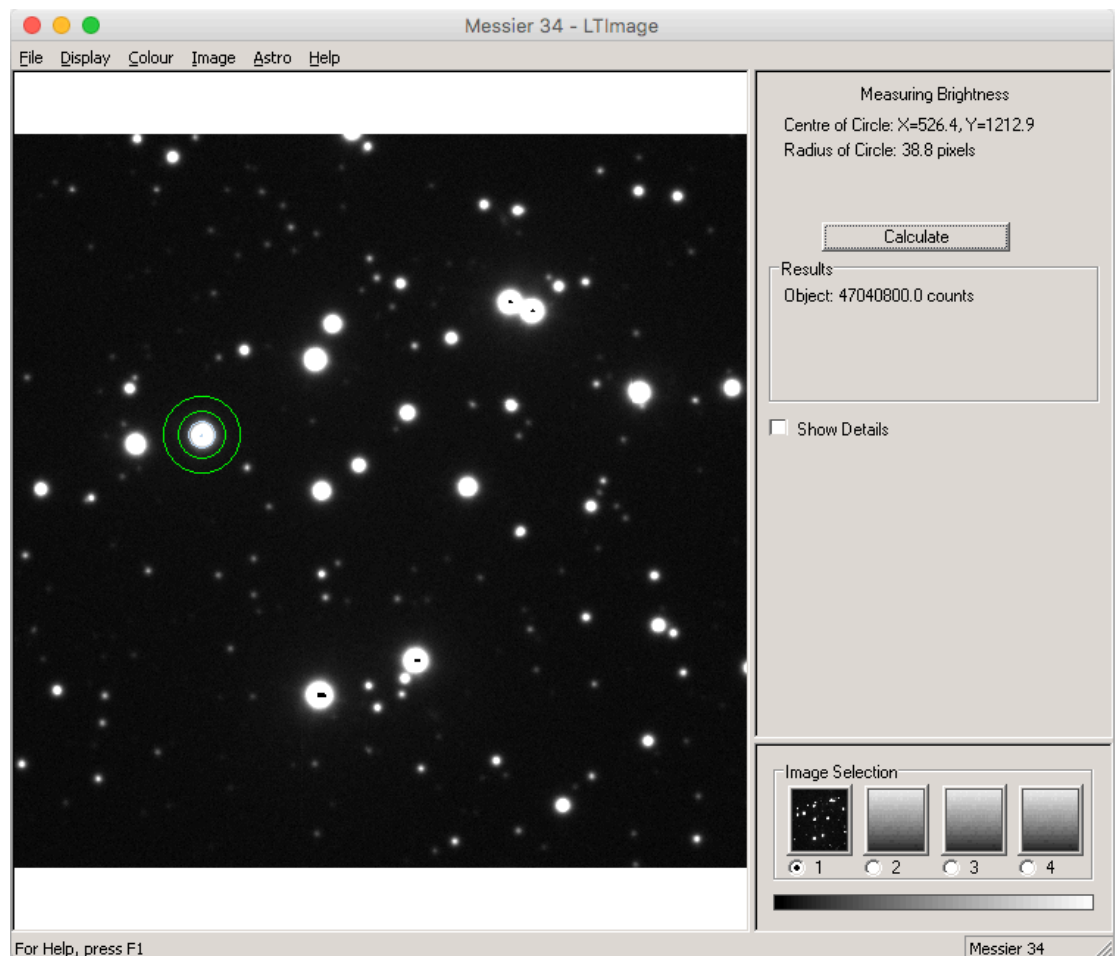
If your circle doesn't quite contain all the pixels you wish to measure, you can repeat the process by clicking, holding and dragging once again. Alternatively you can use the zoom function by selecting 'Display' from the menu at the top of the window and selecting 'zoom+' to zoom in and 'zoom-' to zoom out. This may make it easier for you then to capture the exact part of the image within the measuring circle.



3. Obtain Your Results

Once you are satisfied that you have encircled the correct area you will see the co-ordinates of the circle and the size of the circle's radius (in pixels) on the right hand side of the LT Image window.

Below these pieces of information is a 'Calculate' button, and it is this that we now click to obtain the brightness of pixels within our circle. This is often a very quick process but if your circle is quite large, LT Image may take a little time to perform this calculation.



This provides an answer in counts, which is the number of photons that have hit the CCD during the exposure time of the image. Therefore dividing this number by the exposure time (in seconds) will provide the flux of the object, which can then be converted into magnitude.

By clicking the 'Show Details' check box we can see the breakdown of the calculation, i.e. total counts inside the yellow circle, average counts per pixel in the sky rings and the size of the inner circle (in pixels).