

# Magnitude Estimation Tool

## Measures the magnitudes of stars in the current image.

The Magnitude Estimation Tool was designed to perform photometry in much the same way that visual observers make their observations. The tool is designed to walk the user through the process with a minimum of technical detail to worry about.

For more on using the Magnitude Estimation Tool, see [How to Use the Magnitude Estimation Tool](#) and also the AAVSO Data Format in the AIP4Win Help file.

The Magnitude Estimation Tool has four tabs. Each tab performs a specific function.

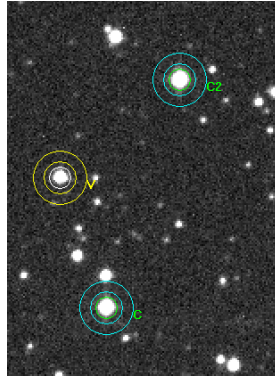
Variable Star	Comparison Star	Check Star (C2)
Selected: Yes	Selected: Yes	Selected: Yes
Location: (1014,660)	Location: (1040,733)	Location: (1081,605)
V ADUs: 43060.	C ADUs: 104262.	C2 ADUs: 126143.
V Std: <b>13.232</b>	C Ref: <input type="text" value="12.272"/>	C2 Std: <b>12.065</b>

Ready for the next image...

[4] BL\_Cam2-001CLR.fit

Save Report      Reset for New Image      Close

**Estimate Tab** This tab will be active when you use the mouse to select a comparison star, a variable star, and a check star in the image.



**Variable Star** Click on a **variable star** You will see the aperture and annulus rings appear around the star image.

**Comparison Star** When you **click on a comparison star**, you see the aperture and annulus rings appear around the star image, and you are prompted to enter the magnitude of the comparison star in the text box.

**C Mag** Enter the magnitude of the comparison star, then press the [Enter] key. The magnitude of the variable star will appear in the variable frame.

**Check Star (C2)** When you **click on a check star**, you see the aperture and annulus rings appear around the star image. You will then see its magnitude appear in this frame.

**Photometry Tab** After you have used the Estimate Tab, this tab displays technical information that has been determined by AIP4Win.

**(x,y)** = coordinates of the star

**Aper ADUs**= the total brightness in the aperture

**Aper Pixels**= the number of pixels in the aperture

**Annu ADU**= the total brightness of the sky in the annulus

**Annu Pixels**= the number of pixels in the annulus

**Max ADUS**= the highest value pixel in the star image

**Star ADUS**= the star brightness minus the sky brightness

**Raw Mag**= the raw instrumental magnitude of the star

**StdDev**= the statistical error of the magnitude estimate

**Time Tab** This tab acquires information needed to compute the Julian Day.

**Time Zone** Enter the time zone that your computer's clock uses. Ideally, your computer would keep Universal Time, but most people set their clocks to civil time.

**True-Log** If your computer's clock is in error, enter the number of seconds fast or slow. If the true time is greater than the clock time, this value will be positive.

**Heliocentric Correction** If you correct your estimates to Heliocentric Julian Day (HJD), enter the heliocentric correction in seconds.

**Image Date, Time, and Julian Day** This frame displays the date, time, and Julian Day derived

from the FITS header of your image.

**Settings Tab** Adjusts the internal parameters for your telescope, CCD, and sets the desired output format.

### Report Format

**AIP4Win Test Format** Outputs a detailed report to the DataLog using *AIP4Win's* standard text format.

**AAVSO Format** Outputs a report in a format compatible with the AAVSO's WebObs data submission software. Selecting this option causes the AAVSO Report Format form to become active.

### Photometry Radii

**Aperture** The radius of the star aperture in pixels.

**Annulus (inner)** The inner radius of the sky annulus.

**Annulus (outer)** The outer radius of the sky annulus.

### Instrumental Parameters

**Zero Point** The photometric zero point.

**Gain [e/ADU]** The conversion factor (gain) of your CCD camera.

**R.O. Noise [e rms]** The readout noise of your CCD camera.

**Dk Curr [e/pix/sec]** The dark current of your CCD camera.

**Default** Restores the default settings.

**Save** Saves the current settings.

**Recall** Restores previously saved settings.

**Note: Although the Settings Tab looks rather fierce, you can leave most of the values at their default settings. As you learn, you can refine the settings.**

**Save Report** Click this button to save your data to the DataLog.

**Reset for New Image** Click this button to process a new image. This clears all data and readies the tool for another star.

**Close** Closes this tool.