Aperture photometry revisited
Due date: Mar 10, 2021

    For this last assignment before the break, let's revisit aperture photometry of the H-χ open cluster that we did in IRAF for one of our last semester's assignments. You should have all the data you need already (if not, please grab them from the ObLab 1 webpage). This time we will use astropy's `photutils` package.

1. Recap what you did last semester, and why. Only address the aperture photometry part – you do not need to discuss image cosmetics.

2. Using `photutils`' source detection module (`photutils.detection`), detect a reasonable number of sources. Discuss what "reasonable" is and why. Depict detected sources and explain the used parameters.

3. Using `photutils`' aperture photometry module (`photutils.aperture`), perform photometry of the detected sources.

4. Extract coordinates, magnitudes and magnitude errors for the apertures and plot magnitude error vs. magnitude.

5. Compare your results to the results from last semester. If you have to redo parts of the extraction in IRAF, please do it – it will serve as a great segue to python photometry.

6. *Extra credit:* Repeat the process for all 5 exposures of H-χ and detect the variables in the field.