

Report for Lab <n>: <Title>

<Author>

<Date>

Introduction

Briefly describe the purpose of the lab—what you are supposed to learn—at a detail level that is sufficient for someone who is not familiar with the lab to know what the lab is about. One or two paragraphs is generally sufficient. Try to motivate the reader to continue reading.

Experimental Setup or Procedure

Describe the procedure you used to take the data, including any preparation needed such as looking up information about objects, etc. Mention the equipment used, observing and/or weather conditions if relevant to explain limitations in the results. Do not repeat the text of the lab instructions—use your own words, but also do not assume that the reader has read the lab instructions. Your report should be a stand-alone report.

Describe or Discuss the Data

Mention such things as number of frames (images) taken, camera temperature, numbers written down during data taking and what they mean. If relevant, include an image or two, WITH ANNOTATION, to show the reader what they should be looking for in the image.

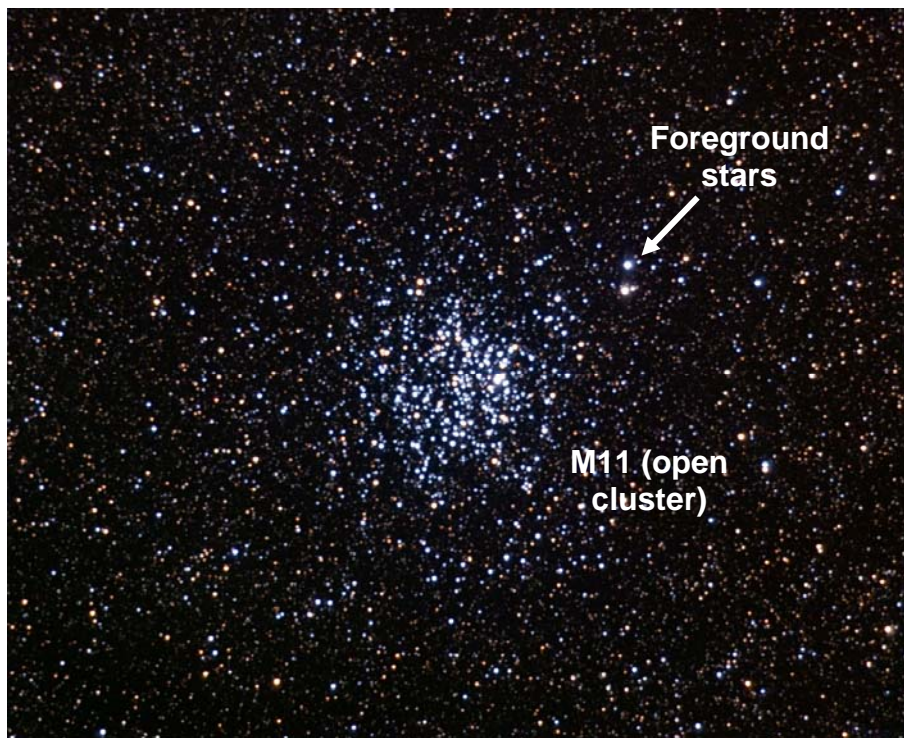


Figure 1: Image of Messier 11, the “wild duck” cluster, taken 2005 Sept. 21. Note the brighter stars to the right, which are not part of the cluster.

When giving measurements and numbers you wrote down during your observations, use tables for clarity where possible. Label your tables or list of measurements so that the reader knows what they are. Refer to them in the text. Do not just give a figure or table with no mention in the text.

Analysis

Describe what you did to calibrate and analyze the data, giving results of calculations, examples of results such as images, etc. Include steps if you had a multi-step calculation, so that I can find where errors occur—do not just write down a result. Include units and error analysis. Do not, however, do all of the mathematical manipulations explicitly if they are obvious. You can assume that the reader can do basic math. For example, if your analysis requires a coordinate conversion, DO write it as in the following example:

RA: 21h 37m 12.3s = 324.30125 degrees

but do NOT write:

RA: 21h 37m 12.3s = $(21+37/60+12.3/3600)*15 = 324.30125$ degrees

The first example shows me your coordinates and your conversion, which are enough for me (or any reader) to check that you did it right. The second, although correct, just wastes space.

Your analysis should show that you have a good understanding of the errors/uncertainties. If you have a quantitative measure of uncertainty, include it. We will discuss uncertainties in class.

Conclusions

Describe what you learned from your measurements and analysis. Discuss where things might have gone wrong, and what might have been done differently, if problems occur. Do NOT say things like—my answer is nonsense, so I must have made a mistake somewhere. If that is the case, FIND the mistake and fix it. I want a report of true results, not mistaken ones.