

ASTR21200

Observational Techniques in Astrophysics

Lecture-6

Bradford Benson

Lab-1: CCDs and Astronomical Images

- Lab-1 Report:
 - Due Tuesday Apr-22 at 5pm
 - For your new object, if you havent already, you want to make sure you schedule your observations by end of class today.
- Homework-3 posted on Canvas:
 - Due Tuesday Apr-29 at 5pm

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| Schedule Spring 2025 | | | | | |
| bradfordbenson edited this page 2 minutes ago · 22 revisions | | | | | |
| Week | Date | Topic | Lecture | Homework / Lab | Tutorial |
| 1 | Mar-25 | Intro to Astro Observing | Lect-1 | HW-1, Due Apr-1 | Python-1: Visibility |
| | Mar-27 | Practical Observing | Lect-2 | | |
| 2 | Apr-1 | CCDs and Astronomical Images | Lect-3 | HW-2, Due Apr-8 | Python-2: CCD Images |
| | Apr-3 | Intro to Stone Edge | Lect-4 | | Python-3: Astropy Fits |
| 3 | Apr-8 | Intro to Labs and Lab1 | Lect-5 | Lab-1, Due Apr-22 | SEO Cheat Sheet |
| | Apr-10 | (Analysis and Help/Hack Session) | | | Python-4: RGB Images |
| 4 | Apr-15 | Statistics | [Lect-6] | HW-3, Due Apr-29 | Python-5: Gaussian Fits |
| | Apr-17 | (Analysis and Help/Hack Session) | | | |
| 5 | Apr-22 | Intro to Lab2 | | [Lab-2, Due May-6] | |
| | Apr-24 | (Analysis and Help/Hack Session) | [Lect-7] | | |
| 6 | Apr-29 | (Analysis and Help/Hack Session) | | | |
| | May-1 | (Analysis and Help/Hack Session) | | | |
| 7 | May-6 | Intro to Lab 3, Project Ideas | [Lect-8] | Lab-3, Due May-22 | |
| | May-8 | (Analysis and Help/Hack Session) | | | |

Lab-1: Lab Report

- Lab-1 instructions include guidance about what format we want for the Lab Report.
 - Expecting the first report to be in Jupyter notebook form, with outline mirroring the Lab instructions (i.e., Intro, Data/Observations, Data Analysis, Future Work) (similar to a paper)
- ***Each person should submit their own Lab report!***
 - Common analyses / code / images can be used by the lab group, but each individual should write their own lab report, with descriptions and text of their own (note the name of your lab partners)

5 Lab Report

Prepare a *jupyter* notebook that documents your entire analysis for the lab. Make sure to explain your steps and conclusions; imagine writing a tutorial for another astronomy student, who is not taking the class. Use *markdown* boxes (which can also parse \LaTeX). Note that you can also include figures (i.e., in png, jpg, etc. form) that are produced outside of the notebook (e.g. with ds9).

The explanations in the *jupyter* notebook will be what we read, but we might look at your code if we think you did something wrong. Make sure that the report is logical; each section should have a short introduction, then code with results and plots, then a conclusion. Make sure the section numbering follows this manual (e.g., Introduction, Data, Data Analysis, Conclusions). Once your notebook is finished, make sure to restart it and re-run all cells. Then save the notebook in pdf format, e.g., through the print menu.

1 Lab Report 2

1.0.0.1 Jason Wu, with Elena Jochum, Dillion Bass, and Joseph Yeung

In the 1929, Edwin Hubble laid the groundwork for modern cosmology by observationally confirm the notion of an expanding universe, a theory implicitly suggested by Einstein's theory of General Relativity. This discovery was an