

ASTR 224: Astronomy and Astrophysics Lab

Instructor: Cash Hauptmann
Email: chauptmann2@huskers.unl.edu

Office: Jorgensen Hall, 253

CLASS

Louise Pound Hall, 209
Tuesdays, 6:30–9:20 PM

REQUIRED TEXTBOOK

[Openstax Astronomy](#) is a free textbook.
Other reading assignments will be put on
Canvas.

OFFICE HOURS

Tuesdays, 1:30–2:30 PM
or scheduled times by appointment.

Learning Goals:

- Gain a fundamental understanding of basic astronomy concepts that can be applied in the future.
- Become a life-long learner and participator in astronomy
- Obtain a greater understanding of the scientific method, specifically in a non-laboratory science.
- Improve scientific literacy and be able to think critically about the accuracy and claims of new scientific discoveries presented in the press.
- Appreciate the intricate relationship of astronomy and culture around the world in history and in the present.
- Understand how astronomical objects move relative to one another.

Learning Objectives

By the end of this course,

- Students will be able to find stars, planets, and constellations in the sky with the aid of maps.
- Students will be able to engage in astronomy citizen science activities.
- Students will be able to set up, aim, and successfully find an astronomical target with a telescope.
- Students will participate in citizen science and be able to explain the reason why citizen science exists.

Long Term Project

You will choose an astronomical target that you will observe for the entire semester. The goal of this project is to gain an understanding of how the motion of the sky works on the timescale of weeks to months. You will make a digital poster and present it to the class during the last lab of the year. More details of this project will be provided during the second lab of the term.

Grades

Your final grade will be determined by:

- 10% Community Engagement
- 75% Labs
- 15% Long-term Project

Grades for individual assignments will be posted in the Canvas gradebook. It is good practice to check the gradebook regularly to monitor your progress and to verify accuracy. Be aware that Canvas may NOT accurately compute final grades. Your instructor will compute your final grades at the end of the term. If curious, you can use the weighted percentages above.

Note: Failure to complete fewer than 12 labs will result in an automatic failing grade.

Safety and Conduct Guidelines

Nighttime Observations and Safety Precautions

During this course, we will conduct nighttime astronomical observations at the Student Observatory. Given the nocturnal nature of our activities, it is important that we observe certain precautions to ensure everyone's safety. To this end, there will always be a *minimum of two individuals* present at the observatory during our sessions.

To ensure your safety after class, arrange your transportation in advance. If you have any safety concerns, feel free to reach out to the Teaching Assistant (TA) instructor. Additionally, you may consider coordinating with your fellow classmates to walk home together.

Laser Usage and Safety Protocols

Laser devices will be utilized as part of our coursework. Please be advised that under no circumstances should you direct a laser beam into anyone's eyes. Moreover, do not point lasers at aircraft, as this constitutes illegal behavior and is often prosecuted by the Federal Aviation Administration (FAA).

Observations at the Student Observatory

Our observational activities will take place at the Student Observatory, situated on the 4th floor of the Stadium Garage next to Memorial Stadium. To prioritize safety and considerate conduct, it is imperative to remain vigilant of your surroundings. Any acts of carelessness, roughhousing, or deliberate dropping of objects from the parking garage are strictly prohibited. *Such dangerous behavior will not be tolerated.* Instances of inappropriate conduct can lead to severe consequences, including expulsion from the laboratory and potential academic repercussions.

Additionally, check the weather beforehand and *dress accordingly*. Cloud coverage will be the determining factor as to whether a lab takes place indoors or outside at the observatory.

Course Policies and Procedures

University course policies and procedures can be found in the link below. It is the responsibility of students to read and understand these procedures. <https://go.unl.edu/coursepolicies>