

Rhodes College
Department of Physics
Physics 101L Astronomy Laboratory

General Instructions

The laboratory course is designed to complement the lecture course, Physics 101; the topics covered and the schedule will hopefully enhance your classroom study. In addition, the laboratory allows you to learn something of the night sky and to gain practical experience in using methods and data employed by astronomers.

The necessary materials are available in the Physics Department office, Room 213, Rhodes Tower, at a cost of \$25.00. They must be obtained before the first lab session. **Each week, bring the materials, a calculator and your textbook to laboratory session.** You are responsible for reading the experiments prior to the laboratory period.

The Laboratory meets from 7 pm - 10 pm on the assigned evening in Room 626 of Rhodes Tower. Attendance is required (see below). It is not possible to meet with a Section other than that in which you are enrolled.

The laboratory activities will include (weather permitting) up to four group observing sessions and nine indoor exercises. The vagaries of weather do not allow a definite schedule to be set, but the **order** of activities is as follows:

Lab	Session 1	Math Tools for Astronomy
Lab	Session 2	Celestial Motion and the Celestial Globe
Lab	Session 3	Simulation of Celestial Motion, the Zodiac and Exploration

Any of the succeeding sessions may be preempted by an

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Lab	Session 4	Lenses and Telescopes
Lab	Session 5	The Revolution of Jupiter's Moons (CLEA)
Lab	Session 6	Measuring Wavelengths
Lab	Session 7	The Classification of Stellar Spectra (CLEA)

Lab Session 8 Photoelectric Photometry of the Pleiades (CLEA)

Lab Session 9 The Hubble Redshift Distance Relation (CLEA)

The observing sessions will initially concentrate on identification of the brightest visible stars and the patterns of the constellations. We will then use telescopes (both small and large) to observe planets, the moon, star clusters, multiple star systems, nebulae and galaxies. Material on the observation programs follows the tab in this notebook. Note that there is one observing program (F-11, S-9) for which you are responsible for scheduling--using the end of the group observing sessions, or on other clear nights during the term.

All exercises and observing reports must be completed by the end of the laboratory session in which they were carried out. **Only absences related to official college functions are allowed without penalty, and these only by prior approval.** Other absences will result in a penalty of one letter grade on that week's work--which in any case, **must** be completed and handed in **prior** to the next week's session. Work will **not** be accepted past this deadline. It is the student's responsibility to attempt to arrange a makeup session which fits their lab assistant's schedule within this allotted time. Of course, it is not possible to schedule observing sessions as makeups, so a missed observing session will result in a zero.

Your work is to be carried out with an assigned lab partner; work on an exercise should be shared equally. You are free to consult with your partner on questions and solutions, and it is understood that the pledging of your work may include that consultation.

Laboratory session reports consist of your turning in the pages from the laboratory manual or experiment writeup, with the data recorded and questions answered. If you are asked to discuss errors or other factors, you may do so on an attached sheet.

Observing reports should include: a summary of the weather conditions and sky transparency, including changes through the evening; an assessment of the limiting stellar magnitude visible, when possible; a list of stars or constellations identified, when appropriate; and a brief description of objects viewed, with appropriate sketches of positions, features, etc, as requested.

Grades for the course will be the average of those received on the exercises and observing reports; missing work will receive a "0" score in computing the average--so don't let this happen! There will be no final exam.

A final note: when observing sessions are likely, and the weather is cold, DRESS WARMLY!

