ASTR 1010L & 1020L
INTRODUCTION TO ASTRONOMY LAB
Fall 2013

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Web Page: www.physast.uga.edu/~loris follow the link to ASTR1010L & 1020L. IT IS IMPERATIVE THAT YOU MONITOR THIS WEB PAGE AT LEAST ON A WEEKLY BASIS. Important announcements for the course will be posted there throughout the semester.
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Class: Tuesday 8:00 – 10:45 PM. When we meet in the classroom, the room will be Physics 202; when we use the telescopes outside, we will meet at the old poultry facility near the end of College Station Rd. (see accompanying map).
Office Hours: M 3:30 – 5:00 PM or by appointment


COURSE OBJECTIVES

The purpose of this course is to introduce you to the night sky and to telescopes for making simple astronomical observations. These courses are de-coupled from the ASTR 1010 and ASTR 1020 lecture courses in the sense that (1) they don’t have to be taken the same semester as the corresponding lecture course and (2) they don’t necessarily cover the subject matter of the lecture course. The reason for not covering the subject matter of the corresponding lecture course is that it is too difficult to observe most of the non-stellar objects discussed in ASTR 1020 using our small telescopes at the not-very-dark-sky sites we use.
The basic aim of the course is to get the student to complete 4 simple observational labs, 3 of which involve telescopic observations. This will give the students an introduction to the night sky and to using small telescopes. Because we are at the mercy of the weather (you cannot make visual telescopic observations of the night sky if it’s cloudy or raining), we also have 4 written labs that will be worked on during cloudy or rainy nights, 2 of which can be turned in for credit (see below for details).

METHODOLOGY

The first 6 weeks of the course are basically training sessions to learn about the night sky and how to use the telescopes. The first three class meetings will be in room 202 in the Physics Building; afterwards, class will meet at the old poultry facility (see accompanying map) – if the weather permits. If the weather is cloudy, then we will meet in room 202 for lectures and working on the indoor labs.

As the semester progresses, you will learn how to identify celestial objects (stars, constellations, planets) visually, and how to make simple telescopic observations of these and other celestial objects. You must attend the first three lecture classes and then go out to the poultry facility on those Tuesday evenings when the sky is clear or mostly clear. If the sky is completely overcast and/or it is raining, then we will meet in room 202 and work on concepts or do some of the indoor labs. I will post on my web page where we will meet that evening (i.e., room 202 or the poultry facility) by 7 PM. During the training phase, the objectives are (1) to become familiar with the night sky, (2) to learn how the various objects move throughout the night and from month to month in the night sky, (3) to learn to use the telescopes to make celestial observations, and (4) learn the tasks required for the easiest observing lab (Constellations and the Celestial Sphere), which does not require the telescope. I expect everyone to have done the Constellations and Celestial Sphere lab before November 5th.

The idea for the first six weeks is to learn how to use the equipment, how to find celestial objects in the sky, and how to make simple descriptions and/or drawings of them. We may even schedule extra sessions on Wednesday or Thursday nights if the weather is particularly bad or we feel that students need extra practice time. The bottom line is that, by the end of week six, you will have learned your way around the night sky and picked up enough telescopic observational techniques for you to complete the telescopic lab assignments during the last 9 weeks of the semester.

Beginning the week of September 29th, you will work on the outdoor lab assignments described below. There are 6 outdoor labs that you can choose from besides the Constellations and Celestial Sphere Lab - which is mandatory; you need to do 3 of the other 6 listed below. Your grade will be based on how well you do the 4 outdoor observing labs, the 2 in-class written labs, and a lab final exam. From these assignments, I will determine a numerical grade for you and then assign a letter grade. The grading
system is explained below. If you don’t finish any labs to the TA’s satisfaction, then you will get partial or even no credit for that lab. To complete an outdoor lab assignment, you will make an appointment by e-mail with one of the TA’s during the testing phase of the course and attempt to carry out the tasks outlined on the Web pages for the given lab assignment (a list of the labs is shown below and also on the website for this course), while the TA is watching. As you will see below, most of the outdoor labs involve finding objects with the telescope so you will have to prove to the TA that you can do this by actually pointing the telescope at the object and finding the object in question. The Phases of Venus, Find Uranus and/or Neptune, and Find an Asteroid lab involve making some observations over several nights and turning in a brief write-up. The Lunar Mountains lab can be done in one night, but it also involves turning in written work. In addition to the telescopic labs, there are 4 written labs that can be done indoors in class in case the weather in the fall does not allow us to make telescopic observations on a given night. The written indoor labs will be handed out in class (room 202 Physics) and picked up at the end of the class – students will not be allowed to take the indoor labs home with them.

Given the likelihood of bad weather in the late fall in Athens, it will not be trivial to finish at least 3 telescopic lab assignments during the last 9 weeks of the semester. The Constellations and Celestial Sphere lab only requires naked-eye observations. If you wait till the last few days and those days are cloudy, then whatever assignments you’ve done up to that point will be included in your grade (see below for how the assignments are factored into your final grade). Make sure you are clear on this point: IT IS YOUR RESPONSIBILITY TO SCHEDULE A TIME WITH ONE OF THE TA’s – WHEN THE WEATHER WILL BE CLEAR – SO THAT YOU CAN COMPLETE THE LAB ASSIGNMENTS IN QUESTION. If you wait till the very end to do this and time runs out and the weather does not cooperate, then that is unfortunate; but a spell of bad weather at the end of the semester will not be accepted as a valid excuse for not having turned in sufficient labs. If you get sick, or have another documented emergency that prevents you from completing the number of labs you wished to complete, then you will receive a grade of Incomplete and will have to schedule a session with the TA’s or Prof. Magnani during the subsequent three semesters to change the Incomplete to a letter grade. A grade of Incomplete that is not remedied during the following three semesters automatically becomes a grade of F after the end of the third semester.

If the weather is so bad throughout the Fall semester that most of the class cannot finish 4 outdoor labs, then we will lower the number of outdoor labs to be factored into the final grade from 4 to 3 and raise the number of indoor labs to be factored into the final grade from 2 to 3. This decision (if made) will be announced before Thanksgiving Break.

GRADING

The grading system consists of completing satisfactorily (as judged by the TA’s) a
The number of lab assignments. There are a total of 7 outdoor lab assignments to choose from (see below), of which you can do a maximum of 4 that will count towards your grade. Everyone must do the Constellations and Celestial Sphere lab as one of the 4 outdoor labs. In addition to the 4 required telescopic or outdoor labs, you must also complete 2 written indoor labs. The bottom line is that you must turn in a total of 6 labs, a maximum of 2 of which can be indoor labs (however, see the systemic bad weather exception described above). Each successfully completed lab assignment will be graded on a maximum scale of 13 points. The actual number of points that you get on a given lab is at the discretion of the TA’s or Prof. Magnani. If you do an unsatisfactory job on the lab, as judged by the TA’s or Prof. Magnani, you can get as little as 0 points on a given lab and then you will have to try it again (see below). If you get less points on a lab than you would like, you can always try the lab again. The highest number of points you get for a given lab will be your final score for that lab. For example, let’s say I do the Double Star Hunt three times and I get scores of 11, 9, and 10 points, in that order. What will get recorded for my Double Star Hunt lab is an 11. For the observing labs where you point the telescope and have to find a given number of objects (e.g., the Double Star Hunt, Deep Sky Hunt), the number of points you get for finding less than the ideal number of objects is spelled out in the individual lab write-up on the Web pages.

As stated above, the maximum number of labs you will be scored on is 6; if you do 6 labs and get a maximum of 13 on each, you will have a maximum total of 78 points. **A Lab Final Exam (given the last two weeks of class – meets at the regular class time in room 202 Physics) will contribute a maximum of 22 points to your final score.** The two components (Lab Assignments and Lab Final Exam) thus add up to a maximum of 100 points. Once your final score is calculated, the letter grade you receive will be based on the following scale: A is for a score of 93.00 or above, A- is for the range 90.00 – 92.99, B+ is for 87.00 – 89.99, B is for 83.00 – 86.99, B- is for 80.00 – 82.99, C+ is for 77.00 – 79.99, C is for 73.00 – 76.99, C- is for 65.00 – 72.99, D is for 50.00 – 64.99, and F is for any average below 50.00.

If you attempt a lab and it is deemed unsatisfactory by one of the TA’s (for example, you look for three deep sky objects but you can’t find any), then you can re-try the lab as many times as you want until it is deemed satisfactory. However, for each re-try, you will have to make a new appointment with the TA. The labs can be done in any order (though the labs that are judged to be difficult (see below) should probably be attempted last after you’ve gotten some experience using the telescopes).

**The absolute last day to complete a lab assignment will Tuesday, December 3rd, 2013. No appointments with the TA’s will be scheduled after that date.**

The laboratory assignments, and my assessment for how difficult they are, are listed below:

- **Outdoor (observational) Labs:**
  1. Constellations and the Celestial Sphere (Mandatory) - Easy
  2. Double Star Hunt - Easy
3. Deep Sky Hunt – Medium
4. Lunar Mountains Lab - Easy
5. The phases of Venus – Medium
6. Find Uranus and/or Neptune – Very Difficult
7. Find an Asteroid Lab – Very Difficult

Indoor (written) Labs
1. The Celestial Sphere and Star Charts
2. Kepler’s 3 Laws
3. Using Skyview Virtual Observatory
4. The Classification of Stellar Spectra

You can follow the links on the course main web page to read the write-ups for these labs.

Note that we will be observing outside in cold weather for a good part of the semester. Make sure you have warm clothing. A hat is probably a very good idea, and you should bring a small flashlight, if you have one. During the early part of the Fall semester, when it is warm, you might want to spray yourself with insect repellant to avoid any unpleasant bites.

STUDENT RESPONSIBILITIES

Please make a reasonable attempt to arrive on time. If you must leave earlier than the scheduled end of class, please try to use the upper exits at the top of the lecture hall. Class disruptions or distracting behavior will not be tolerated.

Ask for clarification on anything you find unclear, ambiguous, or unspecified in this syllabus. This includes both course policies and astronomical topics.

Know the rules concerning withdrawals and incompletes, published in the UGA Undergraduate Bulletin. Note that I will NOT withdraw you from the course for excessive absences. Note also that after the midpoint of the semester, a withdrawal is assigned a grade of WF, except in those cases in which the student is doing satisfactory work and the withdrawal is recommended by the Office of Student Affairs because of emergency or health reasons.

ACADEMIC HONESTY

All students are responsible for knowing, understanding, and abiding by the academic honesty policy of the University of Georgia, which can be found online at http://honesty.uga.edu. If you have any questions about this policy and how it pertains to your work in this course, please ask me for clarification.