

ASTR 1010L & ASTR 1020L
INTRODUCTION TO ASTRONOMY LAB
FALL 2009

Professor: Loris Magnani Office: Physics 238 Phone: 542-2876

E-Mail: loris@physast.uga.edu

Teaching Assistants: Billy Potter and Allison Smith

E-mail: wmpotter@uga.edu

Class: Tuesday 8:00 – 10:45 PM. When we meet in class, the room will be Physics 202; when we use the telescopes outside, we will meet on the roof of the Physics Building (use stairway next to room 226).

Office Hours: By appointment: e-mail or call Prof. Magnani (see above)

Text: *The Cambridge Star Atlas* – 3rd Edition – Wil Tirion. Also, notes will be posted on the Web page.

Web Page: www.physast.uga.edu/~loris follow link to ASTR 1010L & ASTR 1020L pages

IT IS IMPERATIVE THAT YOU MONITOR THE WEB PAGE FOR THIS COURSE AT LEAST ON A WEEKLY BASIS. IMPORTANT ANNOUNCEMENTS FOR THE COURSE WILL BE POSTED THERE THROUGHOUT THE SEMESTER.

Objective: 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 items discussed in ASTR 1020 using our small telescopes at a non-dark sky site like the roof of the Physics Building.

Methodology: The first nine weeks of the course are basically training sessions to learn about the night sky and how to use the telescopes. The first two class meetings will be in room 202 in the Physics Building; afterwards, class will meet on the roof of the Physics Building (use stairway next to room 226 – it is the only one that leads to the

roof), if the weather permits. 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 two lecture classes and then come on those Tuesday evenings when the sky is clear or mostly clear. Obviously, if the sky is completely overcast and/or it is raining, then there will be no lab meeting that evening. My web page will have a log of which nights were considered clear enough for class to meet. During the training phase, we do not take attendance, **HOWEVER, IT IS YOUR RESPONSIBILITY TO BECOME FAMILIAR WITH THE NIGHT SKY AND THE EQUIPMENT.** If you don't show up and learn where things are in the sky and how to observe them with our equipment, you will not be able to complete the lab exercises during the last 6 weeks of class.

The idea for the first nine 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 – **NO MATTER HOW MUCH OR HOW LITTLE TIME THAT MIGHT TAKE.** You might be able to pick up all you need to know in only a few sessions, or you might need all of the sessions. 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 nine, you will have learned your way around the night sky and picked up enough telescopic observational techniques for you to complete the lab assignments during the last 6 weeks of the semester.

Beginning the week of October 18th, you will begin to carry out four of the lab assignments described below. This is known as the “testing phase” of the course. Your grade will be partially based on how many labs you actually finish (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 a 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), while the TA is watching. As you will see below, most of the 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 Mass of Jupiter Lab, Find the Planet Uranus, and the Find an Asteroid lab involve making some observations over several nights and turning in a brief write-up.

Given the likelihood of bad weather in the fall and winter in Athens, it will not be trivial to finish the maximum of 4 lab assignments during the last 6 weeks of the semester. 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 bad weather will not be accepted as a valid excuse. If you get sick, or have another documented emergency that prevents 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.

Grading: The grading system consists of completing satisfactorily (as judged by the TA's) a number of lab assignments. There are a total of 7 lab assignments to choose from (see below), of which you can do a maximum of 4 that will count towards your grade. Each successfully completed lab assignment will be graded on a maximum scale of 20 points. You will get approximately 14 points if you are judged to have done a satisfactory job, approximately 17 points if you did a good job, and the full 20 points if you did an excellent job. The actual number of points that you get on a given lab is at the discretion of the TA 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 12, 18, and 17 points, in that order. What will get recorded for my Double Star Hunt Lab is an 18. 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 4; if you do 4 labs and get a maximum of 20 on each, you will have a maximum total of 80 points. **A Lab Final Exam (given the last two weeks of class – meet at the regular class time in room 202 Physics) will contribute a maximum of 20 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 70.00 – 72.99, D is for 60.00 – 69.99, and F is for any average below 60.00.

If you attempt a lab and it is deemed unsatisfactory by one of the TA's (for example, you look for three globular clusters 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). All the labs with the exception of the Mass of Jupiter, Find the Planet Uranus, and the Find an Asteroid labs can be done in one evening.

The absolute last day to complete a lab assignment will be Tuesday, December 8th, 2009. 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:

Constellations and the Celestial Sphere - Easy

Double Star Hunt - Easy

Deep Sky Hunt - Medium

Lunar Mountains Lab - Easy

Mass of Jupiter Lab – Difficult

Find the Planet Uranus - Difficult

Find an Asteroid Lab - Difficult

You can follow the links on the course main web page to read the writeups 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.