Prerequisites: None — a relatively non-mathematical introduction to the astronomy of the Solar System. This course satisfies three hours of the science area requirement.

Instructor: Craig Sarazin; office: 238 Astronomy Building; phone: 924-4903; office hours: MWF 1:30-2:30 pm; E-mail: sarazin@virginia.edu. There is a WWW homepage for this class, which is http://www.astro.virginia.edu/class/sarazin/ast1210/ The UVaCollab site is "13F ASTR 1210-002 (CGAS)".

Graduate Teaching Assistant: Lauren Bittle; office: 267 Astronomy Building; phone: 924-0686; E-mail: leb2nm@virginia.edu.


You will also need to purchase an i>clicker, and access to Mastering Astronomy (unless it came with your text).

Grading:

<table>
<thead>
<tr>
<th>Grading Category</th>
<th>Percent of Grade</th>
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<tbody>
<tr>
<td>Two Hour-Long Tests</td>
<td>18% each</td>
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<tr>
<td>Final Exam</td>
<td>34%</td>
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<tr>
<td>Weekly Homeworks (Mastering Astronomy)</td>
<td>10%</td>
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<tr>
<td>In-Class (i&gt;clicker) Exercises</td>
<td>10%</td>
</tr>
<tr>
<td>Constellation Lab</td>
<td>5%</td>
</tr>
<tr>
<td>Telescope Lab</td>
<td>5%</td>
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</table>

If you do either the Constellation Lab or the Telescope Lab before the fall break (before Saturday, October 12), you will receive extra credit (6% of your final grade, rather than 5%). If you do both labs early, you will get 2% extra credit.

Missed Tests: All tests must be taken at the scheduled time unless you submit a written excuse from your parent or doctor explaining the necessity of your absence. The excuse must be submitted within 10 days after the test. Late tests taken without excuse count for 1/2 of the normal credit based on the score.

Course Outline

I. Introduction and the Night Sky [pp. xxiv–xxvii, Chapt. 1]

II. Motions of the Moon and Eclipses [Chapt. 2]

III. Early Astronomy and the Motions of the Planets [Chapts. 3, S1]

IV. Gravity and Motion [Chapt. 4]

V. Light and Telescopes [Chapts. 5, 6]

VI. The Sun [Chapt. 14]

VII. Overview of the Solar System [Chapt. 7]

VIII. Origin the Solar System [Chapt. 8]

IX. Exoplanets [Chapt. 13]

X. The Earth and Moon [Chapts. 9, 10]

XI. The Terrestrial Planets (Mercury, Venus, Earth, Mars) [Chapts. 9, 10]

XII. The Jovian Planets (Jupiter, Saturn, Uranus, Neptune) [Chapt. 11]

XIII. Comets, Meteors, and Asteroids (the sky is falling) [Chapt. 12]

XIV. The Search for Extraterrestrial Life [Chapt. 24]
In-Class (>clicker) Exercises

During most classes, I will ask you to respond to a number of questions using your >clicker. I will use your responses to gauge the overall comprehension of the subject, to clear up any misunderstandings, and to steer the discussion in the direction that most interests students. You will receive 2 points for each correct answer and 1 point for each incorrect answer. Once you have earned 100 points, you will not earn any additional credit. I do not allow students to make up missed questions.

You must register your >clicker. Go to the website http://www.iclicker.com/register-an-iclicker. Answer No. Give your official first name (the one in SIS), and your last name. Your “Student ID” is actually your U.Va. Computing ID (e.g., cls7i for me). Enter your >clicker ID. This is the 8-digit hexadecimal number near the bottom of the back of the >clicker below the bar code.

Homework Problems (Mastering Astronomy)

I will assign weekly problems sets using the Mastering Astronomy software system which is associated with your textbook. Unless you registered for this last spring or bought a new textbook which includes access, you will need to purchase access and register at http://www.masteringastronomy.com. Note that it is cheaper to purchase this from the website than the U.Va. bookstore.

Within Mastering Astronomy, this class is ASTR1210Sarazin2013Fall. The object of the homework is to reinforce the material from class immediately, and to make sure that you stay up-to-date in reading the text. The weekly homework assignments will be available on each Monday, and must be done by the following Monday. They must be done on time, or they will not count. They should take approximate 1 1/2 hours.

The Mastering Astronomy website also has online tutorials, practice quizzes, etc., which you may find useful, and provides online access to your textbook.

Required Lab Exercises

You are required to do two labs for credit for this course. Both of the labs occur at night, and both require that you sign up for an observing session in advance. You should do the labs as early as possible in the semester. Both labs require clear weather to do, and if you wait until the end of the semester, you may be clouded out and lose credit for the lab. On the other hand, if you do either of the labs before the fall break (before Saturday, October 12), I will give you 6% credit for lab rather than 5%. If you do both labs early, you will get extra credit for both. One of the required labs is the Constellation Lab (see below). The first date for doing this lab is Monday, September 2. The last date for the Constellation Lab is Thursday, December 5. The other required lab is the Telescope Lab. The first date for doing this lab is Monday, September 9. The last date for doing the Telescope Lab is Thursday, December 5.

Constellation Lab

<table>
<thead>
<tr>
<th>Nights</th>
<th>Times</th>
<th>Begins</th>
<th>Ends</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constellation Lab</td>
<td>Mon – Thurs</td>
<td>9 &amp; 10 pm</td>
<td>02 September</td>
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</table>

The Constellation Lab is a required exercise for the course. The lab requires one evening to do. This lab consists of learning the names and locations of the brightest stars and constellations, completing a worksheet, and passing a short quiz. You should complete the Constellation Lab as early as possible in the semester. If you wait until the end of the semester, you run the risk of being clouded out. Also, if you do the lab before the fall break (before Saturday, October 12), you will receive 6% credit for lab rather than 5%. You must sign up for an observing session in advance. See the Lab Information page for more details.

The Constellation Lab is done at the Student Observatory, which is an enclosed outdoor area just west of the Astronomy Building. (See the attached maps.)
### Telescope Lab

<table>
<thead>
<tr>
<th>Nights</th>
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<th>Begins</th>
<th>Ends</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telescope Observing</td>
<td>Mon. &amp; Thurs.</td>
<td>9 – 11 pm</td>
<td>09 September</td>
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</table>

The Telescope Lab is a required exercise for the course. The lab requires one evening to do. You should complete the Telescope Lab as early as possible in the semester. If you wait until the end of the semester, you run the risk of being clouded out. Also, if you do the lab before fall break (before Saturday, October 12), you will receive 6% credit for lab rather than 5%. You must sign up for an observing session in advance. See the Lab Information page for more details.

Students wanting to do the lab will meet a graduate T.A. at the **sign in front of the Astronomy Building** on McCormick Road on a Monday or Thursday night at 9 pm (EST or EDT). (See the attached maps.) Participants should bring cars if they have them to help with car-pooling to the Observatory. The T.A. at the lot will lead students to the Observatory. Students should leave in the car they rode up in, or wait for a ride with the T.A. when the lab is over at or before 11 pm.

During this lab, you will observe and sketch four objects through the 6-inch and 10-inch telescopes in the Observatory Doghouse and through the 26-inch telescope in the Observatory dome. The T.A.s operating the telescopes will point you to various objects over the course of the evening. In addition to giving you the magnification being used, they will identify the objects and their nature. Worksheets are available at McCormick Observatory during lab hours. Bring pens or pencils, a firm writing surface (e.g., clipboard), and a flashlight. Dress warmly. Once the sketches are taken, **obtain the telescope operator’s or T.A.’s signature and then turn completed lab sheets in to the any of the T.A.s at the Observatory.** Please note that flammable gas is stored at McCormick Observatory; therefore smoking is not allowed even outside while on Observatory grounds.

### Weather and the Night Labs

For obvious reasons, the two night labs (Telescope and Constellation labs) will only be held on clear nights. **If you are unsure as to whether the night lab will be open on a particular night, you can call the Night Lab Status Line after 6 pm at 924-7238. I very strongly recommend that you do these labs early in the semester.** It is often cloudy for several weeks at a time in the spring. If you put off either night lab until the last minute and it is cloudy, you will not be able to do the lab and you will lose the grade credit. **It is your responsibility to do the labs at the first available opportunity; bad weather before the deadline will not relieve you of this responsibility, and you will receive no credit if you do not do the labs.**

### Grading

The class grade will be assigned on a curve with the average grade being slightly below B. There will be two hour-long tests (which count for 18% of the credit), a final exam (which counts for 34% of the credit), in-class i>clicker exercises (which count for 10% of the credit), weekly homework assignments using Mastering Astronomy (which count for 10% of the credit), the Constellation Lab (which counts for 5% of the credit), and the Telescope lab (which counts for 5% of the credit).

### Attendance Policy

It is in your best interest to attend class regularly. The lecture treatment of topics will often differ from that in the text, and the tests will tend to follow the lectures more than the text. Class attendance will not be taken directly, and will not count as a factor in the grading. However, during most classes you will be asked to answer a number of questions using your i>clicker. Credit will only be given for answers completed during class. You **must** attend the scheduled tests and the final exam.

### Missed Tests

**All tests must be taken at the scheduled time** unless a written excuse from a doctor or your parent explaining the necessity of the absence is presented not more than 10 days after the test. Tests taken late without excuse count for 1/2 of the normal credit based on the score.
Honor System

All of the tests, exams, homeworks, and labs done for credit in this course must be your own work, even if you do not explicitly sign the pledge. Some discussion on the In-Class Exercises is allowed, but the answer should be your own. It is a honor violation to use another student’s i>clicker, or give your i>clicker to someone else to use.

Tests

The following is a tentative schedule for the tests:

- **Test # 1:** Wednesday, October 9, in class
- **Test # 2:** Wednesday, November 13, in class
- **Final Exam:** Wednesday, December 11, 9:00 am - noon

The final exam will be inclusive (it will cover the entire semester), although extra emphasis will be given to the material not covered on the first two hour tests. Each of the tests will be closed book (no books or notes or any other materials allowed). The questions will all be of the short answer, true–false, or multiple choice type. That is, there will not be any complicated mathematical problems or any essay questions.

Text and Class Notes

The only required text for the class is *The Cosmic Perspective*, 6th Edition, by Bennett, Donahue, Schneider and Voit, published by Pearson Higher Education, ISBN 0-321-63360-0, which is available at the University Bookstore and online. (This is the same text used for ASTR 1220 last semester.) The class lectures will often differ significantly from the text in order and in emphasis. Copies of my lecture notes will be available on the class website, http://www.astro.virginia.edu/class/sarazin/astr1210/

Maps

The first map shows the location of Clark 107 (the lecture hall), the Astronomy Building (my office) and the adjacent Student Observatory. The second map shows a detailed view of the area just west of the Astronomy Building, including the Constellation Lab area, and the meeting point for the Telescope Lab.