

· A105: STARS & GALAXIES · MR. LUBELL

OBSERVING THE NIGHT SKY

In astronomy, we spend a lot of time looking up and there's only so much of that we can do inside the classroom. So, to help you get more in touch with the kinds of things we talk about in class, please pick **any three** of the following activities. When you have completed all of your chosen activities, please **staple** your materials together and turn in the completed project on or before the due date of **June 13th**.

- ② **Visit the Kirkwood Observatory.** The astronomy department hosts open nights every clear Wednesday evening. Information on the location and times of the open nights can be found at:

<http://www.astro.indiana.edu/kirkwood.shtml>

Please choose an open night and complete the worksheet that you will find on the table by the door. Be sure to have it **initialed** by one of the astronomers working at the observatory.

- ② **Visit the Solar Telescope in Kirkwood.** Over the course of the term, a number of daytime demonstrations of the solar telescope will be scheduled. There will be a worksheet provided at the demonstration for you to fill out.
- ② **Attend a night sky viewing session on the Swain West Rooftop.** Over the course of the term, a number of evening sessions will be scheduled where you will be shown the sights of the current night sky. There will be a worksheet provided at the demonstration for you to fill out.
- ② **Design a stellar classification scheme.** The way astronomers classify stars has only been around for a relatively short period of time and it is by no means the *only* way to do it. For this project, you will be asked to consider the way stellar spectra look and develop your own scheme for classifying stars based on trends you observe. More specific instructions will be found here:

<http://www.astro.indiana.edu/~glubell/pages/spectra.html>

The sort of data you will be working with for this project is precisely the same as that which professional astronomers use, so if you are interested in the real experience, this is the activity for you. The materials you will be required to hand in will all be described on the webpage.

- ☉ **Track the constellations.** Twice a week for the rest of the term, observe the big dipper and two other constellations of your choice in the night sky. Go outside at the same time each night and draw a star chart that shows where the major stars of your chosen constellations live. Be sure to label the cardinal directions on the star chart, and indicate the time, date, and location of your observations. At least 12 observations are required to get full credit for this activity. To assist you, consider consulting a star chart like the ones in your text book or downloading a free one such as those found here:

<http://www.skymaps.com/downloads.html>

· A NOTE OF CAUTION

Most of these activities are weather-dependent. This project is being handed out early on in the course so you can begin work as soon as possible. In other words, **do not assume sessions/open houses you were planning on attending will occur!** If it is a particularly rainy summer, you will find yourself out of luck. Considering this, it would be wise to **go to the first session for any activity that is scheduled and clear.** As a guideline, clear = you being able to see objects. For the solar telescope, this means being able to *clearly* see the sun and for nighttime activities, you should be able to make out many stars.

GRADING OUTLINE

Your projects will be graded on a scale of 1-21. Each of the activities you choose will be worth 7 points, to be distributed based on the specific nature of each activity. In other words, failure to include required elements or incorrect/invalid responses will result in lost points. Failure to staple or complete all aspects of the project will, of course, also result in the deduction of points.