

Ast 350L: Assignment One. Due October 2, 2003

Objective:

- Determine the position of the sunset (or sunrise, if you prefer)

Equipment:

- Clear view of the western (eastern) horizon which you can access multiple times per week
- Notebook for recording data
- Watch or timepiece

This assignment is to be conducted outside of class, on your own time. It is an outdoor observing activity over an extended period of time, so *keep up with the observations and do not procrastinate! THIS ACTIVITY CANNOT BE COMPLETED IN LESS THAN FOUR WEEKS. Plan accordingly*

Find a safe place outside to observe where you can clearly see the western (or eastern, for sunrise) horizon. Make sure you can access this *exact* location several times per week at about the same time each day. You will probably find it easiest to mark your spot with tape, chalk, or some other temporary mark. ***It is very important that you make your observations from exactly the same location each time!*** In your notebook, draw a representation of your view of the western horizon, making sure to label the cardinal directions (N-S-E-W) and sketching in major landmarks such as distant buildings, trees, microwave towers, etc. You will use this map to chart the location of the sunset over an extended period of time. **Never look directly at the sun itself.**

Go outside to your particular observing spot several minutes before sunset (or sunrise) and make sure you can orient yourself with your own drawing, i.e. get your bearings. You will need to record both what time the sun sets (or rises) and the angular separation between this horizon position of the sun and one stationary, distant object to the side of that location. You will need a timepiece of some sort to record the time (please make sure it's set accurately!). You will use your hand-fist (as demonstrated in class) to measure the angular separation between the location of the sun and your stationary object. Make a sketch and record your measurements in a table. In the five weeks you have to complete this activity, you are expected to make **at least 10 observations** of the sunset (or sunrise). Do not wait until the last 10 days of the assignment to take your measurements – if you are clouded out then, it will not be an acceptable excuse. Additionally, measurements made either too far apart or too close together (i.e. daily) will make it more difficult to obtain reliable results.

On your horizon drawing, plot the positions of the sun. Put all the data on one plot so that any changes will be more easily observed.

ANSWER THE FOLLOWING QUESTIONS IN YOUR NOTEBOOK.

1. Did the sun move any along the horizon over the course of your observations? If so, which direction did it move (N-to-S, E-to-W, W-to-E, S-to-N)?
2. Roughly how many degrees per week did the sun appear to move? How did you determine this number?
3. Based on what you know about celestial motions, do your observations support this knowledge? Explain why or why not.