

Constellation Observing Project

The goal of this assignment is apply what you have learned about the night sky and the use of the Planisphere. You will go into the field and observe and sketch a constellation. You will also record some basic information about your constellation, observing conditions and location.

Materials: pencil and eraser, this sheet of paper, flashlight, clipboard

Note: This assignment can be done from nearly any outdoor location. The best place to do it is somewhere that you can be relaxed while looking at the sky for at least 10 to 15 minutes. Examples might be a sidewalk, yard, or driveway. It doesn't need to be a particularly dark place, but do try to avoid locations that are directly under bright street lamps.

Assignment:

- 1) Select a seasonal constellation that currently can be seen in the night sky by looking at the sky map on the Planisphere. Do not select a circumpolar constellation or an asterism. Be sure to select a constellation in which you can **see at least 5 stars**, and more if possible.
- 2) Use the Planisphere date and time function to find the optimum time to view this constellation. Keep in mind that the higher in the sky it is at the time you will observe it, the easier it will be to see.
- 3) Note the brightest stars or obvious patterns to help you recognize your constellation. These may be part of your constellation or something nearby in the sky.
- 4) When you go to observe look around at the sky and give your eyes plenty of time to adjust to the partial darkness; this usually takes at least 10 or 15 minutes. Look all around at as much of the sky as you can see from where you are standing. Pick out the brightest stars, and then fainter ones as your eyes gradually adjust.
- 5) Using the Planisphere as a guide, locate the constellation that you have selected.
- 6) Sketch the constellation on the next page with as many details as possible.
- 7) Label the three brightest stars (α , β , γ) and connect stars that form the outline of the constellation.
- 8) Use your hand at arm's length to make measurements of the separations between the stars that make up the constellation; use the approximate conversions below for all your measurements.
- 9) Record where in the sky you observe your constellation and measure how high it is above the horizon; use the approximate conversions below for all your measurements

Angular Measurement Outside, Width of:

1 finger tip = 1 degree; 3 fingers = 5 degrees; palm (with thumb) = 10 degrees

Tips: Use a clipboard or clip your sketch paper to a notepad or binder. This will make it easier to sketch on the paper. Also, you'll most likely need a flashlight to see your paper and make your sketch. Try to use a flashlight that is not too bright, since a bright light will make it harder to see stars. You can tape a sheet of paper over the front of a flashlight to make it less bright or use a red lens.

Name of Constellation: _____

SKETCH BELOW

Date: _____ Time: _____

Observing Location: _____ (city or neighborhood)

Position in Sky: _____ Height Above Horizon: _____

Can you read this sentence **without** holding a flashlight to it? Circle one **Yes** **No**

Lighting and Sky Conditions: Describe in one or more sentences below what sorts of lights are nearby and how far away--e.g. street lights or cars are 20 feet away; also, is it clear, partly cloudy, etc.