

ASTRONOMICAL OBSERVATIONS

HW041026

due in 1 week

Project I --- Visual Observations

Each group should work together on these assignments and submit a group report.

The purpose of this project is to familiarize yourself with the current night sky.

With the aid of a star chart, find the constellation Cygnus in a clear early evening.

1. Identify the stars consisting of the “Summer Triangle”, i.e., Vega, Altair and Deneb. Plot their positions in the sky relative to the north.
2. Find their right ascension and declination coordinates.
3. (a) Visually estimate the angular separation between these stars.
(b) Calculate the angular separation between these stars by their coordinates
4. Identify the star Polaris in the sky. Estimate the elevation angle of Polaris from the horizon.
5. Check the almanac to find out which planets are currently visible in the sky.

Toward the midnight, we shall see the winter sky. In the constellations Taurus, Orion and Monoceros there are several prominent objects, e.g., the Crab Nebula (M1), Orion Nebula (M42), Horsehead Nebula, M78, and Rosette Nebula (including the open cluster NGC 2244).

6. Find out what these objects are, and collect as much information as you can for them, such as their coordinates, angular sizes, and distances.