Class Assignment 2

Due by: Monday, January 24  
Name: _______________________

Introduction: How to find objects in the sky

There are actually three different ways of describing the location of celestial objects in the sky.

The first and simplest coordinate system has been around for thousands of years. It's the system of **constellations**. Constellations and the stories that go with them gave early humans a way of remembering where the bright stars are located. One can tell what time of the year it is by observing the constellations visible on a given night at a given time. There are 88 different constellations over the entire sky.

The second coordinate system involves measuring the angle of the object above the horizon (known as **altitude**) and the angular distance eastward from the north pole (known as **azimuth**). In other words, a star on the horizon directly north of the observer has an altitude of 0° and an azimuth of 0°. If the star were due east of the observer and on the horizon, the altitude is 0° and the azimuth is 90°. The Earth's rotation causes the apparent east to west motion of the stars. This motion implies that the altitude and azimuth of a celestial object are changing continuously. This limits the usefulness of the **altitude-azimuth coordinate system**. We will use this coordinate system most extensively during this laboratory.

The third coordinate system is fixed with respect to the stars. It involves two quantities known as **right ascension** and **declination**. The coordinate system is referred to as the **equatorial coordinate system**. We will not use this coordinate system for this laboratory. Your instructor will provide a brief description of these coordinates systems.

In this exercise, we will learn some of the basic constellations and other celestial objects commonly seen with the unaided eye (without a telescope). You have each been given a constellation chart appropriate for January/February 2011. You should review them on your own.

Assignment:

You will be responsible to identify the following objects in the night sky:

**Constellations:**
- Ursa Major
- Cassiopeia
- Pegasus
- Orion
- Auriga
- Taurus
- Gemini
- Leo

**Other Celestial Objects:**
- North Star (Polaris)
- Betelgeuse
- Rigel
- Orion Nebula
- Sirius
- Procyon
- Pleiades
- Aldebaran
- Capella
- Castor
- Pollux
- Jupiter

You will be required to point these out to me (or Sam Schaub) at some point during the next week. Please let me know when you are ready, and we can test you in the evening.