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### -1.0.1 Background Survey on Moodle

Log in to Moodle (on smartphone, laptop, or one of the computers at the table). Go to the section for Astronomy Lab 1 and complete the Astronomy Background Survey. Don't worry if you don't know the answers, just answer every question as best you can and you will receive full credit.

### -1.0.2 Stellarium

Stellarium is a planetarium software that helps us visualise the sky over time. We'll use it to begin our exploration of astronomy.

1. Go to <http://stellarium.org/> and download and install the correct version for your operating system. If you can't find it, use Stellarium Web.
2. Open the Location Window from the left-hand menu panel or by pressing F6. In the search bar under the top right, menu type "Amherst" and select "Amherst Center, United States".
  - Make sure it's "Amherst Center", not "Amherst" (that's in NY somewhere).
  - **Do not type** into the "Name/City" box. That renames the location.
3. Close the Location Window and open the Date/Time Window from the left-hand menu panel or by pressing F5. Set the time to 7:00pm tonight. Close the window.
4. Look at what the sky will look like tonight. Drag the view and scroll up or down to zoom in or out respectively.

### -1.0.3 Positions of Astronomical Objects

In astronomy, we use angles to measure positions and separations of objects in the sky. From your point of view, an object's position is given by **azimuth** and **altitude**. Answer the following questions.

1. How many degrees are in a circle?
2. How many degrees are in a right angle?
3. What are longitude and latitude?
4. What is the azimuth/altitude system?

Astronomers use the **sexagesimal** system for recording angles. Each degree is divided into 60 **arc minutes** ('), and each arc minute is divided into 60 **arc seconds** ("). An azimuth of  $240^{\circ}38'12''$  is read as 240 degrees, 38 arc minutes, and 12 arc seconds.

Set the time to 2022/1/31 at 6:00pm. Locate the object and click on it, then answer the following. At this time, what is the azimuth and altitude of:

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Object	Azimuth	Altitude
Betelgeuse		
Jupiter		
Sirius		

Now advance the time by a few minutes. Do the azimuths and altitudes increase or decrease?

#### **-1.0.4 Lab Quiz on Moodle**

Go to the section for this lab on the Moodle page and complete the End-of-Lab Quiz.

**If you logged into your Moodle account from a classroom computer, be sure to log back out!**