# STELLARIUM

Overview **Stellarium** is on open source planetarium program. A planetarium program displays the stars, Sun, Moon, and planets in the sky, as though you were sitting in the planetarium. You will use Stellarium for the substitute activities for the observing projects in this course.

Downloading   Stellarium is free. It can be downloaded from **www.stellarium.org**. There are versions for PC, Mac, and Linux. These instructions are written for Stellarium version **0.16.0** for Windows**.**

Settings_ Start the program. Move the cursor to the lower left corner. Here is where you control the program. Along the left side you will see 7 buttons that bring up the windows where you set various options. Along the bottom are short-cut buttons for display features. In the lower right are the time controls. Near the lower left corner of the screen are two little triangles. Click on them to lock the buttons in place.
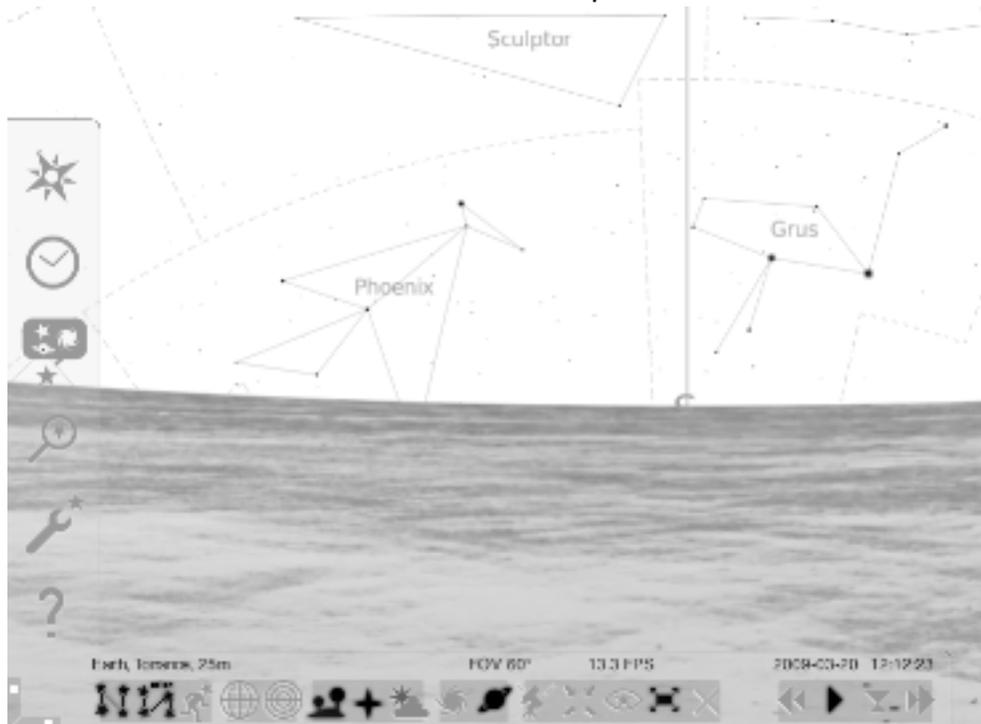
1.   Click on the top left button, **Location window** (or hit F6)**.** Next to the magnifying glass, type TORR. Select Torrance, USA from the list. Click on **Use as default** in the lower left corner of the window**. *Unselect*** the **Enable daylight saving time** option. Close the window.

2.   Click on the **Date/time window** button (or hit F5). Enter the
          date and time of your birth. Use the little up and down arrows
          if you have trouble entering a number. The program uses 24-
          hour time; there is no a.m. or p.m. If you were born after 1 PM,
          add twelve hours to the time. Close the window. You will now
          see what was in the sky at the time of your birth (if you were
          born in southern California). Close the window.

3.   Click on the **Sky and viewing options (View) window** button
          (or hit F4). There are 5 tabs: **Sky, DSO, Markings,
          Landscape,** and **Starlore.**

4.   Click on the **Sky** tab. In the **Sky** box, *uncheck* **Dynamic eye
          adaptation** and **Atmosphere visualization.** You will now be
          able to see the stars during the daytime. You will know
          whether it is day or night by looking at the foreground.

5.   Click on **Refraction/Extinction settings...** In the
          Atmosphere details box, change the **Pressure** to 0.0 and
          change the **Extinction Coefficient** to 0.0. These nasty
          settings will otherwise cause the stars to shift and fade out
          when near the horizon. Close the box.

6.   Click on the **Markings** tab. In the **Celestial Sphere** box,
          check **Equator (of date), Ecliptic (of date), Horizon,
          Meridian, Cardinal points, Celestial poles (of date),** and
          Zenith and Nadir.

7.   Click the **Landscape** tab. Select **Ocean.** In the **Options** box
          at the bottom of the window, uncheck **Show fog** and check
          Use this landscape as default. Close the window.

8.   Click the **Starlore** tab. In the **Options** box, click **Show
          labels, Show lines with thickness 1,** and **Show
          boundaries.** Close the **View** window.

9.   Skipping over the **Search window** button, click on the
          Configuration window button (or hit F2). Click on the
          Navigation tab. Under **Display formats of date and time**
          select **time: 24-hour format.**

10.   On the **Information** tab, in the **Selected object information**
          box, select **Short.** In the **Displayed fields** area, select **Type,
          Altitude/Azimuth** and **Distance.**

11.   On the **Main** tab, In the **Default options** area, click on **Save settings.** Close the **Configurations** window.

Moving around

Moving around is easy. If you have amouse, just click on empty sky and drag the sky around. Or you can use the arrow keys. Drag the sky around until you are facing east. What planets are rising?

Left-click on a star or a planet. In the upper left corner you will see information about the star or planet. Most of it will probably not mean much to you yet.

Click the middle mouse button or hit the space bar to center on the object.

Right-click to select no object.

Controlling time

Move your cursor over the five buttons that are farthest to the right on the bottom of the screen, underneath the date and time. The rightmost button quits the program. The other four control time. Tap these buttons to see what they do. Time can also be controlled by tapping the J, K, and L keys. Each time you tap the L key, time speeds up. Each time you tap the J key, time slows down; if you keep tapping, time will go backward.

Short cuts   The following shortcuts are useful:

J, K, L   Time control: backward, normal, forward
=   Go forward 1 day
-              Go back 1 day
Ctrl =   Go forward 1 hour (command = on Macs.)
Ctrl -   Go back 1 hour (command = on Macs.)
7   Stop time
8   Return to the current date and time
page up   zoom in   (fn-page up on Macs)
page down zoom out   (fn-page down on Macs)

To explore additional shortcuts, press F1 or click on the question mark button in the lower left. Look over the shortcuts and see if there's anything you like.

A little problem

Face south. Use the controls to set the time to 12 noon on your birthday. Look up or down to find the Sun. What constellation is it in?