The Sky – An introduction and review

1. Open TheSky (version 5, the green icon). The screen should show the view of the sky looking due south. Even if the sun is above the horizon, the sky will look black and show stars. The green region is the horizon and ground. Notice the viewing directions are labeled along the horizon.

2. Set the date and time. For example let’s set the date to 3 days from today’s date and set the time to 9PM (21:00). This is done under the menu item Data>Site Information…. When the dialogue box comes up, make sure the Date and Time tab is selected and uncheck “Use Computer’s Clock” and type in 21 hours 00 minutes 00 seconds (we use a 24-hour clock for the time). Now select the date 3 days from today. If you wish to change location, see #3, otherwise click OK (but read #3 to know how it’s done).

3. If you wish to change location, select from the list of cities, Click on Apply and note the change in Latitude and Longitude then click OK. To select from an international list of cities, choose Open… then choose the file “Cities outside USA.loc”, click on Open and now you’ll have list of international cities to choose from.

4. Moving around the sky. Once everything is set, one can move the sky around by clicking on the blue arrow icons at the top of the screen. Alternatively, one can use the vertical and horizontal scroll bars.

   One can also look in the 4 cardinal directions of N, E, S, W. To do that click on the appropriate yellow-button icons at the top of the screen. The Z button means looking toward the zenith (overhead). Our “standard” direction will be looking south (S).
5. **Object Information.** Now find a named star on the screen (such as Sirius or Vega, scroll around if need be) and click on the star. A box of information appears on the screen, this is called a *dialogue box* (see below). At the top of this dialogue box is information such as the Name of the object, Magnitude, Declination, Right Ascension, Altitude and Azimuth. Within the dialogue box (where the scroll bar is) there is other info such as Flamsteed/Bayer designations and Spectral classifications, and (if you scroll down) the rise, set and transit times of the object selected. To center on the object selected click on the icon in the lower left corner of the dialogue box.

A Dialogue Box

6. **Finding the angular separation between two objects.** Now select a second named star and click on it. Another dialogue box appears with information about that star. Click on the green protractor at the bottom of the dialogue box. When you do so, you'll see highlighted within the dialogue box the angular separation (in degrees, arcminutes and arcseconds) from the object you have currently selected to the object you had most recently selected.
7. **Finding an object.** Instead of randomly searching for an object using the scroll bars (or arrow icons), you can find a desired object by hitting the F key and typing its name into the Find box. Alternatively, one can click menu item Edit>Find or click on the Find icon . Find either M27 or M42.

8. **Changing the View.** TheSky has two views of the sky which are accessed by the buttons at the top of TheSky window. There is one called Zenith Up (Z) in which the horizon is visible (this is the default). The is also a view that has the North Celestial Pole Up (P) and orients the stars like they are on your SC001 chart and removes that horizon. This can useful if you wish to view an object that winds up the below the horizon.

9. **Zooming in and out.** To zoom in or zoom out of the star field, click on the appropriate magnifying glass icon . To zoom in on a specific star/object/location, either click on the object or Find it (see #7 above) and then use the centering icon in the dialogue box. Now zoom in on the object.

10. **Filters and Labels.** Under the View menu item select Filters… The following screen on the left appears:

    ![Filter Screen](image)

This allows you select which objects will appear on the screen and set how faint of stars will appear on the screen. The Faintest magnitude of 5.0 is a good limit, but if you wish to see more stars set that to a higher number. Setting it to 30 will show all the stars. Some of the fainter stars will not appear until one zooms in closer.

To change how things are labeled, go under the View menu item and select Labels then Setup… This will allow one to select which type of objects you
wish to have labeled. The defaults are good, though you may wish to eliminate some or all labels to make the view cleaner.

11. **Time step feature.** One can step forward or backward in time by using time step buttons (located just above the stars on the upper, right side).

The default time step is 1 Hour.

If you press the button, the sky will advance one hour. If you press the sky will march forward continuously at one hour per frame. Pressing will cause the sky to step backwards and will “play” the sky backwards. The time interval can be changed by selecting a different interval (by clicking on the next to the time interval) and/or typing in a new time interval. For example, if you wanted to choose 2 hours to be your interval, change 1 Hour to 2 Hour. This is the easiest way to go from say 9PM on a certain night to 11PM on that same night (as opposed to going to setting the date and time as in # 2.

--------------